

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



> SDT 201 ARK-6 NC

### Description

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

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

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due to 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.

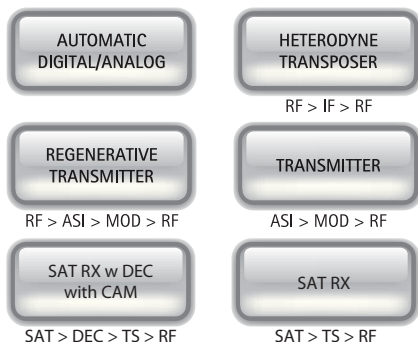
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP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



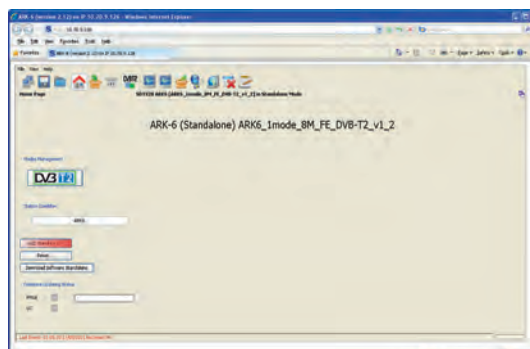
Front View. Transmitter Version

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

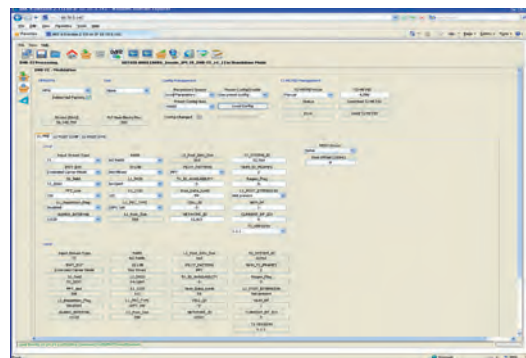
## MODEL SPECIFIC DATA

Models	Output Band	Working Class	Dimensions	N. Ampl	kind of Ampl	Output Connector	Cooling	Meter board N.	Shoulders @ Fo ±	Digital output power (rms) without Filter DVB	Nominal analog output power (p.s.) ATV
SDT 201UB ARK-6 HE	UHF	AB	1 + 3 RU (19" rack), 400 mm	1		7/16"	Air	-	-39	150 W	450 W
SDT 201UB ARK-6	UHF	AB	1 + 3 RU (19" rack), 400 mm	1		7/16"	Air	-	-36	80 W	250 W
SDT 201TB ARK-6	VHF (III)	AB	1 + 3 RU (19" rack), 400 mm	1		7/16"	Air	-	-36	80 W	250 W

Specifications and characteristics are subject to change without notice.



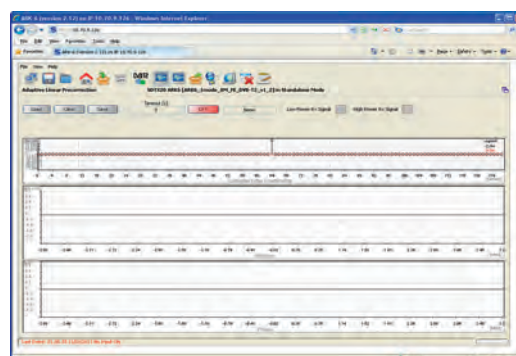
GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.

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



> SDT 501 ARK-6

### Description

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

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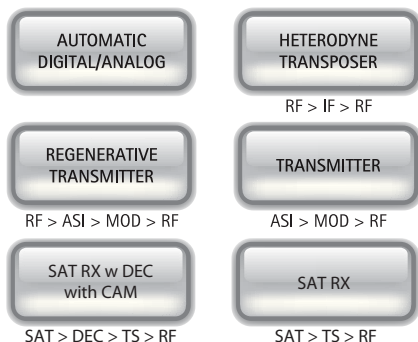
It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter,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



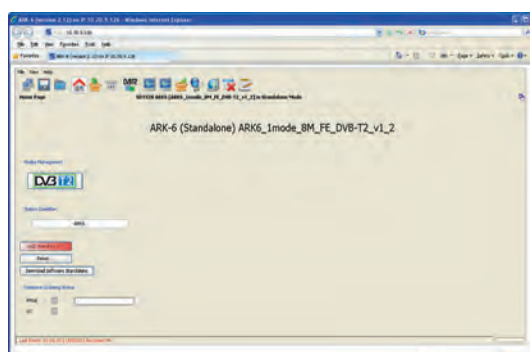
Front View. Transmitter Version

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
SDT 501UB ARK-6 HE C	UHF	AB	3 RU (19" rack), 400 mm	1		7/16"	Air	-	-39	300 W	800 W
SDT 501UB ARK-6 C	UHF	AB	3 RU (19" rack), 400 mm	1		7/16"	Air	-	-36	150 W	700 W
SDT 501TB ARK-6 C	VHF (III)	AB	3 RU (19" rack), 400 mm	1		7/16"	Air	-	-36	150 W	700 W

Specifications and characteristics are subject to change without notice.



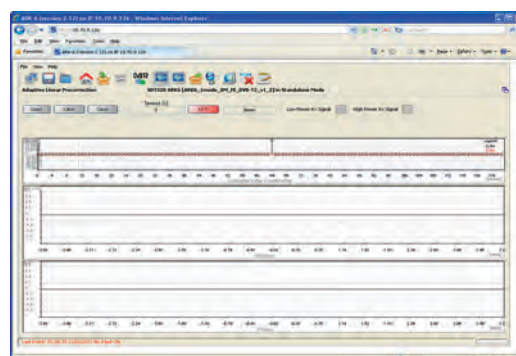
GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.



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



> SDT 501 ARK-6

### Description

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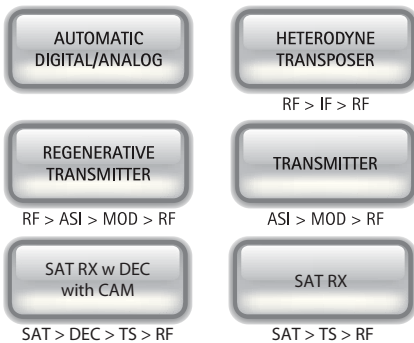
It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due to its versatility in operation modes and configuration. In fact it can be used as a transmitter,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



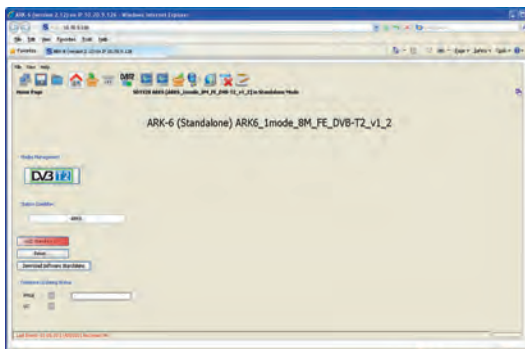
Front View. Transmitter Version

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

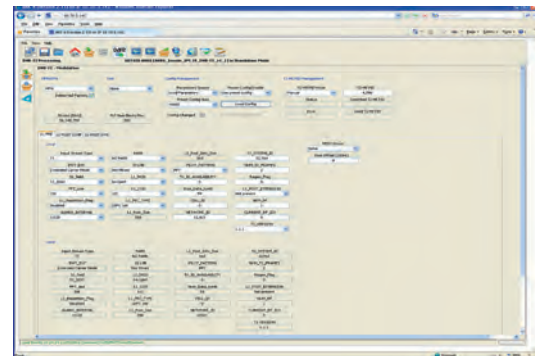
## MODEL SPECIFIC DATA

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
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

Specifications and characteristics are subject to change without notice.



GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.

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



> SDT 102 ARK-6

### Description

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

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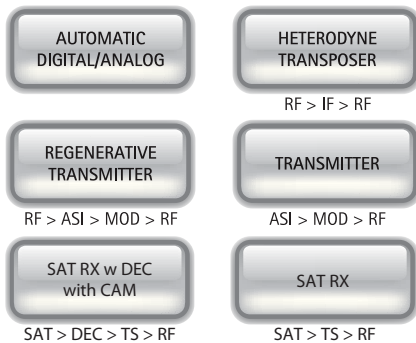
It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter,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



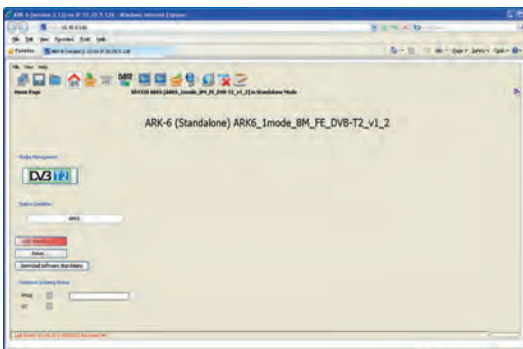
Front View. Transmitter Version

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

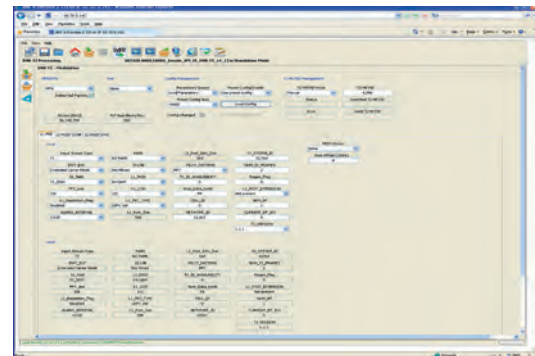
## MODEL SPECIFIC DATA

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
SDT 102UB ARK-6 HE	UHF	AB	1+5 RU	1	SCA102HE	7/16"	Air		-39	700 W	2000 W
SDT 102UM ARK-6 HE	UHF	AB	30 RU	2	SDT501HE	7/16"	Air		-39	700 W	2000 W
SDT 102UB ARK-6	UHF	AB	1+5 RU	1	SCA102UB	7/16"	Air		-36	300 W	1400 W
SDT 102UM ARK-6	UHF	AB	30RU	2	SCA501UB	7/16"	Air		-36	300 W	1400 W
SDT 102TB ARK-6	VHF (III)	AB	1+5 RU	1	SCA102TB	7/16"	Air		-36	300 W	1400 W
SDT 102TM ARK-6	VHF (III)	AB	30 RU	2	SCA501TB	7/16"	Air		-36	300 W	1400 W

Specifications and characteristics are subject to change without notice.



GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.

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



> SDT 202 ARK-6

### Description

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

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

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### 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.

<b>AUTOMATIC DIGITAL/ANALOG</b>	<b>HETERODYNE TRANSPOSER</b> RF > IF > RF
<b>REGENERATIVE TRANSMITTER</b> RF > ASI > MOD > RF	<b>TRANSMITTER</b> ASI > MOD > RF
<b>SAT RX w DEC with CAM</b> SAT > DEC > TS > RF	<b>SAT RX</b> SAT > TS > RF

<b>ATV</b>	<b>DVB T</b>
<b>DVB H</b>	<b>DVB T2</b>
<b>ATSC</b>	<b>a t s c MOBILE DTV</b>
<b>ISDB-T</b>	<b>DTMB</b>



# 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



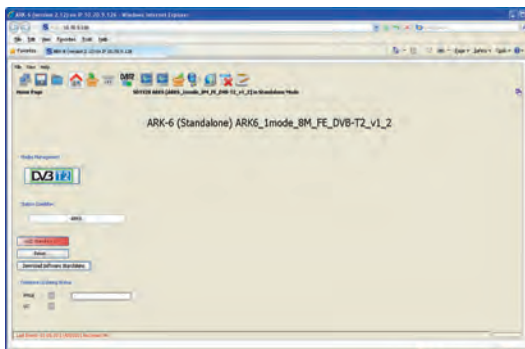
Front View. Transmitter Version

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

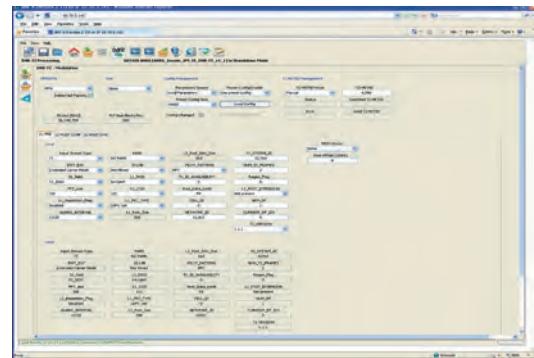
## MODEL SPECIFIC DATA

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 202UB ARK-6 HE	UHF	AB	1+5 RU	1	SCA202HE	7/8"	Air		-39	1300 W	3000 W
SDT 202UM ARK-6 HE	UHF	AB	30 RU	2	SCA202HE	7/8"	Air		-39	1300 W	3000 W
SDT 202UB ARK-6	UHF	AB	1+5 RU	1	SCA202UB	7/8"	Air		-36	700 W	2800 W
SDT 202UM ARK-6	UHF	AB	30RU	2	SCA202UB	7/8"	Air		-36	700 W	2800 W
SDT 202TB ARK-6	VHF (III)	AB	1+5 RU	1	SCA202TB	7/8"	Air		-36	700 W	2800 W
SDT 202TM ARK-6	VHF (III)	AB	30 RU	2	SCA202TB	7/8"	Air		-36	700 W	2800 W

Specifications and characteristics are subject to change without notice.



GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.



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



> SDT 502 ARK-6  
Version with  
Dual Driver Option

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

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



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



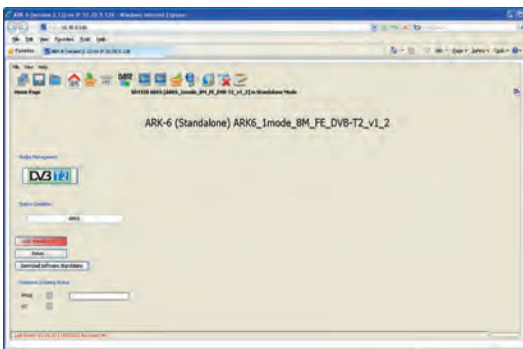
Front View. Transmitter Version

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

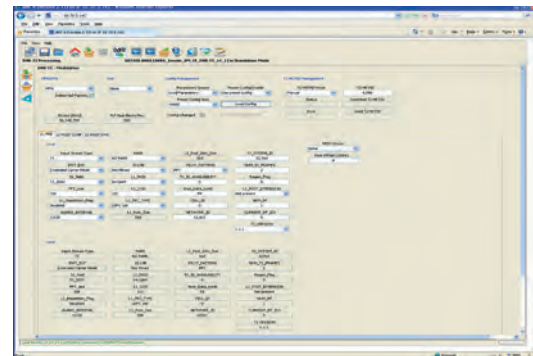
## MODEL SPECIFIC DATA

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
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

Specifications and characteristics are subject to change without notice.



