ScreenService
IT WORKS.

Broadcasting Products DVB

Product Catalogue 3Q 2013

ScreenService

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 TivuItalia, network operator capabilities, installation services, and network planning. TivuItalia has a complete worldwide database with altimeters and population and twenty years of experience in network planning and coverage simulations. Thanks to their experience, TivuItalia 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 creditability 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

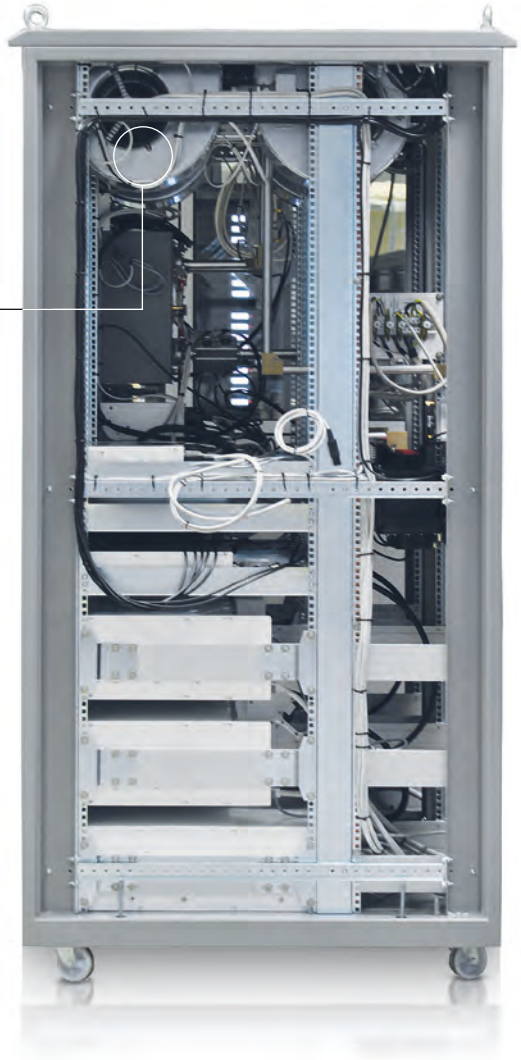
Screen Service also provides custom software applications tailored on any specific requirement our customers may have, such as the software which grants different types of access to the system allowing the authorized personnel working on it with various levels of authorizations.

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, absorbtion control, and a tilting phase circuit as well as auxilary power input for the UPS system within the Control Unit

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

Headend Solutions

Headend Solutions

Encoders
Decoders
Seamless Switching
SFN Re-Multiplexer
MFP Multiplexer
Gateway DVB-T2

ENC 323

Encoder/Decoder H.264

> ENC 323

ENC-323 can operate as H.264 encoder or decoder.
As encoder, ENC-323 receives a Standard or High Definition SDI input signal, and processes it according to H.264 standard for video and AAC HEv2 and MPEG-2 LC standards for audio. Alternatively to SDI input, an internal SD/HD video bars generator is available along with an embedded test audio tone, to provide test or emergency video also when the input signal fails. ENC-323 produces an output MPEG-2 Transport Stream, containing the coded streams and SI/PSI tables PAT, PMT, SIT; the device allows the user to set PIDs of PMT, PCR, Audio and Video streams. The main audio channel carried by SDI is always MPEG-2 LC encoded while up to two selectable audio channels can be processed by the internal AAC-HE encoder at the same time.
As decoder, ENC-323 receives an input TS and processes it according to H.264 standard for video and MPEG-2 LC for audio. The output is transmitted via SDI, standard or high definition according to the encoded input.

VIDEO SPECIFICATIONS	
Video Compression and Bit-rate (CBR/VBR)	H.264 (ISO / IEC 14496-10), High-Level Profile 4.0 Half-duplex Codec
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 fi lter (MCTF)
	Horizontal fi lter
	Input deblocking filter
Aspect Ratios	4:3 and 16:9
	AFD and WSS control
SD Resolutions and Frame Rates	SD 480i, 576i
HD Resolutions and Frame Rates	HD 1080i (25Hz), 1080i(30Hz), 1080p (25Hz), 1080p (30Hz), 1080p (24Hz), 720p(60Hz).
HD Resolutions & frame Rates	1920 × 1080 × 59.94i/50i
	1440 × 1080 × 59.94i/50i
	1280 × 720 × 59.94p
	720 × 480 × 59.94i
	720 × 576 × 50i

AUDIO SPECIFICATIONS	
Standard Channels	1 stereo pair
Audio Formats	MPEG-1 Audio Layer 2, MPEG-2 AAC (LC profile), Linear PCM, Dolby® Digital (AC-3)1
Operating Modes Mono, stereo	Mono, Stereo
Encoding Bit-Rate	MPEG-4 AAC HEv2 (bitrate from 16 up to 48 Kbps), MPEG-2 LC (from 64 up to 384 Kbps)

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

INPUTS AND OUTPUTS	
INPUT	
Video Inputs	ASI. SDI (4x, BNC Connector)
	R Input: 75 Ohm
	V Input: 800 mVpp (500 to 1200 mVpp)
	Standard: CEI EN 50083-9 / SMPTE 259M,292M
	SPI (1x, DB25 Connector)
	R Input: 110 Ohm
	V Input: 385 mVdiff
	Standard:ANSI TIA/EIA-644
OUTPUT	ASI (4x, BNC Connector)
	R Input:75 Ohm
	V Input:800 mVpp (500 to 1200 mVpp)
	Standard: CEI EN 50083-9
	HDMI N° Inputs: 1
	Connector: HDMI Type A

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

Two channels multi-standard H.264 encoder tailored for the Mobile TV applications

Enc 326, is a 2 channels multi-standard H.264 encoder tailored for the 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.

> ENC 326

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
	320 x 240p@25
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	
INPUT	
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
OUTPUT	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

ENC 333A

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 Mbp
	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 fi lter (MCTF)
	Horizontal fi lter
	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
	1080p@23.97p, 24p, 25p, 29.97p, 30p x 1920, 1440, 1280, 960 pixel
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
	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 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	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 Surrond (AC3 5.1), 2 x AAC (LC/HEv1/HEv2) Surround (5.1), 2 x MPEG1-LII, pass-trought
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 75Ohm), 2 x HDMI, spidif, 2 x Stere Balanced Analog Audio
OUTPUT	
ASI	ASI
	R Input: 75Ohm
	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

ENC 334

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)
	Inverse telecine
Video Input Filtering	Motion compensated temporal fi lter (MCTF)
	Horizontal fi lter
	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
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
	176x144p@25
Up/Down/Cross-Conversion	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-trought
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

XBT 525 SFN Multiplexer

DVB TS SFN Multiplexer

> XBT 525

Description

XBT525 SFN Multiplexer is a dual multiplexer and a dual synchronous SFN adapter allowing easy creation of DVB-T/H SFN systems.

XBT525 MFP Multiplexer performs the following basic functions:

- GPS receiver capable of synchronizing internal time generators
- Megaframe Information Packets generation (2x – one for High Priority, other for Low priority) with internal carousel of functions
- Software interface for external carousel of MIP functions
- 16 Carousel of PSI/SI tables with variable bit rate(2x – one for High Priority, other for Low priority)
- Software interface to external PSI/SI tables generators
- Storage of internal carousels content
- Multiplexing (2x – one for High Priority, other for Low priority) of
  - Multiplex Information Packets
  - 4 transport streams selected between 10 physical inputs with PCR re-stamping
  - PSI/SI packets from carousels
- PID filtering and re-mapping on each logical input (4x2 - four for High Priority, other for Low priority)
- Network adaptation to the exact bit rate (2x – one for High Priority, other for Low priority) according to DVB-T/H RF parameters with PCR re-stamping
- Graphical display of input TS data based on SI/PSI analysis
- Option "8IN": Multiplexing of 8 logical inputs in a single output TS instead of 4 for 2 channels

Inputs to multiplexers are:

- 8 ASI Transport Streams (or 4 ASI for HP and 4 ASI for LP)
- 1 SPI connector for multiplexer extension
- 2 RTP clients for RTP/UDP encapsulated Transport Streams on 2 different sockets on single ethernet port

Outputs from multiplexers are:

- 4 ASI Transport Streams carrying 2High Priority Transport Stream and 2 Low Priority transport stream
- 2 RTP/UDP Server carrying encapsulated Transport Stream for High and Low Priority on 2 different IP address
- IGMP generation
- 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
- internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- ultra fast storage are for event system storage
- 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

Main Features

Remote control interfaces

RS-232

- Dedicated DB9 connector
- Data only
- Also available on remote control DB25 connector
- 230400 bps

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
- 2 mA max on current

Functions

- Default: 1 relay alarm/ok
- Option "N1": use relay and opto for SSBT N+1 system
- Option "ALG": use relay and opto according RAI specs

PHYSICAL

Rack frame	1U
Size	(W) 484 mm x (H) 45 mm x (D) 346 mm
Weight	4kg

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	Default - Italy
	Option "UK" - UK standard
	Option "DIN" - Germany and central Europe DIN connector
	Option "US" - US standard

ASI INPUTS

EN 500083-9 compliant
BNC connectors 75 ohm
Maximum bit rate 155 Mbit

SPI INPUT

EN 500083-9 compliant
DB25 female connector
Maximum bit rate 27 Mbytes

ETHERNET CONNECTION

10/100/1000 Mbit Ethernet connector
1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update
2 IP address/port for RTP/UDP servers
2 IP address/port for RTP/UDP clients
RTP protocol: ProMpeg cop3 with no FEC packet processing/generation, selectable 90KHz/27MHz timestamps

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 TTFF
38 s typical warm start TTFF
5 s typical hot start TTFF
<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 155 Mbit

SPI OUTPUT

EN 500083-9 compliant
DB25 female connector
Maximum bit rate 27 Mbytes

FRONT PANEL

4 x 20 alpha displays
8 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 mwA IOH
	Dc coupled
	50 ohm capable

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

Available Options

- "8IN" - Multiplexing of 8 logical inputs in a single output TS instead of 4 for 2 channels
- "UK" – UK standard power cord
- "DIN" – Germany and central Europe DIN connector
- "US" – US standard power cord
- "HIZ" - 10MHz option "HIZ" available
- "HIZ" - 1 sec PPS option "HIZ" available
- "N1" - use relay and opto for SSBT N+1 system
- ALG" - use relay and opto according RAI specs

XBT 538

MFP Multiplexer (Metric Feed Packets)

> XBT 538

Description

XBT538 MFP Multiplexer is the head end main building block of the powerful SSBT regionalization system.

XBT538 MFP Multiplexer performs the following basic functions:

- GPS receiver capable of synchronizing internal time generators
- Metric Feed Packets generation
- Multiplexing of Metric Feed Packets and 4 transport streams selected between 11 physical inputs with PCR re-stamping
- Perform network adaptation to the final Fat Pipe output transport stream bit rate

Inputs to multiplexer are:

- 8 ASI transport streams
- 1 SPI connector for multiplexer extension
- 2 RTP clients for RTP/UDP encapsulated Transport Streams on 2 sockets on single ethernet port

Outputs from multiplexer are:

- 4 ASI transport streams carrying all the same MFP transport stream
- 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
- Internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- Ultra fast storage are for event system storage
- 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

Main Features

Remote control interfaces

RS-232

- Dedicated DB9 connector
- Data only
- Also available on remote control DB25 connector
- 230400 bps

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
- 2 mA max on current

Functions

- Default: 1 relay alarm/ok
- Option "N1": use relay and opto for SSBT N+1 system

PHYSICAL

Rack frame	1U
Size	(W) 484 mm x (H) 45 mm x (D) 346 mm
Weight	4kg

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	Default - Italy
	Option "UK" - UK standard
	Option "DIN" - Germany and central Europe DIN connector
	Option "US" - US standard

ASI INPUTS

EN 500083-9 compliant
BNC connectors 75 ohm
Maximum bit rate 155 Mbit

SPI INPUT

EN 500083-9 compliant
DB25 female connector
Maximum bit rate 27 Mbytes

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

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 TTFF
38 s typical warm start TTFF
5 s typical hot start TTFF
<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

SPI OUTPUT

EN 500083-9 compliant
DB25 female connector
Maximum bit rate as per DVB-T standard

FRONT PANEL

4 x 20 alpha displays
8 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 mwA IOH
	Dc coupled
	50 ohm capable

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

Available Options

- "UK" - UK standard power cord
- "DIN" - Germany and central Europe DIN connector
- "US" - US standard power cord
- "HIZ" - 10MHz option "HIZ" available
- "HIZ" - 1 sec PPS option "HIZ" available
- "N1" - use relay and opto for SSBT N+1 system

XBT 105

Re-Multiplexer with SFN Adapter (for regionalization content)

> XBT 105

Description

XBT 105 IRRM is an Integrated Satellite Receiver, Remultiplexer and SFN adapter allowing the Synchronous regionalization of TS content received.

