



# Broadcasting Products ATSC

Product Catalogue 3Q 2013







# Screen Service

IT WORKS.

Screen Service is a worldwide known company focused on turn key and end-to-end solutions for all broadcaster needs.

With more than 20 years of experience and thousands of satisfied customers, Screen Service is the leading company in digital TV technology.





# Historical Milestones

## 1980s

In the late 1980s Screen Service Italia (SSI) was founded in Brescia. It was active in management, assistance and trading of TV-radio systems, radio transmitters and other electronic equipment.

## 1990s

- SSI starts internal production of TV Transmitters and Microwave Links.
- Strategic partnership with M.B. International Srl, broadens its product portfolio with digital broadcasting technology.

## 2000s

- **2004:** SSI acquires a 39% stake in Innovaction S.r.l., a company which operates in projects and prototypes of electronics and transmission equipment.
- **2004:** Cape Natexis Private Equity Fund (CNPEF) and Fondamenta acquired a 60% stake in the company through SSBT S.p.A.
- **2005:** SSBT incorporates Screen Service America (SSA).
- **2005:** SSBT acquires the entire capital of M.B. International Telecom Labs S.r.l. (MBITL), a spin-off of M.B. International S.r.l.

## 2006s

- Screen Service System (SSS) is incorporated, entering into the system integration business with an opportunistic approach.
- **11-Jun-2007:** first day listed on the Milan Stock Exchange "Expandi Market".

## 2007s

- **Jun-2007:** MBITL signs agreement with Xilinx (NASDAQ – XLNX) as R&D partner for the development of several protocols in order to allow IPTV (Internet Protocol Television) to function on Xilinx's Platform.
- **Jun-2007:** Screenlogix is established and is expected to be involved in the development of a new generation of Hi-speed SuperComputers for number crunching, virtual servers and computer graphics.

- **Oct-2007:** SSBT acquires order from an important System Integrator for the supply of innovative transmitters for the broadcasting of digital terrestrial TV and mobile TV, manufactured according to the Software Defined Transmitter (SWDT) technology. The order has a value of approx. **16 million Euros.**
- **Oct-2007:** MBITL signs agreement with a major company, S&P 500 listed to develop software on embedded/digital signal processing family by utilizing the concept of "Software Defined Radio" of which MBITL is a pioneer.

## 2008s

- **At the end of January 2008,** Screen Service do Brasil (SSB) is incorporated and is already in a position to deliver the ISDB-T standard (also used in Japan) that has been adopted in Brazil for digital transmission.
- **Mar-2008:** record contract signed with RRD and Profit Group worth 14,5 million Euros (duration of 30 months w.e.f. 1-Apr-2008) for the supply of DVB-T equipment necessary to complete and define the digitalization process of the interregional broadcasters controlled by Profit Group.
- **Mar-2008:** financial loan of 8 million Euro granted to Profit Group (expired date 17-Mar-2011) which entitles SSBT to be the privileged supplier (first call-last refusal) of equipment necessary to the construction of the Wi-Max network of the following Italian Regions: Liguria, Toscana and the Province of Trento.
- **Mar-2008:** a call option has been granted by Profit Group for the purchase of 30% of share capital of RRD, leader in the supply of large scale solution in DVB-H technology. It can be exercised within March 2011 at a price of 7 million Euros.

## 2009s

- **SCREEN SERVICE acquires 100%** of RRD Reti Radiotelevisive Digitali S.r.l., a leader in the broadcast and telecommunications services industry.
- Screen Service and RRD play a primary role in the definition of the new standard for the US market, ATSC Mobile DTV (A/153), collaborating with OMVC (Open Mobile Video Coalition) and offering a complete high reliability end-to-end solution.



## 2010s

- **Screen Service founds Skylinks**, a newco with a long background of experiences in High Capacity Microwave Systems. Its product portfolio covers the broadcast needs but also telecom, defense, healthcare and many others.

## 2011s

- Tivuitalia becomes an officially authorized Italian Nationwide Network Operator.

**Screen Service Broadcasting Technologies S.p.A.**

**Screen Service America LLC** 100%

**Screen Service do Brasil Ltda.** 100%

**Skylinks s.r.l.** 100%

**Tivuitalia S.p.A.** 100%

# Services

Have you decided to make the digital switch but cannot find a way to cover the initial cost in your budget? Screen Service Group will make it easy to afford the switch with Darwin Service.

Darwin, otherwise known as evolutionary rental, is an innovative service with a new contractual formula allowing companies looking to make the digital switch without committing to a complete investment, or incurring upfront costs.

Screen Service always supports you, for every problem you can have using our equipments, our support center will help you. Screen Service has strategically located three different support centers in different geographical areas in order to cover the extended business hours support requirement of our customers:

Italy, USA, Brazil.

Call or write us (support@screen.it), we'll do our best to deliver a fast and effective solution.



Screen Service Group does not just value your company's business until the check clears; SSBT values the customer for the duration of our partnership. We hold ourselves to a high standard concerning Customer Support and Maintenance, and provide our partners with quality assistance in either field on a multinational, multilingual level. SSBT takes pride in executing our commitment to you via your warranty conditions as quickly as possible, while still adhering to the excellence and quality we have mandated for ourselves.



The Screen Service group has, through Tivultalia, network operator capabilities, installation services, and network planning. Tivultalia has a complete worldwide database with altimeters and population and twenty years of experience in network planning and coverage simulations. Thanks to their experience, Tivultalia can gather transmission site information and deliver a complete simulation of Population coverage, Errors, disturbed signals, losses of power, SFN simulations and delay calculation, Transmitting power planning and simulations and Network optimization.

The Screen Service Group have gathered an impressive range of expertise in the broadcasting industry, giving them the credibility to advice and consult in the worldwide market for digital TV, such prestige is only given to those amongst the highest echelon in their field, confirming their vast and knowledgeable experts are among the best in the world. Concerning anything from starting out, or making the transition to digital, to telecom operators seeking insight on Mobile TV business opportunities. Screen Service Group combines perspectives to give you complete results, offering you consultants from both the technical and business facets of this industry.

Screen Service Group delivers a wide range of products encompassing all services a broadcaster needs: including everything from the playout to the transmitters. Some customers want to use a particular configuration, which can be integrated into the Screen Service system. We bring a multi-product multi-platform mindset that allows us to integrate equipment our broadcasting customer already has into the Screen Service system.



# Product Customization Ability

## Screen Service fits customer requests into a solution.

This page shows you just a few customizations that the Screen Service engineers are capable of, have confidence in knowing that when you tell our Sales Department what you need, you are working with over twenty years of experience to ensure that you will be provided with excellent customer service and a perfectly tailored solution.

**Transmitter interlock**



**Matching lines for the Antenna load**



**Emergency button**

**Analog dashboard**

Analog Dashboard draws the output power on air and upon loading



**Switching Relay**

It switches from the main transmitter to the reserve with the U-Link bypass capability







### TLC/TLS on top

Panel on top of the rack with all TLC and TLS signals can also have other input options, such as ASI, 10MHz and 1PPS

### Dummy Load



### Motorized Thermostatic Panel to regulate temperature

Thermostatic Panel opens and closes ducts after checking the internal temperatures (68° F, 20° C) and controls the direction of hot air in order to reduce the equipment stress

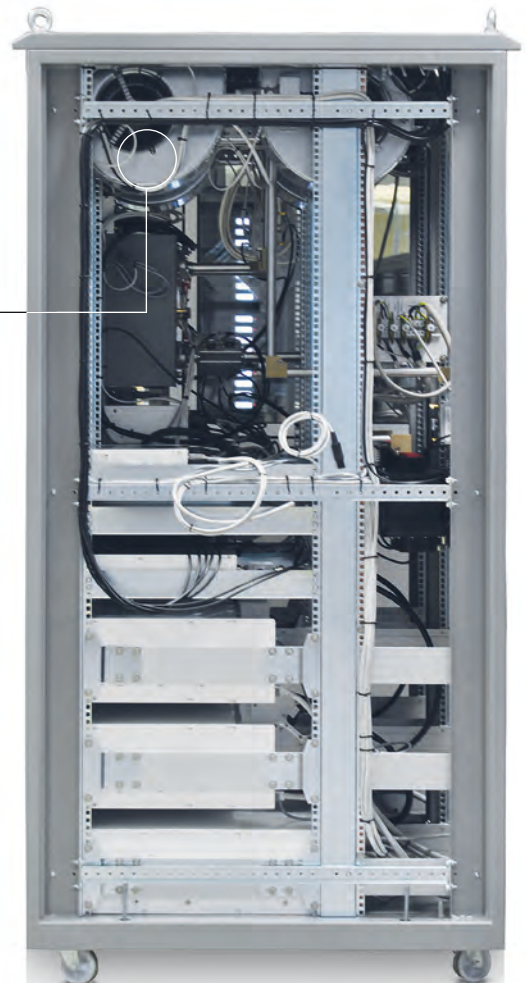
### Redundant Blowers

Fans alternate operation every 300 hours

### Power Distribution

Power Distribution can be provided integrating an insulator transformer, a soft start circuit, absorption control, and a tilting phase circuit as well as auxiliary power input for the UPS system within the Control Unit

Screen Service also provides custom software applications tailored on any specific requirement our customers may have, such as the software which grants different types of access to the system allowing the authorized personnel working on it with various levels of authorizations.



# Product Portfolio



**Screen Service draws the future in the broadcasting market with a wide range of advanced technology products that covers any headend, distribution, broadcast and remoting needs.**

## Headend



- Encoders SD, HD, H264/Decoders
- Multiplexers/Re-Multiplexers
- SFN Adapters
- Seamless ASI Switching Systems
- IRRM (Integrated Receiver and Re-Multiplexer) for Regional SFN Distribution
- Dual GPS with Seamless Switching
- Complete Head-end in a box (DVB-H) /ATSC-MH)
- T2-MI Gateway



## TV Transmitters

- Multi Mode Transmitters and Transposers
- Air and Liquid Cooling
- from 1 mW to 40KW
- Analog (PAL, NTSC) and Digital (DVB-T/T2 - ATSC/MH – ISDB-Tb – DAB/T-DMB - DTMB)
- Transposers/Translator with Automatic Signal Recognition
- Gap Fillers With Automatic Digital Echo Cancelling Device



## Test Measurement & Monitoring

- Broadcast Analyser
- Monitoring System
- Power Meter
- Multi Viewer



## Radio Link Microwave System

- High Capacity Microwave Systems.
- 1+0, 1+1, 2+0, Split Mount and Full Indoor Hardware Configurations
- From 3.6 to 43 GHz., from QPSK to 1024QAM, Several HW configurations are available, scalable Ethernet from 1 up to 2Gpbs.
- Customizable radio links solutions.



## Remote Network Management



All, Always, Anywhere under control... everything totally in your power. Functionality can be achieved with a minimum effort: this is the secret of modern technology. And this is also the result of uninterrupted development, where research and design push the competitive edge of technology. SSBT's remote control system is the result of this philosophy: "SSBT NMS System" embeds in a single product state-of-the-art technology, advanced features and easy of use. RDF (Radio Data Frontend), now in the third generation, SNMP advanced management, and NetLOBBY software are the complementary elements leveraging SSBT NMS System full power.

# Table of Contents

## 2

## Headend Solutions

TSC Mobile DTV turnkey solution	SPEED Mobile DTV	4
XBT 667	SPEED Multiplexer Mobile	5
ENC 326	Two channels Multi-standard H.264 encoder tailored for Mobile TV applications	7
XBT 668	SPEED mobile is the perfect fit to build ATSC SFN network in the most efficient way	8
XBT 167	SPEED ESG Announcement Server	9
Legacy	Go Digital with Professional Headend Systems	11
ENC 333A	Encoder HD/SD/1SEG, MPEG2/H.264	12
ENC 334	Four Channel SD-Encoder MPEG2/H.264	14
PRO RX SAT 2	Professional Satellite Receiver	16
PRO RX SAT 2 with Decoder	Professional Satellite Receiver with decoder	18
Service Platform Coordinator	Headend Central Manager	20

## 22

## SDT ARK-6 ATSC/MH Series

SDT 000 ARK-6	1mW rms	Driver OdBm	30
SDT 200 ARK-6	20W ps/2,5W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	32
SDT 500 ARK-6	50W ps/12W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	34
SDT 201 ARK-6	400W ps/150W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	36
SDT 201 ARK-6 NC	450W ps/150W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	38
SDT 501 ARK-6 Compact	800W ps/300W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	40
SDT 501 ARK-6	1000W ps/350W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	42
SDT 102 ARK-6	2000W ps/700W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	44
SDT 202 ARK-6	3000W ps/1300W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	46
SDT 502 ARK-6	6000W ps/2600W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	48
SDT 532 ARK-6	9000W ps/3900W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	50
SDT 103 ARK-6	12000W ps/5200W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	52
SDT 123 ARK-6	12500W ps/3200W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	54
SDT 133 ARK-6	18000W ps/7800W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	56
SDT 203 ARK-6	24000W ps/10000W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter	58
SDT 303 ARK-6	36000W ps/15000W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter, Liquid Cooled	60
SDT 403 ARK 6	48000W ps/20000W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter, Liquid Cooled	62
SDT 603 ARK-6	72000W ps/30000W rms	Heterodyne Transposer, Regenerative Transmitter, Transmitter, Liquid Cooled	64



<b>66</b>	<b>SDT ARK ECHO Series</b>	
SDT 500UB ARK1 ECHO	Digital Repeter on Channel with Superior Echo cancellation for ATSC and ATSC-MH	66
PSDT 120UIB ARK1 ECHO COMPACT	Digital Repeter on Channel with Superior Echo cancellation for ATSC and ATSC-MH	68
SDT 210UIB ARK1 ECHO COMPACT	Digital Repeter on Channel with Superior Echo cancellation for ATSC and ATSC-MH	70

<b>72</b>	<b>Accessories and Synchronization Systems</b>	
SCS 300/350	Main Meter	74
SCS 500	Automatic Changeover Unit (1+1)	76
SCS 900	Automatic Changeover Unit (N+1)	78
SCS 120S	GPS Receiver, 8 x 1PPS / 5 or 10MHz Outputs - stand-alone unit.	80
SCS 120D	Dual Redundant GPS Receiver, 8 x 1PPS / 5 or 10MHz Outputs Stand-alone unit Seamless	82
GPS Smart	GPS Receiver, 4 x 1PPS / 4 x 10MHz Outputs - stand-alone unit.	84
ASI To IP Converter	ASI TO IP and IP to ASI converter	86
XBT 706D	Redundant Asi Distributor	90
SCS 118	GPS Antenna	91

<b>92</b>	<b>Contacts</b>	
Contacts		92

# ATSC Headend



# Headend Legacy and ATSC Mobile

Complete digital headend solution for ATSC Legacy (A/53) and ATSC Mobile DTV (ATSC-MH, A/153)

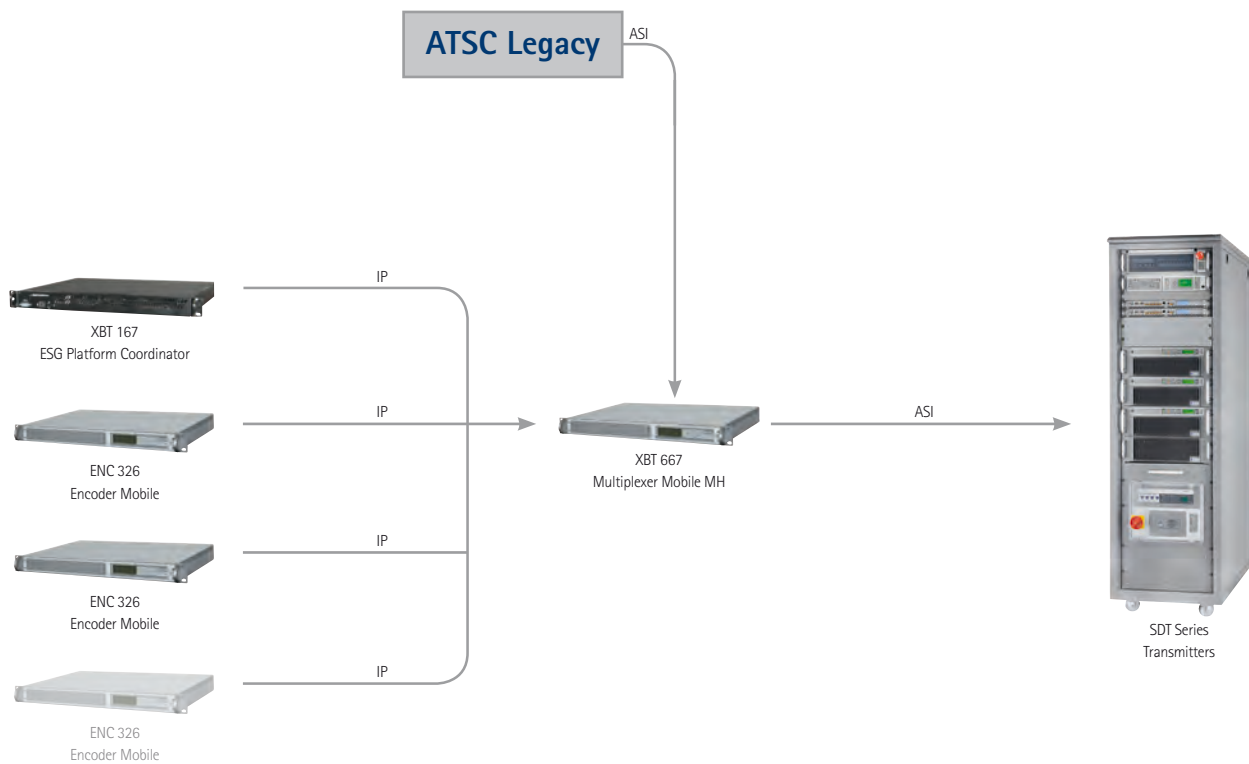


## SPEED Mobile DTV

SPEED is the one-stop solution from testing and evaluation to full commercial service.

The Speed Mobile DTV solution consists of Mobile DTV Encoders, ESG Flute Server, Multiplexer for Mobile streaming, and Exciter fully compliant with the A/153 standard. You will get all you need to put your valuable content in your customers' hand. Speed Mobile DTV gives you the chance to boost your content, reaching your customers anywhere thus increasing revenues.

The system is built to satisfy the broadcasters priorities: ATSC Legacy backward compatibility and easy-to-use plug-and-play nature.





## SPEED Multiplexer Mobile



> XBT 667 – Multiplexer Mobile

SPEED Multiplexer mobile is the most flexible and scalable solution for ATSC Mobile DTV presenting a complete list of features from Preprocessor of the Mobile Stream to aggregation of the legacy ATSC and mobile ATSC MH streams into your Transmitter.



### Main Features

#### Preprocessor:

##### MH Preprocessor:

- Real Time multiplexes of Mobile A/V, Data and ESG
- Information editing function of FIC, TPC, Signaling generator (SMT, GAT, SLT, CIT and RRT)
- Internal generation of SSC IP packet for each ensembles for each parade
- Dedicated Gigabit port for ATSC-MH services
- Perform single and multiple ensemble
- Perform up to 16 parades and up to 32 ensembles
- Support all modes in the ATSC A/153 standard to calibrate the right quality-of video/number-of-channel ratio
- Output interleaved transport stream by multiplexing MHE packet MH PART (MH data) and Legacy ATSC
- Packet timing and PCR restamping for the legacy ATSC packets.



### INPUT TO MULTIPLEXER ARE:

- 1 ASI/SSI transport streams
- 1 GBe port for MH services

### OUTPUTS FROM MULTIPLEXER ARE:

- 4 ASI transport streams carrying all the same transport stream out

### AS ANY MULTIPLEXER OF THE XBT FAMILY, IT HAS BUILT-IN:

- Web server to dispatch a Java applet for interactive management
- Java applet tested on most popular browser
- Java applet downloadable for local execution
- SNMP server for remote control
- GPS receiver capable of synchronizing internal time generators
- Internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- Telnet server for access via character based terminals
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring Physical

### PHYSICAL

1U rack frame

#### Size:

W: 19,05"

H: 1,7"

Lbs: 8,81 (kg 4)

#### Size

D: 13,62"

### POWER SUPPLY

90-270 VAC PFC corrected power supply

Nominal power 38 VA

Power factor: 0.95

Max inrush current 15A

M6 screw for extra ground connection

Power cord: US standard

### ASI INPUTS

EN 500083-9 compliant

BNC connectors 75 ohm

ATSC bit rate

### SSI INPUTS

EN 500083-9 compliant

BNC connectors 75 ohm

ATSC bit rate

### ETHERNET CONNECTION

10/100/1000 Mbit Ethernet connector

1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update

1 IP address for RTP/UDP server

1 IP address for RTP/UDP client

RTP protocol: ProMpeg cop3 with no FEC packet processing/ generation

Optional NTP client

### GPS INPUT

TNC connector 50 ohm

Phantom power 3 Volt 50 mA short circuit protected

GPS L1

12 channel simultaneous operation

45 s typical cold start TTFB

38 s typical warm start TTFB

5 s typical hot start TTFB

<0.5 s reacquisition

Sensitivity Acquisition/Tracking -185dBW / -185dBW

30ns rms accuracy, <10ns resolution

### ASI OUTPUT

EN 500083-9 compliant

BNC connectors 75 ohm

Maximum bit rate as per DVB-T standard

### FRONT PANEL

4 x 20 alpha displays

Button navigation

Basic setup and status

### REFERENCE INPUTS

10MHz	SMB connector
	1Vpp sine
	50 ohm terminated
	AC coupled option "HIZ" available

1 sec PPS	SMB connector
	0.4 VIL
	1.7 VIH
	Dc coupled
	50 ohm terminated Option "HIZ" available

### REFERENCE OUTPUTS

10MHz	SMB connector
	1Vpp sine
	50 ohm
	DC coupled

1 sec PPS	SMB connector
	0.2 VOL @ 64 mA IOL
	2.2 VOH @ 64 mA IOH
	Dc coupled
	50 ohm capable

### REMOTE CONTROL INTERFACES

RS-232	Dedicated DB9 connector
	Data only
	Also available on remote control DB25 connector 230kbit

Relays	4 relays for alarm/info
	NO & NC contacts at connector
	Available on remote control DB25 connector
	Opto couplers
	4 opto couplers for command
	Internal floating current generator Common anode

Functions	2 mA max on current
	Default: 1 relay alarm/ok Option "N1": use relay and opto for SSBT N+1 system

### SOFTWARE

Java applet requires Java 6 Version 13 or more recent

Java applet tested on Safari, Internet Explorer, Mozilla

Browser will download automatically suitable version of Java if connected to internet

SNMP is version 1 compliant

MIB files included in CD



## Two channels Multi-standard H.264 encoder tailored for Mobile TV applications



> ENC 326

Enc 326, 2 channels Multi-standard H.264 encoder tailored for Broadcasting Mobile TV services.

Developed for the next generation of digital video and audio end-equipment applications.

The encoder relies on a powerful hardware platform that features a best-in-class acquisition board, advanced pre-processing filters, statistical encoding, multiple codec support, multi-stream generation, and superior configuration and supervision capabilities. As a result, it is the solution of choice for all mobile TV applications.

VIDEO SPECIFICATIONS	
Video Compression and Bit-rate (CBR/VBR)	MPEG-4 AVC BP@L1.3
Video Input Filtering	Horizontal Filter
Aspect Ratios	4:3 and 16:9
SD Resolutions & frame Rates	416 x 240p@29.97/30
	416 x 240p@25
	416 x 240p@24/23.98
	416 x 240p@12.5
	416 x 240p@12/11.98
	320 x 240p@29.97/30
Up/Down/Cross-Conversion	576i@25 to 416x240p, 320x240p
	480i@29.97/30 to 416x240p, 320x240p

AUDIO SPECIFICATIONS	
Standard Channels	1 stereo pair
Audio Formats	AAC-LC, AAC-HEv1, AAC-HEv2
Operating Modes Mono, stereo	Stereo
Encoding Bit-Rate	AAC-HEv2 16 to 64 Kbps

INPUTS AND OUTPUTS	
<b>INPUT</b>	
Video Inputs	ISMA: up to 2 Serial Digital(SMPTE259M) or CVBS (ITU PAL, NTSC)
Default Audio Inputs	One pair via SDI embedded or Balanced Audio
<b>OUTPUT</b>	
	ASI (only one A/V channel)
	R Input:75 Ohm
	V Input:800 mVpp (500 to 1200 mVpp)
	Standard: CEI EN 50083-9
	MPEGoverIP (only one A/V channel)

POWER	
Input Voltage Range	90-270 VAC PFC corrected power supply
Current	Nominal power 38 VA

ENVIRONMENTAL	
Cooling	8 fans, temperature controlled air flow front to right side
Operating Temperature	+32° to +122° F 0° to +50° C
Storage Temperature	-4° to +176° F -20° to +80° C
Operating Humidity	< 95% non-condensing
Electromagnetic Compliance	FCC Part 15 Class A CE Mark (EN 55022 Class A and EN 50082-1:1997)
Safety	UL 1950 and cUL C22.2#950 EN 60950 ROHS Directive 2002/95/EC

PHYSICAL	
Dimensions	(W x H x D) 19" x 1.75" x 27" (1-RU) 48.26 cm x 4.45 cm x 68.69 cm
Weight	8,81 lbs. / 4 kg

SYSTEM MANAGEMENT	
Control Management GbE	Standalone web user interface
	N° Inputs: 1 Connector: RJ45
	Standard: IEEE 802.3
RS-232	N° Inputs: 1 Connector: DE-9 female



### SPEED XBT 668 mobile is the perfect fit to build ATSC SFN network in the most efficient way.



> XBT 668

SPEED Multiplexer mobile is the most flexible and scalable solution for ATSC Mobile DTV presenting a complete list of features from Preprocessor of the Mobile Stream to aggregation of the legacy ATSC and mobile ATSC MH streams into your Transmitter.



#### Main Features

- Output transport stream compliant to A110/B for the synchronization of distributed transmission (SFN)
- Input the transport stream carried MH and legacy services
- Integrated GPS receiver
- Output bit rate at exact 19.39 Mbps in 6 Mhz channel.