GUI, modulation page.



GUI, main page.



GUI, input page.

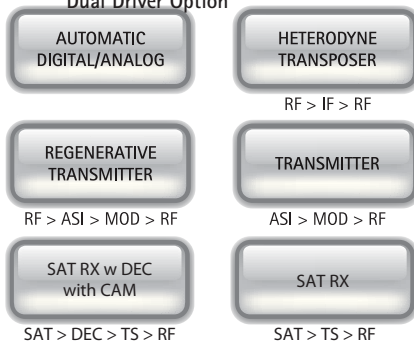


GUI, linear pre correction page.

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



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



### Description

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

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

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

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

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

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

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

### Main Features

- 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



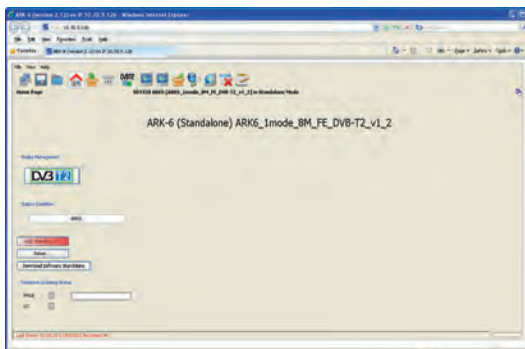
Front View. Transmitter Version

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

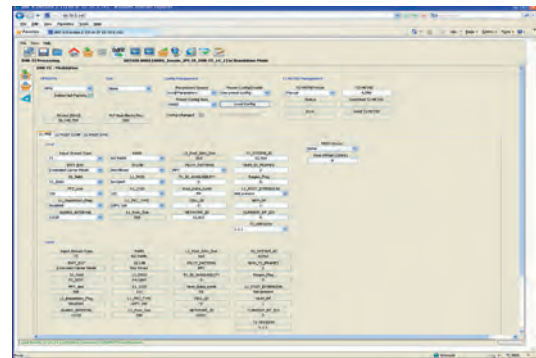
## MODEL SPECIFIC DATA

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 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

Specifications and characteristics are subject to change without notice.



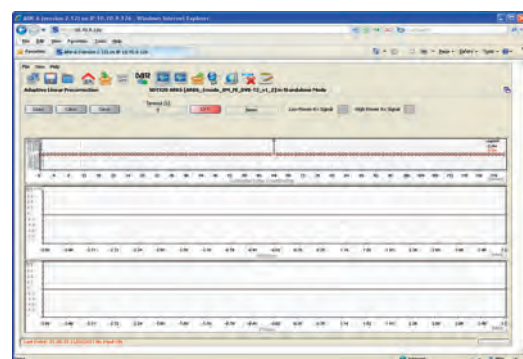
GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.

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



> SDT 103 ARK-6

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

AUTOMATIC  
DIGITAL/ANALOG

HETERODYNE  
TRANSPOSER

RF > IF > RF

REGENERATIVE  
TRANSMITTER

TRANSMITTER

RF > ASI > MOD > RF

ASI > MOD > RF

SAT RX w DEC  
with CAM

SAT RX

SAT > DEC > TS > RF

SAT > TS > RF



### 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 to 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. Moreover, 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



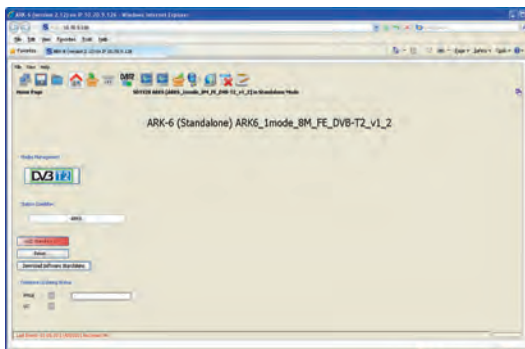
Front View. Transmitter Version

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

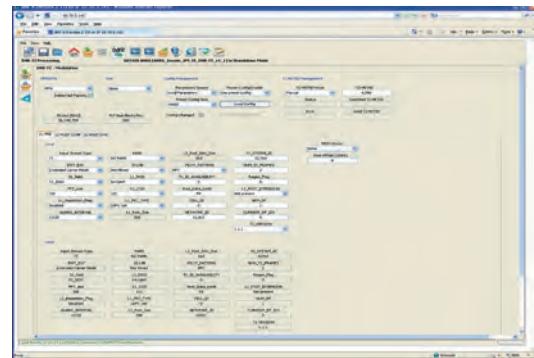
## MODEL SPECIFIC DATA

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
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

Specifications and characteristics are subject to change without notice.



GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.



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



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

### Description

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

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

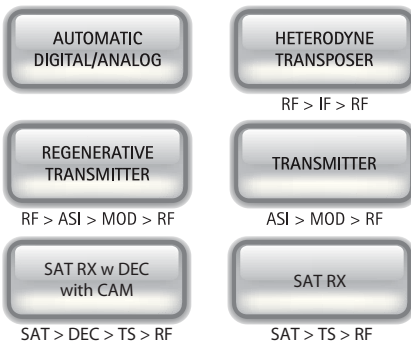
It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due to its versatility in operation modes and configuration. In fact it can be used as a transmitter,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



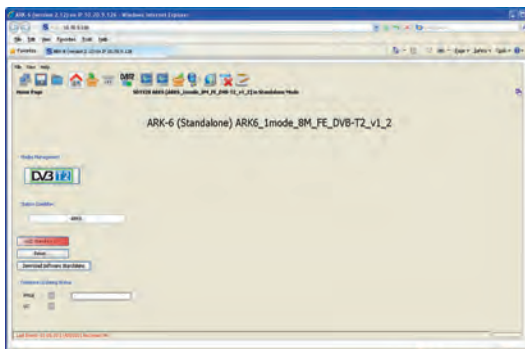
Front View. Transmitter Version

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

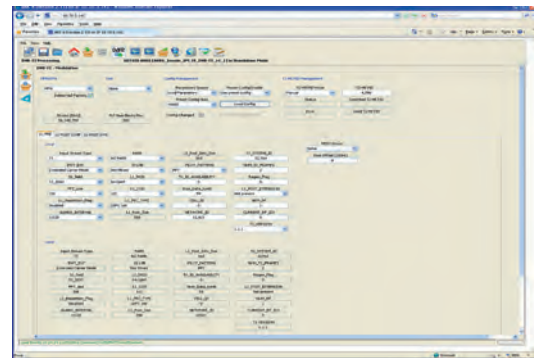
## MODEL SPECIFIC DATA

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

Specifications and characteristics are subject to change without notice.



GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.

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



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

### Description

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

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

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware. ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

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

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

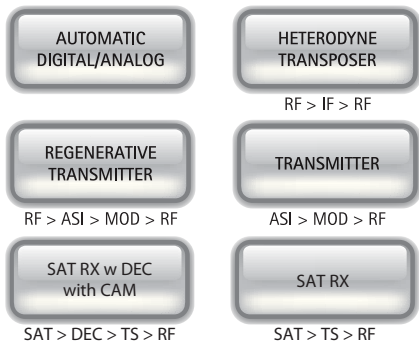
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP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

### Main Features

- 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



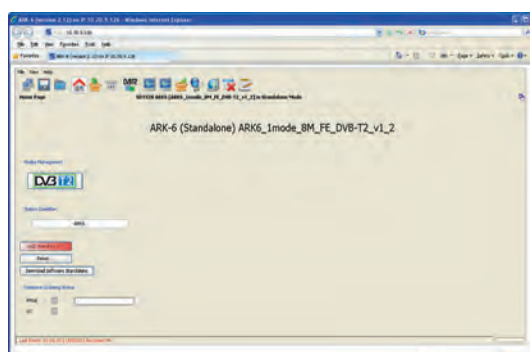
Front View. Transmitter Version

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 @ $F_o \pm 4.3$ MHz	Digital output power (rms) without Filter DVB	Nominal analog output power (p.s.) ATV
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

Specifications and characteristics are subject to change without notice.