IRRM105 multiplexer performs the following basic functions:
- GPS receiver capable of synchronizing internal time generators
- Auto-PID filtering for Services regionalization
- Auto-restamping of SI for Services regionalization
- Megaframe Information Packets generation synchronized by MFP system
- PID re-mapping on each logical input
- Network adaptation to the exact bit rate according to DVB-T/H RF parameters with PCR re-stamping

Inputs to multiplexers are:
- ASI transport streams
- 1 RF connector for DVB-S / S2 reciver
- 1 RTP clients for RTP/DP encapsulated Transport Streams

Outputs from multiplexers are:
- ASI transport streams
- 1 RTP/DP Server carrying encapsulated Transport stream
- IGMP generation

As any multiplexer of the IRRM 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 internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- ultra fast storage are for event system storage
- 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

Main Features

Remote control interfaces

RS-232
- Dedicated DB9 connector
- Data only
- Also available on remote control DB25 connector
- 230400 bps

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
- 2 mA max on current

Functions
- Default: 1 relay alarm/ok
- Option "N1": use relay and opto for SSBT N+1 system
- Option "ALG": use relay and opto according RAI specs

PHYSICAL

Rack frame	1U
Size	(W) 484 mm x (H) 45 mm x (D) 346 mm
Weight	4kg

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	Default - Italy
	Option "UK" - UK standard
	Option "DIN" - Germany and central Europe DIN connector
	Option "US" - US standard

ASI INPUTS

EN 500083-9 compliant
BNC connectors 75 ohm
Maximum bit rate 155 Mbit

RF INPUT

DVB-S / DVB-S2 compliant
F type female connector 75 ohm
Input frequency 950-2150 MHz

Ethernet connection

10/100/1000 Mbit Ethernet connector
1 IP address for web server, management, SNMP server and remote update
1 IP address/port for RTP/UDP servers
1 IP address/port for RTP/UDP clients
RTP protocol: ProMpeg cop3 with no FEC packet processing/generation, selectable 90KHz/27MHz timestamps

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 TTFF
38 s typical warm start TTFF
5 s typical hot start TTFF
<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 210 Mbit

FRONT PANEL

4 x 20 alpha displays
8 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 mwA IOH
	Dc coupled
	50 ohm capable

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 v1

Available Options

- "UK" – UK standard power cord
- "DIN" – Germany and central Europe DIN connector
- "US" – US standard power cord
- "HIZ" - 10MHz option "HIZ" available
- "HIZ" - 1 sec PPS option "HIZ" available
- "N1" - use relay and opto for SSBT N+1 system
- "ALG" - use relay and opto according RAI specs

XB-T2Mi Gateway DVB-T2

DVB-T2Mi GATEWAY

DVB-T2Mi encapsulator for DVB-T2 networks, Single Frequency Network Synchronizer over ASI and IP.

> XB-T2 GATEWAY

Description

DVB-T2-Mi encapsulator for DVB-T2 networks, Single Frequency Network Synchronizer over ASI and IP.

DVB-T2, as a new terrestrial broadcasting standard, provides an increased bandwidth efficiency and better network management through several tools such as Physical Layer Pipes, MISO, 256QAM, rotated constellation.
XB-T2 Gateway allows your network to reach Single Frequency Network (SFN) performances and an higher level of robustness.
To unlock these features, the XB-T2 Gateway is your key choice for your DVB-T2 transmission chain.

Applications:

- DVB-T2 SFN networks,
- DVB-T2 Multi-PLPs networks,
- centrally controlled DVB-T2 networks.

XB-T2Mi is a DVB-T2 Gateway compliant (ETSI EN 302 755, ETSI TS 102 773). It generates a "T2-MI" stream, a sequence of T2-MI packets, which is fed to one or more DVB-T2 modulators in a SFN/MFN network. The key features of the T2-Gateway are:

- Standard MPEG-2 TS encapsulated T2-MI outputs (ETSI TS 102 773) over ASI (EN-50083/9), Gigabit Ethernet (PRO-MPEG COP3 R2) and SPI;
- MPEG-2 Transport Stream inputs (ISO 13818-1) over ASI (EN-50083/9), Gigabit Ethernet (PRO-MPEG COP3 R2);
- Manageable remotely via Java GUI and SNMP interface (full operative control) and locally by display (partial control).
- External or GPS clock locking for SFN purpose.
- PAT , PMT and PCR insertion.
- Single PLP and Multi PLPs.
- T2-Base and T2-Lite full compliant.
- Automatically-calculated constant-rate T2-Mi output (using L1 signalling).
- Automatically-calculated constant-rate TS input (using L1 signalling).
- Null packet insertion.
- Null packet deletion (Dynamic PLP).
- Preset configurations
- 16 different configurations can be saved.
- Import and export of the configuration.
- Individual Addressing insertion.
- T2-MIP insertion.
- Configuration check.
- Time Clock synchronization by: Manual, GPS and NTP.
- Configuration monitoring.
- Up to 4 relays.
- ASI and IP I/O support.
- Easy-to-use web based GUI.

PHYSICAL

Rack frame	1U
Size	(W) 484 mm x (H) 45 mm x (D) 346 mm
Weight	4kg

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	Default - Italy
	Option "UK" - UK standard
	Option "DIN" - Germany and central Europe DIN connector
	Option "US" - US standard

8 X ASI INPUTS

EN 500083-9 compliant
BNC connectors 75 ohm
Maximum bit rate 155 Mbit

ETHERNET CONNECTION

10/100/1000 Mbit Ethernet connector
1 IP address for web server, management, SNMP server and remote update
2 IP address/port for RTP/UDP servers
2 IP address/port for RTP/UDP clients
RTP protocol: ProMpeg cop3 with no FEC packet processing/generation, selectable 90KHz/27MHz timestamps

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 TTFF
38 s typical warm start TTFF
5 s typical hot start TTFF
<0.5 s reacquisition
Sensitivity Acquisition/Tracking -185dBW / -185dBW
30ns rms accuracy, <10ns resolution

4 ASI OUTPUT

EN 500083-9 compliant
BNC connectors 75 ohm
Maximum bit rate 210 Mbit

FRONT PANEL

4 x 20 alpha displays
8 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 (BNC on request)
	1Vpp sine
	50 ohm
	DC coupled
1 sec PPS	SMB connector (BNC on request)
	0.2 VOL @ 64 mA IOL
	2.2 VOH @ 64 mwA IOH
	Dc coupled
	50 ohm capable

SOFTWARE

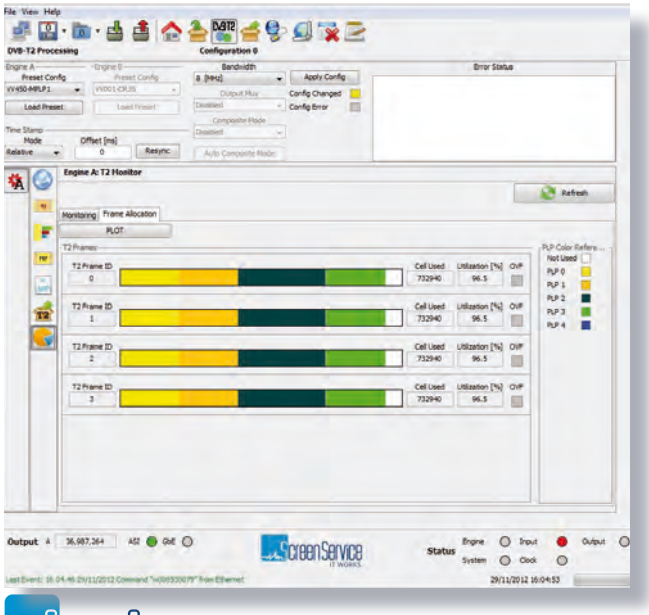
Java applet requires Java 6 Version 13 or more recent
Java applet tested on Safari, Internet Explorer, Mozilla
Browser will download automatically suitable version of Java if connected to internet
SNMP is version 1 compliant
MIB files included in CD

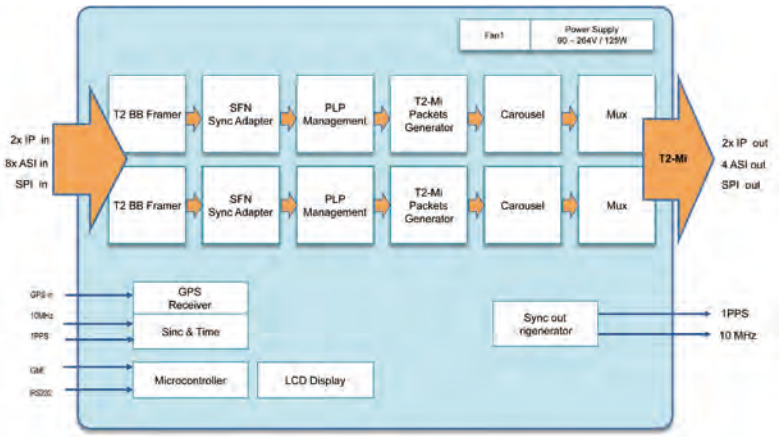
XB-T2Mi Gateway DVB-T2

Family	S	M	X				
Description	Single Core Single PLP	Dual Core single PLP	Single Core 2 PLPs	Single Core 4 PLPs	Single Core 8 PLPs	Dual Core 2 PLPs per core	Dual Core 4 PLPs per core
Code	S	M	X2S	X4S	X8S	X2M	X4M
Admitted Configurations							
Single T2 -Base	•	•	•	•	•	•	•
Single T2-lite	•	•	•	•	•	•	•
T2-Base + T2-Lite (Syncrhonized)		•				•	•
T2-Base + T2-Base (Indipendent not Syncrhonized)		•				•	•
T2-Lite + T2-Lite (Indipendent not Syncrhonized)		•				•	•
Main features							
DVB T2 MI output	•	•	•	•	•	•	•
SPLP mode	•	•	•	•	•	•	•
MPLP mode			•	•	•	•	•
MPLP fixed bandwith per each PLP			•	•	•	•	•
MPLP dynamic per each PLP			•	•	•	•	•
Single T2 MI output	•		•	•	•	•	•
Double T2 MI output		•				•	•
T2 Base (v 1.1.1, 1.2.1, 1.3.1)	•	•	•	•	•	•	•
T2 Lite(v 1.3.1)	•	•	•	•	•	•	•
Composite mode (base + Lite)		•				•	•
Composite output		•				•	•
In band signaling A	•	•	•	•	•	•	•
In band signaling B	•	•	•	•	•	•	•
ISSY	•	•	•	•	•	•	•
ISCR Long/short mode	•	•	•	•	•	•	•
FEF	•	•	•	•	•	•	•
Preset mode	•	•	•	•	•	•	•
Advanced T2 Statistics configuration	•	•	•	•	•	•	•
Automatic Check configuration	•	•	•	•	•	•	•
Single and Multiple IF mode	•	•	•	•	•	•	•
I jump => 2 and PI => 2 supported			•	•	•	•	
High Efficency Mode	•	•	•	•	•	•	•
Normal Mode	•	•	•	•	•	•	•
Null Packet Delayed	•	•	•	•	•	•	•
T2-MIP insertion	•	•	•	•	•	•	
T2-MIP funxtions	•	•	•	•	•	•	
T2-MI PID / T2-MI ID setting	•	•	•	•	•	•	•
Auto and manual output rate	•	•	•	•	•	•	•
PAT/PMT insertion	•	•	•	•	•	•	•
BWT 1,7 MHz	•	•	•	•	•	•	•
BWT 5 MHz	•	•	•	•	•	•	•
BWT 6 MHz	•	•	•	•	•	•	•
BWT 7 MHz	•	•	•	•	•	•	•
BWT 8 MHz	•	•	•	•	•	•	•
BWT 10 MHz	•	•	•	•	•	•	•
Time stamp Null	•	•	•	•	•	•	•
Time stamp relative	•	•	•	•	•	•	•
Time stamp absolute	•	•	•	•	•	•	•
Individual Adressing							
MISO	•	•	•	•	•	•	•
PAPR	•	•	•	•	•	•	•
time offset	•	•	•	•	•	•	•
frequency offset	•	•	•	•	•	•	•
tx power	•	•	•	•	•	•	•
cell ID	•	•	•	•	•	•	•
L1 ACE PAPR	•	•	•	•	•	•	•

L1 ACE PAPR	•	•	•	•	•	•	•
TX-SIG	•	•	•	•	•	•	•
Private data	•	•	•	•	•	•	•
Input							
ASI x 8	•	•	•	•	•	•	•
SPI x 1	•	•	•	•	•	•	•
GBE ch 1	•	•	•	•	•	•	•
GBE ch 2							
UDP	•	•	•	•	•	•	•
RTP	•	•	•	•	•	•	•
SMPTE 2202 Tx	•	•	•	•	•	•	
ASI Equilizer	•	•	•	•	•	•	•
Output							
ASI x 4	•	•	•	•	•	•	•
SPI x 1	•	•	•	•	•	•	•
GBE ch 1	•	•	•	•	•	•	•
GBE ch 2							
UDP	•	•	•	•	•	•	•
RTP	•	•	•	•	•	•	•
Additional feature							
NTP/GPS/Internal time	•	•	•	•	•	•	•
Synchronization ext/GPS/Int	•	•	•	•	•	•	•
IGMP v2	•	•	•	•	•	•	•
SNMP v2/v1	•	•	•	•	•	•	•
Java GUI	•	•	•	•	•	•	•
16 configuration saved	•	•	•	•	•	•	•
preset configurations	•	•	•	•	•	•	•
LCD community from LCD	•	•	•	•	•	•	•
New Network GUI interface	•	•	•	•	•	•	•

Java Interface

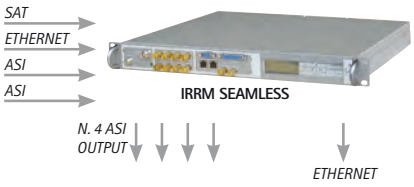




XBT 173 IRRM2

Seamless Multi-Input Switcher

> XBT 173 IRRM



Description

The XBT-173 device is designed to manage the redundancy between two different sources in a SFN environment by seamless switching between them.
It is an ideal solution for intelligent 1+1 redundancy switchover between two MPEG transport streams. It improves the robustness of the system with dual power supply and seamless switchover with no interruption to the transport stream.

Two logical inputs can be selected from the available physical input signals. The two selected input are real-time analyzed under rules of presence and validity.
The inputs that are present and valid are eligible to be sent to output. If only one input was present, is sent to output without the application of any validity rule.

One of the two inputs designated for switching can be marked as higher priority to allow its transmission whenever it meets the presence and validity requirements. Otherwise no priority can be set in order to switch only when the actual input is no more present or valid.

Synchronization
Validity checks of input are designed for a SFN environment.
The XBT-173 needs 10MHz and 1PPS synchronization with any other SFN synchronized device of the network in order to guarantee a unique and stable bitrate reference.
The integrated GPS receiver provide a suitable frequency references source, otherwise external sources can be connected to the available 10 MHz and 1 PPS inputs. 10MHz and 1 PPS outputs permits to use XBT-173 device as frequency reference source for a device following in the network.