#### INPUT TO MULTIPLEXER ARE:

- 8 ASI or SSI transport streams
- 1 SPI connector for multiplexer extension
- 2 RTP clients for RTP/UDP encapsulated Transport Streams on 2 different ports of a single IP address

#### Outputs from multiplexer are:

- 4 ASI transport streams carrying all the same transport stream out
- 1 RTP/UDP Server carrying encapsulated Transport stream
- SPI output for system extension

#### AS ANY MULTIPLEXER OF THE XBT FAMILY, IT HAS BUILT-IN:

- Web server to dispatch a Java applet for interactive management
- Java applet tested on most popular browser
- Java applet downloadable for local execution
- SNMP server for remote control
- GPS receiver capable of synchronizing internal time generators
- Internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- Telnet server for access via character based terminals
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring Physical

#### PHYSICAL

1U rack frame	
Size	
D:	13,62"
Size:	
W:	19,05"
Lbs:	8,81 (kg 4)
H:	1,7"



## SPEED ESG Announcement Server



> XBT 167

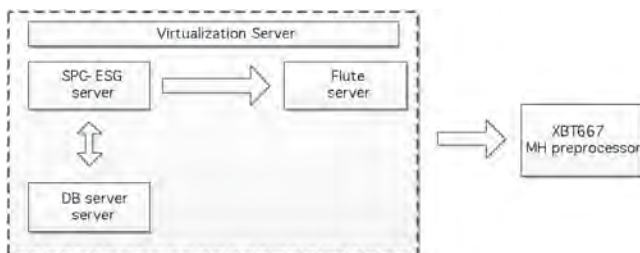
XBT 167 – SPEED ESG Announcement server is a complete solution for creating, aggregating and delivering advanced Mobile TV services over broadcast and cellular networks. It provides Content Providers, Commercial Operators, Network Operators and Broadcast Operators with a management platform for Electronic Service Guide (ESG), Interactive and Datacasting services.

The SPC – ESG module is used in ATSC-M/H Broadcasting Systems as Service Platform Coordinator ESG Server.



### Main Features

- Fully Compliant to A/153 part 4 (Announcement)
- OMA BCAST Service Guide (Service Guide, ESG, EPG)
- Single management point for ESG related information
- Service Provisioning
- SG Delivery Provisioning
- Metadata Collector
- Interstitial Advertising, icon, URL, description
- Basic and Enhanced Interactivity service
- Broadcast delivery server and Datacasting
- Non-Real-Time Content Delivery
- DataBase Storage Server
- Virtual Machine Server



### SPC – ESG Module

SPC – ESG Main features are:

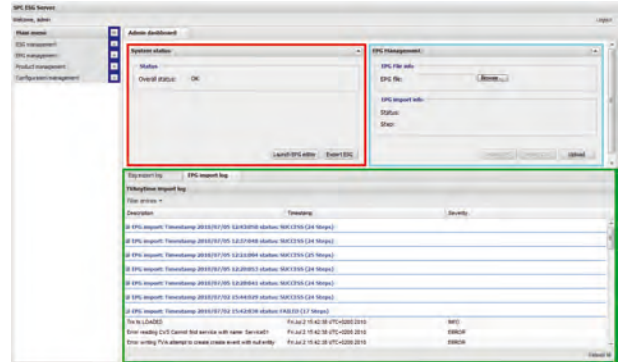
- Fully compliant DVB-IP/OMA-BCAST and ATSC-MH complaint
- Create, update e delete of services, service bundles, products, ESG provider.ESG import from local file
- Support multiple formats such as TV anytime, Tribune, XML, DVB-IPDC and OMA-BCAST file input
- Automatic program data ingestion
- Content editing and management
- ESG creation and export
- Export services, service bundles, products and contents to IPDC and BCAST platform.
- SPC SMS and SPC MPAY Interaction
- Logo Channel preview on the Channel Guide
- NTP Client
- Embedded Linux O.S.



SPC - ESG is the powerful Service Guide generator for SPEED ATSC Mobile DTV solution.

SPC - ESG will act as the single management point for the multimedia product packaging and encoding rules:

- Conditional access control lists definition and management
- Subscription bundles definition and management
- Complimentary information ingestion according to major broadcasting standards
- Basic interactivity services inline definition
- Advanced interactivity services definition in conjunction with leading edge interactive platforms.

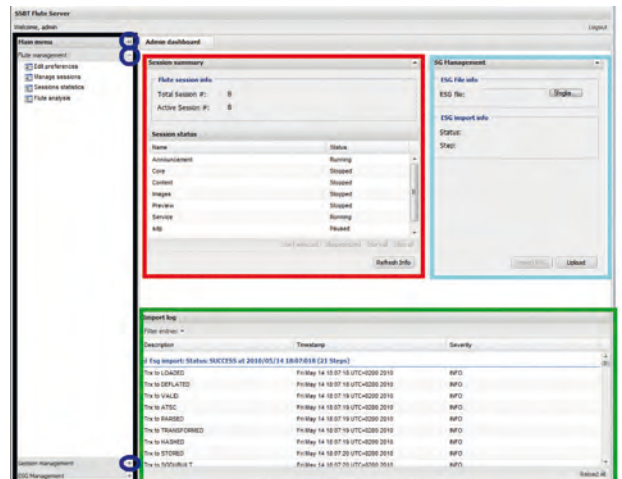


## Flute Server module

The Flute Server module finds its field of application in ATSC-M/H Broadcasting Systems as broadcast file delivery Server. The Flute Server can be configured using a Web interface that loads an ESG configuration and that permit sessions management.

The main features of Flute Server are:

- Session Type supported: ATSC-M/H, BCAST, IPDC2006 (in next releases), IPDC 2010 (in next releases)
- ESG import from local file
- Flute sessions managing: create, update and delete
- Session status managing: start, stop
- Sessions parameters editing
- Session Fragmentation criteria selection
- Session Analysis
- Session Statistic
- Flute Carousel Output
- Embedded Linux O.S.
- NTP Client

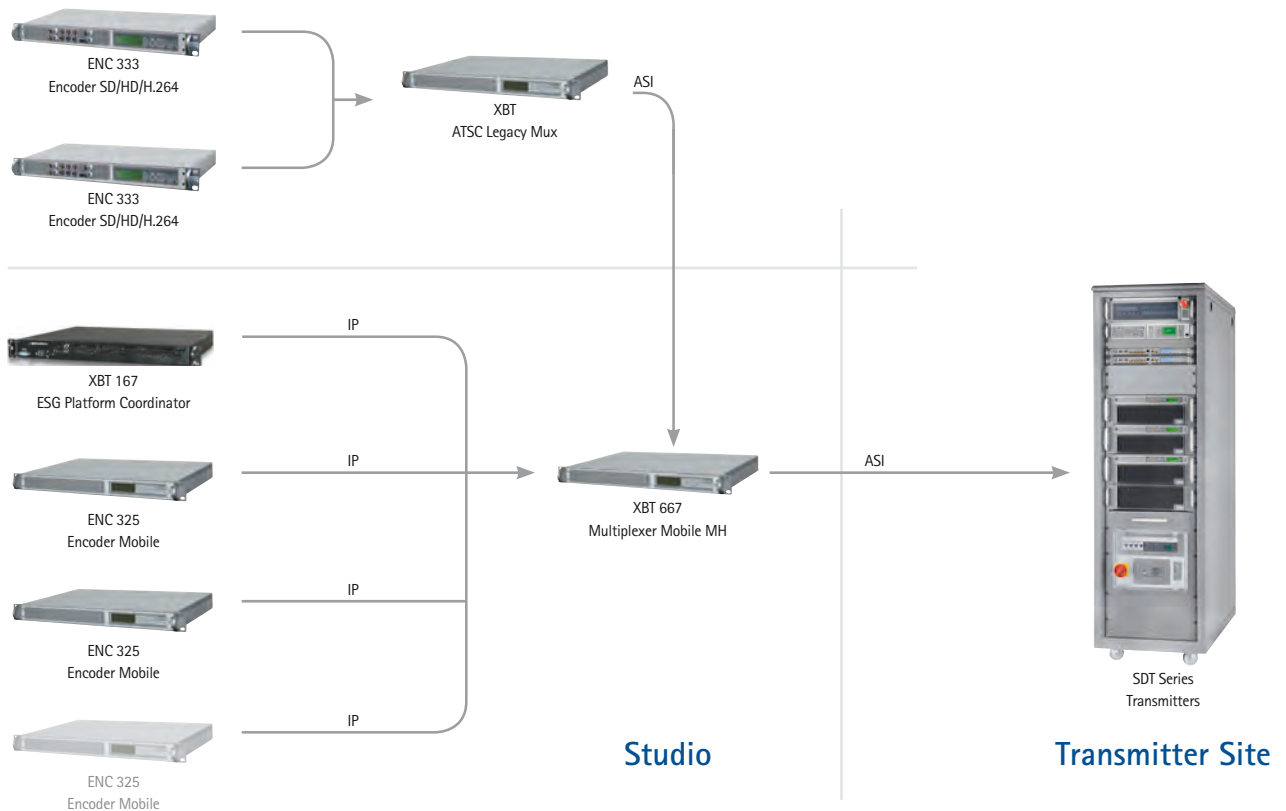


## Go Digital with Professional Headend Systems

Screen Service ATSC Legacy solution includes state-of-the-art SDTV MPEG-2/AC-3 encoders, PSIP signaling generator, multiplexer and exciter. Our standard definition encoder will give your valuable content the right format to please your customers' eyes.

Screen Service will provide you with our efficient PSIP generator to comply with the FCC data in providing Guide TV information to your Transport Stream, automatically ingesting from your PSIP source.

Screen Service Multiplexer is the core element which aggregates your content and data, fitting the ATSC standard specifications and it is ready-to-go for the new generation of broadcasters' revenue ATSC-MH (A/153), perfectly integrated with our SPEED solution. And with our easy to use plug and play architecture you don't even have to struggle with technical details. It just works and hence boosts your revenue, in the respect of your budget needs. The main feature of the Screen Service headend solution is the maximum flexibility and scalability where the customer requirements will tailor and design the perfect match between business and technology.



## Encoder HD/SD/1SEG, MPEG2/H.264



> ENC 333A

The ENC-333 is a high-definition system designed for real-time audio/video encoding for broadcast applications. This device is able to encode several HD and SD formats, providing high quality video, suitable for broadcast transmission. The video encoding technique, H.264 and MPEG-2, guarantees low output bit-rate with a flexible range that goes from 2 up to 25 Mbps. The audio stream is coded with high efficiency and quality, using: MPEG-1 Layer II, AAC-HE and AAC-LC or Dolby Digital Pro. ENC-333 encodes in SD or HD resolution the video input signal that it come from one of the inputs: SDI, HDMI, and Analog Video (Y, Cb, Cr), according to the coding standards, H.264 and MPEG-2. The ENC-333 includes not only video processing, but also stereo audio encoding in MPEG-1 Layer II (MP3), AAC HEv1, HEv2 and LC formats, Dolby Digital Professional. Video and audio elementary streams are multiplexed in an MPEG-2 Transport stream for output over an ASI link. A separate ASI input provides support for an external PSIP/SI data generator. Next to PAT and PMT, PSIP support includes MGT, TVCT and CVCT, while SI support includes NIT, SDT, CAT and TDT.

VIDEO SPECIFICATIONS	
Video Compression and Bit-rate (CBR/VBR)	MPEG-2 MP@ML 2 to 25 Mbps
	MPEG-2 MP@HL 4 to 25 Mbps
	MPEG-4 AVC MP@L3.0 0.5 to 25 Mbps
	MPEG-4 AVC HP@L4.1 4 to 25 Mbps
	MPEG-4 AVC BP@L1.2, L1.3 0.1 to 1 Mbps
Video Processing	LookAhead multi-pass processing
	Scene-cut, fade/dissolve and skin tone detection
	Dynamic GOP management with adaptive I-picture and B-picture placement
	Automatic input format (1080i/p, 720p) detection and switching (SDI only)
	Inverse telecine
Video Input Filtering	Motion compensated temporal filter (MCTF)
	Horizontal filter
	Input deblocking filter
Aspect Ratios	4:3 and 16:9
	AFD and WSS control
SD Resolutions and Frame Rates	576i@25, 480i@29.97 480i@30 x 720, 704, 640, 544, 528, 480, 352 pixels
HD Resolutions and Frame Rates	720p@23.97p, 24p, 25p, 29.97p, 30p, 50p, 59.94p 60p x 1280, 960, 640 pixels
	1080i@25, 29.97, 30 x 1920, 1440, 1280, 960 pixel
Multiscreen Resolutions and Frame Rates	1080p@23.97p, 24p, 25p, 29.97p, 30p x 1920, 1440, 1280, 960 pixel
	Built-in PIP (not enabled)
SD Resolutions & frame Rates	416x240p@25, 29.97 & 30
	352x288p@25
	320x240p@14.985, 15, 25, 29.97 & 30
	320x180p@14.985, 15, 25, 29.97 & 30
	176x144p@25
HD Resolutions & frame Rates	576x720i/p@25
	480x720i/p@29.97 & 30
	416x240p@25, 29.97 & 30
	352x288p@25
	320x240p@14.985, 15, 25, 29.97 & 30
	320x180p@14.985, 15, 25, 29.97 & 30
	176x144p@25

Up	1080i@25 to 576i@25 (HD to SD)
Down	1080i@29.97 & 30 to 480i@29.97 & 30 (HD to SD)
Cross-Conversion	1080i/p@25 to 352x288p, 416x240p, 320x240p, 328x180p @25 (HD to LD)
	1080i/p@29.97 & 30 to 416x240p, 320x240p, 328x180p @14.985, 29.97 & 30 (HD to SD)
	576i@25 to 352x288p, 416x240p, 320x240p, 328x180p @25 (SD to LD)
	480i@29.97 & 30 to 416x240p, 320x240p, 328x180p @14.985, 29.97 & 30 (SD to LD)

ANCILLARY DATA SPECIFICATIONS	
Closed Captioning	EIA608B field 1, 2, 1&2
	EIA708B
Ancillary Data and VBI	WSS, Video Index (SMPTE RP186), AFD/BAR data (SMPTE RP2016 1-3), AFS/BAR

AUDIO SPECIFICATIONS	
Standard Channels	1 x Stereo Pair (capable of up to 2 stereo pair in HD in version 3.0 and above)
Audio Formats	Consumer (AC3-CE, 2.0) native encoding
	Dolby Digital Surround (AC3 5.1), 2 x AAC (LC/HEV1/HEV2) Surround (5.1), 2 x MPEG1-LII, pass-through
Operating Modes Mono, stereo	Mono, Stereo
Encoding Bit-Rate	MPEG1 Audio Layer II 192 to 384 kbps
	Dolby Digital (AC-3) 56 to 448 kbps
	AAC-LC 32 to 384 kbps
	AAC-HEV1 32 to 192 kbps
	AAC-HEV2 32 to 96 kbps





INPUTS AND OUTPUTS	
INPUT	
Video Inputs	1 x Serial Digital (SMPTE 259M SD-SDI, SMPTE 292M HD-SDI), 1 x Component (YUV), 1 x HD-MIv1.3, 1 x CVBS (PAL, NTSC)
Default Audio Inputs	2 x SDI embedded, 2 x AES/EBU (AES3 750hm), 2 x HDMI, spdif, 2 x Stere Balanced Analog Audio
OUTPUT	
ASI	ASI
	R Input: 750hm
	V Input: 800mVpp (500 to 1200 mVpp)
	Standard: CEI EN 50083-9 (Not active for Dolby Digital Audio)
ASI over IP	Standard: SMPTE 2022 (FEC included)

SYSTEM MANAGEMENT	
Control Management GbE	Standalone web user interface
	N° Inputs: 1 Connector: RJ45
	Standard: IEEE 802.3
RS-232	N° Inputs: 1 Connector: DE-9 female

ENVIRONMENTAL	
Cooling	8 fans, temperature controlled air flow front to right side
Operating Temperature	+32° to +122° F 0° to +50° C
Storage Temperature	-4° to +176° F -20° to +80° C
Operating Humidity	< 95% non-condensing
Electromagnetic Compliance	FCC Part 15 Class A CE Mark (EN 55022 Class A and EN 50082-1:1997)
Safety	UL 1950 and cUL C22.2#950 EN 60950 ROHS Directive 2002/95/EC

PHYSICAL	
Dimensions	(W x H x D) 19" x 1.75" x 27" (1-RU) 48.26 cm x 4.45 cm x 68.69 cm
Weight	8,81 lbs. / 4 kg

## Four Channel SD-Encoder MPEG2/H.264



> ENC 334

ENC 334 is the compact solution for your digital television head end. It provides up to 4 SD channel encoding capacity in order to quickly create a new line up or easily transcode existing analog channel line ups to new digital ones for either DVB-T, DVB-S, ATSC delivery. ENC 334 provides not only video processing, but also stereo audio encoding in MPEG-1, Layer II (MP3) and AAC (HE and LC) formats for each video channel. Video and audio elementary streams are multiplexed in an MPEG-2 Transport Stream for output over an ASI link. A separate ASI input provides support for an external PSIP/SI table data generator.

VIDEO SPECIFICATIONS	
Video Compression and Bit-rate (CBR/VBR)	MPEG-2 MP@ML 2 to 25 Mbps
	MPEG-4 AVC MP@L3.0 0.5 to 25 Mbps
	MPEG-4 AVC BP@L1.2, L1.3 0.1 to 1 Mbps
Video Processing	LookAhead multi-pass processing
	Scene-cut, fade/dissolve and skin tone detection
	Dynamic GOP management with adaptive I-picture and B-picture placement
	Automatic input format (1080i/p, 720p) detection and switching (SDI only)
Video Input Filtering	Inverse telecine
	Motion compensated temporal filter (MCTF)
	Horizontal filter
Aspect Ratios	Input deblocking filter
	4:3 and 16:9
SD Resolutions and Frame Rates	AFD and WSS control
	576i@25, 480i@29.97 480i@30 x 720, 704, 640, 544, 528, 480, 352 pixels
Multiscreen Resolutions and Frame Rates	Built-in PIP (not enabled)
SD Resolutions & frame Rates	416x240p@25, 29.97 & 30
	352x288p@25
	320x240p@14.985, 15, 25, 29.97 & 30
	320x180p@14.985, 15, 25, 29.97 & 30
Up/Down/Cross-Conversion	176x144p@25
	576i@25 to 352x288p, 416x240p, 320x240p, 328x180p @25 (SD to LD)
	480i@29.97 & 30 to 416x240p, 320x240p, 328x180p @14.985, 29.97 & 30 (SD to LD)
Up/Down/Cross-Conversion	1080i@25 to 576i@25 (HD to SD)
	1080i@29.97 & 30 to 480i@29.97 & 30 (HD to SD)
	1080i/p@25 to 352x288p, 416x240p, 320x240p, 328x180p @25 (HD to LD)
	1080i/p@29.97 & 30 to 416x240p, 320x240p, 328x180p @14.985, 29.97 & 30 (HD to SD)
	576i@25 to 352x288p, 416x240p, 320x240p, 328x180p @25 (SD to LD)
	480i@29.97 & 30 to 416x240p, 320x240p, 328x180p @14.985, 29.97 & 30 (SD to LD)
ANCILLARY DATA SPECIFICATIONS	
Closed Captioning	EIA608B field 1, 2, 1&2
	EIA708B
Ancillary Data and VBI	AFS/BAR, WSS

PHYSICAL	
Dimensions	(W x H x D) 19" x 1.75" x 27" (1-RU) 48.26 cm x 4.45 cm x 68.69 cm
Weight	8,81 lbs. / 4 kg

AUDIO SPECIFICATIONS	
Standard Channels	1 stereo pair
Audio Formats	MPEG-1 Layer II, AAC-LC, AAC-HEv1, AAC-HEv2 native encoding
	Dolby Digital Pro (AC3 2.0 & 5.1), AAC-LC/HEv1&2 Surround (5.1) pass-through
Operating Modes Mono, stereo	Mono, Stereo
Encoding Bit-Rate	MPEG Audio Layer II 192 to 384 kbps
	AAC-LC 32 to 384 kbps
	AAC-HEv1 32 to 192 kbps
	AAC-HEv2 32 to 96 kbps

INPUTS AND OUTPUTS	
INPUT	
Video Inputs	four Composite (CVBS), Component(YUV) inputs
Default Audio Inputs	four stereo analog audio inputs
OUTPUT	ASI
	R Input:75 Ohm
	V Input:800 mVpp (500 to 1200 mVpp)
Standard: CEI EN 50083-9	

SYSTEM MANAGEMENT	
Control Management GbE	Standalone web user interface
	N° Inputs: 1 Connector: RJ45 Standard: IEEE 802.3
RS-232	N° Inputs: 1 Connector: DE-9 female

ENVIRONMENTAL	
Cooling	8 fans, temperature controlled air flow front to right side
Operating Temperature	+32° to +122° F 0° to +50° C
Storage Temperature	-4° to +176° F -20° to +80° C
Operating Humidity	< 95% non-condensing
Electromagnetic Compliance	FCC Part 15 Class A CE Mark (EN 55022 Class A and EN 50082-1:1997)
Safety	UL 1950 and cUL C22.2#950 EN 60950 ROHS Directive 2002/95/EC





## Professional Satellite Receiver

### Description

The PRO RX S2 is a DVB-S/S2 receiver with up to three ASI outputs designed for the primary distribution of mobile and/or terrestrial television over satellite. Operating in compliance with the DVB-S2 standard, the PRO RX S2 is capable of demodulating multiple MPEG transport stream in multi-stream mode: once received the input multi-stream, the transport streams are separated again based on their DVB-S2 Input Stream Identifier (ISI), then the desired services are descrambled by a CAM (Smart Card – common interface) modules with commonly adopted CAS in the market. With ASI and IP interfaces for input and output, PRO\_RX\_SAT 2 can be integrated into any head end systems for content delivery and re-distribution. (Professional Satellite Receiver, DVB S2 Professional Receiver).



PRO RX S2



PRO RX S2 In 1+1 configuration

### Main Features

#### RF Input

Connector used as input to the systems

- N° input: 1 for each receiver board
- Connector type: LNB (female)
- R input: 75 Ω
- V input: 1.75 V
- Frequency: 950 to 2150 MHz
- DVB-S (ETSI EN 300 421)
- DVB-S2 (ETSI EN 302 307)

#### 1 x Common Interface (for each receiver)

Connector used as input CAM

- Connector type: PCMCIA
- DVB-CI EN 50221-1997

#### 1 x FastEthernet (Management)

- Connector: RJ45
- Standard supported: IEEE 802.3

#### 3 x ASI Output (same content) / 6 x ASI Output (1+1 or 2+0 configuration)

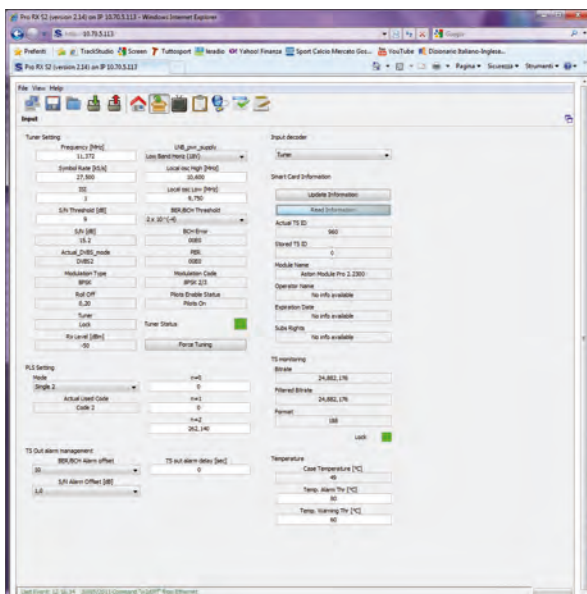
- TS Descrambled (TSD)
- Connector type: BNC
- Input: 75 ohm, 800 mVpp (500 to 1200mVpp)
- MPEG-2 TS ISO/IEC 13818-1
- CEI EN 50083-9,

#### Management of the devices is made through:

- Java GUI on Ethernet connection.
- SNMP agent.