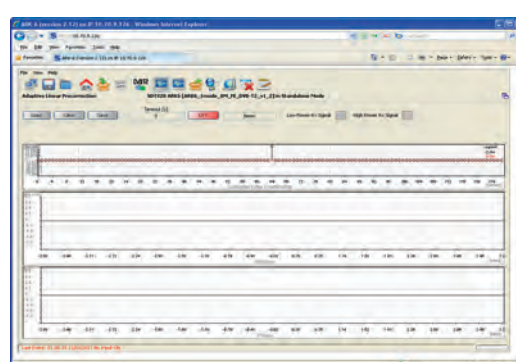
GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.

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



> SDT 203 ARK-6  
With Dual Driver Option



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

### Description

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

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

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

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

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

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

Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. Moreover, 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.

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



# 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 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

Specifications and characteristics are subject to change without notice.



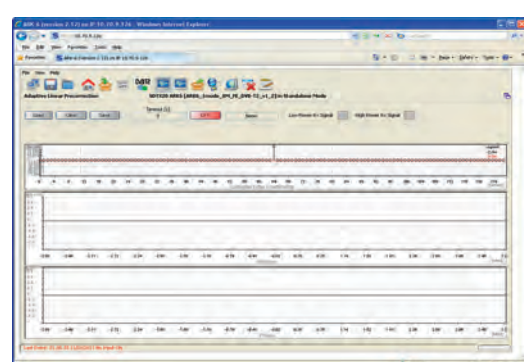
GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.



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



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

### Description

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

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

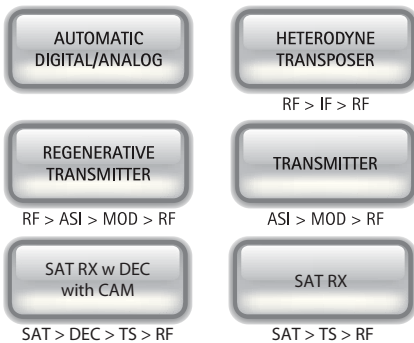
It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter,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

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

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

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

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



### Main Features

- 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



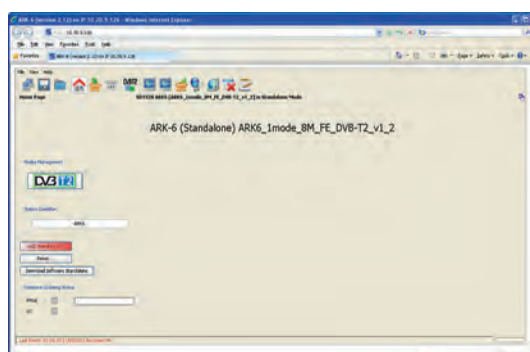
Front View. Transmitter Version

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 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

Specifications and characteristics are subject to change without notice.



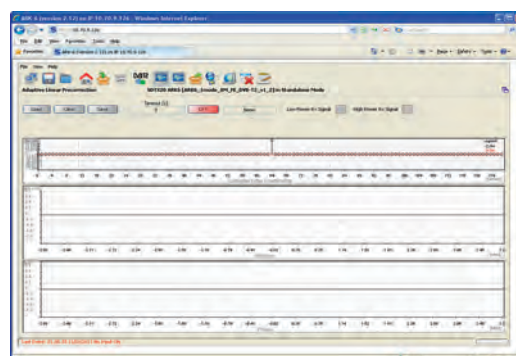
GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.

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



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

### Description

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

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

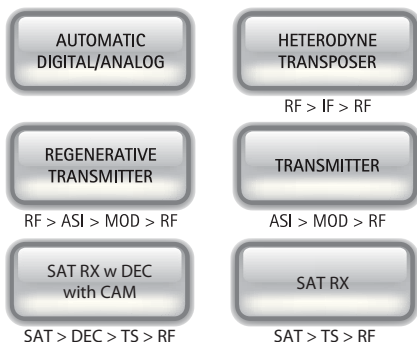
It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter,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

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

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

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

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



### Main Features

- 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



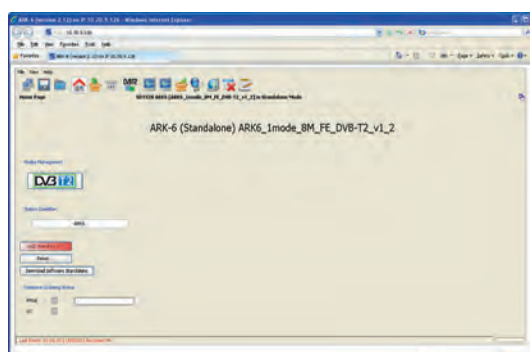
Front View. Transmitter Version

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 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

Specifications and characteristics are subject to change without notice.



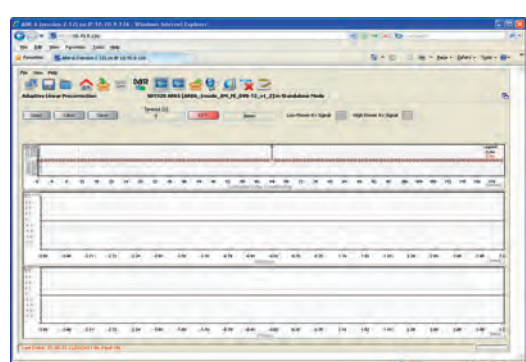
GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.

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



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

### Description

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

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

It is perfect for both international broadcasters which have business in several countries – to increase manageability of investment through reduction of transmitter types – and national broadcasters, due for its versatility in operation modes and configuration. In fact it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, all in a single hardware. ARK-6 UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this DRIVER guarantees a perfect upgrade path for new modulation schemes that the researchers will delivery.

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

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

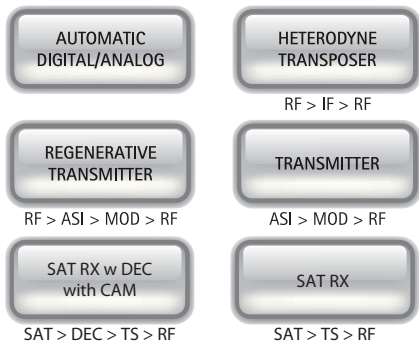
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. More over, the built-in SNMP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

### Main Features

- 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 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.



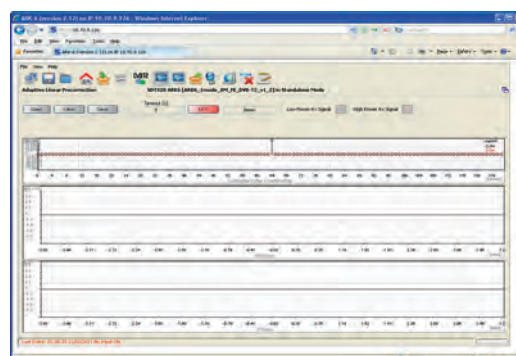
GUI, modulation page.