Main Features

Seamless input automatic selection:The XBT 173 manages redundancy of two logic inputs with user selectable priority. Each logic input can be associated to one of the physical input available:
- ASI1
- ASI2
- Tuner DVB-S/S2
- ASI over IP on GBe port 2

The XBT-173 switches automatically between two non-identical input streams when the actual selected one doesn't meet the assigned presence and validity requirements without loss of in downstream equipment. Delay alignment of two identical transport streams provides seamless switching of Transport Stream content.

Fully configurable switching criteria.

Frame aligned seamless switchover
Alignment and seamless switchover between SFN streams from SFN Adapters with preservation of MIP packets.

Alignment and seamless switchover between T2MI streams from DVB-T2 Gateways with preservation of T2 time stamps (Option on request)
.
Robustness and flexibility:
Dual power supply (Option on request).
Relay protected main output ensures signal through even in the event of power loss or power supply failure.

Simultaneous monitoring of two MPEG transport streams.
Support for main ETSI TR 101 290 alarm contidions.
Bit rate monitoring.

User-friendly configuration and control.
WEB/XML based remote control.
SNMP agent for easy integration with NMS systems.

OUTPUT

TS	
ASI 1 OUT	Available
ASI 2 OUT	Available
ASI 3 OUT	Available
ASI 4 OUT	Available
GbE 1 (used for managing)	-
GbE 2	Available

INPUT

TS	
ASI 1	Supported
ASI 2	Supported
Tuner	Supported
GbE 1 (used for managing)	-
GbE 2	Supported

PHYSICAL

Rack frame	1U
Size	(W) 484 mm x (H) 45 mm x (D) 346 mm
Weight	4kg

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	Default - Italy
	Option "UK" - UK standard
	Option "DIN" - Germany and central Europe DIN connector
	Option "US" - US standard

ASI INPUTS

EN 500083-9 compliant
BNC connectors 75 ohm
Maximum bit rate 155 Mbit

RF INPUT

DVB-S / DVB-S2 compliant
F type female connector 75 ohm
Input frequency 950-2150 MHz

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/port for RTP/UDP servers
1 IP address/port for RTP/UDP clients
RTP protocol: ProMpeg cop3 with no FEC packet processing/generation, selectable 90KHz/27MHz timestamps

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 TTFF
38 s typical warm start TTFF
5 s typical hot start TTFF
<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 155 Mbit

FRONT PANEL

4 x 20 alpha displays
8 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 mwA IOH
	Dc coupled
	50 ohm capable

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 v1

Available Options

- *"UK" – UK standard power cord*
- *"DIN" – Germany and central Europe DIN connector*
- *"US" – US standard power cord*
- *"HIZ" - 10MHz option "HIZ" available*
- *"HIZ" - 1 sec PPS option "HIZ" available*
- *"N1" - use relay and opto for SSBT N+1 system*
- *"ALG" - use relay and opto according RAI specs*

IRRM2 LCN

Multiple LCN Descriptors in SFN Area

>IRRM 2 LCN

The IRRM2-LCN project is a on the fly LCN processor that allows users to analyze and modify the LCN descriptors fields in an input Transport Stream and modify them. No other data in the whole Transport Stream are modified.

Main features

LCN processor

Processed input:
One logical input, selectable from the available physical inputs is processed and sent to out.

TS input analysis:
One logical input, selectable from the available physical inputs is analysed.
The analyzer shows the following SI/PSI from input:
- PAT
- PMT
- SDT
- NIT
- NIT LCN descriptor

On the fly LCN processor:
The on-the-fly processor available allows the user to modify the LCN descriptor sent to out.
For each program in the LCN descriptor the following parameters can be modified:
- LCN number

Management

Alarm matrix management:
Management of the alarm matrix to enable/disable:
Alarm notification
Relay excitement
Trap activation
Output Mask On/Off

Exportable Event log:
Capability to export on text file the event log in memory.

Configuration file import/export:
Capability to import and export on file the machine configuration

SNMP:
Implementation of SNMP tree for device management
- SNMP engine supports global MIBs and tables

GbE management:
- Complete port management at Ethernet/IP level
- MAC address definition
- IP address definition
- Gateway definition
- Subnet mask definition

Satellite Receiver

Tuner:
Frequency range: 10700 to 12750 MHz

Supported standards:
- 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.

SAT RF input:
Tuning parameters:
- Frequency;
- Symbol Rate;
- Polarization;
- S/N Threshold;
- Rx Level Threshold;

Monitoring:
- Actual_DVBS_mode;
- Modulation Code;
- Modulation Type;
- Roll Off;
- Pilots Enable Status;
- Rx Level [dBm];
- S/N [dB];
- Tuner Status;
- Tuner Lock Flag;
- Error Values.

DVB-S Demodulator:
- modulation type;
- filter roll-off;
- pilot presence (on/off);
- long frames only;
- Forward Error Correction;
- Viterbi and Reed-Solomon dual decoder;
- Error monitoring;
- LDPC + BCH dual decoder (only DVB-S2)

Physical layer scrambling:
Settings:
- Mode
- First Physical Layer Scrambling sequence.
- Second Physical Layer Scrambling sequence.
- Third Physical Layer Scrambling sequence.

Monitoring:
- Actual Used Code

On the fly LCN processor:
The on-the-fly processor available allows the user to modify the LCN descriptor sent to out.
For each program in the LCN descriptor the following parameters can be modified:

- LCN number

RF INPUT
N° connetors: 1
Connector type: LNB (female)
R input: 75 ohm
V input: 1.75V
Frequenza: 10700 to 12750 MHz
DVB-S (ETSI EN 300 421)
DVB-S2 (ETSI EN 302 307)

GIGABIT ETHERNET
N° connectors: 2
Connector: RJ45
Standard supported: IEEE 802.3

ASI INPUT
N° connectors: 2
Connector type: BNC
R input: 75 ohm
V input: 800 mVpp (500 to 1200mVpp)
MPEG-2 TS ISO/IEC 13818-1
CEI EN 50083-9,

ASI OUTPUT
N° connectors: 4
Connector type: BNC
R input: 75 ohm
V input: 800 mVpp (500 to 1200mVpp)
MPEG-2 TS ISO/IEC 13818-1
CEI EN 50083-9,

10MHZ
N° connectors: 2
Connector type: BNC
R input: 75 ohm
V input: 800 mVpp (500 to 1200mVpp)

1 PPS
N° connectors: 2
Connector type: BNC
R input: 75 ohm
V input: 800 mVpp (500 to 1200mVpp)

GPS
N° connectors: 1
Connector type: TNC
Sensitivity: -185 dBW

SERIAL INTERFACE
N° connectors: 1
Connector: DE-9 female

RELAYS
N° connectors: 1
Connector: SUB-D 25p Female
Max voltage: 125VAC / 60VDC @ 0,3A - 30VDC @ 1A

LOCAL USER INTERFACE
LCD
Keyboard

PRO RX S2

Professional Satellite Receiver

PRO RX S2

PRO RX S2 In 1+1 configuration

Description

The 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).

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

Tuner	
Frequency range	950 to 2150 MHz
Supported Standard	DVB-S EN 300 421 v1.1.2: Digital Video Broadcasting (DVB); Framing structure, channelcoding and modulation for 11/12 GHz satellite services
	DVB-S2 EN 302 307 v1.1.2: Digital Video Broadcasting (DVB); Second generation framingstructure, channel coding and modulation systems for
	Broadcasting, Interactive Services, News Gathering and other broadband
	Satellite applications
Input Sat RF	
Tuning Setting	Frequency
	Symbol Rate
	ISI
	S/N Threshold
	LNB_pwr_supply
	Local osc Low
	BER/BCH Threshold
	Force Tuning
Monitoring	Actual_DVBS_mode
	Modulation Code
	Modulation Type
	Pilots Enable Status
	Rx Level [dBm]
	S/N [dB]
	Tuner Lock Flag
	Error Values

DVB-S Demodulator Features	
Setting Demodulator	QPSK
	FEC: 1/2, 2/3, 3/4, 5/6, 7/8
	Broadcast operating range 45 MSymbols/s
	CCM
Automatic configurations monitoring	Modulation type
	Filter roll-off
	Pilot presence (on/off)
	Long frames only
	Forward error correction
	Viterbi and Reed-Solomon dual decoder
	Error monitoring
Demodulator Features DVB- S2	
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

Physical layer scrambling	
Adjustable parameters	Mode
	First Physical Layer Scrambling sequence
	Second Physical Layer Scrambling sequence
	Third Physical Layer Scrambling sequence
Monitoring	Actual Used Code
DVB descrambler	DVB
	TSD (TS Descrambled) output interface
	Descrambler - max 12 Services
	Encryption systems supported: all mayors CA suppliers
	CAM supported: all mayors CA suppliers
Cam Reader	Smart Card Information
	Read Information
	Actual TS ID
	Stored TS ID
	Module Name
	Operator Name
	Expiration Date
	Subs Rights
Services Informations	Scrambled and not scrambled services
	Information
	Service Name
	Service ID
	Video PID
	Audio PID
	PCR PID
	TTX PID
TS Out	Output TS Monitoring
	Bitrate
	Filtered Bitrate
	Format
	Lock
	BB Frame and T2 MI out supported

ALARM MANAGMENT

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

PRO RX S2 with Decoder

Professional Satellite Receiver with Decoder

PRO RX S2 with Decoder

Description

The 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.

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)

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

Tuner	
Frequency range	950 to 2150 MHz
Supported Standard	DVB-S EN 300 421 v1.1.2: Digital Video Broadcasting (DVB); Framing structure, channelcoding and modulation for 11/12 GHz satellite services
	DVB-S2 EN 302 307 v1.1.2: Digital Video Broadcasting (DVB); Second generation framingstructure, channel coding and modulation systems for
	Broadcasting, Interactive Services, News Gathering and other broadband
	Satellite applications
Input Sat RF	
Tuning Setting	Frequency
	Symbol Rate
	ISI
	S/N Threshold
	LNB_pwr_supply
	Local osc Low
	BER/BCH Threshold
	Force Tuning
Monitoring	Actual_DVBS_mode
	Modulation Code
	Modulation Type
	Pilots Enable Status
	Rx Level [dBm]
	S/N [dB]
	Tuner Lock Flag
	Error Values

DVB-S Demodulator Features	
Setting Demodulator	QPSK
	FEC: 1/2, 2/3, 3/4, 5/6, 7/8
	Broadcast operating range 45 MSymbols/s
	CCM
Automatic configurations monitoring	Modulation type
	Filter roll-off
	Pilot presence (on/off)
	Long frames only
	Forward error correction
	Viterbi and Reed-Solomon dual decoder
	Error monitoring
Demodulator Features DVB- S2	
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

Physical layer scrambling	
Adjustable parameters	Mode
	First Physical Layer Scrambling sequence
	Second Physical Layer Scrambling sequence
	Third Physical Layer Scrambling sequence
Monitoring	Actual Used Code
DVB descrambler	DVB
	TSD (TS Descrambled) output interface
	Descrambler - max 12 Services
	Encryption systems supported: all mayors CA suppliers
	CAM supported: all mayors CA suppliers
Cam Reader	Smart Card Information
	Read Information
	Actual TS ID
	Stored TS ID
	Module Name
	Operator Name
	Expiration Date
	Subs Rights
Services Informations	Scrambled and not scrambled services
	Information
	Service Name
	Service ID
	Video PID
	Audio PID
	PCR PID
	TTX PID
TS Out	Output TS Monitoring
	Bitrate
	Filtered Bitrate
	Format
	Lock
	BB Frame and T2 MI out supported

ALARM MANAGMENT

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

PRO RX T2

Pro Rx-T2 DVB-T/T2 RF signal receiver

PRO RX T2

Main Features

DVB-T2 signal reception features:
- Automatic L1 signaling decoding.
- Fully compliant to all the standard Guard Intervals; Code Rates, Constellations.
- Provides manual selection of a single stream from single or multiple PLP input signal.
- Automatic output constant stream rate;

DVB-T signal reception features:
- Automatic TPS signaling decoding;
- Fully compliant to all the standard Guard Intervals; Code Rates, Constellations.
- Fast automatic 2k – 8k acquisition.
- Automatic spectral inversion.

Pro Rx T2 provides the following monitoring and statistics:
- SNR estimation.
- MER measure.
- Pre LDPC, BCH BER.
- Post BCH FER (FEC block Error Rate).
- Percentage signal quality.
- P1 parameters monitoring.
- L1 pre/post parameters monitoring.

1 x RF Input for each receiver board
- Frequency: 42 to 866 MHz

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)
- 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 T2 is a multi-standard (DVB-T and DVB-T2) receiver, with integrated DVB-T and DVB-T2 receiver, DVB descramblers and a DVB decoder.
Pro Rx-T2 receives a RF signal modulated with standard ETSI EN 302755 or ETSI EN 300744, demodulates it and output a MPEG-2 TS over ASI. The on-board PCMCIA slot provides common interface connection to descramble encrypted contents. PRO-RX T2 receiver is designed to receive a TV signal, complying with ETSI EN 302 755 v1.2.1_0.11 (2009-2010) or ETSI EN 300 744, at a given frequency, demodulate it, decode the Transport Stream, descramble selected services and output the stream over ASI interface. As alternative to RF signal, it can directly receive an MPEG Transport Stream, complying with ISO/IEC standard 13818-1 (or ITU-T Rec. H.222.0), decode it, descramble selected services and output the stream over ASI interface. PRO-RX T2 receiver can operate either as DVB-T or as DVB-T2 receiver.
One of the main feature of PRO-RX T2 is the monitoring of all parameters of demodulation process both for DVB-T and for DVB-T2 input signal. Furthermore, it provides the plots of actual Constellation and Channel Impulse Response.