#### Power Supply

- Dual Power Supply (only in 1+1 or 2+0 configuration)
- 110/220V AC Auto Switching
- 48V DC (Option on Request)



JAVA INTERFACE



## SATELLITE RECEIVER DESCRIPTION

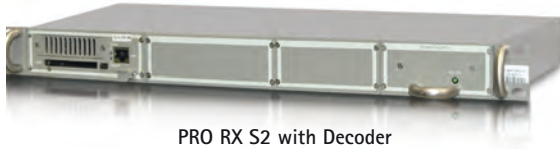
<b>Tuner</b>	
Frequency range	950 to 2150 MHz
Supported Standard	DVB-S EN 300 421 v1.1.2: Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for 11/12 GHz satellite services DVB-S2 EN 302 307 v1.1.2: Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband Satellite applications
<b>Input Sat RF</b>	
Tuning Setting	Frequency
	Symbol Rate
	ISI
	S/N Threshold
	LNB_pwr_supply
	Local osc Low
	BER/BCH Threshold
Monitoring	Force Tuning
	Actual_DVBS_mode
	Modulation Code
	Modulation Type
	Pilots Enable Status
	Rx Level [dBm]
	S/N [dB]
	Tuner Lock Flag
	Error Values
	<b>DVB-S Demodulator Features</b>
Setting Demodulator	QPSK
	FEC: 1/2, 2/3, 3/4, 5/6, 7/8
	Broadcast operating range 45 MSymbols/s
Automatic configurations monitoring	CCM
	Modulation type
	Filter roll-off
	Pilot presence (on/off)
	Long frames only
	Forward error correction
	Viterbi and Reed-Solomon dual decoder
Error monitoring	
<b>Demodulator Features DVB- S2</b>	
Setting Demodulator	FEC QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
	B. FEC 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
	FEC 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
	FEC 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10
	FECFRAME: both normal and short
	Broadcast operating range from 1 to 67 MSymb/s
	CCM, VCM and ACM
Automatic configurations monitoring	Modulation type
	Filter roll-off
	Pilot presence (on/off)
	Long frames only
	Forward error correction
	LDPC + BCH dual decoder
Error monitoring	

<b>Physical layer scrambling</b>	
Adjustable parameters	Mode
	First Physical Layer Scrambling sequence
	Second Physical Layer Scrambling sequence
Monitoring	Third Physical Layer Scrambling sequence
	Actual Used Code
DVB descrambler	DVB
	TS0 (TS Descrambled) output interface
	Descrambler - max 12 Services
	Encryption systems supported: all mayors CA suppliers
Cam Reader	CAM supported: all mayors CA suppliers
	Smart Card Information
	Read Information
	Actual TS ID
	Stored TS ID
	Module Name
	Operator Name
	Expiration Date
	Subs Rights
	Services Informations
Information	
Service Name	
Service ID	
Video PID	
Audio PID	
TS Out	PCR PID
	TTX PID
	Output TS Monitoring
	Bitrate
	Filtered Bitrate
	Format
	Lock
BB Frame and T2 MI out supported	

## ALARM MANAGMENT

<b>Tuner unlocked</b>	
<b>CAM presence</b>	
<b>Smart Card presence</b>	
<b>Rights Absence</b>	
<b>TS Id changed</b>	
<b>Decrypt error</b>	
<b>Hardware</b>	
<b>Temperature High</b>	
<b>Temperature Warning</b>	
<b>S/N Alarm</b>	
<b>BER/PER Alarm</b>	
<b>PS1 Voltage low</b>	
<b>PS2 Voltage low</b>	
<b>32 bit alarms available</b>	
Alarm Matrix Management	Alarm notification
	Alarm notification via Java GUI
	LED alarm on the front panel
	Enable logging event alarm
	SNMP trap
Event Log	Disable Mask TS out for alarm
	SNMP v1

## Professional Satellite Receiver with Decoder



PRO RX S2 with Decoder

### Main Features

#### RF Input

Connector used as input to the systems

- N° input: 1 for each receiver board
- Connector type: LNB (female)
- R input: 75 Ω
- V input: 1.75 V
- Frequency: 950 to 2150 MHz
- DVB-S (ETSI EN 300 421)
- DVB-S2 (ETSI EN 302 307)

#### 1 x Common Interface (for each receiver)

Connector used as input CAM

- Connector type: PCMCIA
- DVB-CI EN 50221-1997
- BISS descrambling - up to full TS
- CA Methods : MultiCrypt, SimulCrypt

#### 1 x FastEthernet (Management)

- Connector: RJ45
- Standard supported: IEEE 802.3

#### 3 x ASI Output (same content)

- TS Descrambled (TSD)
- Connector type: BNC
- Input: 75 ohm, 800 mVpp (500 to 1200mVpp)
- MPEG-2 TS ISO/IEC 13818-1
- CEI EN 50083-9,

#### Management of the devices is made through:

- Java GUI on Ethernet connection.
- SNMP agent.

#### Power Supply

- Dual Power Supply (only in 1+1 or 2+0 configuration)
- 110/220V AC Auto Switching
- 48V DC (Option on Request)

### Description

The PRO RX S2 is a DVB-S/S2 receiver with up to three ASI outputs designed for the primary distribution of mobile and/or terrestrial television over satellite. Operating in compliance with the DVB-S2 standard, the PRO RX S2 is capable of demodulating multiple MPEG transport stream in multi-stream mode: once received the input multi-stream, the transport streams are separated again based on their DVB-S2 Input Stream Identifier (ISI), then the desired services are descrambled by a CAM (Smart Card – common interface) modules with commonly adopted CAS in the market. With ASI and IP interfaces for input and output, PRO\_RX\_SAT 2 can be integrated into any head end systems for content delivery and re-distribution. (Professional Satellite Receiver, DVB S2 Professional Receiver).

Audio and Video services are decoded and available on several interface.

#### Audio/Video decoder section description:

##### Video standard supported:

- H.264/AVC: Level 4.1 high profile video decoder
- MPEG-2: MP@HL

##### HD video resolution supported:

- 1920x1080i30
- 1920x1080i25
- 1280x720p60
- 1280x720p50

##### SD video resolution supported:

- 720x576i25 compliant PAL-BG
- 720x576i29 compliant PAL-M
- 720x480i compliant NTSC

##### Audio standard supported:

- MPEG-2, layer I
- MPEG-2, layer II

##### Decoder Output:

###### 1 x SDI-SD Output

- Connector: BNC
- Input: 75 Ohm, 800mVpp (500 to 1200 mVpp)
- Standard: SMPTE 259M,292M

###### 1 x RGB-SD (R,G,B) Outputs

- Connector: RCA

###### 1 x CVBS-SD Output

- Composite Video Blanking Sync
- Connector: RCA

###### 1x HDMI-HD/SD Output

- Connectors: HDMI Type A

###### 1 x YUV-HD (Y,U,V) Outputs

- Connector: XLR

###### 1 x YPbPr (Y, U, V) (HD)

- Connector: RCA

###### 1 x Audio out (Left e Right)

- Connector: mini XLR



## SATELLITE RECEIVER DESCRIPTION

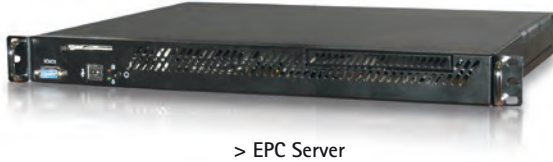
<b>Tuner</b>	
<b>Frequency range</b>	950 to 2150 MHz
<b>Supported Standard</b>	DVB-S EN 300 421 v1.1.2: Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for 11/12 GHz satellite services
	DVB-S2 EN 302 307 v1.1.2: Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband Satellite applications
<b>Input Sat RF</b>	
<b>Tuning Setting</b>	Frequency
	Symbol Rate
	ISI
	S/N Threshold
	LNB_pwr_supply
	Local osc Low
	BER/BCH Threshold
<b>Monitoring</b>	Force Tuning
	Actual_DVBS_mode
	Modulation Code
	Modulation Type
	Pilots Enable Status
	Rx Level [dBm]
	S/N [dB]
	Tuner Lock Flag
	Error Values
	<b>DVB-S Demodulator Features</b>
<b>Setting Demodulator</b>	QPSK
	FEC: 1/2, 2/3, 3/4, 5/6, 7/8
	Broadcast operating range 45 MSymbols/s
<b>Automatic configurations monitoring</b>	CCM
	Modulation type
	Filter roll-off
	Pilot presence (on/off)
	Long frames only
	Forward error correction
<b>Demodulator Features DVB- S2</b>	
<b>Setting Demodulator</b>	FEC QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
	B. FEC 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
	FEC 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
	FEC 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10
	FECFRAME: both normal and short
	Broadcast operating range from 1 to 67 MSymb/s
	CCM, VCM and ACM
<b>Automatic configurations monitoring</b>	Modulation type
	Filter roll-off
	Pilot presence (on/off)
	Long frames only
	Forward error correction
	LDPC + BCH dual decoder
	Error monitoring

<b>Physical layer scrambling</b>	
<b>Adjustable parameters</b>	Mode
	First Physical Layer Scrambling sequence
	Second Physical Layer Scrambling sequence
<b>Monitoring</b>	Third Physical Layer Scrambling sequence
	Actual Used Code
<b>DVB descrambler</b>	DVB
	TSD (TS Descrambled) output interface
	Descrambler - max 12 Services
	Encryption systems supported: all mayors CA suppliers
<b>Cam Reader</b>	CAM supported: all mayors CA suppliers
	Smart Card Information
	Read Information
	Actual TS ID
	Stored TS ID
	Module Name
	Operator Name
	Expiration Date
	Subs Rights
	<b>Services Informations</b>
Information	
Service Name	
Service ID	
Video PID	
Audio PID	
PCR PID	
TTX PID	
<b>TS Out</b>	Output TS Monitoring
	Bitrate
	Filtered Bitrate
	Format
	Lock
BB Frame and T2 MI out supported	

## ALARM MANAGMENT

<b>Tuner unlocked</b>	
<b>CAM presence</b>	
<b>Smart Card presence</b>	
<b>Rights Absence</b>	
<b>TS Id changed</b>	
<b>Decrypt error</b>	
<b>Hardware</b>	
<b>Temperature High</b>	
<b>Temperature Warning</b>	
<b>S/N Alarm</b>	
<b>BER/PER Alarm</b>	
<b>PS1 Voltage low</b>	
<b>PS2 Voltage low</b>	
<b>32 bit alarms available</b>	
<b>Alarm Matrix Management</b>	Alarm notification
	Alarm notification via Java GUI
	LED alarm on the front panel
	Enable logging event alarm
	SNMP trap
<b>Event Log</b>	Disable Mask TS out for alarm
	SNMP v1

## SPC Headend Central Manager



> EPC Server

### Description

The SPC server can manage the DVB headend and generate an EPG for every kind of architecture, including small or large headends.

SPC Server with XBT 525, when combined are the complete solution for the DVB-T Headend Management.

### Main Features

SPC has 2 main features:

#### 1) EPG Generation

SPC supports different inputs for the EPG generation: such as XML files or Plain Text Files. Content provisioning can be made manually or via file transfer protocol (FTP) based using periodic transfers. SPC comes with a full-featured EPG editor.

- EPG Server standalone
- Integrated with every multiplexer
- Ethernet output
- SI/PSI generation (PAT, PMT, NIT, SDT, TDT, TOT, EIT P/F and EIT Schedule)
- NTP enabled

#### 2) Multiplexer Management Platform (with XBT525)

SPC allows to easily configure one or more XBT525 multiplexer. SPC includes automatic device discovering and inventory management, an automatic PID filtering, complete MUX management and SI/PSI signalling/generation. SPC is also equipped with an alarm device monitoring.

- Integrated with XBT525
- Full XBT525 management, monitoring and trending
- ASI/Ethernet output
- SI/PSI generation (PAT, PMT, NIT, SDT, TDT, TOT, EIT P/F and EIT Schedule)
- PID filtering and remapping
- NTP enabled

### SPC Versions features

- EPG Server standalone
- Integrated with every multiplexer
- Ethernet output
- SI/PSI generation (PAT, PMT, NIT, SDT, TDT, TOT, EIT P/F and EIT Schedule)
- NTP enabled
- EPG Server Management platform
- Integrated with XBT525
- Full XBT525 management, monitoring and trending
- ASI/Ethernet output
- SI/PSI generation (PAT, PMT, NIT, SDT, TDT, TOT, EIT P/F and EIT Schedule)
- PID filtering and remapping
- NTP enabled

### Overall key features

- Easy interfacing with program guide content providers
- Real-time EPG updates
- Flexible and scalable hardware/software architecture
- Superior management of PSI tables including EIT P/F and schedule
- XML-enabled to facilitate connectivity
- User-rights management
- Ethernet and/or ASI output capabilities
- User-friendly graphical user interface (Web/HTML) for easy configuration and supervision





## EPG Related features

- DVB-SI (ETS 300 468) standard compliant
- SI tables support (PAT, PMT, NIT, SDT, TDT, TOT, EIT P/F, and Schedule)
- SI tables modification and filtering
- EIT P/F transition using the server clock
- Multi-language support
- User-rights management
- NTP client
- Web configuration and supervision

## I/O specifications

### Input

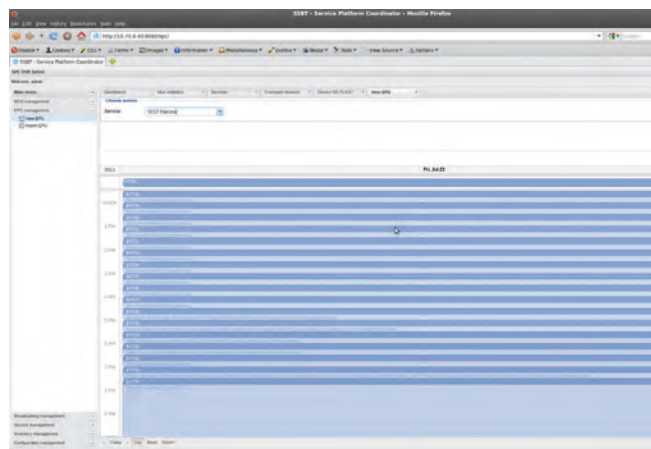
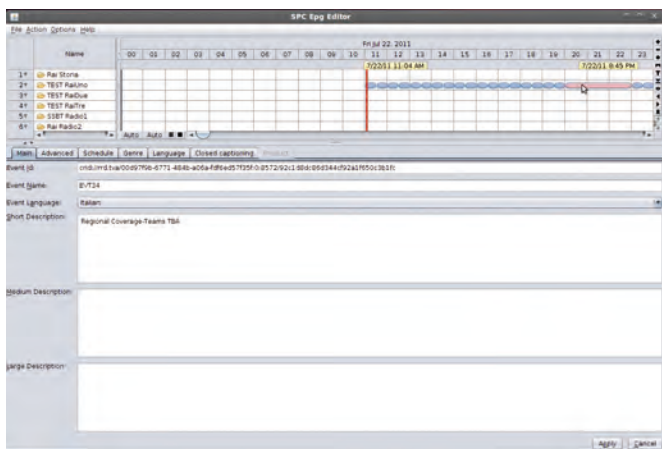
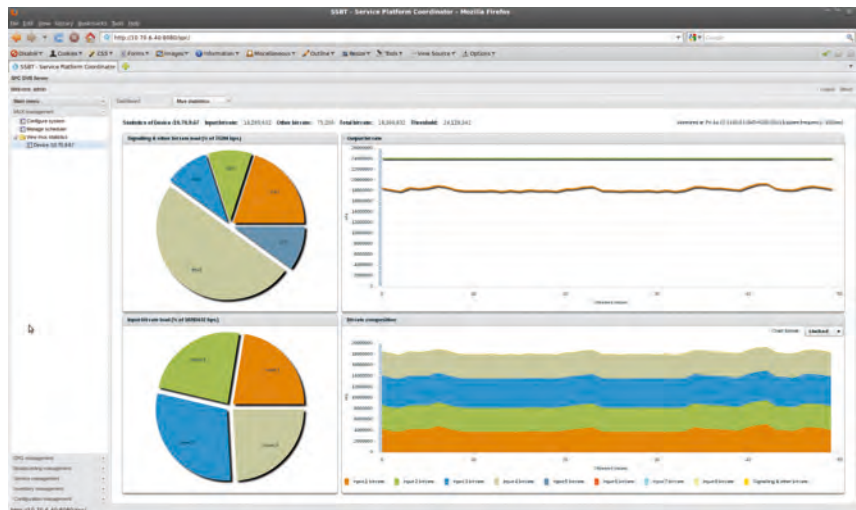
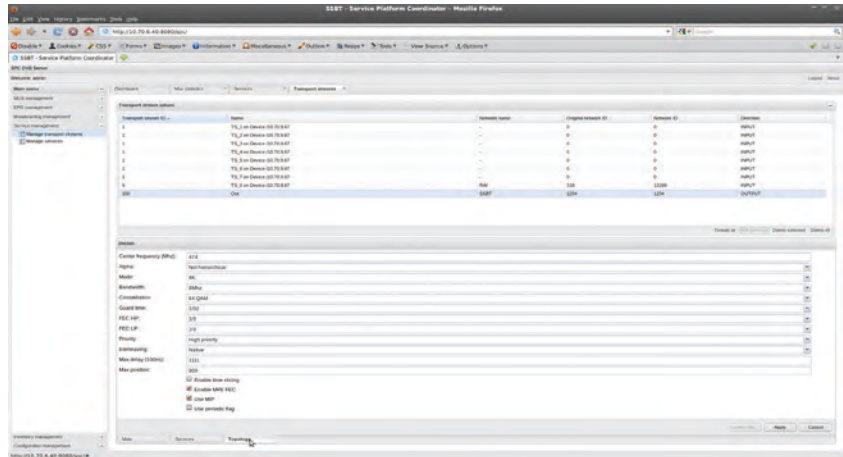
- XML files
- CVS files
- FTP file transfer
- Periodic file transfer
- Interactive editing

### Output

- ASI output interface (with XBT525)
- Ethernet output (both version)

## Multiplexer Management

- Full Multiplexer management
- Multiple device management
- High Availability configuration
- Automated device discovering
- Master/slave management
- Automated PID Filtering management
- PID remapping management
- Ethernet and ASI SI/PSI signaling
- Device alarm monitoring and correlation
- Output bandwidth monitoring



Service Platform GUI Screenshots

# SDT ARK-6 Series



# The Multiple Configuration Flexible Hardware Platform

The SDT ARK-6 is a Universal Driver with Multiple Front-End Boards

SDT ARK-6 SERIES. All configurations

Available configurations: Satellite Receiver w DEC w/o CAM, Regenerative Trasmmitter, Analog A/V Input, Transmitter only.



<b>Specifications</b>		
Frequency range	UHF (Band IV/V)	470 to 862 MHz, in 1 Hz Step
	VHF (Band III)	170 to 255 MHz, in 1 Hz Step
Available standards (all standars are full compliant)	Digital TV	DVB-T, DVB-T2, DVB-H, ISDB-Tb, ATSC, ATSC Mobile DTV,DTMB
	Digital Audio Broadcasting	DAB,DAB+,T-DMB
	Analog TV	B/G, D/K, M, M1, N, I, I1
Power Supply	AC Line Voltage	380 to 415 (3 phases), 208 to 240 Delta or Star ; 47 Hz to 63 Hz To be specify at order
	AC Line variations	+/- 15%
	Power factor	≥ 0,98
Environmental Conditions	Altitude	2500 m above sea level (> 2500 m on request)
	Operating temperature range	-10 °C to +45 °C at sea level, upper limit derated of 2 °C per 300 m Above Mean Sea Level
	Relative humidity	95 %, not-condensing
	Cooling method	Forced Air / liquid with external heat exchanger with redounded fan
RF output	Output power variation range	+0,5 to -10 dB
	RF load impedance	50 Ohm
	VSWR	Power reduction after exceeding the set value or switch off after three attempts
	RF Output connector	See Specific Data Sheet
Transmitter size	Rack Unit	See Model Specific Data Sheet
	Weight	
	Dimension	
Synchronization	Reference frequency	10 MHz, 0.1 V to 5 V (Vpp) or TTL, BNC
	Reference pulse	1pps (1 Hz, TTL, BNC)
Operations Control and Monitoring	Remote	Web based Java Interface
		SNMP
		Telnet access via ethernet
	Local	Extensive front panel control Local terminal on RS232
Compliance and Conformity	RoHS	2002/95/EC
	R&TTE	1999/5/EC
	Safety	EN 60215
	EMC	EN 301-4891-1
	FCC	Part 73
	WEEE	2002/96/EC
	Manufacturing	ISO 9001:2008

Specifications are subject to change without notice



# SDT SERIES ARK-6 ATSC + ATV

## Models Selection Guide

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ F <sub>o</sub> ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) ATV
SDT 000UA ARK-6-HE	UHF	A	1 RU (19" rack), 400 mm			N	Air	-	-37	1mW	1mW
SDT 200UA ARK-6	UHF	A	1 RU (19" rack), 400 mm	1		N	Air	-	-36	2,5 W	80 W
SDT 200TB ARK-6	VHF (III)	AB	1 RU (19" rack), 400 mm	1		N	Air	-	-36	2,5 W	80 W
SDT 500UB ARK-6	UHF	AB	1 RU (19" rack), 400 mm	1	SCA500UB	N	Air	-	-36	12 W	50 W
SDT 500TB ARK-6	VHF (III)	AB	1 RU (19" rack), 400 mm	1	SCA500TB	N	Air	-	-36	12 W	50 W
SDT 201UB ARK-6 HE C	UHF	AB	2 RU (19" rack), 400 mm	1		N	Air	-	-39	150 W	400 W
SDT 201UB ARK-6 C	VHF (III)	AB	2 RU (19" rack), 400 mm	1		N	Air	-	-36	80 W	250 W
SDT 201UB ARK-6 HE	UHF	AB	1+3 RU	1		N	Air	-	-39	150 W	450 W
SDT 201UB ARK-6	UHF	AB	1+3 RU	1		N	Air	-	-36	80 W	250 W
SDT 201TB ARK-6	VHF (III)	AB	1+3 RU	1		N	Air	-	-36	80 W	250 W
SDT 501UB ARK-6 HE C	UHF	AB	3 RU	1		7/16	Air	-	-39	300 W	800 W
SDT 501UB ARK-6 C	UHF	AB	3 RU	1		7/16	Air	-	-36	150 W	700 W
SDT 501TB ARK-6 C	VHF (III)	AB	3 RU	1		7/16	Air	-	-36	150 W	700 W
SDT 501UB ARK-6 HE	UHF	AB	15 RU (4+1)	1	SCA501	7/8	Air	-	-39	350 W	1000 W
SDT 501UB ARK-6	UHF	AB	15 RU (4+1)	1	SCA501	7/8	Air	-	-36	150 W	700 W
SDT 501TB ARK-6	VHF (III)	AB	15 RU (4+1)	1	SCA501	7/8	Air	-	-36	150 W	700 W
SDT 102UB ARK-6 HE	UHF	AB	1+5 RU	1	SCA102HE	7/16	Air	-	-39	700 W	2000 W
SDT 102UM ARK-6 HE	UHF	AB	30 RU	2	SDT501HE	7/16	Air	-	-39	700 W	2000 W
SDT 102UB ARK-6	UHF	AB	1+5 RU	1	SCA102UB	7/16	Air	-	-36	300 W	1400 W
SDT 102UM ARK-6	UHF	AB	30RU	2	SCA501UB	7/16	Air	-	-36	300 W	1400 W
SDT 102TB ARK-6	VHF (III)	AB	1+5 RU	1	SCA102TB	7/16	Air	-	-36	300 W	1400 W
SDT 102TM ARK-6	VHF (III)	AB	30 RU	2	SCA501TB	7/16	Air	-	-36	300 W	1400 W
SDT 202UB ARK-6 HE	UHF	AB	1+5 RU	1	SCA202HE	7/8	Air	-	-39	1300 W	3000 W
SDT 202UM ARK-6 HE	UHF	AB	30 RU	2	SCA202HE	7/8	Air	-	-39	1300 W	3000 W
SDT 202UB ARK-6	UHF	AB	1+5 RU	1	SCA202UB	7/8	Air	-	-36	700 W	2800 W
SDT 202UM ARK-6	UHF	AB	30RU	2	SCA202UB	7/8	Air	-	-36	700 W	2800 W
SDT 202TB ARK-6	VHF (III)	AB	1+5 RU	1	SCA202TB	7/8	Air	-	-36	700 W	2800 W
SDT 202TM ARK-6	VHF (III)	AB	30 RU	2	SCA202TB	7/8	Air	-	-36	700 W	2800 W
SDT 502UB ARK-6 HE	UHF	AB	30 RU	2	SCA202HE	7/8	Air	1	-39	2600 W	6000 W
SDT 502UM ARK-6 HE	UHF	AB	40 RU	4	SCA102HE	7/8	Air	1	-39	2600 W	6000 W
SDT 502UB-W ARK-6 HE	UHF	AB	40 RU	2	SCA202HE-W	7/8	Liquid	1	-39	2600 W	6000 W
SDT502UB ARK-6	UHF	AB	30RU	2	SCA202UB	7/8	Air	1	-36	1300 W	5000 W
SDT502UB-W ARK-6	UHF	AB	40 RU	2	SCA202UB-W	7/8	Liquid	1	-36	1300 W	5000 W
SDT 502UM ARK-6	UHF	AB	40 RU	4	SCA102UB	7/8	Air	1	-36	1300 W	5000 W
SDT 502TB ARK-6	VHF (III)	AB	30 RU	2	SCA202TB	7/8	Air	1	-36	1300 W	5000 W
SDT 502TB-W ARK-6	VHF (III)	AB	40 RU	2	SCA202TB-W	7/8	Liquid	1	-36	1300 W	5000 W
SDT 502TM ARK-6	VHF (III)	AB	40 RU	4	SCA102TB	7/8	Air	1	-36	1300 W	5000 W
SDT 532UB-W ARK-6 HE	UHF	AB	40 RU	3	SCA202HE-W	7/8	Liquid	1	-39	3900 W	9000 W
SDT 532UB-W ARK-6	UHF	AB	40 RU	3	SCA202UB-W	7/8	Liquid	1	-36	2000 W	7500 W
SDT 532TB-W ARK-6	VHF (III)	AB	40 RU	3	SCA202TB-W	7/8	Liquid	1	-36	2000 W	7500 W
SDT 103UM ARK-6 HE	UHF	AB	40 RU	4	SCA202HE	7/8	Air	1	-39	5200 W	12000 W
SDT 103UM-W ARK-6 HE	UHF	AB	40 RU	4	SCA202HE	7/8	Liquid	1	-39	5200 W	12000 W
SDT 103UM ARK-6	UHF	AB	40 RU	4	SCA202UB	7/8	Air	1	-36	2600 W	10000 W
SDT 103UM-W ARK-6	UHF	AB	40 RU	4	SCA202UB-W	7/8	Liquid	1	-36	2600 W	10000 W
SDT 103TM ARK-6	VHF (III)	AB	40 RU	4	SCA202TB	7/8	Air	1	-36	2600 W	10000 W
SDT 103TM-W ARK-6	VHF (III)	AB	40 RU	4	SCA202TB-W	7/8	Liquid	1	-36	2600 W	10000 W
SDT 123UM-W ARK-6	UHF	AB	40 RU	5	SCA202UB-W	7/8	Liquid	1	-36	3200 W	12500 W
SDT 123TM-W ARK-6	VHF (III)	AB	40 RU	5	SCA202TB-W	7/8	Liquid	1	-36	3200 W	12500 W
SDT 133UM-W ARK-6 HE	UHF	AB	2 x 40 RU	6	SCA202HE-W	7/8	Liquid	1	-39	7800 W	18000 W
SDT 133UM-W ARK-6	UHF	AB	2 x 40 RU	6	SCA202UB-W	7/8	Liquid	1	-36	6000 W	16000 W
SDT 133TM-W ARK-6	VHF (III)	AB	2 x 40 RU	6	SCA202TB-W	7/8	Liquid	1	-36	6000 W	16000 W
SDT 203UM ARK-6 HE	UHF	AB	2 x 40 RU	8	SCA202HE	7/8	Air	2	-39	10000 W	24000 W
SDT 203UM-W ARK-6 HE	UHF	AB	2 x 40 RU	8	SCA202HE	7/8	Liquid	2	-39	10000 W	24000 W
SDT 203UM ARK-6	UHF	AB	2 x 40 RU	8	SCA202UB	7/8	Air	2	-36	5000 W	20000 W
SDT 203UM-W ARK-6	UHF	AB	2 x 40 RU	8	SCA202UB-W	7/8	Liquid	2	-36	5000 W	20000 W
SDT 203TM ARK-6	VHF (III)	AB	2 x 40 RU	8	SCA202TB	7/8	Air	2	-36	5000 W	20000 W
SDT 203TM-W ARK-6	VHF (III)	AB	2 x 40 RU	8	SCA202TB-W	7/8	Liquid	2	-36	5000 W	20000 W
SDT 303UM-W ARK-6 HE	UHF	AB	3 X 40 RU	12	SCA202HE-W	7/8	Liquid	4	-39	15000 W	36000 W
SDT 303UM-W ARK-6	UHF	AB	3 X 40 RU	12	SCA202UB-W	7/8	Liquid	4	-36	7800 W	32000 W
SDT 303TM-W ARK-6	VHF (III)	AB	3 X 40 RU	12	SCA202TB-W	7/8	Liquid	4	-36	7800 W	32000 W
SDT 403UM-W ARK-6 HE	UHF	AB	4 X 40 RU	16	SCA202HE-W	7/8	Liquid	4	-39	20000 W	48000 W
SDT 403UM-W ARK-6	UHF	AB	4 X 40 RU	16	SCA202UB-W	7/8	Liquid	4	-36	10000 W	40000 W
SDT 403TM-W ARK-6	VHF (III)	AB	4 X 40 RU	16	SCA202TB-W	7/8	Liquid	4	-36	10000 W	40000 W
SDT 603UM-W ARK-6 HE	UHF	AB	6 X 40 RU	24	SCA202HE-W	7/8	Liquid	6	-39	30000 W	72000 W
SDT 603UM-W ARK-6	UHF	AB	6 X 40 RU	24	SCA202UB-W	7/8	Liquid	6	-36	15000 W	64000 W
SDT 603TM-W ARK-6	VHF (III)	AB	6 X 40 RU	24	SCA202TB-W	7/8	Liquid	6	-36	15000 W	64000 W

Specifications and characteristics are subject to change without notice.