GUI, main page.



GUI, input page.



GUI, linear pre correction page.



# MCT Solutions



# MCT Solutions

Multichannel solutions

Up to 7+1 Channel Transmitters and Gap Filler



**DVB T** **DVB H**

**DVB T2** **ATSC** > Gap filler/Translator only



Multichannel Transmitter Solution (up to 7+1 channels). Three different models:

- Transmitter with SAT RX.
- Transmitter with SAT RX + ASI (Seamless).
- Gap Filler with echo canceller.

Two version hardware configurations: 4RU & 2RU.



> MCT 050UB 7+1 (4RU Configuration)



> MCT in 2+1 Configuration (2RU)

S.F. HETERODYNE  
TRANSPOSER w  
ECHO CANCELLER

RF > IF > ECHO > RF

SAT RX w DEC  
with CAM

SAT > DEC > TS > RF

TRANSMITTER

ASI > MOD > RF

SAT RX w DEC  
with CAM

SAT > DEC > TS > RF



DVB T

DVB H

DVB T2 ATSC

> Gap filler/Translator only

## Key Features

- Multichannel Transmitter/Re-Transmitter with built-in automatic changeover.
- Available with 3 different models:
  - Transmitter with Satellite Receiver and Decoder.
  - Multi Input (ASI+ SAT) Transmitter Seamless Switching.
  - Gap Filler with echo cancelling.
- Available Output Power: 2, 5 and 10W rms.
- Available in 2 different hardware configurations:
  - 4RU configuration: up to 7 x transmitters, 1 x Reserve, 2 x GPS Boards, 1 x Main Board
  - 2RU configuration: up to 2 x transmitters, 1 x Reserve, 2 x GPS Boards, 1 x Main Board
- Multi-standard (DVB-T/H) modulator.
- Linear pre-correction with preloaded tables or graphical setting.
- Non Linear adaptive pre correction.

## Management

- N+1 redundancy system with up to 7 main devices and 1 reserve.
- GPS plug-in boards (redundancy as option).
- Redundant power supply (as option).

### TRANSMITTER with SATELLITE RECEIVER

#### INPUT

- 1 x Satellite receiver for DVB-S/S2 standard (support multi-stream, PLS scrambling function) with common interface for de-scrambler and MPEG-2/H264 - AVC decoder.
- GPS Receiver Board.

### TRANSMITTER with SATELLITE RECEIVER + ASI INPUT (SEAMLESS)

#### INPUT

- 1 x Satellite receiver for DVB-S/S2 standard (support multi-stream, PLS scrambling function, BISS-1) with common interface for de-scrambler and MPEG-2/H264 - AVC decoder.
- 1 x ASI Input with standard BNC connector.
- Input seamless switcher control technology.
- GPS Receiver Board.

### GAP FILLER with ECHO CANCELLER

#### INPUT

- RF Input with N connector.

### ALL VERSIONS OUTPUT

- Multiple RF channels: up to 7 channels can be frequency multiplexed to output.
- Full UHF Band, frequency range 470-860Mhz.
- 2 - 5 - 10W rms output nominal power in DVB-T/H standard.
- 1PPS and 10 MHz (for each GPS board).





## Available models

Versions	MODELS			
	Board	Transmitter with SAT RX	Seamless	Transposer / Gap Filler w Echo Canceller
4RU	TX	from 1 + 0 up to 7 + 1	from 1 + 0 up to 7 + 1	from 1 + 0 up to 7 + 1
	GPS	up 1+1	up 1+1	-
	Meter	1	1	1
	SAT distributor	1	1	-
	ASI matrix	-	1	-
2 RU	TX	from 1+ 0 up to 2 + 1	from 1+ 0 up to 2 + 1	from 1+ 0 up to 2 + 1
	GPS	up 1+1	up 1+1	-
	Meter	1	1	1
	SAT distributor	1	1	-
	ASI matrix	-	1	-

## N+1 Redundancy

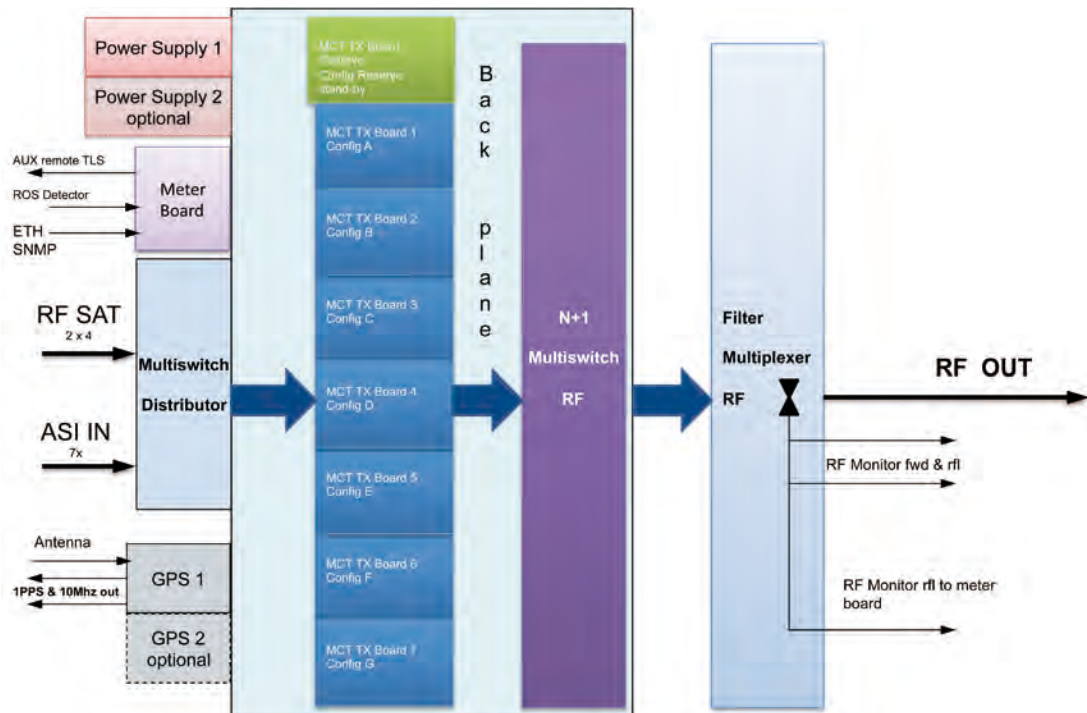
Complete interchangeability among transmitters boards from the 4RU to 2RU versions and viceversa.

The MCT Series is composed by N (up to 7) transmitters and 1 Reserve. Each device stores its own operating set of parameters, used to define for example modulation mode, output channel, input satellite settings and modulation. It also stores all the other transmitter configurations. This ensures better spare part management and logistics. The scope and the hierarchy of each Transmitter board is defined by its position in the chassis.

One transmitter is used as a reserve: it stores all the other transmitter configurations in order to provide redundancy in case of failure of one of the main transmitters others. The reserve transmitter is normally in stand-by mode waiting to be enabled from a failure signal coming from one of the main transmitters.

Each device uses a keyword (magic number) that enables the device to work in the system. New blades have default invalid values that are set to valid only after the proper configuration of the device itself is performed.

## MCT SEAMLESS 7+1 BLOCK DIAGRAM



## Solutions available

Complete interchangeability among transmitters boards from the 4RU to 2RU versions and viceversa.