PRO RX T2 In 1+1 configuration

DVB-T2 DEMODULATOR FEATURES

DVB-T2 input monitoring provided	
DVB-T2 signal lock	
Carrier offset of the currently tuned channel	
SNR estimation made by the demodulator	
MER (Modulation Error Ratio) of the T2 demodulator	
Pre LDPC BER	
Pre-BCH BER	
Post BCH FER (FEC block error rate)	
The signal quality as a percentage (0-100)	
Active PLP information monitoring of data and common PLP for multiple PLP	
Data PLP error indicator	
L1 change indicator	
Synchronization state of the T2 demodulator	
L1 post lock	
Demodulated *estimated* DVB-T2 TS (Transport Stream) rate	
SI Field	S1 signalling. SISO/MISO indication
S2 Field	The pre-amble mixed indicator
	The FFT mode of transmission
L1-pre signaling	The stream type contained within the current T2 superframe
	BW extension indicator
	S1 signalling. P1 S1
	S2 signalling. P1 S2
	L1 repetition flag
	The guard interval used for the super-frame
	L1-pre PAPR (Peak to Average Power Ratio) indicator
	The L1-post modulation in this frame
	The L1-post code rate in this frame
	The L1-post FEC type
	Size of the L1-post in OFDM cells
	L1-post info size = L1-post configurable+dynamic+extension
	The pilot pattern for the OFDM symbols in this frame
	The TX Id
	The T2 cell Id
	The T2 network Id
	T2 system Id
	Number of T2-frames per T2 super-frame
	Number of OFDM symbols per T2-frame
	Regeneration count indicator
	L1-post extensions enabled
	The number of RF frequencies in use
	The current RF index
L1-post signaling	The number of sub-slices per T2 frame
	The number of PLPs in the current superframe
	Number of auxiliary streams
	Auxiliary stream config (Reserved for Future Use)
	Indicates the type of FEF part
	The length of the FEF as part of the elementary period
	The number of T2-frames between two FEF parts
PLP Loop	The PLP ID
	The type of the PLP
	The payload carried by the PLP
	The group of PLPs that this PLP belongs to
	The code rate of this PLP
	The constellation of this PLP
	Rotated constellation indicator
	The FEC type used on this PLP
	Maximum number of PLP blocks
	The T2 frame interval within the superframe of this PLP
	Time Interleaver length
	Time Interleaver type indicator
	In-band flag. Indicates whether PLP carries in-band signalling
	TS error flag
	TS sync flag
	TS valid flag
The following parameters are not supported by monitoring as along as Time-Frequency-Slicing (TFS) is not implemented. L1-pre signaling	T2 version
	RF Loop
	RF IDX
	Frequency
	PLP Loop
	First RF IDX
	First frame IDX
TS DVB descrambler	PID Filter (TBD)
	Each TSD can filter up to 32 configurable PIDs
	PID filter can check continuity counter
	PID filter can check TS packet syntax (Adaptation field length, adaptation field flags, etc.)
Supports all DVB-T2 modes, including	Single and multiple-PLPs
	SISO and MISO transmission
Simple API	Fully-automatic acquisition
	Fully-automatic L1-signalling decoding
	Automatic guard-interval detection
	Automatically-calculated constant-rate TS output (using L1 signalling and ISSY)
Stream processor for automatic common- and data-PLP combination	
Signal Analisys	Constallation plot
	Channel i,pulse response plot

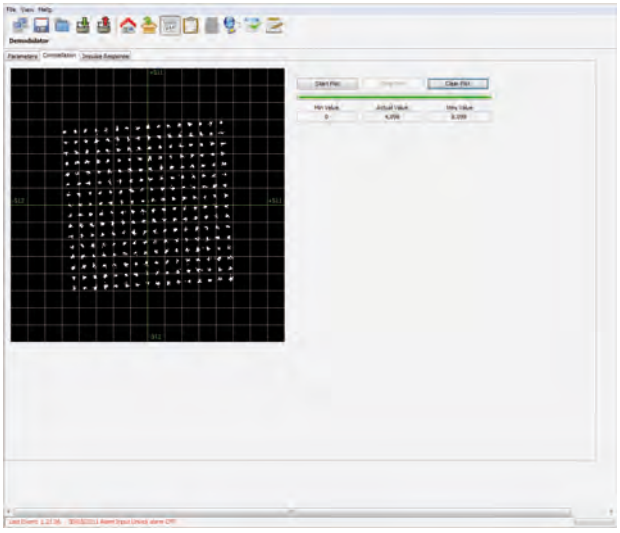
DVB-T/H AND DVB-T2 RECEIVER

Tuner	Frequency range: Agile tuning of every frequency between42 and 866 MHz
	Band: VHF and UHF
	Channel bandwidth: 6, 7 and 8 MHz
	Reception optimized for UE CCIR digital channels
Supported standards	DVB - T/H - ETSI EN 300 744
	DVB - T2 - ETSI EN 300 755 v1.2.1_0.11(2009-2010)
	Complies with all European standards for static and portableequipment including NorDig Unified 2.0, DTG 6.1, Ebook
	Fully compliant with DTG6.1 and targeting NorDig-T2 addendumto Nordig Unified Requirements Ver2.1
Supported standards DVB-T demodulator features	Smart Auto Acquisition controller with fast 2k/8k acquisition, low processor overhead and re-acquisition mode
	Automatic spectral inversion
	Enhanced SFN perf. with pre/post-cursive echoes inside/outside guard
	Enhanced Impulse noise cancellation algorithm compliant with DTG & Ebook
	Enhanced ACI protection and performance with CCI
	Advanced channel corrector for low multipath loss and enhanced Doppler performance

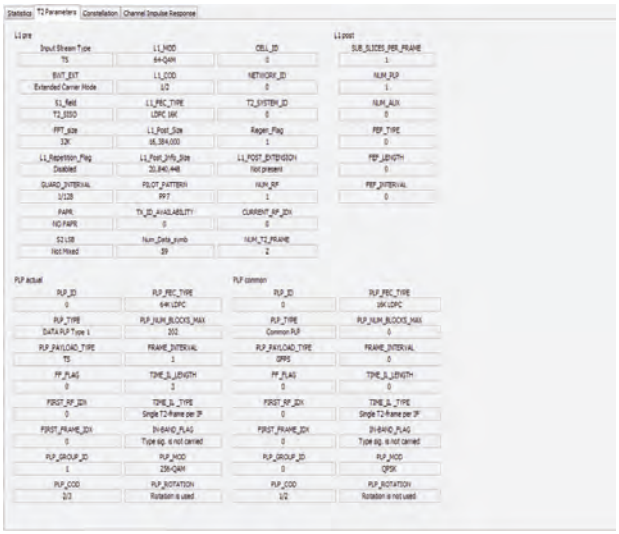
HARDWARE CONNECTORS

RF input to the device	
N° input	1
Connector type	LNB (female)
R input	75 Ω
V input	16 dBuV to 115 dBuV
Frequency	42 to 866 MHz
Smart-card input	
N° input	1
Connector type	PCMCIA
N° connectors	1
Connector	RJ45
Standard supported	IEEE 802.3
TS output from the system	
N° Output	1
Connector type	MCX
R input	75 Ω
V input	800 mVpp (500 to 1200mVpp)
Standard	CEI EN 50083-9

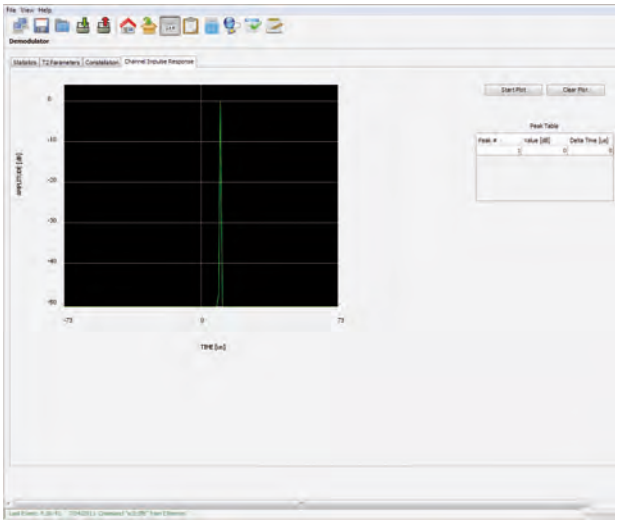
Power Supply
Dual Power Supply (only in 1+1 or 2+0 configuration)
110/220V AC Autoswitching
48V DC



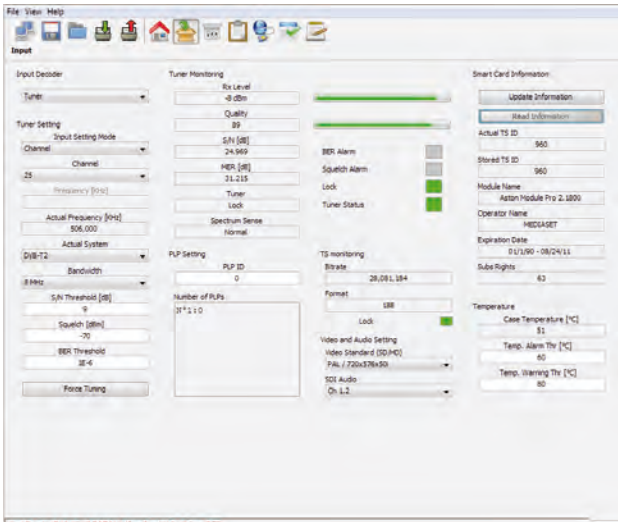
Demoulator - Costellation



Demoulator - T2 parameters

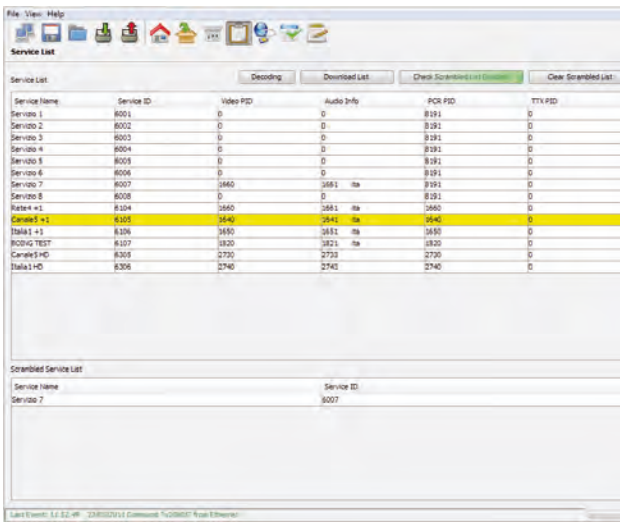


Demodulator - Impulse Response



Input

Demodulator - Statistcs



Service list

PRO RX T2 with Decoder

Pro Rx-T2 DVB-T/T2 RF signal receiver with Decoder

PRO RX T2 with decoder

Main Features

DVB-T2 signal reception features:
- Automatic L1 signaling decoding.
- Fully compliant to all the standard Guard Intervals; Code Rates, Constellations.
- Provides manual selection of a single stream from single or multiple PLP input signal.
- Automatic output constant stream rate;

DVB-T signal reception features:
- Automatic TPS signaling decoding;
- Fully compliant to all the standard Guard Intervals; Code Rates, Constellations.
- Fast automatic 2k – 8k acquisition.
- Automatic spectral inversion.

Pro Rx T2 provides the following monitoring and statistics:
- SNR estimation.
- MER measure.
- Pre LDPC, BCH BER.
- Post BCH FER (FEC block Error Rate).
- Percentage signal quality.
- P1 parameters monitoring.
- L1 pre/post parameters monitoring.

1 x RF Input for each receiver board
- Frequency: 42 to 866 MHz

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)
- 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 T2 is a multi-standard (DVB-T and DVB-T2) receiver, with integrated DVB-T and DVB-T2 receiver, DVB descramblers and a DVB decoder.
Pro Rx-T2 receives a RF signal modulated with standard ETSI EN 302755 or ETSI EN 300744, demodulates it and output a MPEG-2 TS over ASI. The on-board PCMCIA slot provides common interface connection to descramble encrypted contents. PRO-RX T2 receiver is designed to receive a TV signal, complying with ETSI EN 302 755 v1.2.1_0.11 (2009-2010) or ETSI EN 300 744, at a given frequency, demodulate it, decode the Transport Stream, descramble selected services and output the stream over ASI interface. As alternative to RF signal, it can directly receive an MPEG Transport Stream, complying with ISO/IEC standard 13818-1 (or ITU-T Rec. H.222.0), decode it, descramble selected services and output the stream over ASI interface. PRO-RX T2 receiver can operate either as DVB-T or as DVB-T2 receiver.

One of the main feature of PRO-RX T2 is the monitoring of all parameters of demodulation process both for DVB-T and for DVB-T2 input signal. Furthermore, it provides the plots of actual Constellation and Channel Impulse Response.