The Universal DRIVER can be customised in 5 different configurations.  
All, always and easily upgradable to new features.



The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology. We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package. It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due to its versatility in operation modes and configuration. In fact it can be used as a transmitter, an heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### HARDWARE OPTIONS

	DVBT	DVBT2	ITU	ISDB-T	ATSC
NO	DVB-T TX	DVB-T2 TX	ITU.470 TX (all video standard)	ISDB-T TX	ATSC TX
DVB-S2	DVB-T TX with DVB-S2 RX input	DVB-T2 TX with DVB-S2 RX input	X	ISDB-T TX with DVB-S2 RX input	ATSC TX with DVBS2 RX input
DVBS2 + CAM	DVB-T TX with DVB-S2 RX input (with CAM)	DVB-T2 TX with DVB-S2 RX input (with CAM)	ITU.470 TX With decoded DVB-S2 RX input	ISDB-T TX with DVB-S2 RX input (with CAM)	ATSC TX with DVBS2 RX input (with CAM)
FE T/T2	Regenerative DVB-T TX - DVB-T repeater	Regenerative DVB-T2 TX - DVB-T repeater	X	X	X
Digitalizer	X	X	ITU.470 TX with A/V analog Input	X	X
FE ISDBT	X	X	X	Regenerative ISDB-T TX - ISDB-T repeater	X
FE ATSC	X	X		X	Regenerative ATSC TX - ATSC repeater





Front View. Transmitter with Satellite Receiver

## 1. DVB-S2 Input Configuration – Satellite Input Specifications

- N. SAT Inputs: 1
- Demodulator: STV-0900AAB
- Connector type: F Female
- Input impedance: 75 ohm
- Input level: -81 dB up to -17 dB
- Supported symbol rates: 1 to 45 Msymb/s (DVB-S) / 1 to 67.5 (DVB-S2 depending on modulation scheme).
- DiSEqC: 2.0
- TS interface: broadcast reception and ISI filtering supported.
- Supported standards: ETSI EN 302 307 V1.1.1 (DVB-S2)
- DVB-T/T2 available



Front View. Transmitter with Satellite Receiver with DEC and CAM

## 2. DVB-S2 Input with DEC and CAM Configuration – Satellite and CAM Specifications

- N. GPS Inputs: 1
- Demodulator: STV-0900AAB
- Connector type: F Female
- Input impedance: 75 ohm
- Input level: -81 dB up to -17 dB
- Supported symbol rates: 1 to 45 Msymb/s (DVB-S) / 1 to 67.5 (DVB-S2 depending on modulation scheme).
- DiSEqC: 2.0
- TS interface: broadcast reception and ISI filtering supported.
- Common Interface:
- N° card slots: 1
- Type: PCMCIA
- Supported CAM:
- Supported standards: ETSI EN 302 307 V1.1.1 (DVB-S2)
- DVB-T/T2, ITU available



Front View. Transposer and Regenerative Transmitter

## 3. DVB-T/T2 Transposer and Regenerative Transmitter Configuration – Terrestrial RF IN Specifications

- N. RF Inputs: 1
- Demodulator: Sony CX02820R
- Connector type: N Female
- Input impedance: 50 ohm
- Input level: -81 dB up to -17 dB
- Supported standards: DVB-T/H, DVB-T2
- DVB-T/T2 available



Front View. Transmitter Only Version

#### 4. DVB-T/T2 Configuration

- Inputs: 4 ASI and 2 TSolP channels
- Output: 1 RF, 1 RF Monitor  
2 ASI and 2 TSolP channels for inputs bypass
- Synchronization: External or GPS
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Test modes: CW, Force Null Packets and PRBS
- Management: Embedded SNMP v1 server  
Embedded Web server
- GbE Ports: GbE 1: 10/100/1000 Base T Management port  
GbE 2: 10/100/1000 Base T Data port
- Redundancy: Input autoswitch algorithm supported
- Security: Authentication for GUI access supported
- Configuration: Automatic loading of preset configurations supported.
- Automatic retrieving of configuration data from the RF input supported.
- DVB-T/T2 available



Front View. Transmitter with Analog A/V Inputs

#### 5. Digitizer with Analog A/V Inputs Configuration - A/V Specifications

- N. CVBS inputs: 2
- Video digitizer: Texas Instruments TVP5146
- Connector type: BNC
- Input impedance: 75 ohm
- Supported video standards: PAL B,D,G,H,I,M,N, NTSC
- Analog audio input
- N°Inputs: 2 L/R couples
- Connector type: XLR3 (Cannon f)
- Input impedance: 600 Ohm balanced
- Input Level: +6dBm +/- 6 dB
- Supported standards: EIA RF-297-A
- ITU available
- Inputs: 4 SDI, 2 CVBS and 2 L/R
- Supported Composite Standards: NTSC CVBS, PAL (B, D, G, H, I, M, N) CVBS
- Supported SDI Standard: SMPTE 259M-C – Component 4:2:2, 270Mb/s for 525 and 625 lines, 13.5 MHz sampling, 4x3 and 16x9 aspect ratios.
- Outputs: 1 RF, 1 RF Monitor  
2 SDI for inputs bypass
- Synchronization: External or GPS
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Test modes: CW, CW AV, Mute Audio Carrier, Mute Audio, Audio Test Tone, Video In, SMPTE Bars, Horizontal Bars, Red Field, ITSO, ITS1, ITS2, ITS3 and ITS4.
- Management: Embedded SNMP v1 server  
Embedded Web server
- GbE Ports: GbE 1: 10/100/1000 Base T Management port
- Redundancy: Input autoswitch algorithm supported
- Security: Authentication for GUI access supported.



## Hardware Specifications

TYPE:	DESCRIPTION AND NUMBER:
ASI/SSI/SDI Input	Connectors used as ASI, SMPTE-310 or SDI: N° Inputs: 4 Connector type: BNC Input impedance: 75 ohm Input voltage: 800 mVpp (500 to 1200mVpp) Supported standards: CEI EN 50083-9 SMPTE 310 SMPTE 259M
PS RF Input	N° Inputs: 1 Sensitivity: -185dBW Connectors: TNC
10 MHz Input	N° Inputs: 1 Connector: BNC Input impedance: 50 ohm Input voltage: 2 Vpp
1PPS Input	N° Inputs: 1 Connector: BNC Input impedance: 50 ohm Input voltage: TTL (min 1,7V) Pulse width: 100us
ASI Output Monitor	Connectors used for monitoring purposes: N° outputs: 2 Connector type: BNC Input impedance: 75 ohm Input voltage: 800 mVpp (500 to 1200mVpp) Supported standards: CEI EN 50083-9
10 MHz Output	N° outputs: 1 Connector: SMB Output impedance: 50 ohm Output voltage: 2 Vpp
1PPS Output	N° Outputs: 1 Connector: SMB Z load: 50 ohm Output voltage: TTL (min 2,4V) Pulse width: 100us
Gigabit Ethernet	N° connectors: 2 Connector: RJ45 Supported standards: IEEE 802.3
Relays	N° outputs: 4 Connectors: SUB-D 25p Female Max voltage: 125VAC / 60VDC @ 0,3A - 30VDC @ 1A
Opto	N° inputs: 4 Connectors: SUB-D 25p Female Max current: -5 mA
RF Front-End input	Please refer to various configurations for a complete description of all the available Front-end modules
RF Measure board inputs	N° Inputs: 1 Connector type: Input impedance: 50 ohm Input level: -40 dB up to -8.5 dB Supported standards: DVB-T/H ISDB-T ATSC DVB-T2
DB9 – RS232	N° inputs: 1 Speed: up to 230400 bps 8-bit data No parity bits 1 stop bit
DB9 – RS485 CAM BUS	N° inputs: 1
DB15 – TLC	N° inputs: 1
DB25 – TLS	N° inputs: 1

## Heterodyne Transposer, Regenerative Transmitter, Transmitter 20W ps/2,5W rms



> SDT 200 ARK-6

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries - to increase manageability of investment through reduction of transmitter types - and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

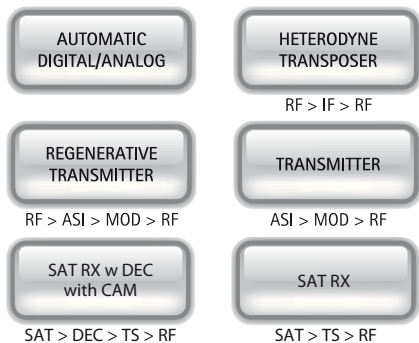
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



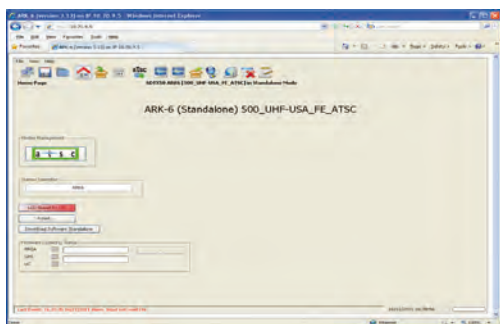
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

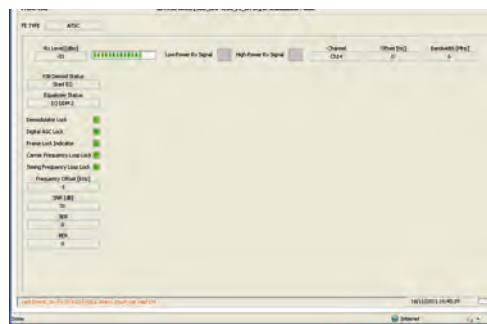
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ $F_o \pm 3.5$ MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 200UA ARK-6	UHF	A	1 RU (19" rack), 400 mm	1		N	Air	-	-36	2,5 W	80 W
SDT 200TB ARK-6	VHF (III)	AB	1 RU (19" rack), 400 mm	1		N	Air	-	-36	2,5 W	80 W

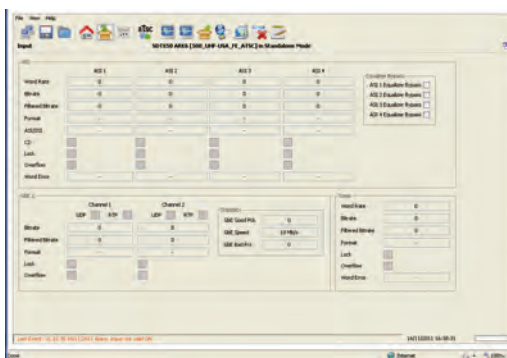
Specifications and characteristics are subject to change without notice.



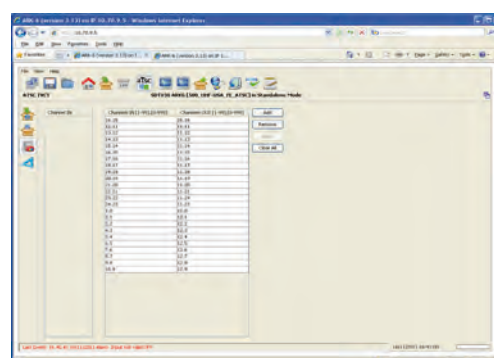
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter 50W ps/12W rms



> SDT 500 ARK-6

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries - to increase manageability of investment through reduction of transmitter types - and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

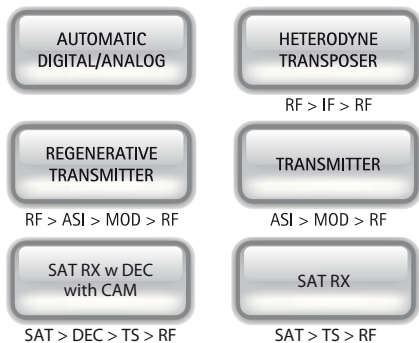
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



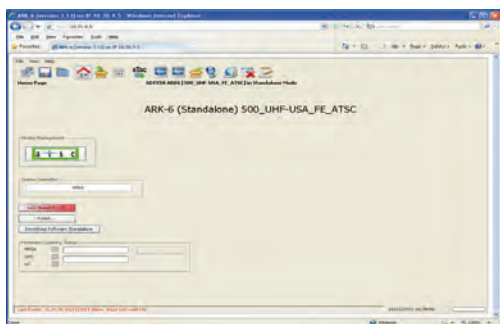
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

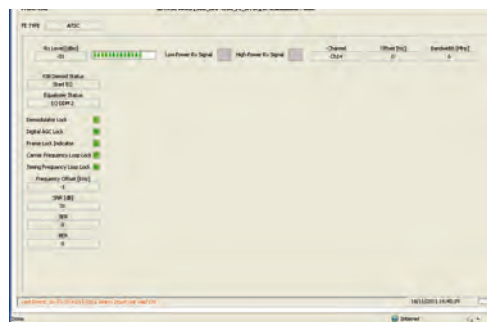
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ $F_o \pm 3.5$ MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 500UB ARK-6	UHF	AB	1 RU (19" rack), 400 mm	1	SCA500UB	N	Air	-	-36	12 W	50 W
SDT 500TB ARK-6	VHF (III)	AB	1 RU (19" rack), 400 mm	1	SCA500TB	N	Air	-	-36	12 W	50 W

Specifications and characteristics are subject to change without notice.



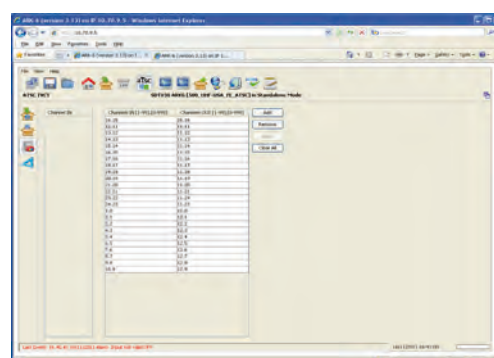
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter 90W ps/50W rms



> SDT 101 ARK-6

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries - to increase manageability of investment through reduction of transmitter types - and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

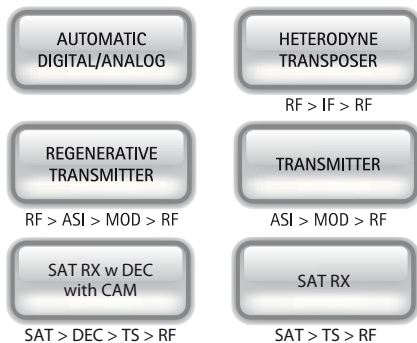
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



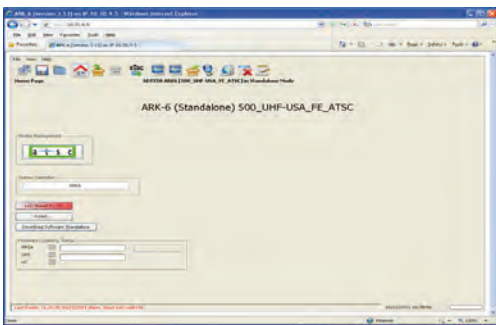
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

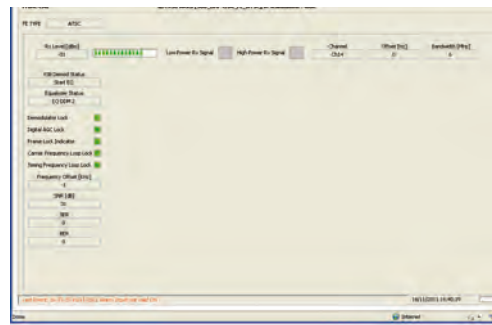
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ $F_o \pm 3.5$ MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 101UB ARK-6	UHF	AB	1 RU (19" rack), 400 mm	1	SCA101UB	N	Air	-	-36	50 W	90 W
SDT 101TB ARK-6	VHF (III)	AB	1 RU (19" rack), 400 mm	1	SCA101TB	N	Air	-	-36	50 W	90 W

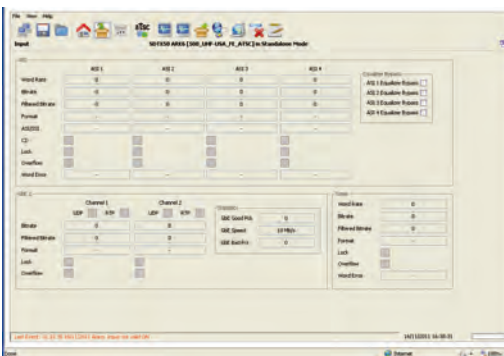
Specifications and characteristics are subject to change without notice.



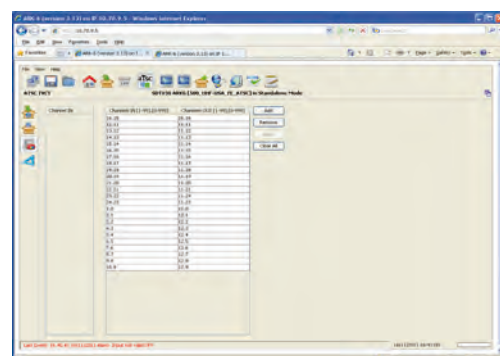
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter, up to 400W ps/150W rms



> SDT 201 ARK-6

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

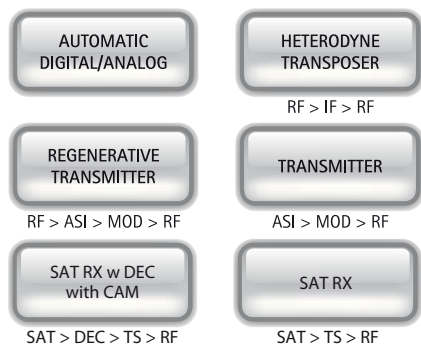
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.





# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



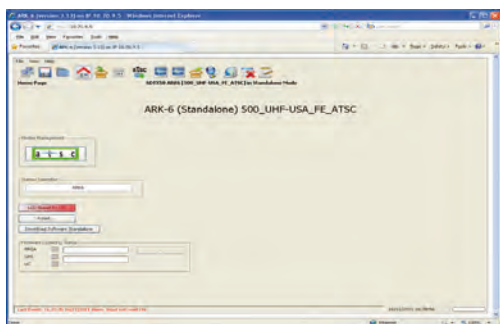
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

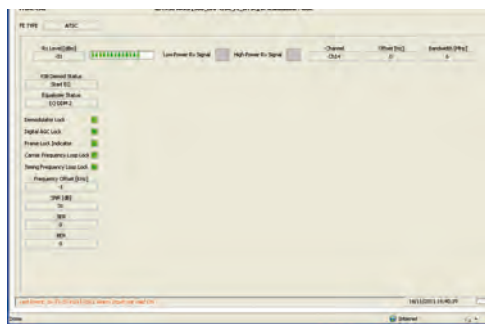
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 201UB ARK-6 HE C	UHF	AB	1 RU (19" rack), 400 mm	1		N	Air	-	-39	150 W	400 W
SDT 201TB ARK-6 C	VHF (III)	AB	1 RU (19" rack), 400 mm	1		N	Air	-	-36	80 W	250 W

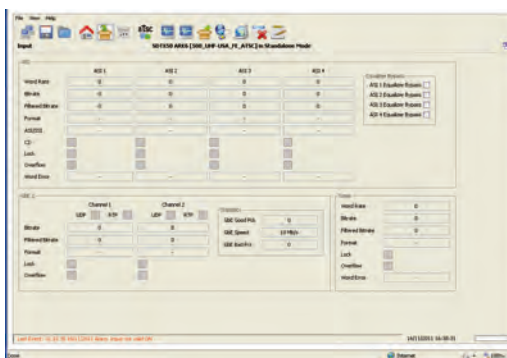
Specifications and characteristics are subject to change without notice.



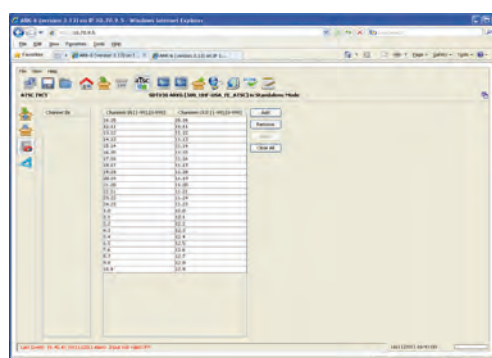
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 450W ps/150W rms



> SDT 201 ARK-6 NC

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

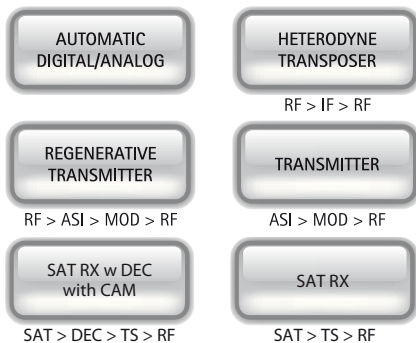
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



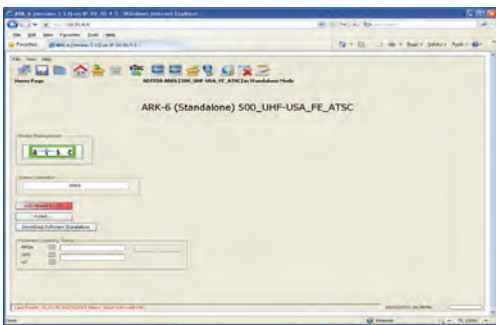
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

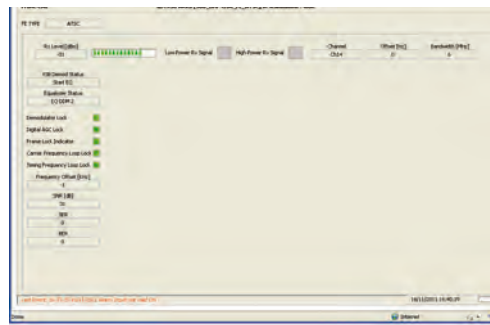
### MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 201UB ARK-6 HE	UHF	AB	1+3 RU	1	SCA201	N	Air	-	-39	150 W	450 W
SDT 201UB ARK-6	UHF	AB	1+3 RU	1	SCA201	N	Air	-	-36	80 W	250 W
SDT 201TB ARK-6	VHF (III)	AB	1+3 RU	1	SCA201	N	Air	-	-36	80 W	250 W

Specifications and characteristics are subject to change without notice.



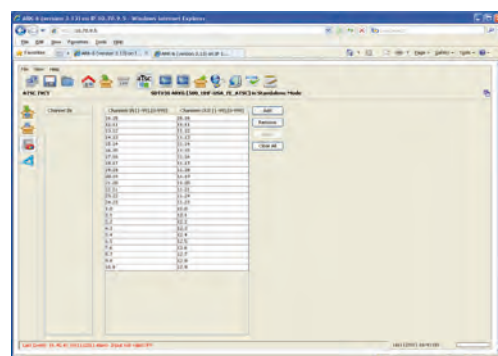
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 800W ps/300W rms



> SDT 501 ARK-6

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

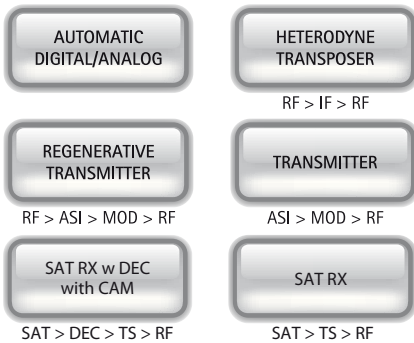
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



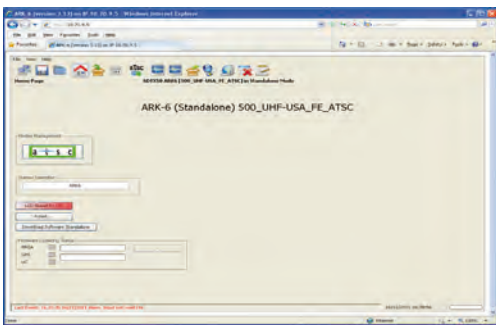
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

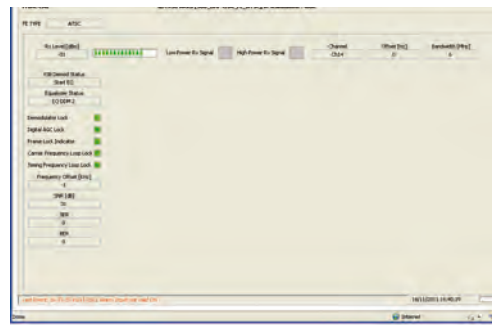
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 501UB ARK-6 HE C	UHF	AB	3 RU (19" rack), 400 mm	1		7/16	Air	-	-39	300 W	800 W
SDT 501UB ARK-6 C	UHF	AB	3 RU (19" rack), 400 mm	1		7/16	Air	-	-36	150 W	700 W
SDT 501TB ARK-6 C	VHF (III)	AB	3 RU (19" rack), 400 mm	1		7/16	Air	-	-36	150 W	700 W

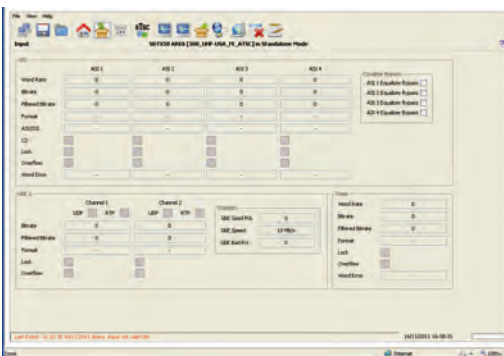
Specifications and characteristics are subject to change without notice.