### Configuration 2 + 1.

This solution offers 2 +1 reserve transmitters and redundant GPS boards\*.



### Configuration 2 + 0.

This solution offers 2 transmitters and redundant GPS boards\*.



### Configuration 1 + 1.

This solution offers 1 +1 reserve transmitters and redundant GPS boards\*.



### Configuration 1 + 0.

This solution offers 1 transmitter and redundant GPS boards\*.

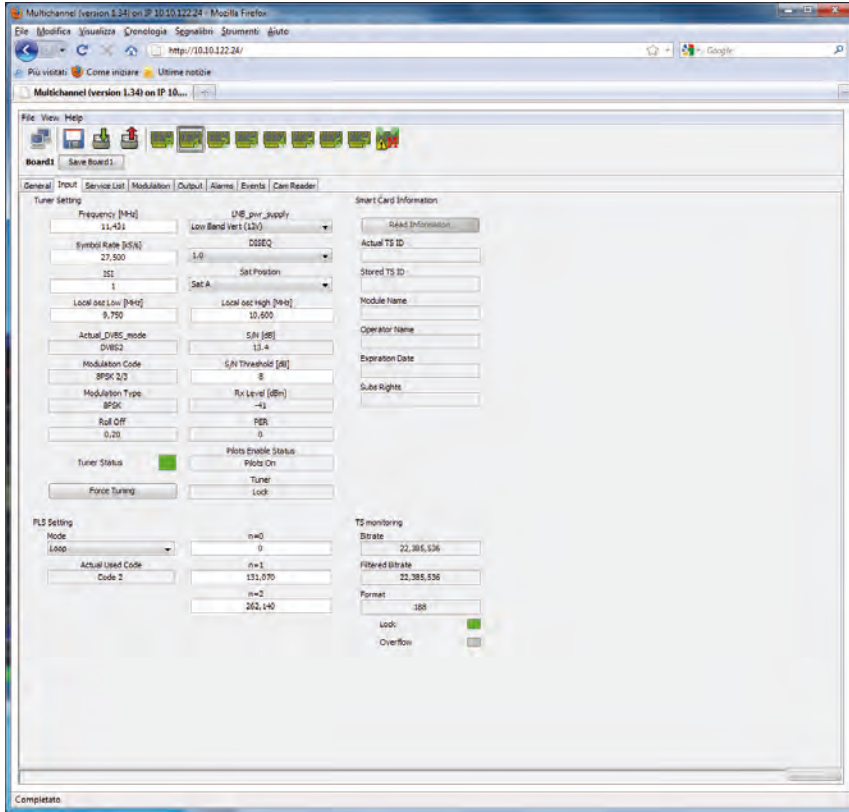


\*Gps Redundancy board is an option



# Java interface

Intuitive and user friendly java interface to set and control through SNMP or WEB browser any parameter , alarm or status.



Hereafter follows an example of common list of alarms or status:

- Satellite input not locked -> The satellite input signal did not lock.
- Satellite input high BER -> A BER higher than a programmed threshold was measured in the sat input signal.
- Satellite input low S/N -> A S/N lower than a programmed threshold was measured in the satellite input signal.
- No input TS -> a valid TS was not found at the descrambled input of the modulator.
- De-scrambling error -> the receiver returned error while de-scrambling.
- Input service not found -> the service selected is not valid or no more present in the input TS.
- Failed device enabling -> the device has an incorrect keyword and needs to be re-configured before being enabled.
- 10 MHz clock alarm -> the 10 MHz failed to lock to the external 10 MHz.
- 1 PPS alarm-> 1 PPS external signal was missing.
- System delay alarm -> the system cannot lock its internal reference timing to the STS received from MIP and cannot perform a correct SFN transmission.
- No MIP alarm-> a valid MIP packet was not found in the input TS.



## MCT "Transposer/Gap-filler with echo canceller" model

TV signals from a master transmitter can be rebroadcast directly so that small gaps in the network can be filled easily. Network operators can also use the TV transposer / gap filler for the regional expansion of networks where the installation of additional transmitters would be too expensive.

The MCT gap filler rebroadcasts off-air signals directly from the master transmitter, without requiring complex signal feed and modulation. The network coverage of digital transmission equipment can therefore be expanded quickly, easily and above all according to requirements.

Screen Service MCT use the fold back settings techniques in order to guarantee the right balance between echo level input and output quality of signal.

Gap fillers can be used in wide area SFN networks to implement a variety of use cases:

MCT "Transposer" model

- To cover black spots on specific areas, whenever deemed necessary
- To increase signal coverage and quality in specific urban areas
- To extend coverage in high power transmission areas
- To limit or eliminate interference effects generated by multipath signals
- Improve Indoor and Mobile Penetration/Coverage for Mobile DTV Service

## MCT "Transposer/Translator" model

The MCT provide efficient and reliable re-broadcast of the received signal in a small and robust package, is a high quality TV transposer family providing digital terrestrial transmission of TV programs using the traditional transposer method with off-air reception and non re modulation broadcasting. This range is equally suitable for any kind of DVB standard like DVB-T/T2, ATSC, ISDB-T, DTMB

## MCT "Gap-filler with echo canceller" functional working

The MCT receives as input an RF signal even with low signal quality (even -80 dBm). The RF input signal is converted into a standard 36 (44) MHz IF frequency by a fully agile down converter. This signal is digitally filtered, elaborated, pre-corrected and then presented at 996 MHz to the channel converter.

The channel converter provides to generate the final frequency in a fully agile mode. The LO with a very low phase noise is locked to the 10 MHz reference.

The signal coming from the agile up converter goes to the RF amplifier section. The RF amplification is done by class A and AB stages.

Out of the final stage, the RF signal passes through a directional coupler. The directional coupler detects samples of direct and reflected power and passes this information to the check function.

## MCT "Gap-filler with echo canceller" main features

- Powerful adaptive echo cancellation with up to 17 dB gain margin (12dB for exposed stations and difficult situations)
- Broadband, frequency agile design – UHF 470 to 862 MHz

Low Time Delay:

- MCT gap-filler time delay is less than 10 uSec and the echo cancellation window is 20 uS max (Equipment time delay not included)
- A low time delay allow the receiver to deal with two different signals (main transmitter and MCT) without allowing them to interfere with each other and degrade reception.

This range is equally suitable for any kind of DVB standard like DVB-T/T2, ATSC, ISDB-T, DTMB

Echo Canceller:

- Screen Service digital signal processing algorithms offer a superior cancellation, it means that stable operation can be achieved even with a feedback (undesired) signal that is larger than the incoming (desired) signal!
- MCT performs at significant output power levels.
- Linear Pre correction
- AGC (Automatic Gain Control) for Power Limitation
- Powerful adaptive echo cancellation with up to 17 dB gain margin for exposed stations and difficult situations
- Very low processing delay, ideal for short guard intervals in COFDM
- Digital IF filter for maximum adjacent channel suppression
- Digital, tunable RF input filter
- Full remote control capability including:
  - Web-based HTML GUI interface
  - SNMP
- Parallel control/monitoring



**MODEL SPECIFIC DATA**

Models	Output Band	Working Class	Dimensions	N. Tx	Output Connector	Cooling	Meter board N.	MER	Shoulders @ Fo ± 4.3 MHz	Digital output power (rms) without Filter DVB
MCT050UB 2	UHF	A	2/4 RU	2+1 (7+1)	N	Air	1	>36dB	-39	2W
MCT050UB 5	UHF	A	2/4 RU	2+1 (7+1)	N	Air	1	>36dB	-36	5W
MCT050UB10	UHF	A	2/4 RU	2+1 (7+1)	N	Air	1	>36dB	-36	10W

Specifications and characteristics are subject to change without notice.