PRO-RX T2 with decoder works also as Decoder. It takes the demodulated and descrambled TS, then decodes and outputs a selected service through several physical interfaces, in order to connect the outputs directly to the TV

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:
- 1920x180i30
- 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

DVB-T2 DEMODULATOR FEATURES

DVB-T2 input monitoring provided	
DVB-T2 signal lock	
Carrier offset of the currently tuned channel	
SNR estimation made by the demodulator	
MER (Modulation Error Ratio) of the T2 demodulator	
Pre LDPC BER	
Pre-BCH BER	
Post BCH FER (FEC block error rate)	
The signal quality as a percentage (0-100)	
Active PLP information monitoring of data and common PLP for multiple PLP	
Data PLP error indicator	
L1 change indicator	
Synchronization state of the T2 demodulator	
L1 post lock	
Demodulated *estimated* DVB-T2 TS (Transport Stream) rate	
SI Field	S1 signalling. SISO/MISO indication
S2 Field	The pre-amble mixed indicator
	The FFT mode of transmission
L1-pre signaling	The stream type contained within the current T2 superframe
	BW extension indicator
	S1 signalling. P1 S1
	S2 signalling. P1 S2
	L1 repetition flag
	The guard interval used for the super-frame
	L1-pre PAPR (Peak to Average Power Ratio) indicator
	The L1-post modulation in this frame
	The L1-post code rate in this frame
	The L1-post FEC type
	Size of the L1-post in OFDM cells
	L1-post info size = L1-post configurable+dynamic+extension
	The pilot pattern for the OFDM symbols in this frame
	The TX Id
	The T2 cell Id
	The T2 network Id
	T2 system Id
	Number of T2-frames per T2 super-frame
	Number of OFDM symbols per T2-frame
	Regeneration count indicator
	L1-post extensions enabled
	The number of RF frequencies in use
	The current RF index
L1-post signaling	The number of sub-slices per T2 frame
	The number of PLPs in the current superframe
	Number of auxiliary streams
	Auxiliary stream config (Reserved for Future Use)
	Indicates the type of FEF part
	The length of the FEF as part of the elementary period
	The number of T2-frames between two FEF parts
PLP Loop	The PLP ID
	The type of the PLP
	The payload carried by the PLP
	The group of PLPs that this PLP belongs to
	The code rate of this PLP
	The constellation of this PLP
	Rotated constellation indicator
	The FEC type used on this PLP
	Maximum number of PLP blocks
	The T2 frame interval within the superframe of this PLP
	Time Interleaver length
	Time Interleaver type indicator
	In-band flag. Indicates whether PLP carries in-band signalling
	TS error flag
	TS sync flag
	TS valid flag
The following parameters are not supported by monitoring as along as Time-Frequency-Slicing (TFS) is not implemented. L1-pre signaling	T2 version
	RF Loop
	RF IDX
	Frequency
	PLP Loop
	First RF IDX
	First frame IDX
TS DVB descrambler	PID Filter (TBD)
	Each TSD can filter up to 32 configurable PIDs
	PID filter can check continuity counter
	PID filter can check TS packet syntax (Adaptation field length, adaptation field flags, etc.)
Supports all DVB-T2 modes, including	Single and multiple-PLPs
	SISO and MISO transmission
Simple API	Fully-automatic acquisition
	Fully-automatic L1-signalling decoding
	Automatic guard-interval detection
	Automatically-calculated constant-rate TS output (using L1 signalling and ISSY)
Stream processor for automatic common- and data-PLP combination	
Signal Analisys	Constallation plot
	Channel i,pulse response plot

DVB-T/H AND DVB-T2 RECEIVER

Tuner	Frequency range: Agile tuning of every frequency between42 and 866 MHz
	Band: VHF and UHF
	Channel bandwidth: 6, 7 and 8 MHz
	Reception optimized for UE CCIR digital channels
Supported standards	DVB - T/H - ETSI EN 300 744
	DVB - T2 - ETSI EN 300 755 v1.2.1_0.11(2009-2010)
	Complies with all European standards for static and portableequipment including NorDig Unified 2.0, DTG 6.1, Ebook
	Fully compliant with DTG6.1 and targeting NorDig-T2 addendumto Nordig Unified Requirements Ver2.1
Supported standards DVB-T demodulator features	Smart Auto Acquisition controller with fast 2k/8k acquisition, low processor overhead and re-acquisition mode
	Automatic spectral inversion
	Enhanced SFN perf. with pre/post-cursive echoes inside/outside guard
	Enhanced Impulse noise cancellation algorithm compliant with DTG & Ebook
	Enhanced ACI protection and performance with CCI
	Advanced channel corrector for low multipath loss and enhanced Doppler performance

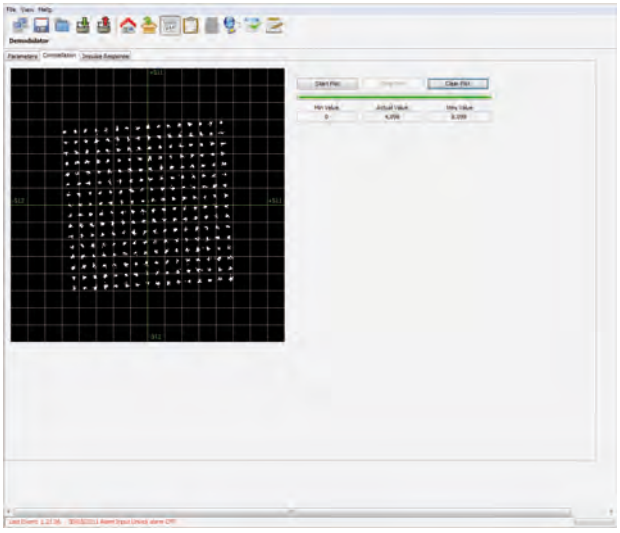
HARDWARE CONNECTORS

RF input to the device	
N° input	1
Connector type	LNB (female)
R input	75 Ω
V input	16 dBuV to 115 dBuV
Frequency	42 to 866 MHz
Smart-card input	
N° input	1
Connector type	PCMCIA
N° connectors	1
Connector	RJ45
Standard supported	IEEE 802.3
TS output from the system	
N° Output	1
Connector type	MCX
R input	75 Ω
V input	800 mVpp (500 to 1200mVpp)
Standard	CEI EN 50083-9

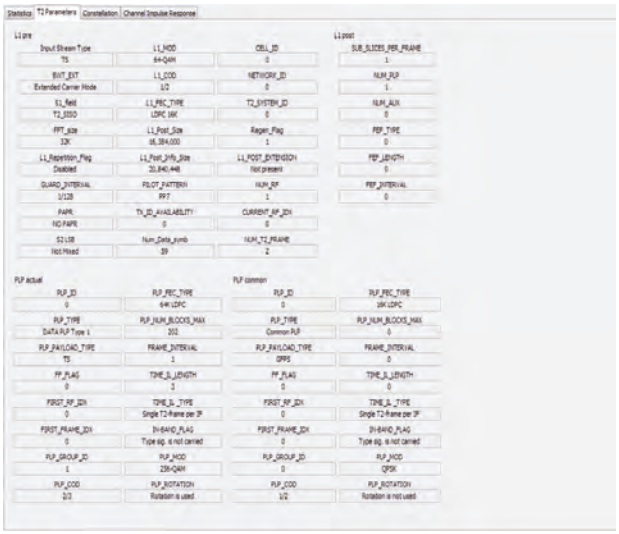
DECODER FEATURES

SD-SDI-OUT	Connector Used as output to the systems
	N° Outputs: 1
	Connector: BNC
	R Input: 75 Ohm
	V Input: 800 mVpp (500 to 1200 mVpp)
	Standard: SMPTE 259M,292M
RGB -SD-OUT	Connector Used as output to the systems
	N° Outputs: 3 (R, G, B)
	Connector: RCA
	R Input
	V Input
	Standard
CVBS -SD-OUT	Connector Used as output to the systems
	N° Outputs: 1
	Composite Video Blanking Sync
	Connector: RCA
	R Input
	V Input
	Standard
HDMI (HD/SD) OUT	Connector Used as output to the systems
	N° Outputs: 1
	Connectors: HDMI Type A
YUV (HD)	Connector Used as output to the systems
	N° Inputs: 3 (Y, U, V)
	Connector: RCA
	R Input: -
	V Input: -
	Standard: -
Audio (Out)	Audio connector
	Connettori audio
	N° Outputs: 2 (Usati per Left e Right)
	Connector: 2 pin su scheda
	R Input:V Input
	Standard

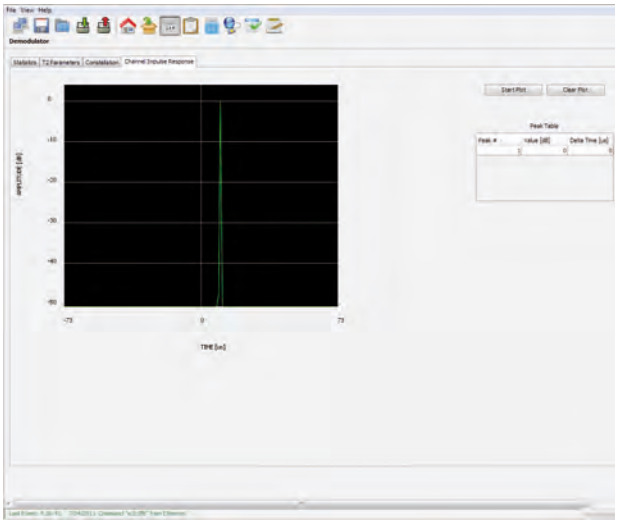
Power Supply
Dual Power Supply (only in 1+1 or 2+0 configuration)
110/220V AC Autoswitching
48V DC



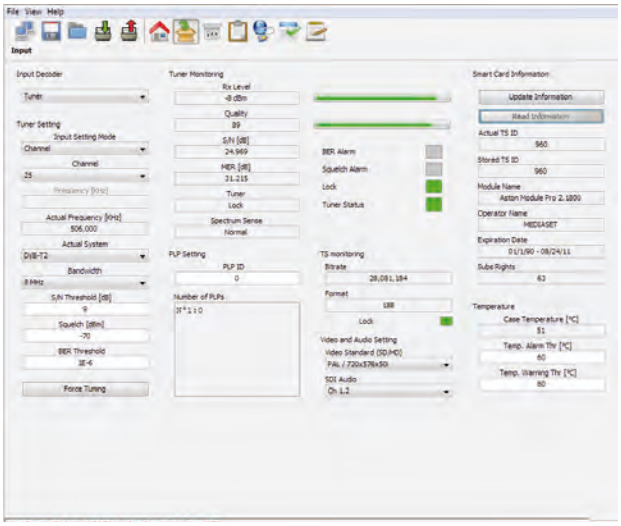
Demoulator - Costellation



Demoulator - T2 parameters

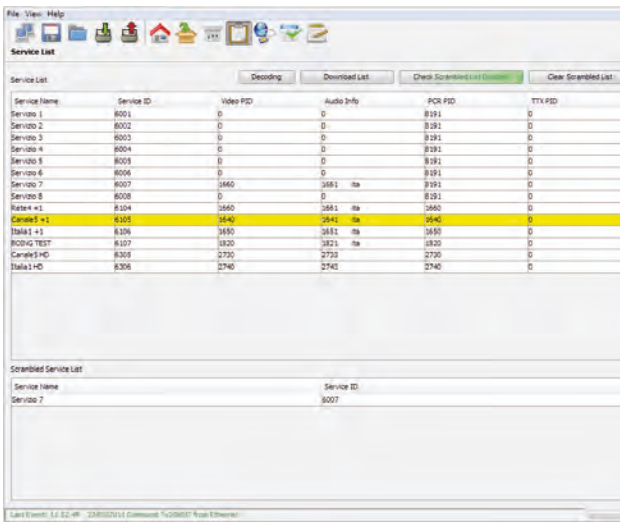


Demodulator - Impulse Response



Input

Demodulator - Statistcs



Service list

XBT 704

DVB-T receiver with decoder

> XBT 704

Description

XBT 704 is a DVB receiver with decoder functionality, specially designed for the switchover transition period.
It works in both analog and digital conditions (both RF and ASI Inputs).
In analogue condition: it receives an RF input signal and delivers it throught its ouptus connectors. It is a bypass for the RF analog signal, suitable for the pre-switchover phase.

In digital condition: it receives an RF digital input signal and decodes the contents. It extracts a program from the bouquet and delivers it into an ASI output signal. This ASI can be perfectly managed by a SDT Transmitter Series, which converts the ASI signal into an RF analogue output signal. This signal feeds a transposer.

Features: program recognising function.

Main Features

INPUTS
- DVB-T Compliant RF input
- Digital MPEG-2 TS compliant ASI input
- PAL RF (N connector)

OUTPUTS
- DVB-T Compliant RF input
- Digital MPEG-2 TS compliant ASI OUT
- Two channels (L/R) balanced analog audio output.
- Doubled SDI interface for digital video with embedded audio.

OUTPUTS FROM MULTIPLEXER ARE
External GPS 10 MHz reference input
Doubled ASI interface for TS bypass output
X port connector for low level software interface
Local User Interface with buttons pad and LCD display
Digital MPEG-2 TS compliant ASI input
Doubled analog CVBS video output
S/P Dif digital audio output
Events logging for board's history recording
Remote upgrade of firmware and software

BYPASS STATUS (ON/OFF) SELECTABLE BY LOCAL OR REMOTE
DVB-T compliant demodulator
Input frequency range: B III / IV - V
Channel bandwidth: 6 MHz, 7 MHz, 8 MHz
2K and 8K COFDM demodulator
Modulation ways: QPSK, 16-QAM, 64-QAM
FEC modes: 1/2, 2/3, 3/4, 5/6, 7/8
Guard interval modes: 1/32, 1/16, 1/8, 1/4
Fully automatic Transmission Parameters detection
1 ASI input interface
2 ASI output interface
1 SPI output interface
RS232 interface
Ethernet interface

Redundant ASI/SDI Distributor

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.

