

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



> SDT 102 ARK-6

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.

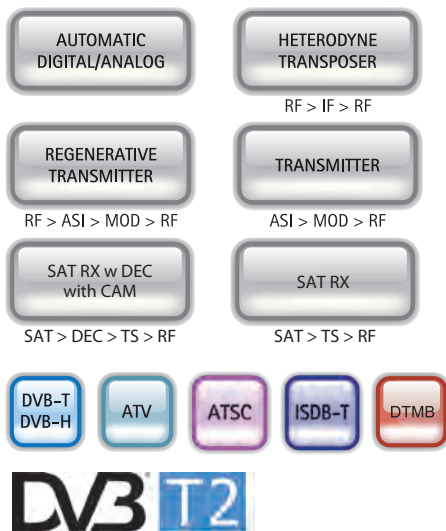
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP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

Main Features

- 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
- MFN and SFN operations
- Signal modulation compliant with ETSI EN-302 755 (DVB-T2) standard 1.1.1 and 1.2.1
 - > ETSI EN 300 744 v16.1
 - > ETSI TS 101 191 v1.4.1
 - > ITU -R BT. 470-7
- Full support of T2 modulation up to 256-QAM including I/Q rotation
- T2-MI compliant with ETSI EN-102 773 (T2-MI) standard
- DVB-T2 transmission on VHF and UHF bands
- Full Single-PLP compatibility (including MISO and PAPR reduction)
- Capable to transmit MPLP
- Up to 16 PLP
- Internal GPS receiver
- Bit rate adaptation plus PCR restamping in S-PLP
- 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

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-T2 + PAL

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

MODEL-SPECIFIC DATA

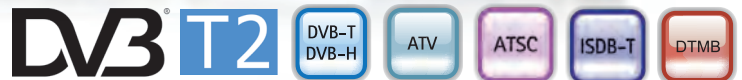
Model	Output band	Number of amplifiers	Working class	Dimensions	Kind of amplifiers	Output connector	Cooling	Shoulders @ $F_0 \pm 4.3$ MHz	Digital output power (rms) without Filter DVB-T/T2	Nominal analog output power (p.s.) PAL
SDT 102UB ARK-6 HE	UHF	1	AB	1+5 RU	SCA102HE	7/16	Air	-39	700 W	2000 W
SDT 102UM ARK-6 HE	UHF	2	AB	30 RU	SDT501HE	7/16	Air	-39	700 W	2000 W
SDT 102UB ARK-6	UHF	1	AB	1+5 RU	SCA102UB	7/16	Air	-36	300 W	1400 W
SDT 102UM ARK-6	UHF	2	AB	30 RU	SCA501UB	7/16	Air	-36	300 W	1400 W
SDT 102TB ARK-6	VHF (III)	1	AB	1+5 RU	SCA102TB	7/16	Air	-36	300 W	1400 W
SDT 102TM ARK-6	VHF (III)	2	AB	30 RU	SCA501TB	7/16	Air	-36	300 W	1400 W

Specifications and characteristics are subject to change without notice.

GENERAL

Model	SDT 102 ARK-6
Cooling System	Forced air
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java Interface Telnet access via Ethernet SNMP
Operating Temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

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



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HARDWARE OPTIONS

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





Front View. Transmitter with Satellite Receiver

1. DVB-S2 Input Configuration – Satellite Input Specifications

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



Front View. Transmitter with Satellite Receiver with DEC and CAM

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

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



Front View. Transposer and Regenerative Transmitter

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

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



Front View. Transmitter Only Version

4. DVB-T/T2 Configuration

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



Front View. Transmitter with Analog A/V Inputs

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

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



Hardware Specifications

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