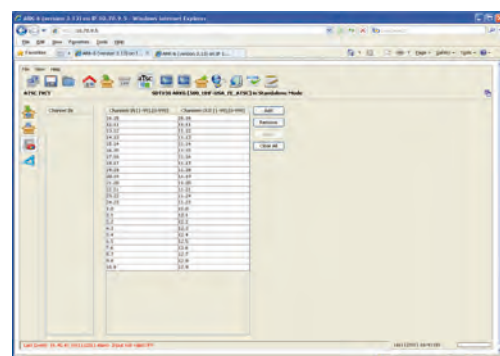
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 1000W ps/350W rms



> SDT 501 ARK-6

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries - to increase manageability of investment through reduction of transmitter types - and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

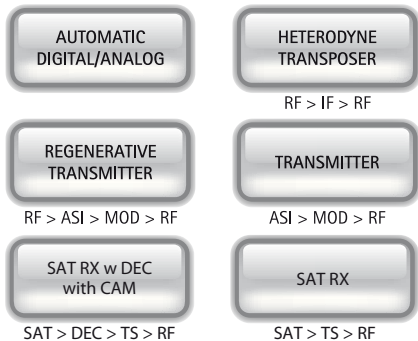
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



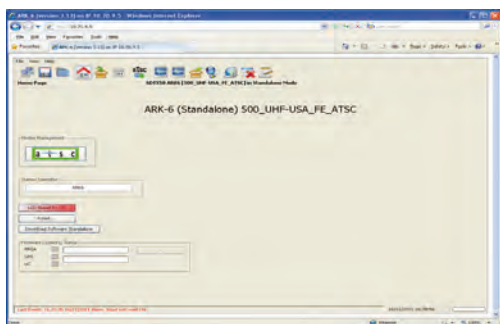
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

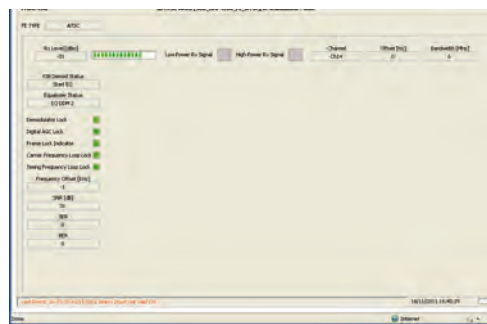
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 501UB ARK-6 HE	UHF	AB	15 RU (4+1)	1	SCA501	7/8	Air	-	-39	350 W	1000 W
SDT 501UB ARK-6	UHF	AB	15 RU (4+1)	1	SCA501	7/8	Air	-	-36	150 W	700 W
SDT 501TB ARK-6	VHF (III)	AB	15 RU (4+1)	1	SCA501	7/8	Air	-	-36	150 W	700 W

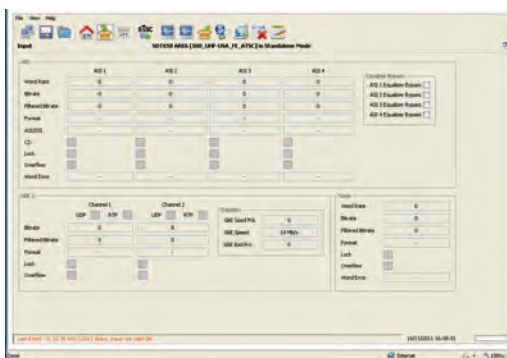
Specifications and characteristics are subject to change without notice.



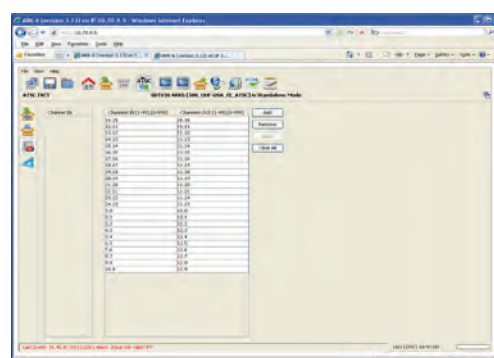
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 2000W ps/700W rms



> SDT 102 ARK-6

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

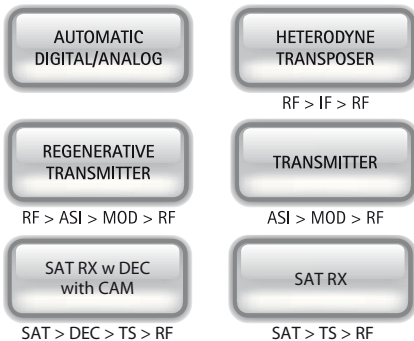
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.





# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



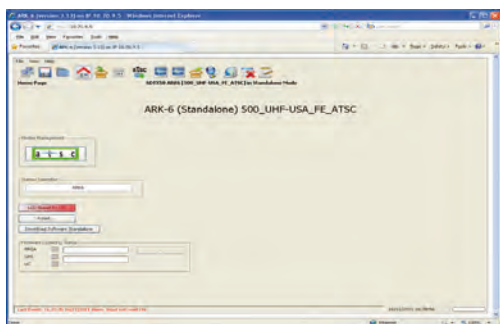
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

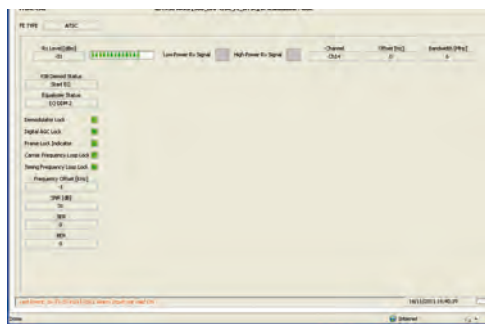
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 102UB ARK-6 HE	UHF	AB	1+5 RU	1	SCA102HE	7/16	Air		-39	700 W	2000 W
SDT 102UM ARK-6 HE	UHF	AB	30 RU	2	SDT501HE	7/16	Air		-39	700 W	2000 W
SDT 102UB ARK-6	UHF	AB	1+5 RU	1	SCA102UB	7/16	Air		-36	300 W	1400 W
SDT 102UM ARK-6	UHF	AB	30RU	2	SCA501UB	7/16	Air		-36	300 W	1400 W
SDT 102TB ARK-6	VHF (III)	AB	1+5 RU	1	SCA102TB	7/16	Air		-36	300 W	1400 W
SDT 102TM ARK-6	VHF (III)	AB	30 RU	2	SCA501TB	7/16	Air		-36	300 W	1400 W

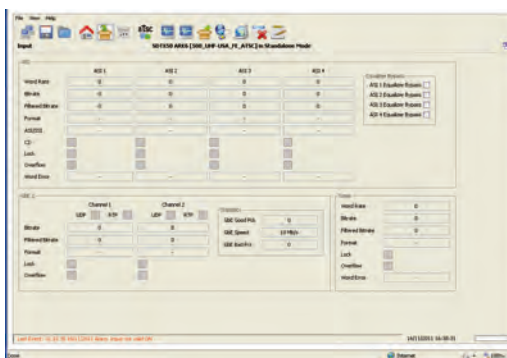
Specifications and characteristics are subject to change without notice.



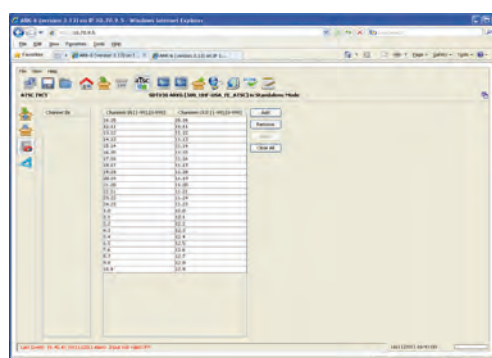
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 3000W ps/1300W rms



> SDT 202 ARK-6

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries - to increase manageability of investment through reduction of transmitter types - and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

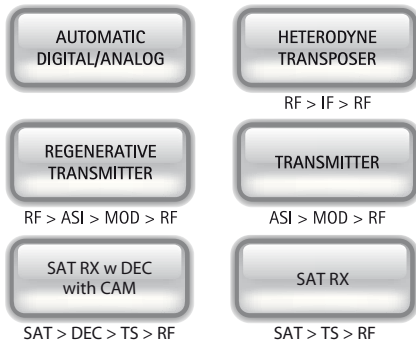
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



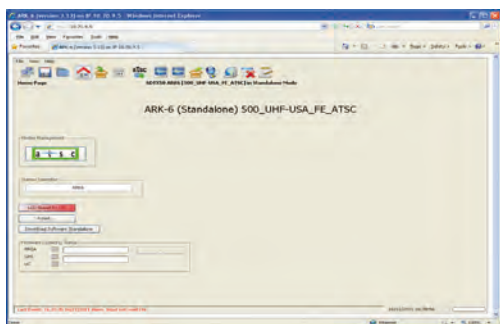
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

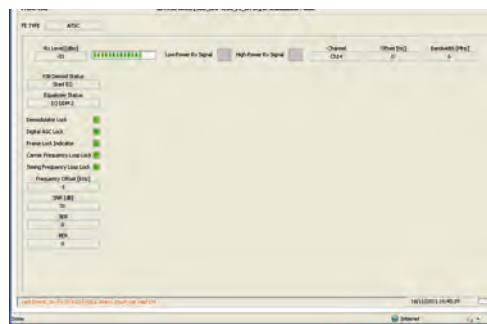
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 202UB ARK-6 HE	UHF	AB	1+5 RU	1	SCA202HE	7/8	Air		-39	1300 W	3000 W
SDT 202UM ARK-6 HE	UHF	AB	30 RU	2	SCA202HE	7/8	Air		-39	1300 W	3000 W
SDT 202UB ARK-6	UHF	AB	1+5 RU	1	SCA202UB	7/8	Air		-36	700 W	2800 W
SDT 202UM ARK-6	UHF	AB	30RU	2	SCA202UB	7/8	Air		-36	700 W	2800 W
SDT 202TB ARK-6	VHF (III)	AB	1+5 RU	1	SCA202TB	7/8	Air		-36	700 W	2800 W
SDT 202TM ARK-6	VHF (III)	AB	30 RU	2	SCA202TB	7/8	Air		-36	700 W	2800 W

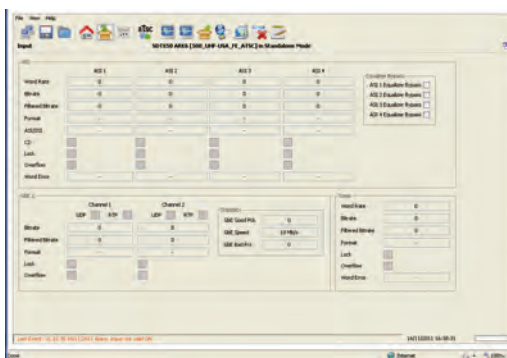
Specifications and characteristics are subject to change without notice.



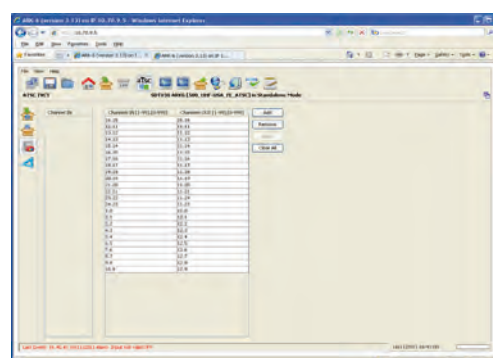
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 6000W ps/2600W rms



> SDT 502 ARK-6  
Version with  
Dual Driver Option

> SDT 502 ARK-6  
Liquid Cooled – Version  
with Dual Driver Option

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

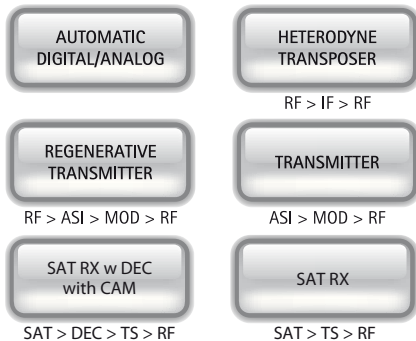
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



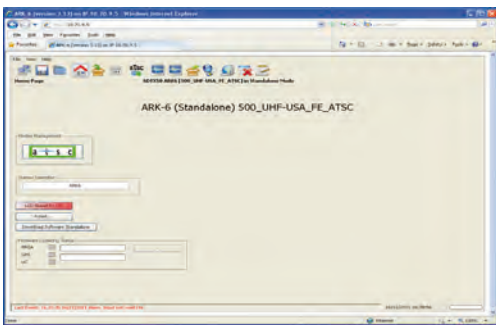
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

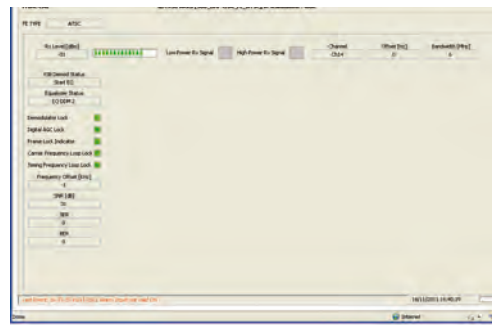
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ $F_o \pm 3.5$ MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 502UB ARK-6 HE	UHF	AB	30 RU	2	SCA202HE	7/8	Air	1	-39	2600 W	6000 W
SDT 502UM ARK-6 HE	UHF	AB	40 RU	4	SCA102HE	7/8	Air	1	-39	2600 W	6000 W
SDT 502UB-W ARK-6 HE	UHF	AB	40 RU	2	SCA202HE-W	7/8	Liquid	1	-39	2600 W	6000 W
SDT502UB ARK-6	UHF	AB	30 RU	2	SCA202UB	7/8	Air	1	-36	1300 W	5000 W
SDT502UB-W ARK-6	UHF	AB	40 RU	2	SCA202UB-W	7/8	Liquid	1	-36	1300 W	5000 W
SDT 502UM ARK-6	UHF	AB	40 RU	4	SCA102UB	7/8	Air	1	-36	1300 W	5000 W
SDT 502TB ARK-6	VHF (III)	AB	30 RU	2	SCA202TB	7/8	Air	1	-36	1300 W	5000 W
SDT 502TB-W ARK-6	VHF (III)	AB	40 RU	2	SCA202TB-W	7/8	Liquid	1	-36	1300 W	5000 W
SDT 502TM ARK-6	VHF (III)	AB	40 RU	4	SCA102TB	7/8	Air	1	-36	1300 W	5000 W

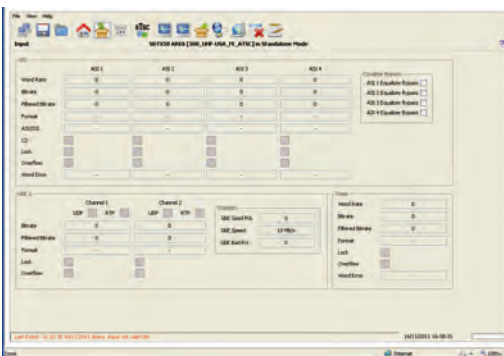
Specifications and characteristics are subject to change without notice.



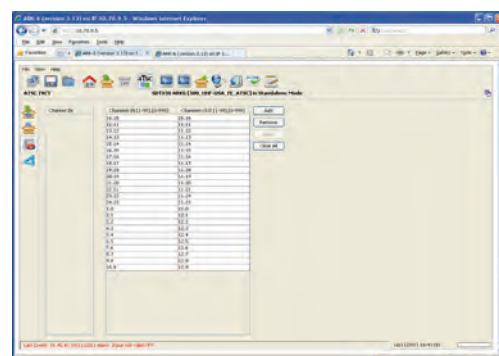
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 9000W ps/3900W rms



> SDT 532 ARK-6  
Liquid Cooled Version with  
Dual Driver Option

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

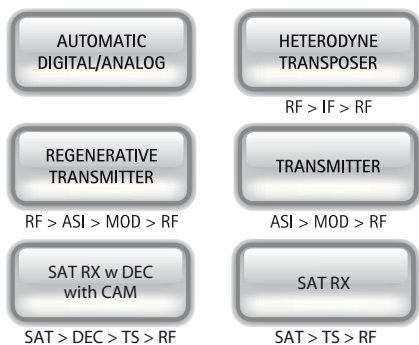
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



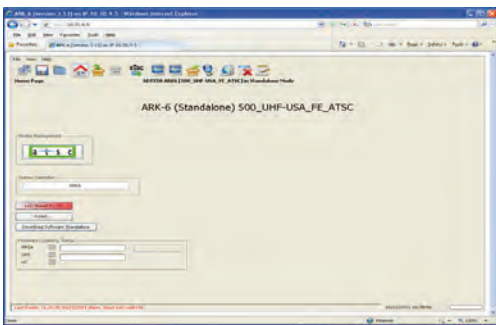
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

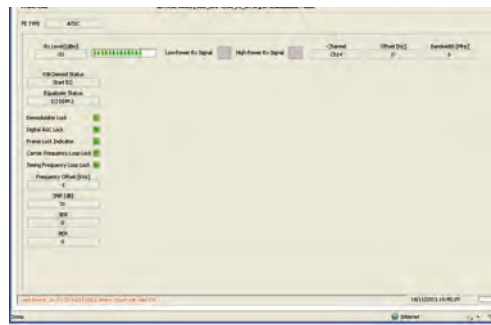
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 532UB-W ARK-6 HE	UHF	AB	40 RU	3	SCA202HE-W	7/8	Liquid	1	-39	3900 W	9000 W
SDT 532UB-W ARK-6	UHF	AB	40 RU	3	SCA202UB-W	7/8	Liquid	1	-36	2000 W	7500 W
SDT 532TB-W ARK-6	VHF (III)	AB	40 RU	3	SCA202TB-W	7/8	Liquid	1	-36	2000 W	7500 W

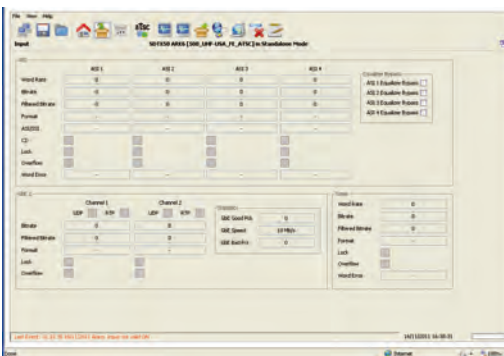
Specifications and characteristics are subject to change without notice.



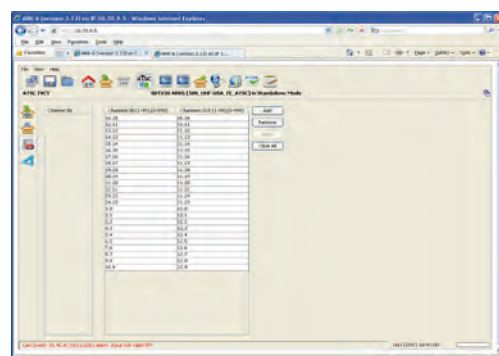
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 12000W ps/5200W rms



> SDT 103 ARK-6



> SDT 103 W ARK-6  
Liquid Cooled Version with  
Dual Driver Option

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission

AUTOMATIC  
DIGITAL/ANALOG

HETERODYNE  
TRANSPOSER  
RF > IF > RF

REGENERATIVE  
TRANSMITTER  
RF > ASI > MOD > RF

TRANSMITTER  
ASI > MOD > RF

SAT RX w/ DEC  
with CAM  
SAT > DEC > TS > RF

SAT RX  
SAT > TS > RF



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.





# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



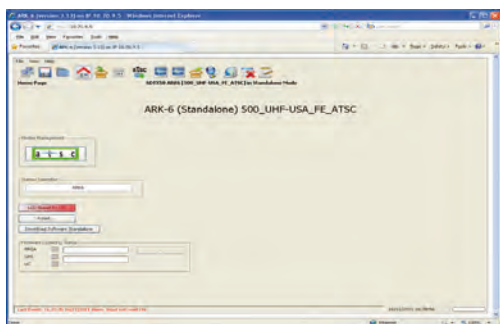
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

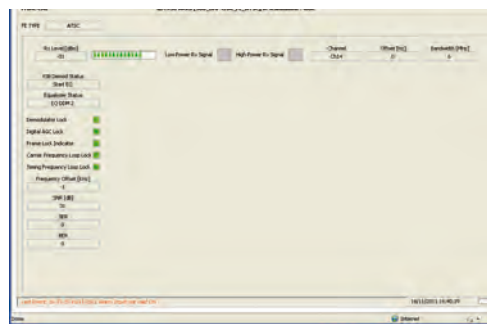
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ $F_o \pm 3.5$ MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 103UM ARK-6 HE	UHF	AB	40 RU	4	SCA202HE	7/8	Air	1	-39	5200 W	12000 W
SDT 103UM-W ARK-6 HE	UHF	AB	40 RU	4	SCA202HE	7/8	Liquid	1	-39	5200 W	12000 W
SDT 103UM ARK-6	UHF	AB	40 RU	4	SCA202UB	7/8	Air	1	-36	2600 W	10000 W
SDT 103UM-W ARK-6	UHF	AB	40 RU	4	SCA202UB-W	7/8	Liquid	1	-36	2600 W	10000 W
SDT 103TM ARK-6	VHF (III)	AB	40 RU	4	SCA202TB	7/8	Air	1	-36	2600 W	10000 W
SDT 103TM-W ARK-6	VHF (III)	AB	40 RU	4	SCA202TB-W	7/8	Liquid	1	-36	2600 W	10000 W

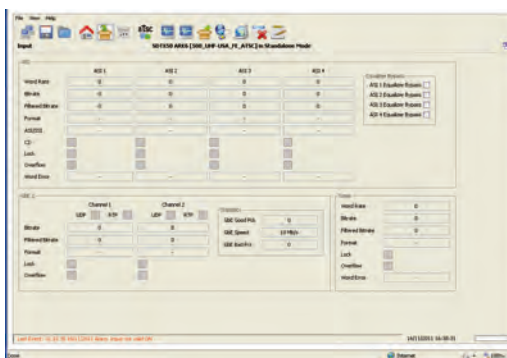
Specifications and characteristics are subject to change without notice.



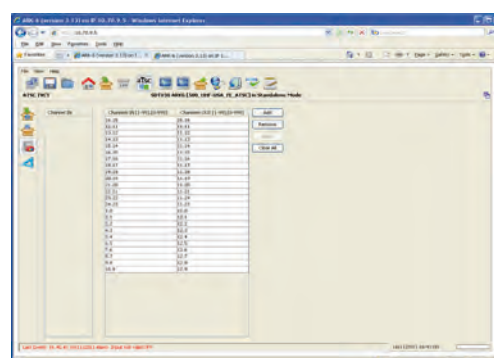
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 12500W ps/3200W rms



> SDT 123UM-W ARK-6  
Liquid Cooled Version With Dual Driver

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

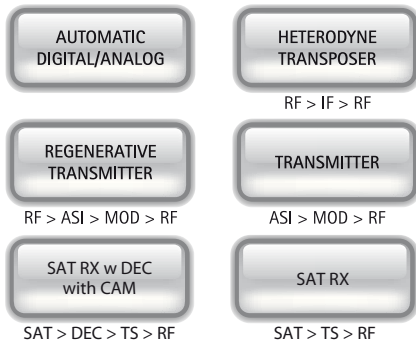
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



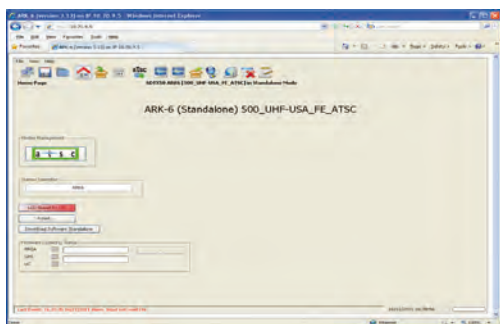
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

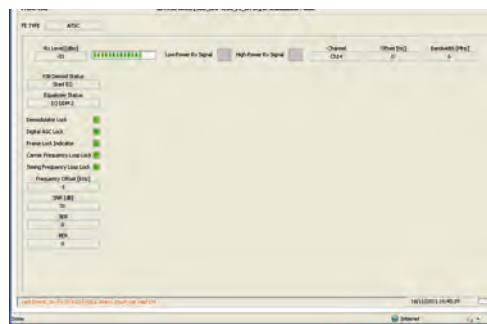
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ $F_o \pm 3.5$ MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 123UM-W ARK-6	UHF	AB	40 RU	5	SCA202UB-W	7/8	Liquid	1	-36	3200 W	12500 W
SDT 123TM-W ARK-6	VHF (III)	AB	40 RU	5	SCA202TB-W	7/8	Liquid	1	-36	3200 W	12500 W

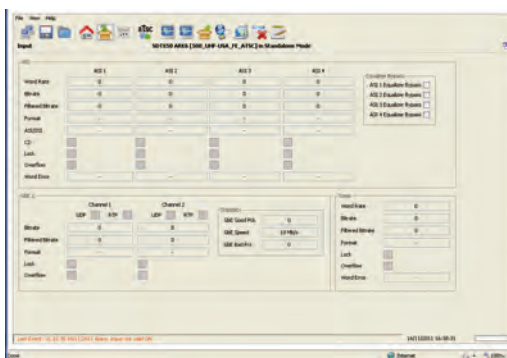
Specifications and characteristics are subject to change without notice.