XBT 706D

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)

Rear View

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

SCS 120S/ SCS120D

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 whit "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

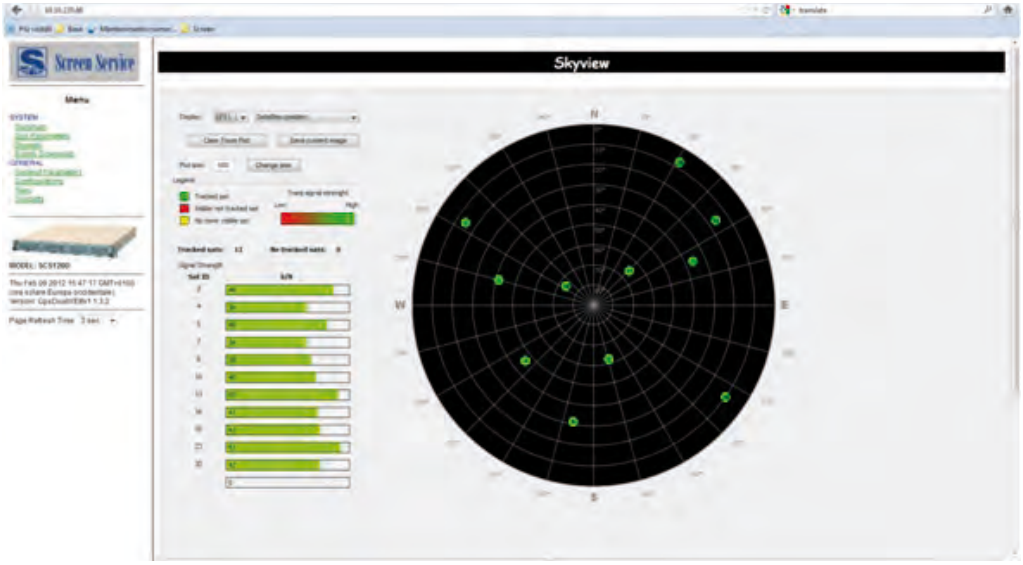
The dual GPS Receiver contains two fully redundant GPS receiver boards, each with their own OCXO, GPS module and GPS antenna input. The redundancy is at power supply level as well. Each receiver has an OCXO (oven controlled crystal oscillator) which runs at 10MHz. The accuracy of this OCXO is better than ±0.3Hz (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 rear view
(version with GPS Input on the front-panel)

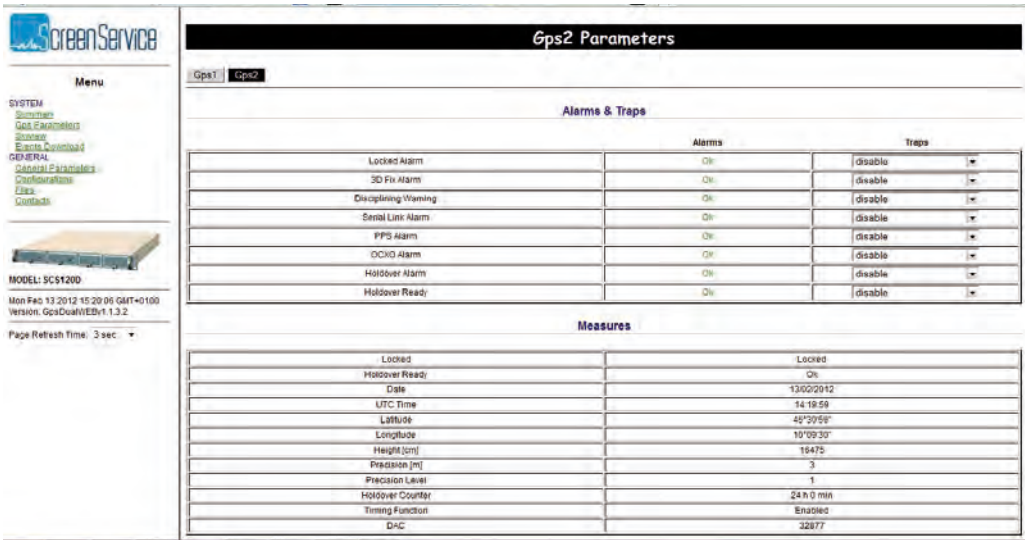
GPS RECEIVER

- 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



Skyview



Control Panel

FREQUENCY REFERENCE	
Number of outputs	10 x BNC, 50 Ω
Output signal	5 or 10 MHz, sine wave, 1 V p.p
Short term stability	Better than 5x10-12 (1sec)
Frequency accuracy	Better than 3x10-12 (24hours continuos powe up and GPS)
Hold over drift	±5x10-10/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 Ω
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 (3 hours without GPS) < 8 µs (24 hours without GPS)

GENERAL	
GPS antenna input connector	N female, 50 Ω, 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 Smart

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 whit "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

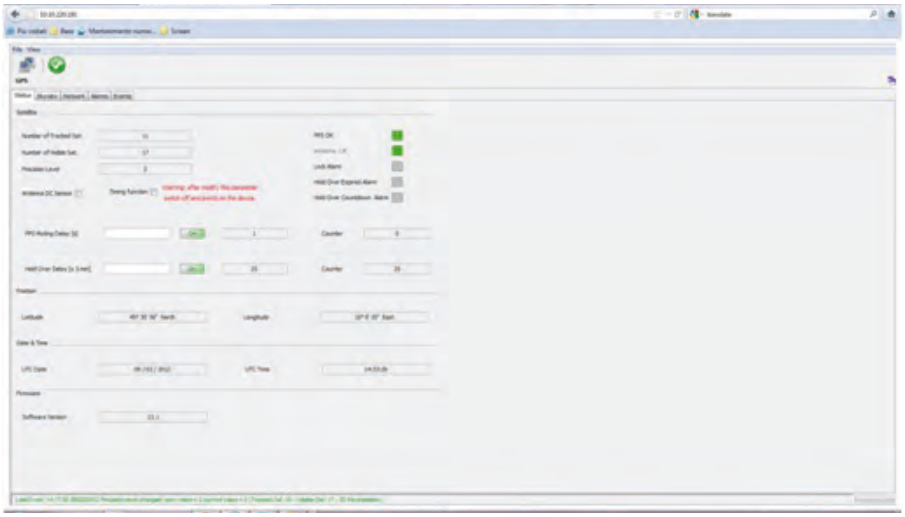
- 50 parallel channels.
- C/A code 1,023 MHz chip rate.
- Carrier Aided Tracking.
- Precision in position: 25 m (SA absent), 100 m (SA spec. UD DoD)
- Suitable for use with active antennas.
- LAN TCP/IP
- Aux TLS relay contact available on the rear panel.

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 5x10-12 (1 sec.)
Frequency accuracy	Better than 3x10-12 (24 hours continuous power up and GPS)
Holdover drift	±5x10-10/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.

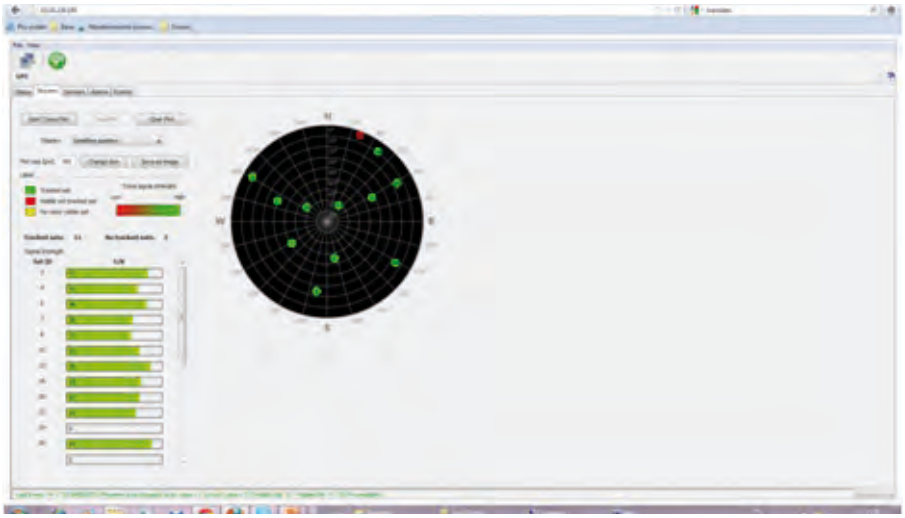
TIMING REFERENCE	
Number of outputs	4 x BNC, 50 Ω (2 rear and 2 front side)
Output signal	1 PPS, 5 V TTL, square wave
Timing accuracy	±100 ns peak (24 hours continuous power up and GPS)
Holdover drift	±1 µs (5 hours without GPS) < 24 µs (24 hours without GPS)

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" rac) 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*

Service Platform Coordinator

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

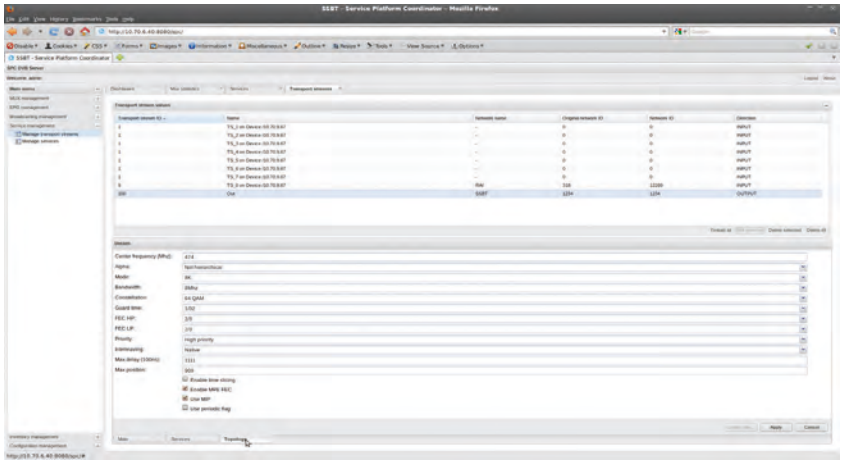
- XML files
- CVS files
- FTP file transfer
- Periodic file transfer
- Interactive editing

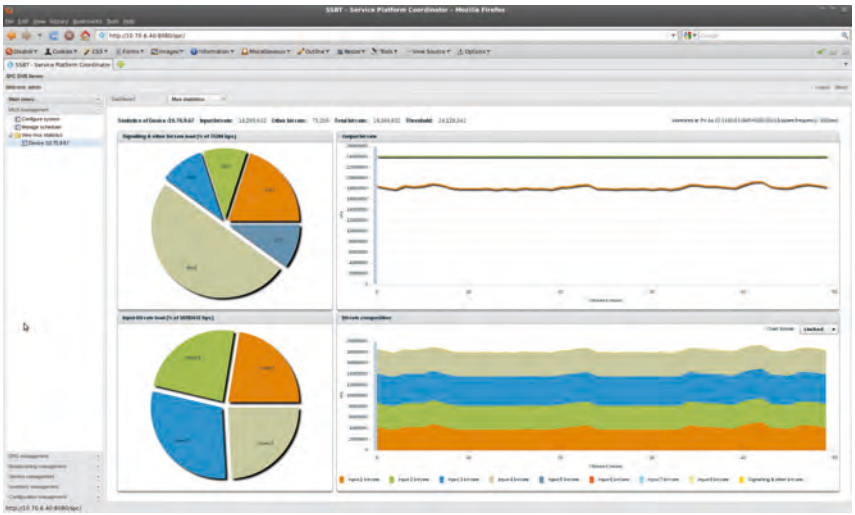
Output

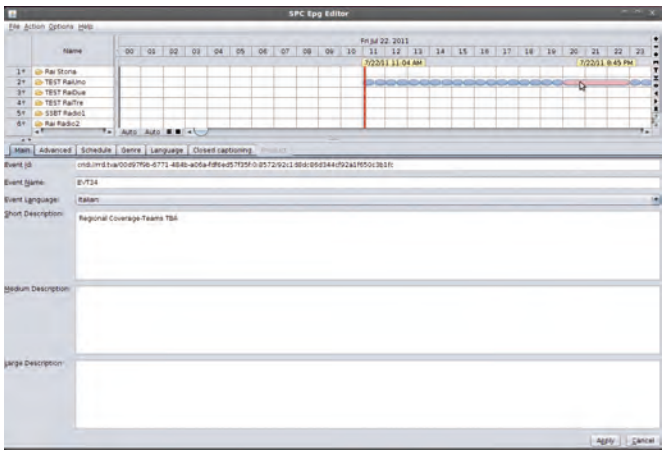
- ASI output interface (with XBT525)
- Ethernet output (both version)

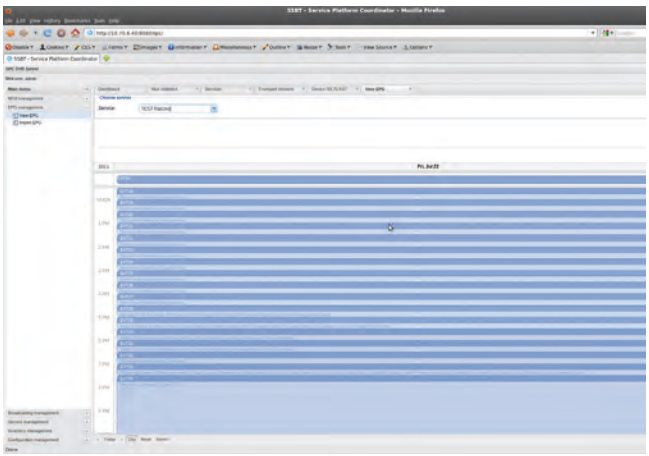
Multiplexer Management

- 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

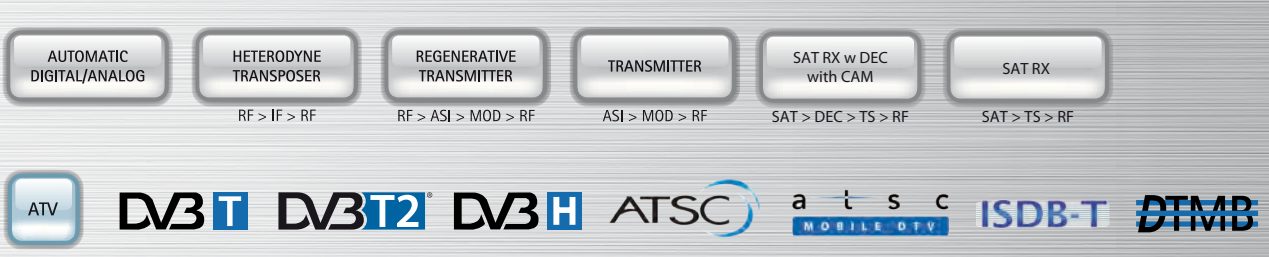
SDT ARK-6 Series

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 front end configurations:
Transmitter only
Satellite Receiver Input
Satellite Receiver with Decoder and CAM Input
Analog A/V Input
Regenerative Trasmitter



Specifications		
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

Analog TV	standards	B/G, D/K, M, M1, N, I, I1
	Color transmission	PAL, NTSC, SECAM
	Sound transmission	IRT dual-sound coding, FM single sound and NICAM728 (13 dB/20 dB), FM single sound(-10 dB)
	Inputs	1 x video , 2 x audio
Video	Video input	0,5 to 1,5 V
	Regulation of output power	+/- 3%
	Variation of output power	+/- 2%
	Differential gain	3%
	Differential phase	3°
	Low frequency linearity	8%
	ICPM	+/- 2°
	S/N	>60 dB
	K Factor	2%
	20 T	3%
	Spourius and Harmonics radiation	>60 dB
	In Channel IMD	> 58 dB
Sound	Modulation capability	+/- 120 KHz
	Monoaural input	settable 0 to 12 dBm
	Pre-Emphasys	75 / 50 µS
	Frequency response	+/- 0,5 dB 30 to 15000 Hz
	Harmonic distorsion	0,5% 30 to 15000 Hz
	FM Noise	60 dB with de-emphasis
	AM Noise	50 dB 30 to 15000 Hz
	Synchronous AM noise	40 dB
	IRT Sound	available
	NICAM Sound	available

SDT ARK-6 SERIES

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 for 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. It could be used as an exciter in a system or like standalone transmitter in several compact solution. The STD ARK 6 transmitters have a compact design. They are 19" wide, occupy 1 rack unit and contain all basic components such as transmitter input unit, modulator unit, output stage module, and display plus keypad. The housing fan is attached outside for easy access. In addition, the transmitters can accommodate a variety of options. The transmitters can be set up wherever required and are easy to transport. The broadband output stages are based on powerful LDMOS transistors and feature high efficiency.