**Satellite receiver**

Standard:	ETSI EN 300 421 (QPSK) (DVB-S) ETSI EN 302 307 (QPSK, 8PSK, 16APSK) (DVB-S2) ETSI EN 50083-9 (ASI) ETSI EN 50221 (Common Interface)
DVB-S2:	VCM, CCM, Multi Stream and Single Stream, Normal & Short FEC frames
Symbol Rate:	1 - 45 Msymb/s (DVB-S) 2 - 45 Msymb/s (DVB-S2)
Constellation:	QPSK, 8PSK, 16APSK
FEC:	Automatic, all modalities available according to the standard. Block Short or Normal DVB-S: Reed-Solomon (204,188) DVB-S2: BCH, LDPC
Roll-Off:	0.2, 0.25, 0.35
Input connector:	F (f), 75 Ohm
Frequency:	L-band 930÷2250 MHz
LNB control voltage:	Off, +13/18 Vdc, 22 kHz, 0.25 A (overload protection)
RF input level:	40 ÷ 100 db/μV (with attenuator)
Output connector:	BNC (f), 75 Ohm
Modality:	188 bytes
Max input bit rate:	80 Mbps (CAM limit: 72 Mbps)
CAM interface:	PCMCIA DVB-CI Common Interface
CA mode (Conditional Access):	Multicrypt, Simulcrypt
CAS Support:	Mediaguard, Viaccess, Irdeto, Conax, BISS-1 with Professional multiprogram CAM (descrambling of up to 24 Elementary Streams) Betacrypt, Cryptoworks, Nagravision with standard consumer CAM (descrambling of up to 4 services)

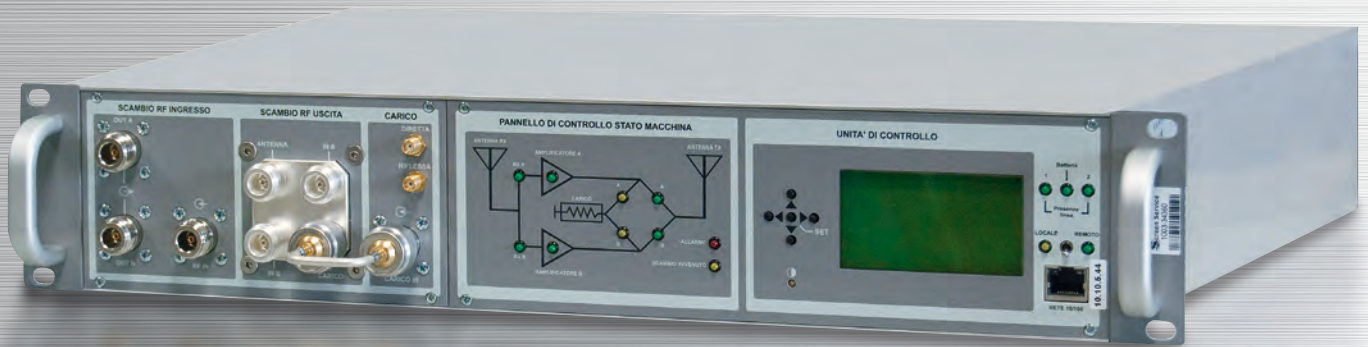
Specifications and characteristics are subject to change without notice.

**Other specs**

Chassis:	4U rack 19"
Width:	482 mm
Height:	177 mm
Depth:	420 mm without fans
Weight:	25 Kg
Operating Temperature Range:	-5°C ÷ 40°C
Max. relative Humidity:	90%, non condensing
Max. operating altitude:	2500 m. a.s.l. (>2500 m. optional)

Specifications and characteristics are subject to change without notice.

# Accessories and Synchronization Systems





# Accessories and Synchronization Systems

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

**Single or Dual GPS Receiver**

**GPS Smart**

**ASI to IP Converter**

**ASI distributor**



## Main Meter



> SCS 300/350

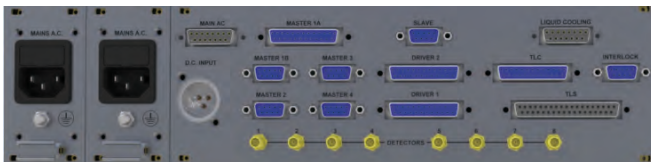
### Description

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

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

Watt meter in order to control:

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



Rear view Main Meter SCS300



## Automatic Changeover Unit (1+1)



> SCS 500

### Description

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

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

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

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

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

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

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

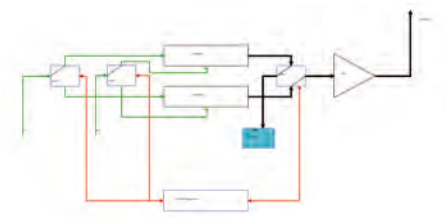
The SCS 500 is designed with a modular approach in a 19" , 2U standard RACK and the modularity refers to the plug-in units equipped with coaxial relays both for TRANSPOSERS and TRANSMITTERS.

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

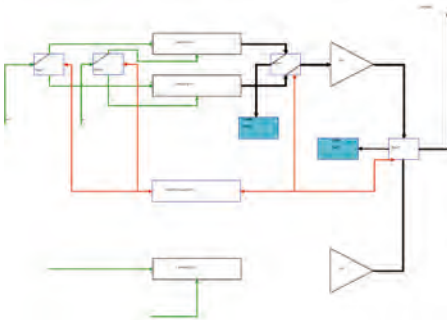
### Main Features

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

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



Internal Relay Configuration Management



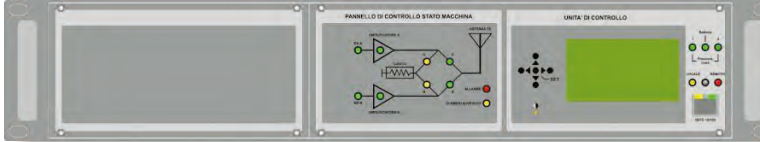
Internal + external Relay Configuration Management



## Models and Options

### SCS 500

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



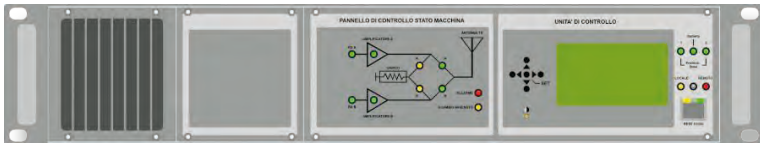
### SCS 500M

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



### SCS 500RO (X)

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



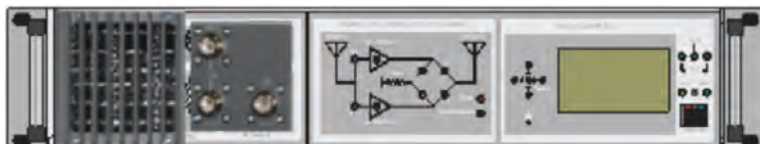
### SCS 500RF

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



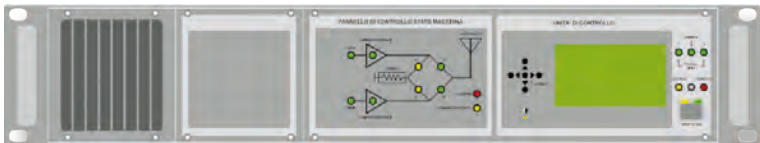
### SCS 510MS (500MS)