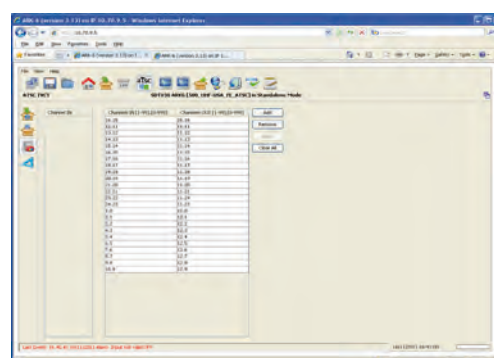
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 18000W ps/7800W rms



> SDT 133UM-W ARK-6  
Liquid Cooled Version  
with Dual Driver Option

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries - to increase manageability of investment through reduction of transmitter types - and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

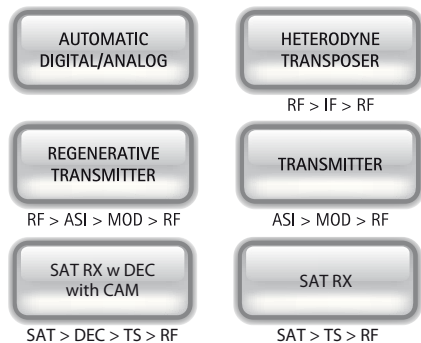
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



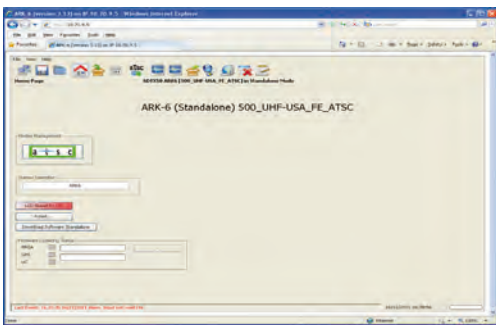
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

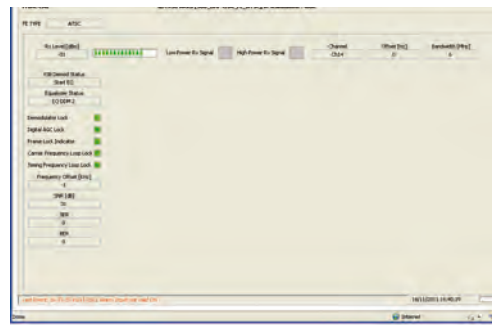
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 133UM-W ARK-6 HE	UHF	AB	2 x 40 RU	6	SCA202HE-W	7/8	Liquid	1	-39	7800 W	18000 W
SDT 133UM-W ARK-6	UHF	AB	2 x 40 RU	6	SCA202UB-W	7/8	Liquid	1	-36	6000 W	16000 W
SDT 133TM-W ARK-6	VHF (III)	AB	2 x 40 RU	6	SCA202TB-W	7/8	Liquid	1	-36	6000 W	16000 W

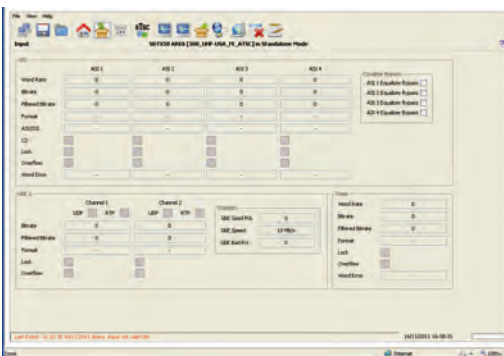
Specifications and characteristics are subject to change without notice.



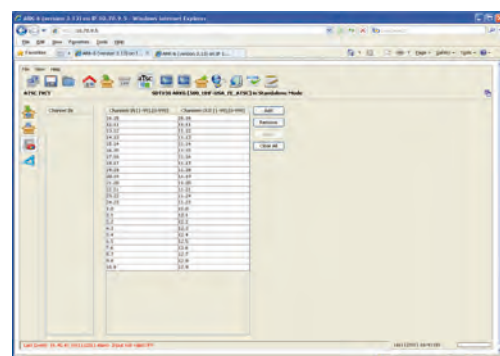
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 24000W ps/10000W rms



> SDT 203 ARK-6  
With Dual Driver Option

> SDT 203 W ARK-6  
Liquid Cooled Version  
with Dual Driver Option

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

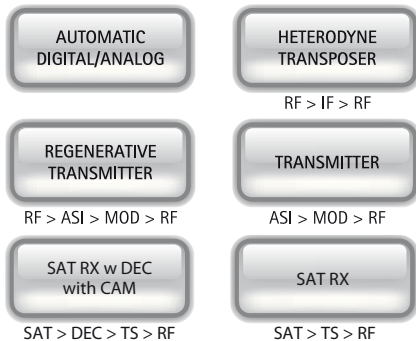
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



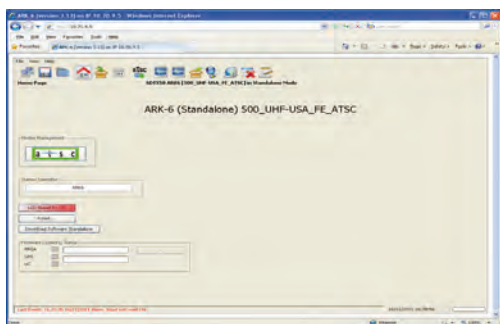
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

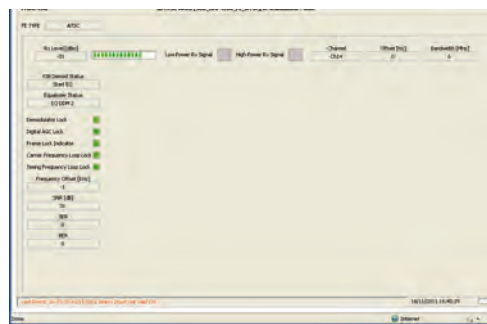
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ $F_o \pm 3.5$ MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 203UM ARK-6 HE	UHF	AB	2 x 40 RU	8	SCA202HE	7/8	Air	2	-39	10000 W	24000 W
SDT 203UM-W ARK-6 HE	UHF	AB	2 x 40 RU	8	SCA202HE	7/8	Liquid	2	-39	10000 W	24000 W
SDT 203UM ARK-6	UHF	AB	2 x 40 RU	8	SCA202UB	7/8	Air	2	-36	5000 W	20000 W
SDT 203UM-W ARK-6	UHF	AB	2 x 40 RU	8	SCA202UB-W	7/8	Liquid	2	-36	5000 W	20000 W
SDT 203TM ARK-6	VHF (III)	AB	2 x 40 RU	8	SCA202TB	7/8	Air	2	-36	5000 W	20000 W
SDT 203TM-W ARK-6	VHF (III)	AB	2 x 40 RU	8	SCA202TB-W	7/8	Liquid	2	-36	5000 W	20000 W

Specifications and characteristics are subject to change without notice.



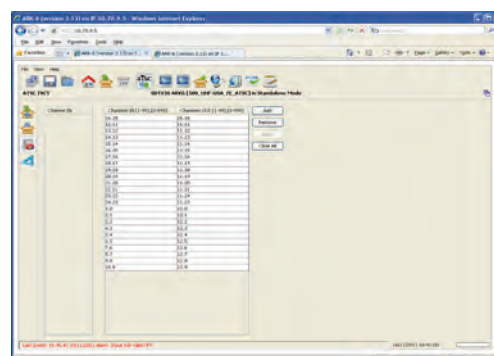
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 36000W ps/15000W rms – Liquid Cooled Version



> SDT 303 ARK-6  
With Liquid Cooling and Dual Driver Option

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

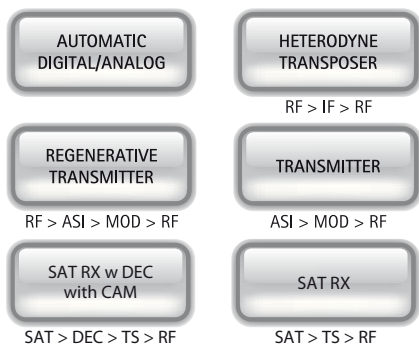
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- "ONE-CLICK" Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.





# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



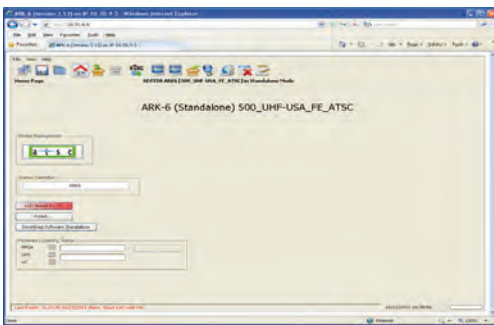
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

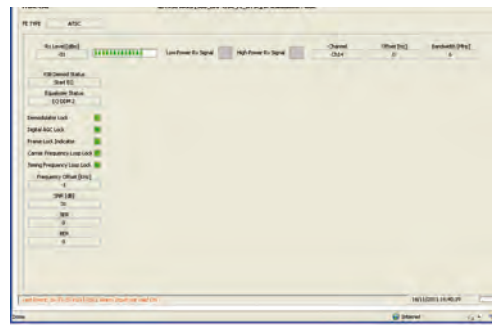
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 303UM-W ARK-6 HE	UHF	AB	3 X 40 RU	12	SCA202HE-W	7/8	Liquid	4	-39	15000 W	36000 W
SDT 303UM-W ARK-6	UHF	AB	3 X 40 RU	12	SCA202UB-W	7/8	Liquid	4	-36	7800 W	32000 W
SDT 303TM-W ARK-6	VHF (III)	AB	3 X 40 RU	12	SCA202TB-W	7/8	Liquid	4	-36	7800 W	32000 W

Specifications and characteristics are subject to change without notice.



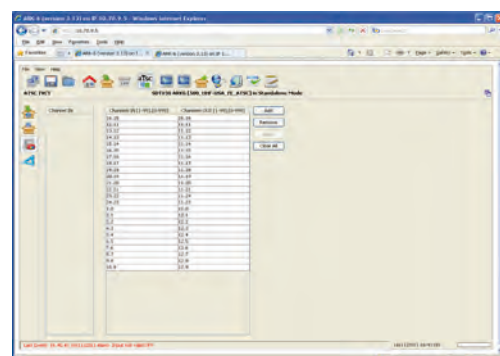
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 48000W ps/20000W rms – Liquid Cooled Version



> SDT 403 ARK-6 W  
Liquid Cooled – Version with Dual Driver Option

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

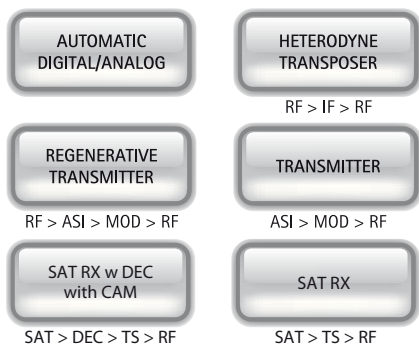
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



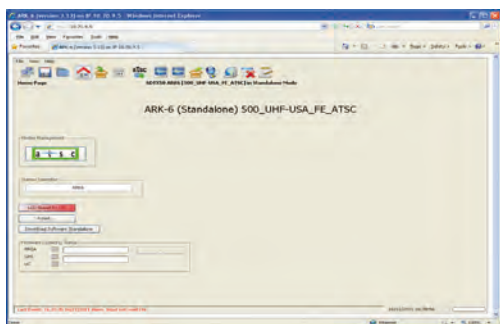
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

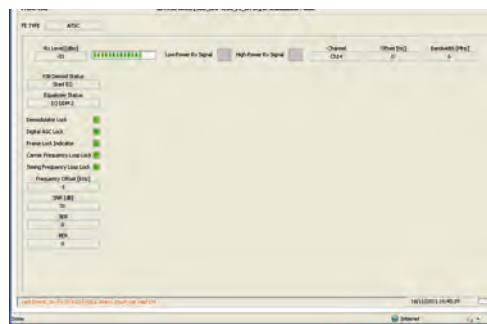
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 403UM-W ARK-6 HE	UHF	AB	4 X 40 RU	16	SCA202HE-W	7/8	Liquid	4	-39	20000 W	48000 W
SDT 403UM-W ARK-6	UHF	AB	4 X 40 RU	16	SCA202UB-W	7/8	Liquid	4	-36	10000 W	40000 W
SDT 403TM-W ARK-6	VHF (III)	AB	4 X 40 RU	16	SCA202TB-W	7/8	Liquid	4	-36	10000 W	40000 W

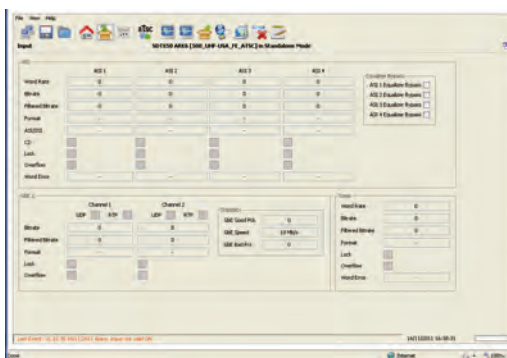
Specifications and characteristics are subject to change without notice.



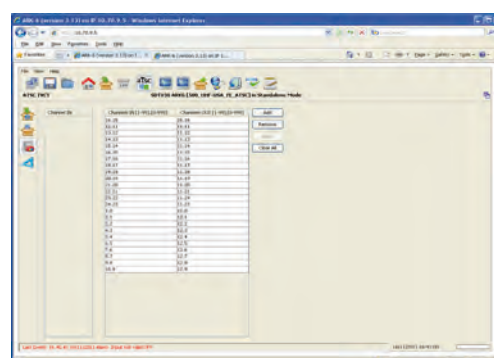
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

## Heterodyne Transposer, Regenerative Transmitter, Transmitter up to 72000W ps/30000W rms – Liquid Cooled Version



> SDT 603 ARK-6  
With Dual Driver Option and Liquid Cooling

### Description

The New SDT ARK-6 Series is the result of years of research and represents the state of the art of the worldwide transmitter technology.

We call it UNIVERSAL DRIVER because of its incredible capability to be all configurations with one hardware and uploading a proper software package.

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware.

ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

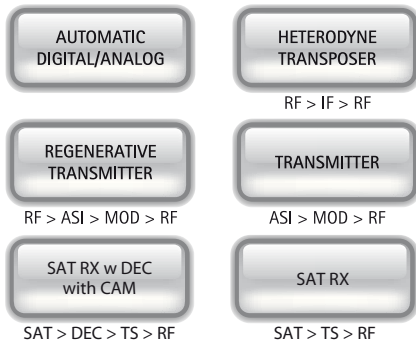
Besides ARK-6 UNIVERSAL DRIVER already implements DVB-T/T2, ATSC/MH, ISDB-T, DTMB, ATV modulations.

The SDT ARK-6 allows selection of transmission modes in various ways: remotely, using a dry contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP agent allows full automated remote control.

### Main Features

- ASI, MPEG-over-IP, SMPTE310, RF, SSI Input:
  - > Support 4 ASI input
  - > Support 4 SSI input
  - > Support 2 ASI Output
  - > Support 2 MPEG over IP input/output channels on GBE port 2
- Enable/Disable of cable equalizer bypass on input ASI ports
- “ONE-CLICK” Linear and non-linear ADAPTIVE digital pre-correction circuits, when operated as transmitter
- Linear and non-linear digital pre-correction circuits, when operated as repeater
- One RF input to operate the ARK-6 in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Internal GPS receiver
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS)
- Output clock: 1 PPS and 10 MHz
- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- Bit rate adaptation plus PCR re-stamping
- Embedded HTTP server
- RF main and monitoring outputs
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b Compliant for STL with ATSC-MH transmission



### Option Features

- Based on Software Defined Technology (SWDT), ARK6 T2 Modulator allows the definition of different operative modes on the same hardware platform.



# SDT SERIES ARK-6 ATSC + ATV

The New SDT ARK-6 SERIES is available in different hardware configurations.



Front View. Transposer and Transmitter Version



Front View. Version with Analog Audio/Video Input



Front View. Transmitter with DVB-S2 Receiver Version



Front View. Transmitter with DVB-S2 Receiver Version with CAM



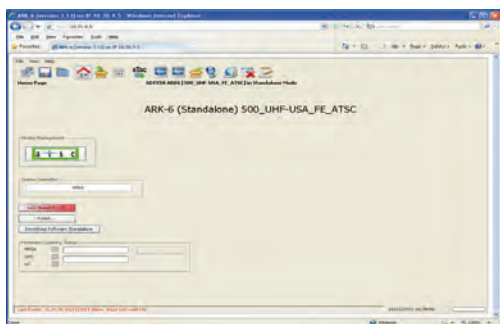
Front View. Transmitter Version

General Specifications	
Cooling System	Forced air/liquid cooling
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

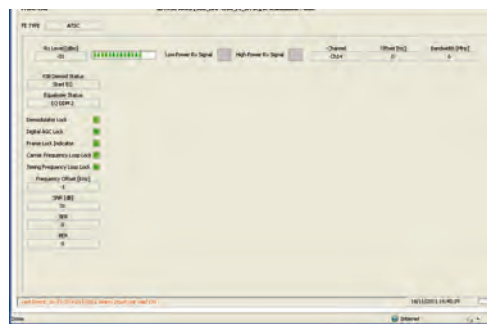
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 3.5 MHz	Digital output power (rms) without Filter ATSC	Nominal analog output power (p.s.) NTSC
SDT 603UM-W ARK-6 HE	UHF	AB	6 X 40 RU	24	SCA202HE-W	7/8	Liquid	6	-39	30000 W	72000 W
SDT 603UM-W ARK-6	UHF	AB	6 X 40 RU	24	SCA202UB-W	7/8	Liquid	6	-36	15000 W	64000 W
SDT 603TM-W ARK-6	VHF (III)	AB	6 X 40 RU	24	SCA202TB-W	7/8	Liquid	6	-36	15000 W	64000 W

Specifications and characteristics are subject to change without notice.



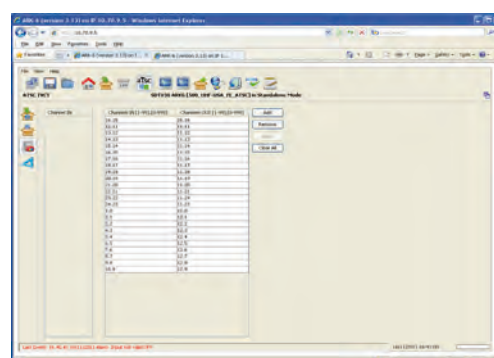
GUI, Home page



GUI, Front end



GUI, Input page.



GUI, TVCT

# SDT ARK ECHO



# SDT ARK-ECHO

Digital Repeater On Channel with Superior Echo cancellation  
for mutistandard

From 15W rms up to 125W rms



**DVB-T**

**DVB-T2**

**DVB-H**

**ATSC**

**a-t-s-c**  
MOBILE-TV

**ISDB-T**

**DTMB**



## ARK-ECHO – Digital Repeater On Channel with Superior Echo cancellation up to 5W rms



> SDT 500 ARK ECHO

### Descriptions

ARK-ECHO is a cutting-edge product completely designed and developed by Screen Service in an answer to market needs. ARK-ECHO provides a complete digital coverage solution with echo cancellation to make sure the area is not receiving dual signals by canceling system feedback between the transmit and receive antennas. The innovative software defined technology with features provides useful tools to manage your Single Frequency Network.

ARK-ECHO Digital signal processing algorithms offer a superior cancellation; it means that stable operation can be achieved even with a feedback (undesired) signal that is larger than the incoming (desired) signal.

ARK-ECHO offer one of the lowest latency of the industry (less than 10  $\mu$ S); a low time delay allows the receiver to deal with two different signals (main transmitter and ARK-ECHO) without allowing them to interfere with each other and degrade reception

The Screen Service's state of the art pre-correction plus the compact size (125W rms ATSC/ATSC-MH in 2RU) is designed to perfectly satisfy the critical need of a Broadcast Network to have full coverage and expanded indoor penetration; all these features makes the ARK-ECHO unique on its class.



DVB T

DVB H

DVB T2

ATSC

ATSC  
MOBILE DTV

ISDB-T

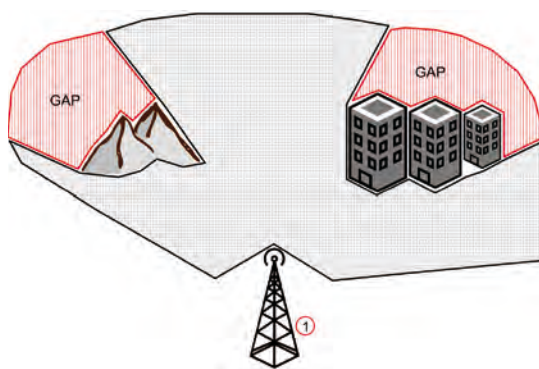
DTMB

### Main Features

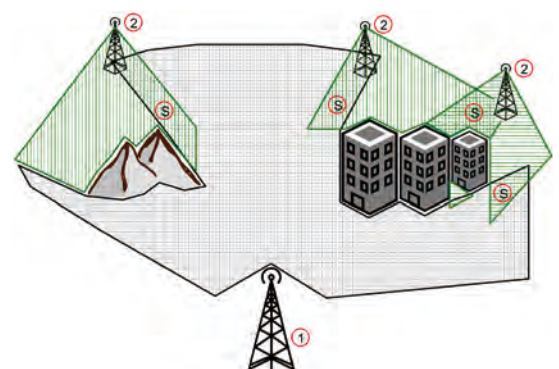
- Multistandard Digital Repeater On Channel
- Heterodyne Repeater
- Superior Echo Cancellation Algorithm
- Perfect for Gap Filler area in SFN Network Deployment
- AGC (Automatic Gain Control) for Power Limit
- Compact Size design 1RU or 2RU up to 125W rms (ATSC/ATSC-MH)
- User friendly JAVA user interface
- Multi-standard Capability (ATSC, ATSC-MH, DVB, ISDB-T, DTMB)
- Advanced O&M feature support
- Remote management capabilities included

### How it works?

The ARK-ECHO receive an off-air DTV signal to amplify it; down-convert it to an intermediate frequency (IF) for filtering and equalization; and up-convert it using its fully agile local oscillator on exactly the same frequency with exactly the same data as the received signal.



As can be seen gap areas do not receive signal (1) due to natural or artificial obstacles.

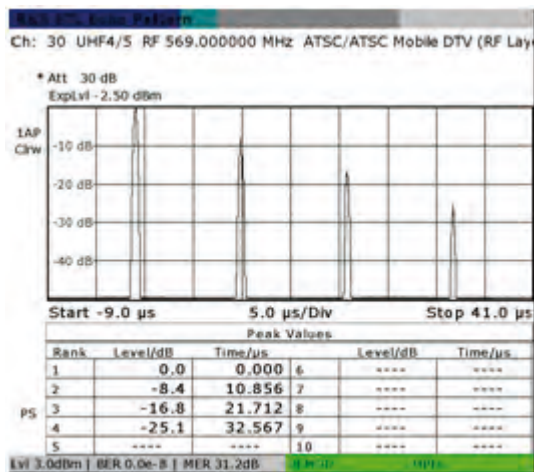


After we place the ARK-ECHO in the strategic positions (2) all the gap areas will be covered by the signal

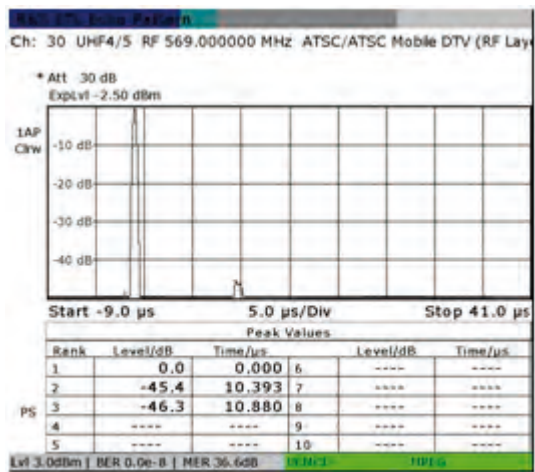




This self explanatory snapshot shows how effective is the performance of echo cancellation algorithm in the ARK ECHO product.



Without echo suppressor



With echo suppressor

### Technical Specifications

Available standards	ATSC, ATSC-MH, DVB, ISDB-T, DTMB
Operating frequency range	UHF Band IV & V: 470 - 860 MHz
IF Frequency	36 MHz +/- 4
IF Bandwidth	6 -7-8 MHz
Time delay	less than 10 us typ.
Echo cancellation window	20 us max (Equipment time delay NOT included)
Cooling	Forced Air
Main supply	110/220 V AC; Monophase
MAX Power consumption	150 VA @ 34 dBm 200 VA @ 40 dBm 250 VA @ 46 dBm 750 VA @ 50 dBm

Dimensions	(W x H x D) 483mm (19") x 1HU (2HU) x 400 mm (19 in x 1HU (2HU) x 15.74 in)
Weight	7Kg (15,43 Lbs) x 1HU or 15Kg (33,06 Lbs) x 2HU

Specifications and characteristics are subject to change without notice.

#### MODEL-SPECIFIC DATA

Model	Output Band	Working class	Dimensions	Output connector	Cooling	Shoulders @ Fo ± 3.5 MHz	DVB W rms	ISDBT W rms	ATSC W rms	DTMB W rms
SDT500UB_ARK_EO	UHF	AB	1RU	N	Air	-36	12	12	15	12

## ARK-ECHO – Digital Repeater On Channel with Superior Echo cancellation up to 125W rms



> SDT 201UB ARK ECHO Compact

### Descriptions

ARK-ECHO is a cutting-edge product completely designed and developed by Screen Service in an answer to market needs. ARK-ECHO provides a complete digital coverage solution with echo cancellation to make sure the area is not receiving dual signals by canceling system feedback between the transmit and receive antennas. The innovative software defined technology with features provides useful tools to manage your Single Frequency Network.