HW OPTIONS						
Front-End	STANDARD					
	ATV	DVB-T/H	DVB-T2	ISDBT	ATSC	DMBT
None	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Digitalizer A/V Input option	Transmitter with A/V analog inputs	X	X	X	X	X
DVB-S/S2	X	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input
DVB-S/S2 + CAM	X	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)
DVB-T/T2	X	Regenerative Transposer / Heterodyne Transposer / GapFiller Echo Canceller	Regenerative Transposer / Heterodyne Transposer / GapFiller Echo Canceller	X	X	X
ISDBT	X	X	X	Regenerative Transposer / Heterodyne Transposer / GapFiller Echo Canceller	X	X
ATSC	X	X	X	X	Regenerative Transposer / Heterodyne Transposer / GapFiller Echo Canceller	X
DTMB	X	X	X	X	X	Regenerative Transposer / Heterodyne Transposer / GapFiller Echo Canceller

Specifications

Front View. Transmitter with Satellite Receiver

1. DVB-S2 Input Configuration - Satellite Input Specifications

- N. SAT Inputs: 1
- 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 (DVB-S2)
- DVB-T/T2 available

Front View. Transmitter with Satellite Receiver with Decoder and CAM

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

- N. GPS Inputs: 1
- 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 (DVB-S2)
- DVB-T/T2, ITU available
- Common Interface:
- N° card slots: 1
- Type: PCMCIA
- Supported CAM:

Front View. Transposer and Regenerative Transmitter

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

- N. RF Inputs: 1
- 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

Specifications

Front View. Transmitter Only Version

4 Multistandard Transmitter Configuration

- Inputs: 4 ASI and 2 TSoIP channels
- Outpus: 1 RF, 1 RF Monitor
  2 ASI and 2 TSoIP 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 retriving 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
- 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, ITS0, 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.

Specifications

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

TYPE:	DESCRIPTION AND NUMBER:
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, DTMB
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

Specifications		
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		

Models Selection Guide

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ± 4.3 MHz	Digital output power (rms) without Filter DVB	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)	A	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		7/16"	Air	-	-39	150 W	400 W
SDT 201UB ARK-6 C	VHF (III)	AB	2 RU (19" rack), 400 mm	1		7/16"	Air	-	-36	80 W	250 W
SDT 201UB ARK-6 HE	UHF	AB	1 +3 RU	1		7/16"	Air	-	-39	150 W	450 W
SDT 201UB ARK-6	UHF	AB	1 +3 RU	1		7/16"	Air	-	-36	80 W	250 W
SDT 201TB ARK-6	VHF (III)	AB	1 +3 RU	1		7/16"	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	7/16"	Air	-	-39	350 W	1000 W
SDT 501UB ARK-6	UHF	AB	15 RU (4+1)	1	SCA501	7/16"	Air	-	-36	150 W	700 W
SDT 501TB ARK-6	VHF (III)	AB	15 RU (4+1)	1	SCA501	7/16"	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	1+5/8"	Air	1	-39	2600 W	6000 W
SDT 502UM ARK-6 HE	UHF	AB	40 RU	4	SCA102HE	1+5/8"	Air	1	-39	2600 W	6000 W
SDT 502UB-W ARK-6 HE	UHF	AB	40 RU	2	SCA202HE-W	1+5/8"	Liquid	1	-39	2600 W	6000 W
SDT502UB ARK-6	UHF	AB	30 RU	2	SCA202UB	1+5/8"	Air	1	-36	1300 W	5000 W
SDT502UB-W ARK-6	UHF	AB	40 RU	2	SCA202UB-W	1+5/8"	Liquid	1	-36	1300 W	5000 W
SDT 502UM ARK-6	UHF	AB	40 RU	4	SCA102UB	1+5/8"	Air	1	-36	1300 W	5000 W
SDT 502TB ARK-6	VHF (III)	AB	30 RU	2	SCA202TB	1+5/8"	Air	1	-36	1300 W	5000 W
SDT 502TB-W ARK-6	VHF (III)	AB	40 RU	2	SCA202TB-W	1+5/8"	Liquid	1	-36	1300 W	5000 W
SDT 502TM ARK-6	VHF (III)	AB	40 RU	4	SCA102TB	1+5/8"	Air	1	-36	1300 W	5000 W
SDT 532UB-W ARK-6 HE	UHF	AB	40 RU	3	SCA202HE-W	1+5/8"	Liquid	1	-39	3900 W	9000 W
SDT 532UB-W ARK-6	UHF	AB	40 RU	3	SCA202UB-W	1+5/8"	Liquid	1	-36	2000 W	7500 W
SDT 532TB-W ARK-6	VHF (III)	AB	40 RU	3	SCA202TB-W	1+5/8"	Liquid	1	-36	2000 W	7500 W
SDT 103UM ARK-6 HE	UHF	AB	40 RU	4	SCA202HE	3+1/8"	Air	1	-39	5200 W	12000 W
SDT 103UM-W ARK-6 HE	UHF	AB	40 RU	4	SCA202HE	3+1/8"	Liquid	1	-39	5200 W	12000 W
SDT 103UM ARK-6	UHF	AB	40 RU	4	SCA202UB	3+1/8"	Air	1	-36	2600 W	10000 W
SDT 103UM-W ARK-6	UHF	AB	40 RU	4	SCA202UB-W	3+1/8"	Liquid	1	-36	2600 W	10000 W
SDT 103TM ARK-6	VHF (III)	AB	40 RU	4	SCA202TB	3+1/8"	Air	1	-36	2600 W	10000 W
SDT 103TM-W ARK-6	VHF (III)	AB	40 RU	4	SCA202TB-W	3+1/8"	Liquid	1	-36	2600 W	10000 W
SDT 123UM-W ARK-6	UHF	AB	40 RU	5	SCA202UB-W	3+1/8"	Liquid	1	-36	3200 W	12500 W
SDT 123TM-W ARK-6	VHF (III)	AB	40 RU	5	SCA202TB-W	3+1/8"	Liquid	1	-36	3200 W	12500 W
SDT 133UM-W ARK-6 HE	UHF	AB	2 x 40 RU	6	SCA202HE-W	3+1/8"	Liquid	1	-39	7800 W	18000 W
SDT 133UM-W ARK-6	UHF	AB	2 x 40 RU	6	SCA202UB-W	3+1/8"	Liquid	1	-36	6000 W	16000 W
SDT 133TM-W ARK-6	VHF (III)	AB	2 x 40 RU	6	SCA202TB-W	3+1/8"	Liquid	1	-36	6000 W	16000 W
SDT 203UM ARK-6 HE	UHF	AB	2 x 40 RU	8	SCA202HE	3+1/8"	Air	2	-39	10000 W	24000 W
SDT 203UM-W ARK-6 HE	UHF	AB	2 x 40 RU	8	SCA202HE	3+1/8"	Liquid	2	-39	10000 W	24000 W
SDT 203UM ARK-6	UHF	AB	2 x 40 RU	8	SCA202UB	3+1/8"	Air	2	-36	5000 W	20000 W
SDT 203UM-W ARK-6	UHF	AB	2 x 40 RU	8	SCA202UB-W	3+1/8"	Liquid	2	-36	5000 W	20000 W
SDT 203TM ARK-6	VHF (III)	AB	2 x 40 RU	8	SCA202TB	3+1/8"	Air	2	-36	5000 W	20000 W
SDT 203TM-W ARK-6	VHF (III)	AB	2 x 40 RU	8	SCA202TB-W	3+1/8"	Liquid	2	-36	5000 W	20000 W
SDT 303UM-W ARK-6 HE	UHF	AB	3 X 40 RU	12	SCA202HE-W	4+1/2"	Liquid	4	-39	15000 W	36000 W
SDT 303UM-W ARK-6	UHF	AB	3 X 40 RU	12	SCA202UB-W	4+1/2"	Liquid	4	-36	7800 W	32000 W
SDT 303TM-W ARK-6	VHF (III)	AB	3 X 40 RU	12	SCA202TB-W	4+1/2"	Liquid	4	-36	7800 W	32000 W
SDT 403UM-W ARK-6 HE	UHF	AB	4 X 40 RU	16	SCA202HE-W	4+1/2"	Liquid	4	-39	20000 W	48000 W
SDT 403UM-W ARK-6	UHF	AB	4 X 40 RU	16	SCA202UB-W	4+1/2"	Liquid	4	-36	10000 W	40000 W
SDT 403TM-W ARK-6	VHF (III)	AB	4 X 40 RU	16	SCA202TB-W	4+1/2"	Liquid	4	-36	10000 W	40000 W
SDT 603UM-W ARK-6 HE	UHF	AB	6 X 40 RU	24	SCA202HE-W	6+1/8"	Liquid	6	-39	30000 W	72000 W
SDT 603UM-W ARK-6	UHF	AB	6 X 40 RU	24	SCA202UB-W	6+1/8"	Liquid	6	-36	15000 W	64000 W
SDT 603TM-W ARK-6	VHF (III)	AB	6 X 40 RU	24	SCA202TB-W	6+1/8"	Liquid	6	-36	15000 W	64000 W

Specifications and characteristics are subject to change without notice.

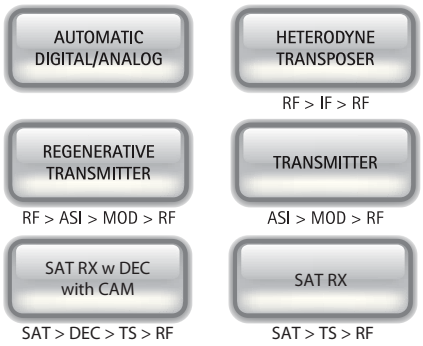
SDT 000 ARK-6

DVB Transmitter/Modulator up to 1mW 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

- Transmission in VHF and UHF bands
- MFN and SFN operations
- Internal GPS receiver
- Embedded HTTP server
- RF main and monitoring outputs
- 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

- T2-MI input over IP or ASI
- Modulated DVB-T2 RF signal input (VHF/UHF) – when operating as repeater
- T2-MI input RF signal (VHF/UHF) – specific for SFN gap filler operation
- Signal modulation compliant with ETSI EN-302 755 (DVB-T2) standard 1.3.1
- ETSI EN 300 744 v16.1
- ETSI TS 101 191 v1.4.1
- ETSI EN-102 773 (T2-MI)
- ITU -R BT. 470-7

- Full support of T2 modulation up to 256-QAM including I/Q rotation
- T2-MI compliant with standard
- Full Single-PLP and MPLP compatibility (including MISO and PAPR reduction)
- Up to 16 PLP
- Bit rate adaptation plus PCR restamping in S-PLP

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 DVB + 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

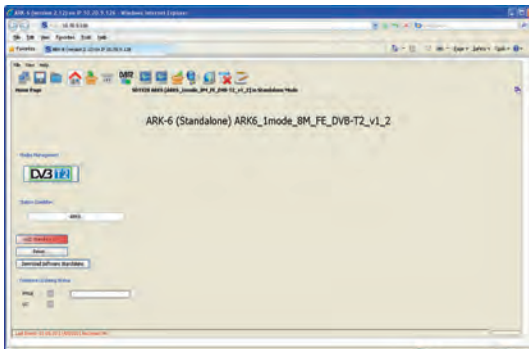
Front View. Transmitter with DVB-S2 Receiver Version

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

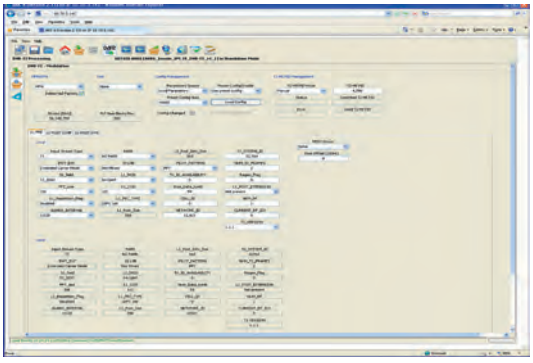
Front View. Transmitter Version

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 VAC, 380 VAC (3 Phases) other available on request

MODEL SPECIFIC DATA											
Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	**Shoulders @ Fo ± 4.3 MHz**	**Digital output power (rms) without Filter DVB**	**Nominal analog output power (p.s.) ATV**
SDT000UA ARK-6	UHF	A	1 RU (19" rack), 400 mm			N	Air	-	-37	1mW	1mW
Specifications and characteristics are subject to change without notice.											

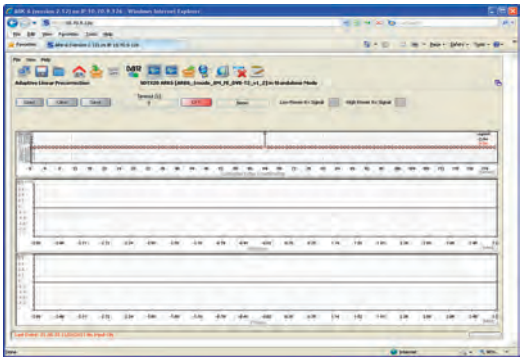


GUI, modulation page.



GUI, main page.

GUI, input page.



GUI, linear pre correction page.

SDT 200 ARK-6

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.

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

ATV

DVB T

DVB H

DVB T2

ATSC

atsc MOBILE DTV

ISDB-T

DTMB

Main Features

- Transmission in VHF and UHF bands
- MFN and SFN operations
- Internal GPS receiver
- Embedded HTTP server
- RF main and monitoring outputs
- 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

- T2-MI input over IP or ASI
- Modulated DVB-T2 RF signal input (VHF/UHF) – when operating as repeater
- T2-MI input RF signal (VHF/UHF) – specific for SFN gap filler operation
- Signal modulation compliant with ETSI EN-302 755 (DVB-T2) standard 1.3.1
- ETSI EN 300 744 v16.1
- ETSI TS 101 191 v1.4.1
- ETSI EN-102 773 (T2-MI)
- ITU -R BT. 470-7

- Full support of T2 modulation up to 256-QAM including I/Q rotation
- T2-MI compliant with standard
- Full Single-PLP and MPLP compatibility (including MISO and PAPR reduction)
- Up to 16 PLP
- Bit rate adaptation plus PCR restamping in S-PLP

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 DVB + 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

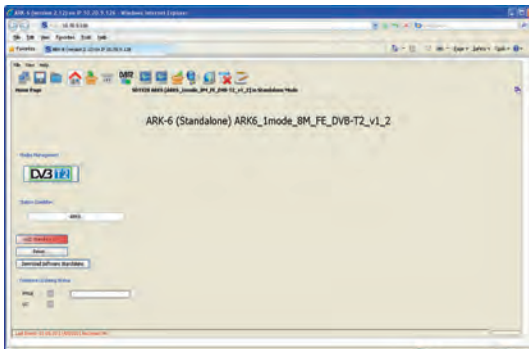
Front View. Transmitter Version

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 VAC, 380 VAC (3 Phases) other available on request

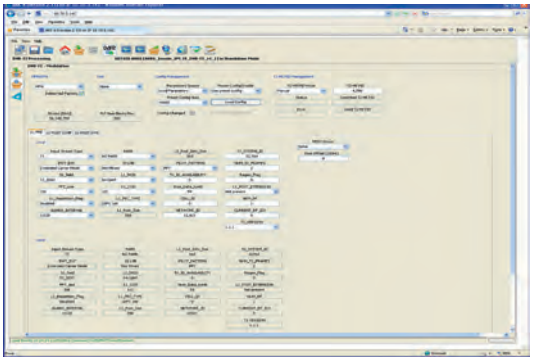
MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	**Shoulders @ Fo ± 4.3 MHz**	**Digital output power (rms) without Filter DVB**	**Nominal analog output power (p.s.) ATV**
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)	A	1 RU (19" rack), 400 mm	1		N	Air	-	-36	2,5 W	80 W

Specifications and characteristics are subject to change without notice.

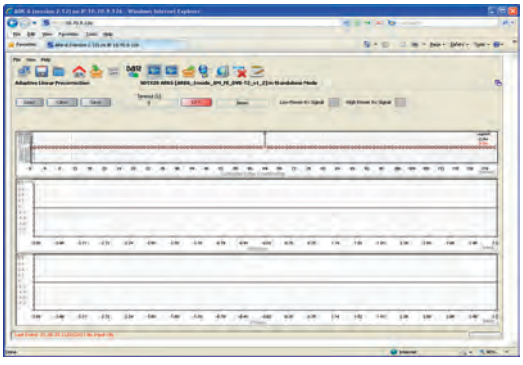


GUI, modulation page.



GUI, main page.

GUI, input page.



GUI, linear pre correction page.

SDT 500 ARK-6

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.

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

ATV

DVB T

DVB H

DVB T2

ATSC

atsc MOBILE DTV

ISDB-T

DTMB

Main Features

- Transmission in VHF and UHF bands
- MFN and SFN operations
- Internal GPS receiver
- Embedded HTTP server
- RF main and monitoring outputs
- 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

- T2-MI input over IP or ASI
- Modulated DVB-T2 RF signal input (VHF/UHF) – when operating as repeater
- T2-MI input RF signal (VHF/UHF) – specific for SFN gap filler operation
- Signal modulation compliant with ETSI EN-302 755 (DVB-T2) standard 1.3.1
- ETSI EN 300 744 v16.1
- ETSI TS 101 191 v1.4.1
- ETSI EN-102 773 (T2-MI)
- ITU -R BT. 470-7

- Full support of T2 modulation up to 256-QAM including I/Q rotation
- T2-MI compliant with standard
- Full Single-PLP and MPLP compatibility (including MISO and PAPR reduction)
- Up to 16 PLP
- Bit rate adaptation plus PCR restamping in S-PLP

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 DVB + 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

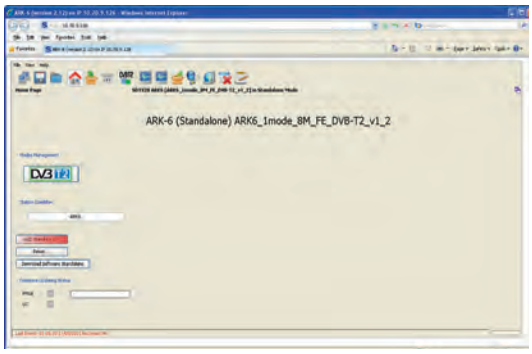
Front View. Transmitter Version

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 VAC, 380 VAC (3 Phases) other available on request

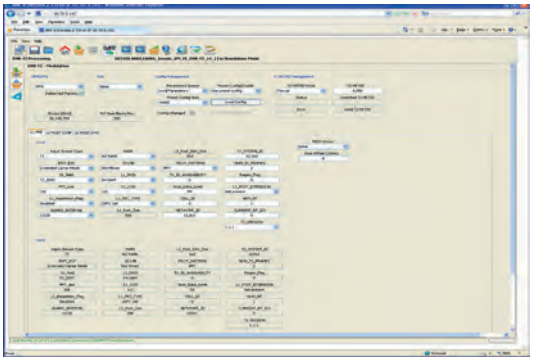
MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	**Shoulders @ Fo ± 4.3 MHz**	**Digital output power (rms) without Filter DVB**	**Nominal analog output power (p.s.) ATV**
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.

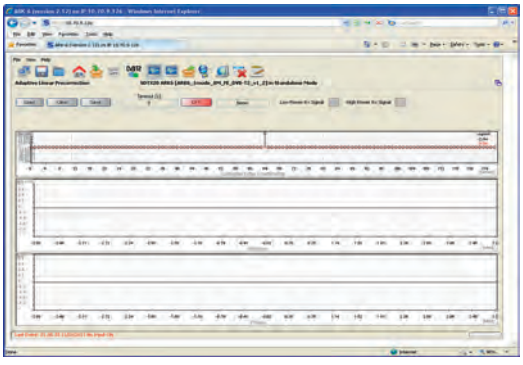


GUI, modulation page.



GUI, main page.

GUI, input page.



GUI, linear pre correction page.

SDT 101 ARK-6

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.

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

ATV

DVB T

DVB H

DVB T2

ATSC

atsc MOBILE DTV

ISDB-T

DTMB

Main Features

- Transmission in VHF and UHF bands
- MFN and SFN operations
- Internal GPS receiver
- Embedded HTTP server
- RF main and monitoring outputs
- 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

- T2-MI input over IP or ASI
- Modulated DVB-T2 RF signal input (VHF/UHF) – when operating as repeater
- T2-MI input RF signal (VHF/UHF) – specific for SFN gap filler operation
- Signal modulation compliant with ETSI EN-302 755 (DVB-T2) standard 1.3.1
- ETSI EN 300 744 v16.1
- ETSI TS 101 191 v1.4.1
- ETSI EN-102 773 (T2-MI)
- ITU -R BT. 470-7

- Full support of T2 modulation up to 256-QAM including I/Q rotation
- T2-MI compliant with standard
- Full Single-PLP and MPLP compatibility (including MISO and PAPR reduction)
- Up to 16 PLP
- Bit rate adaptation plus PCR restamping in S-PLP

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 DVB + 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

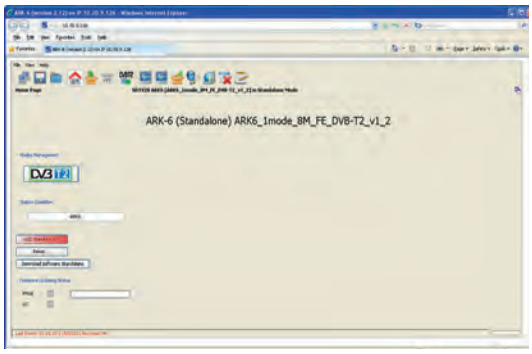
Front View. Transmitter Version

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 VAC, 380 VAC (3 Phases) other available on request

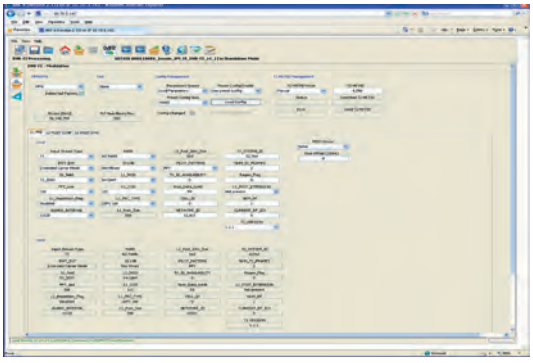
MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	**Shoulders @ Fo ± 4.3 MHz**	**Digital output power (rms) without Filter DVB**	**Nominal analog output power (p.s.) ATV**
SDT 101UB ARK-6	UHF	AB	1 RU (19" rack), 400 mm	1	SCA101UB	7/16"	Air	-	-36	50 W	90 W
SDT 101TB ARK-6	VHF (III)	AB	1 RU (19" rack), 400 mm	1	SCA101TB	7/16"	Air	-	-36	50 W	90 W

Specifications and characteristics are subject to change without notice.

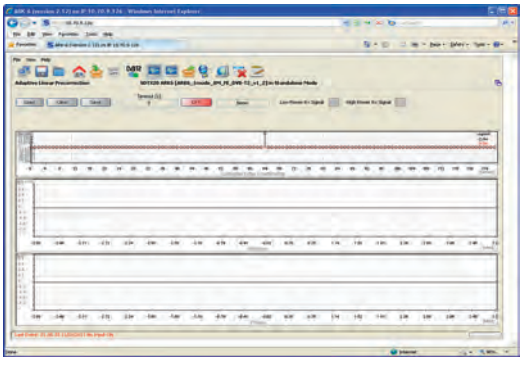


GUI, modulation page.



GUI, main page.

GUI, input page.



GUI, linear pre correction page.

SDT 201 ARK-6 Compact

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.

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

ATV

DVB T

DVB H

DVB T2

ATSC

atsc MOBILE DTV

ISDB-T

DTMB

Main Features

- Transmission in VHF and UHF bands
- MFN and SFN operations
- Internal GPS receiver
- Embedded HTTP server
- RF main and monitoring outputs
- 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

- T2-MI input over IP or ASI
- Modulated DVB-T2 RF signal input (VHF/UHF) – when operating as repeater
- T2-MI input RF signal (VHF/UHF) – specific for SFN gap filler operation
- Signal modulation compliant with ETSI EN-302 755 (DVB-T2) standard 1.3.1
- ETSI EN 300 744 v16.1
- ETSI TS 101 191 v1.4.1
- ETSI EN-102 773 (T2-MI)
- ITU -R BT. 470-7

- Full support of T2 modulation up to 256-QAM including I/Q rotation
- T2-MI compliant with standard
- Full Single-PLP and MPLP compatibility (including MISO and PAPR reduction)
- Up to 16 PLP
- Bit rate adaptation plus PCR restamping in S-PLP

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 DVB + 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

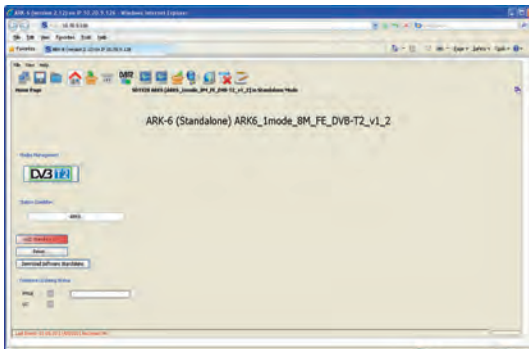
Front View. Transmitter Version

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 VAC, 380 VAC (3 Phases) other available on request

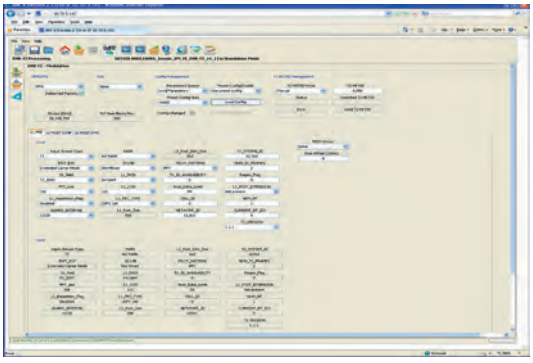
MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	**Shoulders @ Fo ± 4.3 MHz**	**Digital output power (rms) without Filter DVB**	**Nominal analog output power (p.s.) ATV**
SDT 201UB ARK-6 HE C	UHF	AB	2 RU (19" rack), 400 mm	1		7/16"	Air	-	-39	150 W	400 W
SDT 201UB ARK-6 C	VHF (III)	AB	2 RU (19" rack), 400 mm	1		7/16"	Air	-	-36	80 W	250 W

Specifications and characteristics are subject to change without notice.

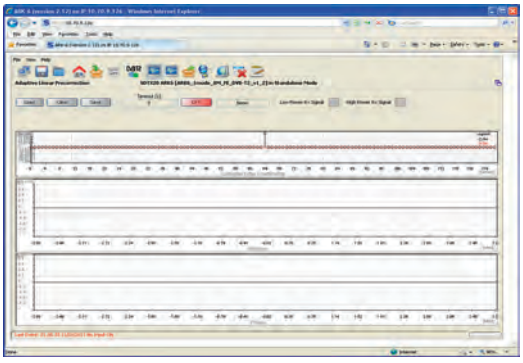


GUI, modulation page.



GUI, main page.

GUI, input page.



GUI, linear pre correction page.