ARK-ECHO Digital signal processing algorithms offer a superior cancellation; it means that stable operation can be achieved even with a feedback (undesired) signal that is larger than the incoming (desired) signal.

ARK-ECHO offer one of the lowest latency of the industry (less than 10  $\mu$ S); a low time delay allows the receiver to deal with two different signals (main transmitter and ARK-ECHO) without allowing them to interfere with each other and degrade reception

The Screen Service's state of the art pre-correction plus the compact size (125W rms ATSC/ATSC-MH in 2RU) is designed to perfectly satisfy the critical need of a Broadcast Network to have full coverage and expanded indoor penetration; all these features makes the ARK-ECHO unique on its class.



DVB T

DVB H

DVB T2

ATSC

ATSC  
MOBILE DTV

ISDB-T

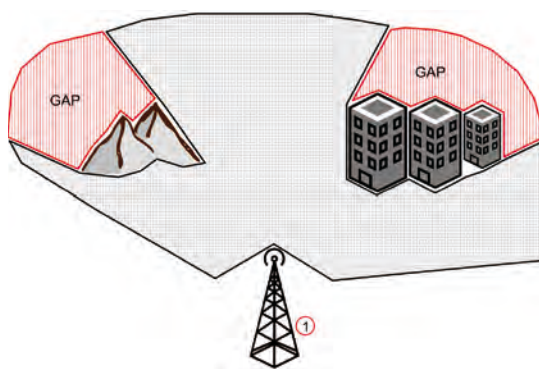
DTMB

### Main Features

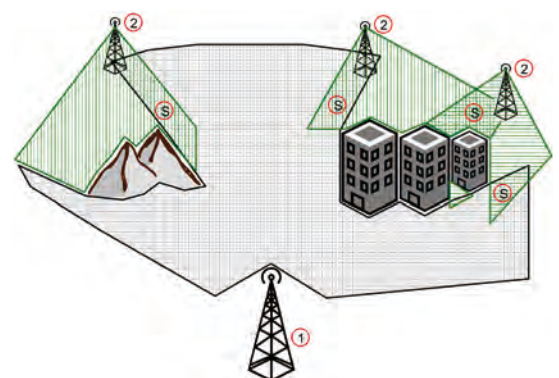
- Multistandard Digital Repeater On Channel
- Heterodyne Repeater
- Superior Echo Cancellation Algorithm
- Perfect for Gap Filler area in SFN Network Deployment
- AGC (Automatic Gain Control) for Power Limit
- Compact Size design 1RU or 2RU up to 125W rms (ATSC/ATSC-MH)
- User friendly JAVA user interface
- Multi-standard Capability (ATSC, ATSC-MH, DVB, ISDB-T, DTMB)
- Advanced O&M feature support
- Remote management capabilities included

### How it works?

The ARK-ECHO receive an off-air DTV signal to amplify it; down-convert it to an intermediate frequency (IF) for filtering and equalization; and up-convert it using its fully agile local oscillator on exactly the same frequency with exactly the same data as the received signal.



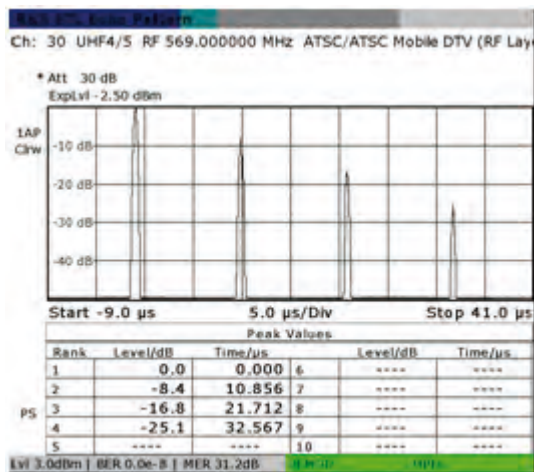
As can be seen gap areas do not receive signal (1) due to natural or artificial obstacles.



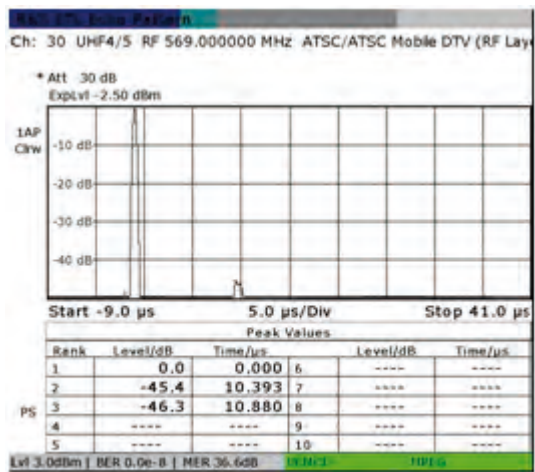
After we place the ARK-ECHO in the strategic positions (2) all the gap areas will be covered by the signal



This self explanatory snapshot shows how effective is the performance of echo cancellation algorithm in the ARK ECHO product.



Without echo suppressor



With echo suppressor

### Technical Specifications

Available standards	ATSC, ATSC-MH, DVB, ISDB-T, DTMB
Operating frequency range	UHF Band IV & V: 470 - 860 MHz
IF Frequency	36 MHz +/- 4
IF Bandwidth	6 -7-8 MHz
Time delay	less than 10 us typ.
Echo cancellation window	20 us max (Equipment time delay NOT included)
Cooling	Forced Air
Main supply	110/220 V AC; Monophase
MAX Power consumption	150 VA @ 34 dBm 200 VA @ 40 dBm 250 VA @ 46 dBm 750 VA @ 50 dBm

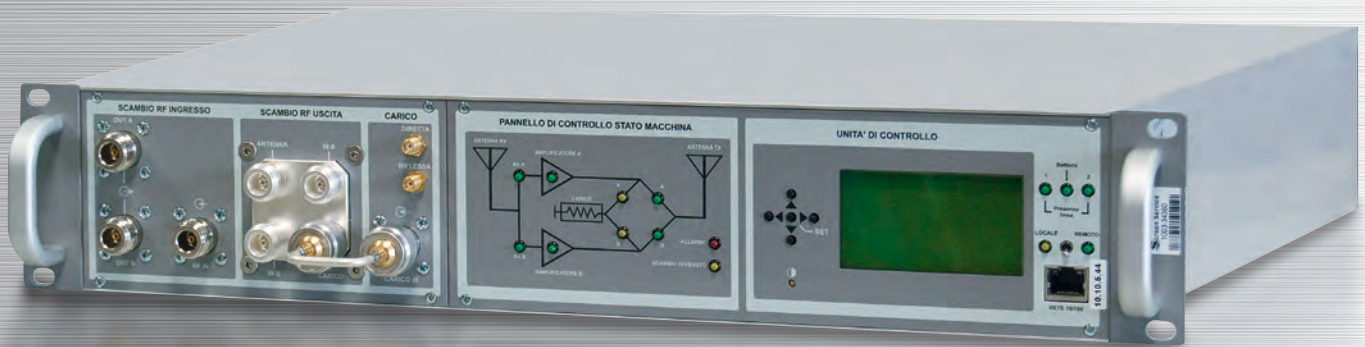
Dimensions	(W x H x D) 483mm (19") x 1HU (2HU) x 400 mm (19 in x 1HU (2HU) x 15.74 in)
Weight	7Kg (15,43 Lbs) x 1HU or 15Kg (33,06 Lbs) x 2HU

Specifications and characteristics are subject to change without notice.

#### MODEL-SPECIFIC DATA

Model	Output Band	Working class	Dimensions	Output connector	Cooling	Shoulders @ Fo ± 3.5 MHz	DVB W rms	ISDBT W rms	ATSC W rms	DTMB W rms
SDT201UB_ARK_EO_C	UHF	AB	2RU	N	Air	-36	100	100	125	100

# Accessories and Synchronization Systems



# Accessories and Synchronization Systems

**Automatic Changeover (1+1, N+1)**

**Single or Dual GPS Receiver**

**GPS Smart**

**ASI to IP Converter**

**ASI distributor**



## Main Meter



> SCS 300/350

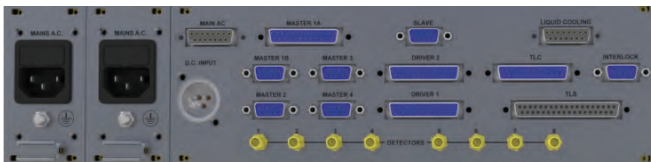
### Description

The SCS 300/350 (for dual driver system) Main Meter Unit is designed for complete managing platform for transmitters/ transposers.

- Local and Remote control of all system parameter via SNMP, Web, TLC/TLS
- Controller power out
- Local Transmitter and Transposer managing capabilities;
- Analog and Digital (multimode) management

Watt meter in order to control:

- Reflected power after filter
- Forward power after filter
- Reflected power before filter
- Forward power before filter



Rear view Main Meter SCS300



## Automatic Changeover Unit (1+1)



&gt; SCS 500

## Description

The SCS 500 performs the switching between two transmitters or transposers in a 1+1 Driver configuration and in a 1+1 with reserve configuration.

SCS 500 change-over detects the presence of the IF or RF signal and in case of absence of the primary signal to switch on the spare one and vice-versa.

The SCS 500 used in transmitter applications switches the Audio/Video signals and IF/RF from one driver to the other one. Some of them, as indicated in the previous table, use an internal coaxial bi-stable and motorized relays (SPINNER or RADIALL) depending on the output power. Some others drive an external high power coaxial, bi-stable and motorized Relays.

The SCS 500 used in transposer applications switches the RF signal from one driver to the other one. Also in this case, some of them, as indicated in the previous table, use an internal coaxial bi-stable and motorized relays (SPINNER or RADIALL) depending on the output power. Some others drive an external high power coaxial, bi-stable and motorized Relays.

The SCS 500 front panel of the transmitter application have two audio inputs: 1 main and 1 spare; four video inputs (video + SDI or ASI): main and spare; one audio output; two video outputs (video + SDI or ASI). Few configurations have a graphic panel (with led) that show the relays status.

The SCS 500 front panel of the transposer application have two RF (N connector) output to the drivers and one input for the signal coming from the antenna. Few configurations have a graphic panel (with led) that show the relays status.

If SCS 500 unit is used with Screen Service Series transmitters and transposers a direct interconnection is made by means of DB25 connectors on the back panels of the equipment. This connection carries alarm and control signals and allows "safety" function to switch-down the transmitters during the switching. If the unit is used with equipment of different brands it is possible to switch-down the driver or the modulator using the two SMA connector located on the rear panel.

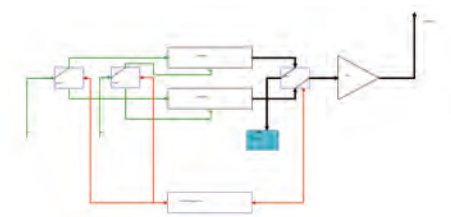
The SCS 500 is designed with a modular approach in a 19" , 2U standard RACK and the modularity refers to the plug-in units equipped with coaxial relays both for TRANSPOSERS and TRANSMITTERS.

The SCS 500 is equipped with two power supplies and a battery. So it can manages the alarms (via SNMP) also in case of failures.

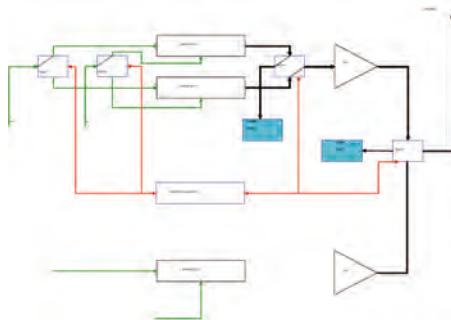
## Main Features

The SCS 500 Change Over Unit is designed especially for TV Broadcasting Transmitters, Transposers and Repeaters, operating in 1+1 arrangements. Based on a modular concept, the SCS 500 is capable to handle multi standard both in Digital and Analog. The equipment is based on high performance relays architecture to have a spare function to prevent a total system collapse. This security risk management function will help to eliminate single point failure conditions, thus preventing possible disastrous events granting an higher system MTBF.

- Double power supply;
- Single pole, double trough (double depending on configuration);
- Double pole, double trough;
- Transmitter and Transposer managing capabilities;
- Local and Remote Full Control;
- Analog and Digital management



Internal Relay Configuration Management

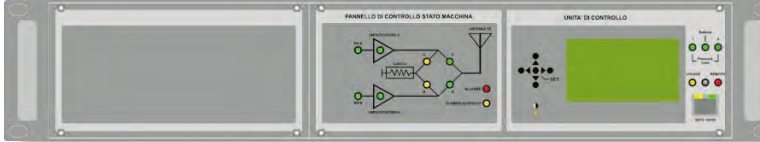


Internal + external Relay Configuration Management

## Models and Options

### SCS 500

Automatic changeover for transmitter applications with an integrated 1 ways relays. (on request A/V, ASI switching)



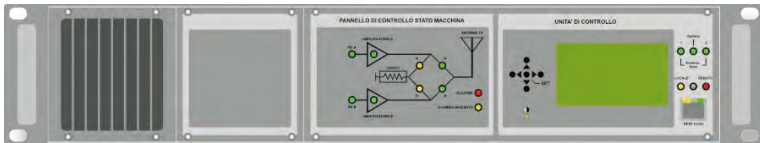
### SCS 500M

Automatic changeover for transmitter applications with an integrated 2 ways relays, dummy load and fan.



### SCS 500RO (X)

Automatic changeover with graphic panel for transmitter applications suitable only for external relays use. Support all kind relays (input solenoid drive, motor drive) Interlock.



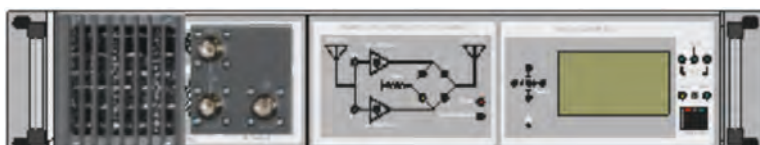
### SCS 500RF

Automatic changeover with graphic panel for transposer applications with an integrated 2 ways relays . Like M model with Input/ Output RF Front side



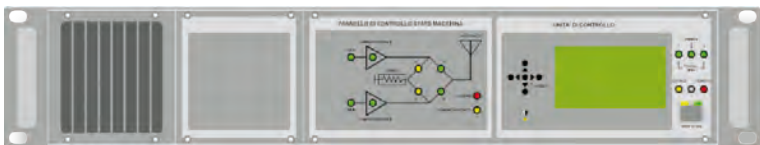
### SCS 510MS (500MS)

Automatic changeover with graphic panel for transmitter applications with an integrated 2 ways relays, dummy load and fan and input RF splitter.



### SCS 500MR

Automatic changeover with graphic panel for transmitter applications with an integrated 2 ways relays, dummy load and fan.



**SCS 500NM:** Automatic changeover for transmitter applications suitable only for external relays use. Support all kind relays (input solenoid drive, motor drive) Interlock.



**SCS 50012VB:** Automatic changeover for transmitter applications with an integrated 1 ways relays. Power supply 12V



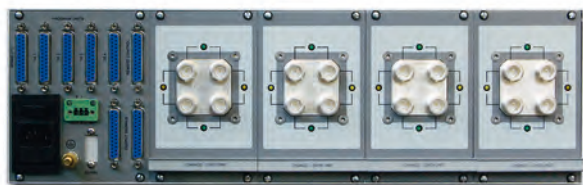


TECHNICAL SPECIFICATIONS	
System Capability	1+1 MAIN & RESERVE
Control Remote	USB front panel
	RS 232 rear panel
	RS 485 rear panel
	GbE front panel
	Parallel rear panel
Control local	Push button front panel
Management	Automatic / Manual
Visualization Status Remote	Applet java
Visualization Status Local	Display / led
Main Supply	AC, double 90 to 264 VAC - DC, single 24 VDC
Power Consumption	< 10 W
Dimension	19", 2U RACK STANDARD, 450 mm D
Weight	5 Kg
Handling RF Power TX	65 W RMS (higher with external relays)
Handling RF Power RX	1 W RMS
Connector TX OUT	N FEMALE
Connector RX IN	N FEMALE (RT version)
Connector ASI IN	BNC FEMALE (TX version)
Impedance	50 Ohm (RF) - 75 Ohm (ASI) - 75 Ohm (Analog Video)
Return Loss	<1.2 :1

## Automatic Changeover Unit (N+1)



> SCS 900



REAR VIEW GUESTS COAXIAL RELAYS AND DB25 PORTS

### Model and Options

**SCS 900:** Automatic changeover unit stand alone unit (N+1).

**SCS 900X:** Automatic changeover for transmitter applications with an external relays use.

**SCS 900TA:** Automatic changeover for transmitter applications with an integrated 2 ways relays.

**SCS 900TA4:** Automatic changeover for transmitter applications with an integrated 4 ways relays.

### Description

The SCS 900 model is an automatic change-over unit that controls and operates television transmitters and transposers, both analogue and digital, as well as microwave links, with configurations ranging from 1+1 to 8+1.

All dialogues with controlled units take place through an ultimate generation micro-processor.

The System management has been made extremely simple thanks to multiple local or remote interfaces (RS-232, RS-485, parallel contacts, SNMP, USB and LAN).

The user may select either the manual or automatic mode and on/off or switching functions may be activated remotely.

### Main Features

- From 1 to 8 programs/channels + one back-up.
- Local/remote control.
- Automatic/manual mode.
- USB, RS-232, RS-485, LAN, SNMP management interface, parallel contacts.
- Management of switching delay.
- Memorization of events and alarms.
- Incorporated Real Time Clock.
- Priority management.
- Threshold levels and number of retries may be adjusted by user.
- Operative frequency: DC to 1 GHz.
- Compact size: 3 RU (19").

### TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	
<b>INPUTS</b>	
Operating frequency range	DC to 1 GHz
Input impedance	50 Ω
Insertion loss	< 0.8 dB
Return loss	< -20 dB
Isolation between channels	> 80 dB
Switch type	D.P. - D.T. microstrip
Input connector	N, female
<b>OUTPUTS</b>	
Operating frequency range	DC to 1 GHz
Max operating power	Up to 200 W p.s. with internal relays
Output impedance	50 Ω
Insertion loss	< 0.2 dB
Return loss	< -26 dB
Switch type	D.P. - D.T. coaxial
Isolation between channels	> 80 dB
Input connector	N, female (other on request)
<b>GENERAL</b>	
Number of programs and/or channels	Up to 8 (Main) + 1 (reserve)
Control	Local and remote
Operations	Automatic or manual
Management interfaces	RE 232, RS 485, LAN, USB, opto-isolated parallel contacts, local push-buttons
Monitoring Interfaces	Web based Java Interface Front panel display
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Main supply	90 to 264 V AC / 24 V DC
Power consumption	< 10 W
Dimensions	3 or 6 RU (19" rack)
Weight	< 5 kg





**SCS120S : GPS Receiver, 10 Output x 1PPS, 10 or 5MHz Outputs stand-alone unit.**

**SCS120D : Dual Redundant GPS Receiver, 10 Output x 1PPS , 10 or 5MHz Outputs stand alone unit Seamless**



SCS 120D



SCS 120S

### Description

The systems in these series represent the ideal solution to problems of synchronization for distribution networks of broadcasting signals or in every kind of network that required Frequency and Timing reference. They make possible to obtain a high-precision frequency source wherever there is unavailable GPS signal. The GPS receivers, designed with "Carrier Aided Tracking" technology with 12 parallel channels, are available in single or redundant version with automatic seamless switch-over , which provides a commutation without interruption.

Distributors are available, moreover, for frequency reference signals as well as for timing-reference signals. The discontinuity of the presence of the reference signal does not jeopardize operation of the equipment, thanks to the substantial stability of the oscillator.

The sturdiness of the system in case of reference signal lack was obtained by comparing the local source frequency with the reference signal frequency and correcting the possible drift of the local frequency of the integrated oscillator

The dual GPS Receiver contains two fully redundant GPS receiver boards, each with their own OCXO, GPS module and GPS antenna input. The redundancy is at power supply level as well. Each receiver has an OCXO (oven controlled crystal oscillator) which runs at 10MHz. The accuracy of this OCXO is better than  $\pm 0.3\text{Hz}$  (0.3 ppm). When the GPS signal is present and is detected, the OCXO frequency is controlled to match the accuracy of the GPS time reference. The number of cycles of this signal is counted over a period of one second, as given by the 1PPS signal from the GPS module. This way the frequency error of the OCXO is derived. If the GPS module tracks only 3 satellites or less, it becomes impossible to extract the GPS time information. If this happens, the microcontroller stops adjusting the OCXO frequency. The OCXO is left running in open loop, with the last tuning voltage known before the GPS module lost track. When both receivers do not receive the GPS signal, then the frequency accuracy is set by the OCXO accuracy, which is less than 0.3ppm. this function is named Hold Over

### GPS RECEIVER

- 12 parallel channels.
- C/A code 1,023 MHz chip rate.
- Carrier Aided Tracking.
- Precision in position: 25 m (SA absent), 100 m (SA spec. UD DoD)
- Suitable for use with active antennas.
- LAN TCP/IP
- Aux TLS relay contact available on the rear panel.
- RS485,RS232 Communication



GPS receiver rear view  
(version with GPS Input on the front-panel)



GPS receiver rear view





\*Skyview

The Gps2 Parameters interface is divided into two main sections: Alarms & Traps and Measures. The Alarms & Traps section contains a table with columns for Alarm Name, Status, and Action. The Measures section contains a table with columns for Parameter Name and Value.

Alarms & Traps		
	Alarms	Traps
Locked Alarm	On	Disable
SD Fix Alarm	On	Disable
Disciplining Warning	On	Disable
Serial Link Alarm	On	Disable
PPS Alarm	On	Disable
DOXP Alarm	On	Disable
Holover Alarm	On	Disable
Holover Ready	On	Disable

Measures	
Locked	Locked
Holover Ready	On
Date	13/02/2012
UTC Time	14:18:59
Latitude	45°29'59"
Longitude	10°09'30"
Height [m]	16475
Precision [m]	3
Precision Level	1
Holover Counter	24 h 0 min
Timing Function	Enabled
DNC	32877

\*Control Panel

## FREQUENCY REFERENCE

Number of outputs	10 x BNC, 50 $\Omega$
Output signal	5 or 10 MHz, sine wave, 1 V p.p
Short term stability	Better than $5 \times 10^{-12}$ (1sec)
Frequency accuracy	Better than $3 \times 10^{-12}$ (24hours continuous power up and GPS)
Hold over drift	$\pm 5 \times 10^{-10}$ /day
Phase noise @ 100 Hz	Better then -145 dBc/Hz
Phase noise @ 10 kHz	Better then -155 dBc/Hz
Cold startup	Less then 10 min.

## TIMING REFERENCE

Number of outputs	10 x BNC, 50 $\Omega$
Output signal	1 PPS, 5 V TTL, square wave
Timing accuracy	$\pm 100$ ns peak (24 hours continuous power up and GPS)
Holdover drift	$\pm 1$ $\mu$ s (3 hours without GPS) < 8 $\mu$ s (24 hours without GPS)

## GENERAL

GPS antenna input connector	N female, 50 $\Omega$ , lightning protection available as option
Switchover function (redundant models only)	Auto
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Power supply	90 to 264 V AC, 24/48 V DC
Dimensions	1 RU (19" rack)
Weight	5 kg (approx)

## OPTIONS

Power supply in redundant configuration
Lightning protection
5 MHz output (2MHz on request)
Rear Input GPS antenna
Kit SCS 118/Mobil Antenna GPS





## GPS Receiver, 4 x 1PPS / 4 x 10MHz Outputs – stand-alone unit.



GPS Smart



GPS receiver front view



GPS receiver rear view

### Description

GPS SMART with a compact and light modular hardware design to bring you a powerful time & frequency reference system at the lowest cost. Intelligent solution for all your requirements for time synchronization and frequency. The GPS receivers, designed with "Carrier Aided Tracking" technology with 50 parallel channels. Distributors are available, moreover, for frequency reference signals as well as for timing-reference signals. The discontinuity of the presence of the reference signal does not jeopardize operation of the equipment, thanks to the substantial stability of the oscillator.

### Main Features

#### GPS RECEIVER

- 50 parallel channels.
- C/A code 1,023 MHz chip rate.
- Carrier Aided Tracking.
- Precision in position: 25 m (SA absent), 100 m (SA spec. UD DoD)
- Suitable for use with active antennas.
- LAN TCP/IP
- Aux TLS relay contact available on the rear panel.

#### FREQUENCY REFERENCE

Number of outputs	4 x BNC, 50 Ω (2 rear and 2 front side)
Output signal	10 MHz, sinewave, 1 V p.p.
Short term stability	Better than 5x10 <sup>-12</sup> (1 sec.)
Frequency accuracy	Better than 3x10 <sup>-12</sup> (24 hours continuous power up and GPS)
Holdover drift	±5x10 <sup>-10</sup> /day
Phase noise @ 100 Hz	Better then -145 dBc/Hz
Phase noise @ 10 kHz	Better then -155 dBc/Hz
Cold startup	Less then 10 min.

#### TIMING REFERENCE

Number of outputs	4 x BNC, 50 Ω (2 rear and 2 front side)
Output signal	1 PPS, 5 V TTL, square wave
Timing accuracy	±100 ns peak (24 hours continuous power up and GPS)
Holdover drift	±1 μs (5 hours without GPS) < 24 μs (24 hours without GPS)

#### GENERAL

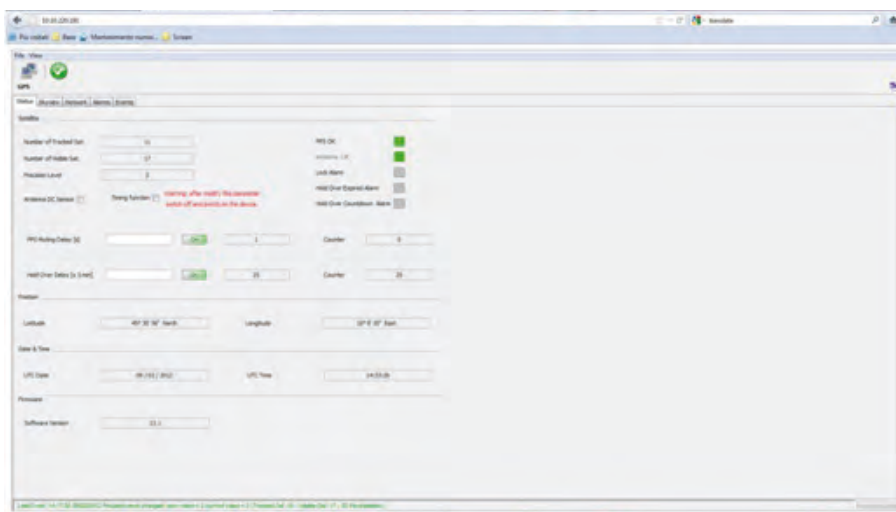
GPS antenna input connector	N female, 50 Ω (rear or front side), lightning protection available as option
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Power supply	100 to 240 V AC, 50 to 60Hz or 24 V DC
Dimensions	1 RU (19" rack) half unit 484 mm (W) x 350 mm (D) x 45 mm (H)
Weight	2 kg (approx.)

#### OPTIONS

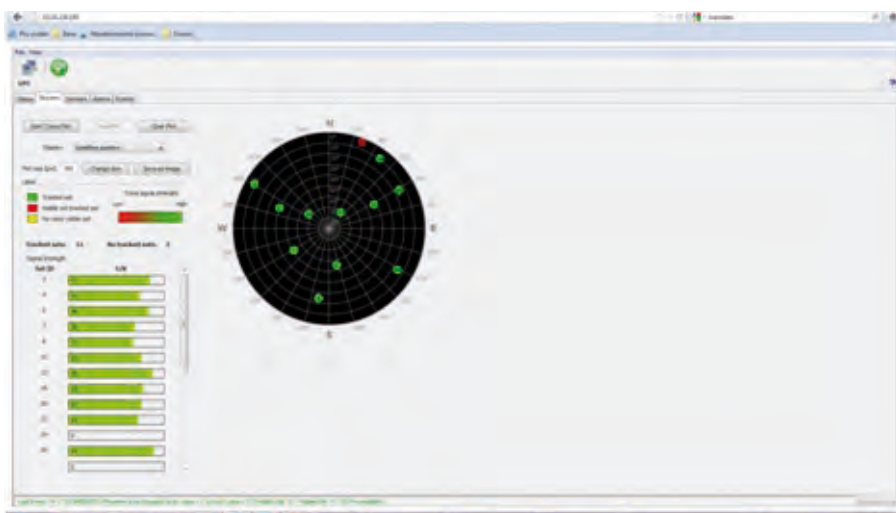
Lightning protection	
5 MHz output (2MHz on request)	
Kit SCS 118/Mobil Antenna GPS	







\*Control Panel



\*Skyview

## 8 channels ASI to IP and IP to ASI Converter



> Redundant ASI - IP



> Portable Version ASI - IP

### Description

SMPT E Specification 2022-1: Forward Error Correction for Real-time Video/Audio Transport Over IP Networks  
Modern data networks are subject to a variety of impairments, ranging from simple bit errors to groups of contiguous data packets.

The Pro-MPEG COP3/SMPT E 2022 standard has been designed specifically to ensure that high quality video that is used by broadcasters for their most valuable live video feeds are able to be transported over these networks.

COP #3 FEC can protect a video stream from a burst packet loss of up to 255 packets, which is suitable for most private, managed IP networks using QoS techniques such as MPLS, RSVP, and DiffServ. COP #3 FEC is available as the option within user datagram protocol (UDP)/IP network encapsulation, with real-time transport protocol (RTP) encapsulation.

The generation of FEC packets in the COP #3 standards is based upon a matrix defined by the parameters L and D. L represents the number of columns in the matrix, while D represents the number of rows. The standard defines the generation of two types of FEC packet: Column FEC and Row FEC. A FEC packet is generated by XOR of the media packets in a column or a row. Once generated, the Column FEC packets and Row FEC packets are transmitted along with the original media packets on 3 separate UDP ports to a Pro-MPEG COP #3 compliant receiving device.

SMPT E-2022 Network Adapters provide a cost effective and highly reliable solution for transporting digital video content over IP networks (MPEG2-TS over IP also called DVB over IP or ASI over IP)

While Pro-MPEG COP #3 FEC is adequate for most private IP links, it is not robust enough to handle the challenges associated with moving video over highly loss IP networks such as the Public Internet.

### Main Features

- It is a portable translator that provides seamless conversion between different MPEG2-TS transmission media.
- ASI->Ethernet, Ethernet->ASI converter, designed for the distribution of MPEG2-TS.
- It is capable to route TS from ASI to Ethernet and for Ethernet to ASI, managing Forward Error Correction data channel as requested by SMPT E 2022 standard.
- Full SMPT E 2022 (Pro MPEG-COP#3) standard compliant.

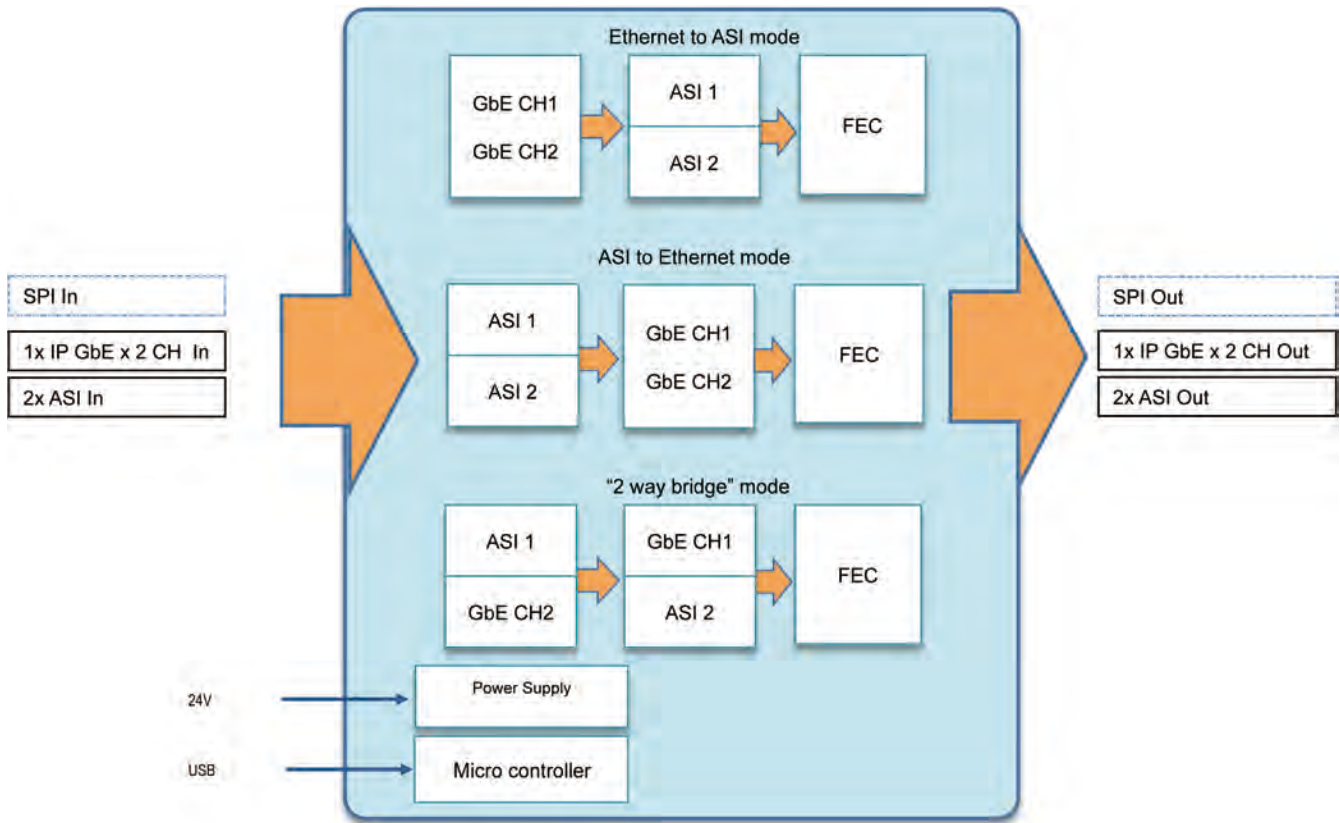
It provides three working modes:

- 1) ASI to Ethernet mode: provides the routing of up to 2 ASI input to 2 Ethernet outputs.
- 2) Ethernet to ASI mode: provides the routing of up to 2 Ethernet input channels to 2 ASI outputs.
- 3) 2 Way Bridge mode: working mode allows to use both function, ASI to GbE and GbE to ASI simultaneously, this working mode use the ASI1 and the GbE2 as input and the GbE1 and the ASI2 as output.

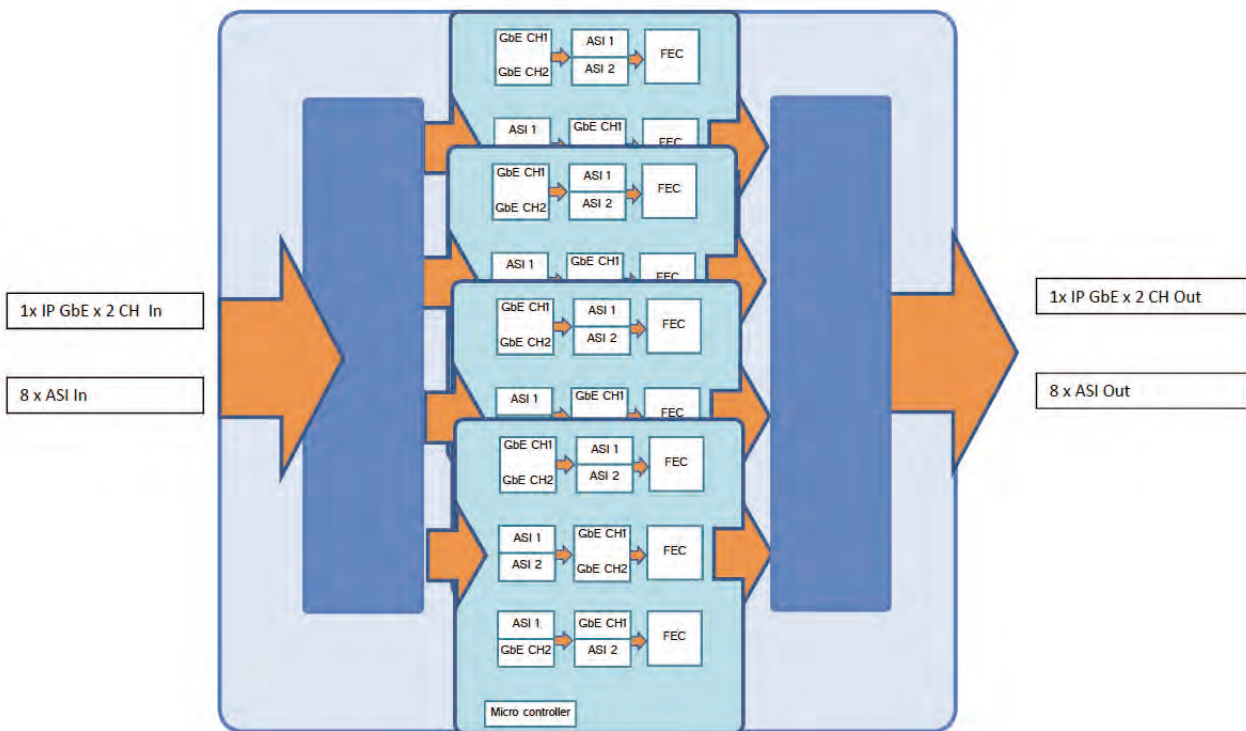
- Fully programmable FEC with several selectable FEC mode:
  - Enable
  - Disable
  - One-dimensional
  - Two-dimensional
- Selectable input buffer size (selectable latency)
- Resynchronization Output Bitrate PCR based
- Device settings and upgrade are managed by the included Graphic User Interface through a USB port.



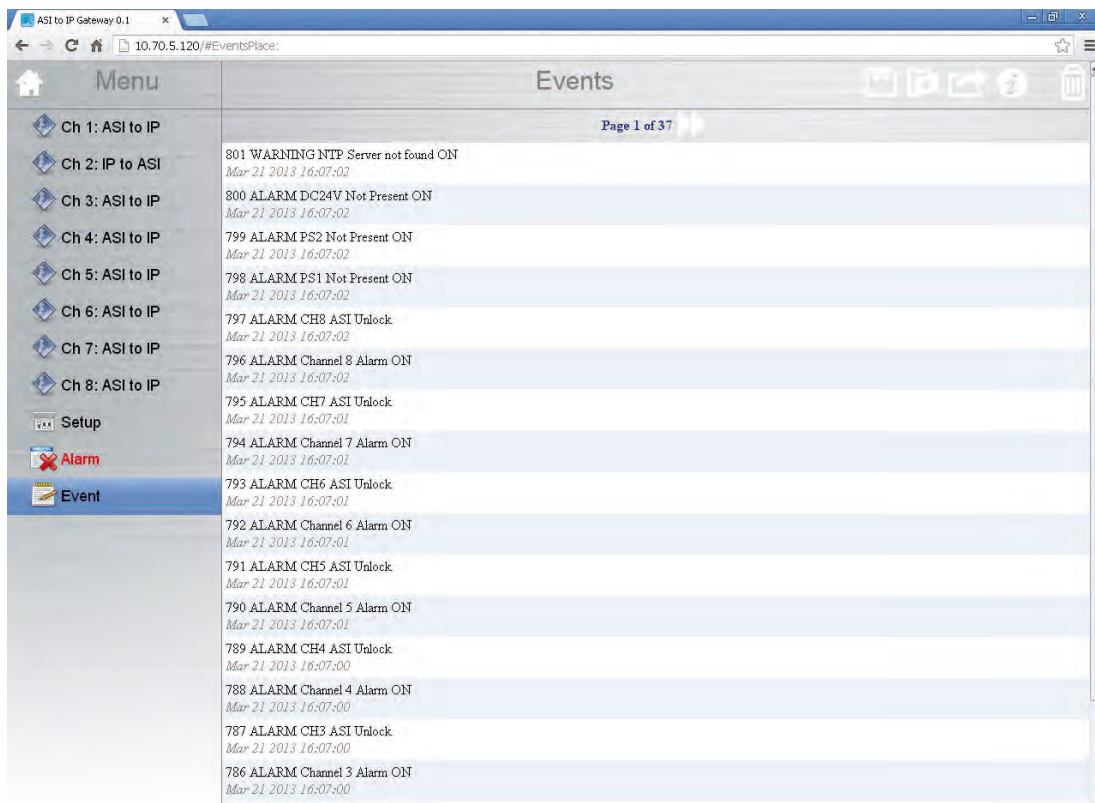
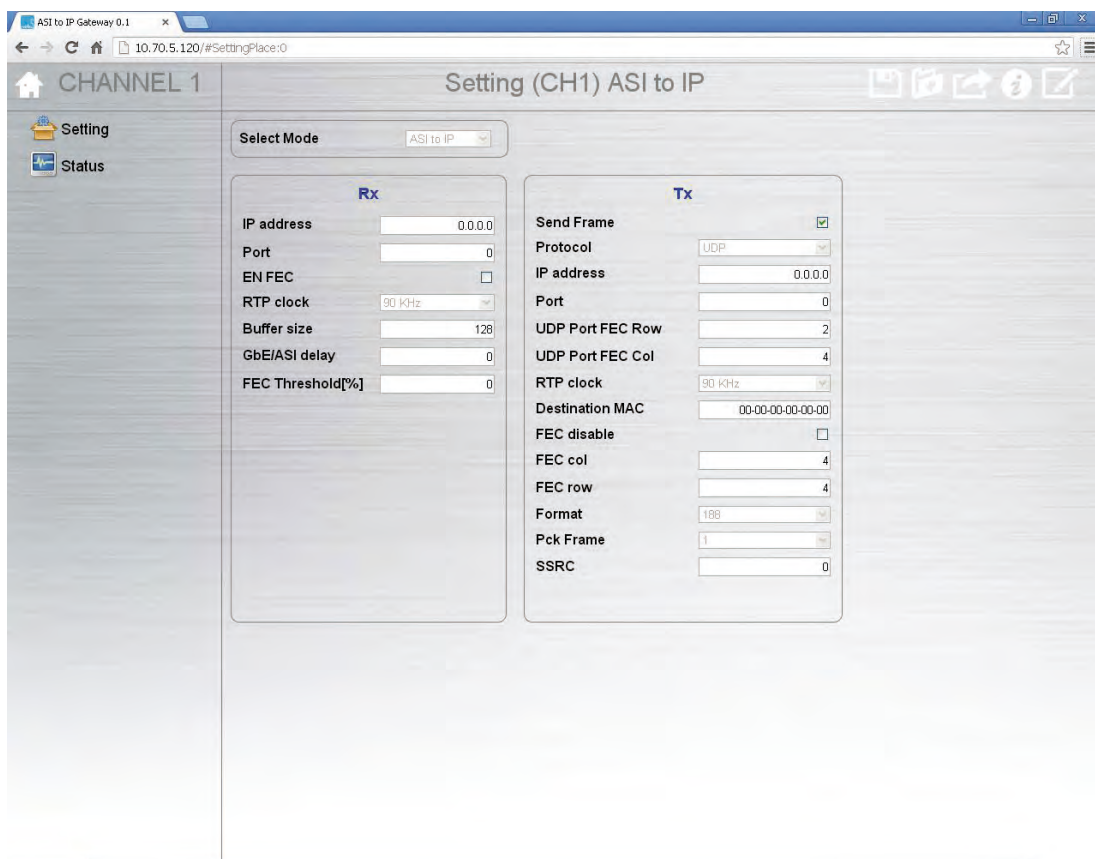
Block diagram ASI to IP converter 2 ways



Block diagram ASI to IP converter 8 ways







## Redundant Asi Distributor



XBT 706D

### Description

The XBT 706D enables a very flexible and easily manageable distribution of 1+1 Input to 6 + 6 Output SDI/DVB-ASI (270 Mb/s) for different purposes (microwave links back to back propagation, distribution of signal to monitoring and test equipment, general connectivity in the head end, etc.) together with the related clock. The system can be used either in multiple distribution option for up to 12 outputs or as a fully redundant unit for the 1 input to 6 outputs configuration of the XBT 600. To compensate for the signal distortion potentially introduced by long transmission (up to 200 mt.) an automatic line equalizer is present on the ASI input port. Besides that the outgoing signal is muted in case of lacking of the related incoming signal. The equipment has the possibility to mount the redundant power supply as standard base configuration.

Available on request the model XBT 706E with 4 SDI/DVB-ASI (270 Mb/s) input and 6+6+6+6 SDI/DVB-ASI (270 Mb/s) output with double power supply.



Rear View

### Main Features Model XBT706D

#### INPUT

- 2 SDI/DVB-ASI (270 Mb/s) Inputs BNC connector, 75 ohm ( also available in 1+1 fully redundant configuration)
- ASI fully comply EN 50083-9
- ASI bit rate 270Mbps
- Return loss >17dB
- Automatic equalization
- Auto re-clocker

#### OUTPUT

- 6 + 6 SDI/DVB-ASI (270 Mb/s) Outputs BNC connector, 75 ohm
- ASI fully comply EN 50083-9
- ASI bit rates 270Mbps
- 1 RU (19" rack)

### Main Features Model XBT706E

#### INPUT

- 4 SDI/DVB-ASI (270 Mb/s) Inputs BNC connector, 75 ohm ( also available in 1+1 fully redundant configuration)
- ASI fully comply EN 50083-9
- ASI bit rate 270Mbps
- Return loss >17dB
- Automatic equalization
- Auto re-clocker

#### OUTPUT

- 6 + 6 + 6 + 6 SDI/DVB-ASI (270 Mb/s) Outputs BNC connector, 75 ohm
- ASI fully comply EN 50083-9
- ASI bit rates 270Mbps
- 1 RU (19" rack)

### Options

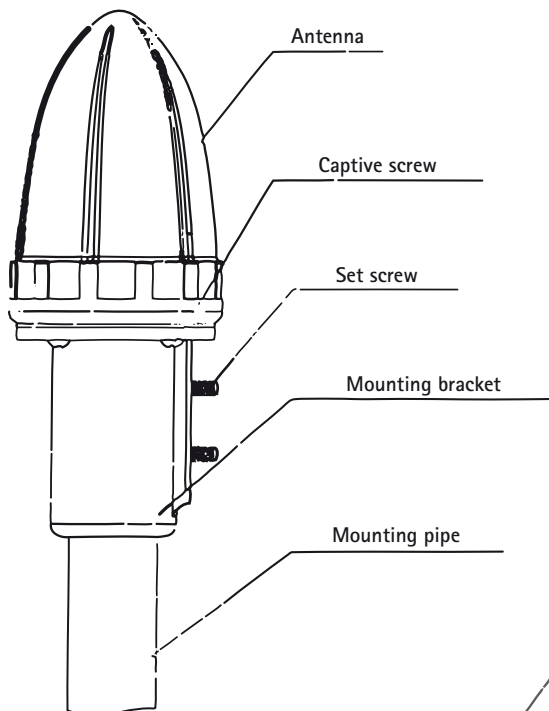
- Double and redundant power supply



## GPS Antenna



> SCS 118 MOBI



### ELECTRICAL SPECIFICATIONS

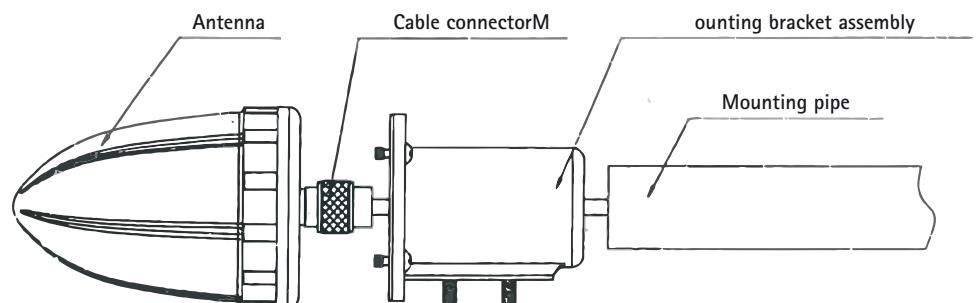
Frequency Range(MHz)	1575.42±10
Polarization	Right hand circula
DC Voltage (V)	4.5 ~ 5.5
DC Current (mA)	≤ 60
Connector	(F) N (F)
Typical Gain of Ceramic Antenna	Better then -145 dBc/Hz
VSWR	Better then -155 dBc/Hz
Input Impedance (Ω)	Less then 10 min.
Amplifier Gain (dB)	26±3
Amplifier Input IP3 (dBm)	≥ -10
Amplifier Noise Figure (dB)	≤ 2.5 (at 26° C) ≤ 3.5 (entire frequency range)
Amplifier Filtering	Typical 3dB bandwidth 20 MHz ≥ 55dB (1575±50 MHz)

### MECHANICAL SPECIFICATIONS

Radome material	ASA
Size (mm)	81 x 142.5 (including the connector)
Weight (Kg)	0,28
Operating Temperature (°C)	-40 ~ +75
Reposition Temperature (°C)	-55 ~ +75
Operating Humidity (%)	95
Operating Wind Speed (Km/h)	135
Rated Wind Speed (Km/h)	200
Circumstance	Outdoor

### Packing List

- 1 x SCS 118 MOBI GPS Antenna
- 1 x User guide
- 1 x Mounting bracket assembly
- 1 x Allen wrench



# Contacts

## Screen Service Broadcasting Technologies SpA

### Screen Service Broadcasting Technologies SpA

#### Headquarters

Via G. Di Vittorio, 17 - 25125 Brescia - Italy

#### R&D Labs

Via Lepetiti, 40 - 20020 Lainate (Milano) - Italy

[www.screen.it](http://www.screen.it)

Phone: +39 030 57831

Fax: +39 030 5783888

#### Sales

[Sales@screen.it](mailto:Sales@screen.it)

#### Marketing

[Marketing@screen.it](mailto:Marketing@screen.it)

#### Technical Support

[technical.office@screen.it](mailto:technical.office@screen.it)

[support@screen.it](mailto:support@screen.it)

## Skylinks

### Skylinks Srl

SS per Voghera Reg. Villoria 93/5F  
15057 Tortona (AL) - Italy

[www.skylinks.it](http://www.skylinks.it)

Phone: +39 0131 821235

Fax: +39 0131 8662248

#### Sales

[sales@skylinks.it](mailto:sales@skylinks.it)

## Tivuitalia SpA

### Tivuitalia Srl

#### Head Office

Via G. Di Vittorio, 17 - 25125 Brescia Italy

#### Headquarters

Via Lepetiti,40 - 20020 Lainate (Milano) - Italy

[www.tivuitalia.net](http://www.tivuitalia.net)

Phone: +39 03057831

Fax: +39 0305783888

#### Info

[broadcast@tivuitalia.net](mailto:broadcast@tivuitalia.net)





### Screen Service America Llc

**Screen Service America Llc**  
6095 NW 167th Street, Suite D-10 - Miami, FL 33015 USA  
Phone: +1 (305) 826-2212  
Fax: +1 (305) 826-2290  
USA Toll Free 1-888-522-0012  
www.screenservice.net

Sales  
Sales@screen.it  
  
Info  
info@screenservice.net

### Screen Service Do Brasil Ltda

**Screen Service do Brasil Ltda**  
Av. dos Alecrins 740  
Distrito Industrial Tuany Toledo  
Pouso Alegre - MG - Brasil  
CEP 37550-000  
Phone : +55 (35) 2102-3100  
www.screenbrasil.com.br

Info  
info@screenbrasil.com.br









SCREEN SERVICE AMERICA LLC

6095 NW 167th Street, Suite D-10 Miami, FL 33015 - USA

Phone: +1 (305) 826-2212

Fax: +1 (305) 826-2290 USA Toll Free 1-888-522-0012

Email: [info@screenservice.net](mailto:info@screenservice.net)



SCREEN SERVICE BROADCASTING TECHNOLOGIES S.p.A.

Via G. Di Vittorio, 17 - 25125 Brescia Italy

Tel +39 030 57831 - Fax +39 030 5783888

[info@screen.it](mailto:info@screen.it) - [www.screen.it](http://www.screen.it)