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



### SCS 500MR

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



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



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

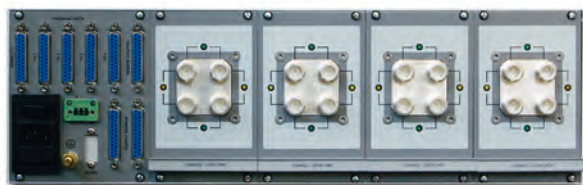


TECHNICAL SPECIFICATIONS	
System Capability	1+1 MAIN & RESERVE
Control Remote	USB front panel
	RS 232 rear panel
	RS 485 rear panel
	GbE front panel
	Parallel rear panel
Control local	Push button front panel
Management	Automatic / Manual
Visualization Status Remote	Applet java
Visualization Status Local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

## Automatic Changeover Unit (N+1)



> SCS 900



REAR VIEW GUESTS COAXIAL RELAYS AND DB25 PORTS

### Model and Options

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

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

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

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

### Description

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

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

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

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

### Main Features

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

### TECHNICAL SPECIFICATIONS

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







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

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



SCS 120D



SCS 120S

### Description

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

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

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

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

### GPS RECEIVER

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

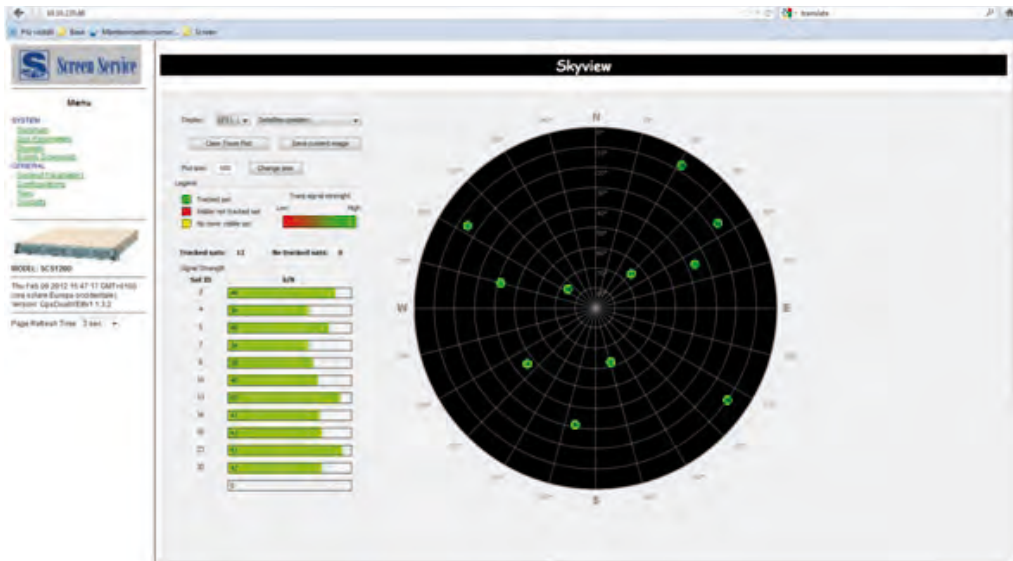


GPS receiver rear view  
(version with GPS Input on the front-panel)



GPS receiver rear view





\*Skyview

The Gps2 Parameters control panel is divided into two main sections: 'Alarms & Traps' and 'Measures'.

### Alarms & Traps

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

### Measures

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

\*Control Panel



## FREQUENCY REFERENCE

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

## TIMING REFERENCE

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

## GENERAL

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

## OPTIONS

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





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



GPS Smart



GPS receiver front view



GPS receiver rear view

### Description

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

### Main Features

#### GPS RECEIVER

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

#### FREQUENCY REFERENCE

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

#### TIMING REFERENCE

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

#### GENERAL

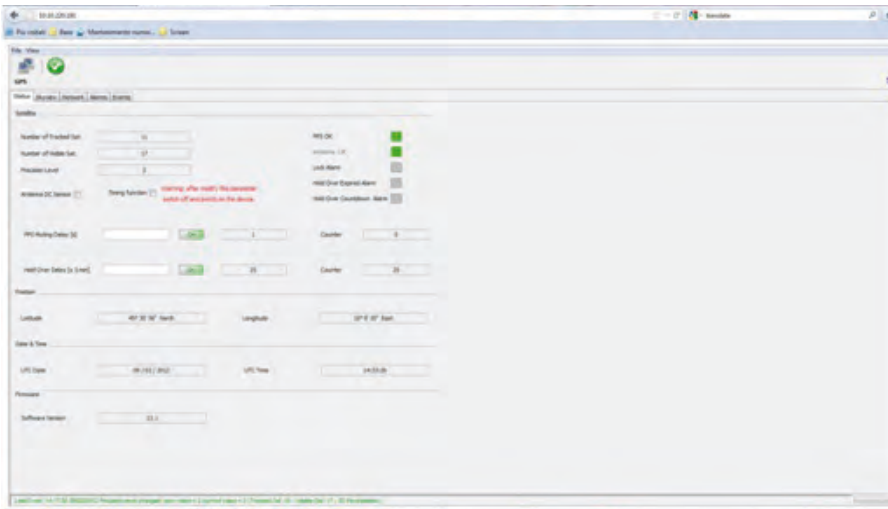
GPS antenna input connector	N female, 50 Ω (rear or front side), lightning protection available as option
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Power supply	100 to 240 V AC, 50 to 60Hz or 24 V DC
Dimensions	1 RU (19" rack) half unit 484 mm (W) x 350 mm (D)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

#### OPTIONS

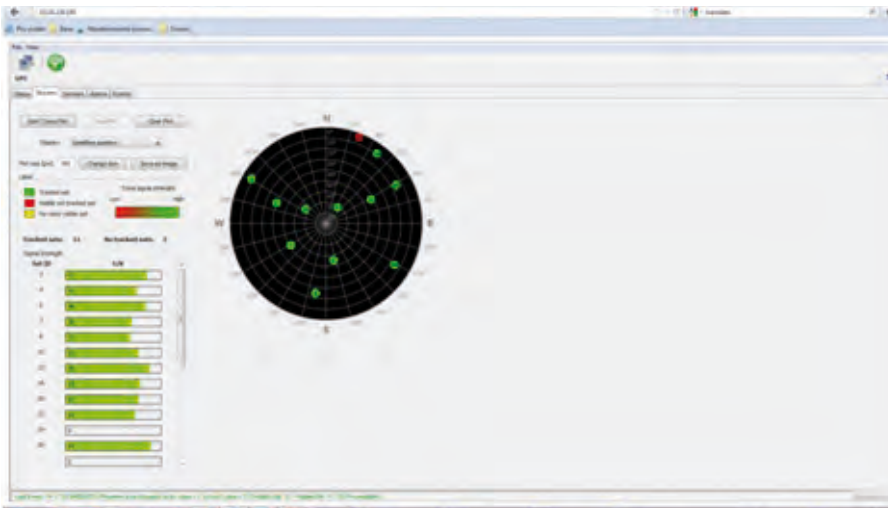
Lightning protection	
5 MHz output (2MHz on request)	
Kit SCS 118/Mobil Antenna GPS	







\*Control Panel



\*Skyview

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



> Redundant ASI - IP



> Portable Version ASI - IP

### Description

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

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

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

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

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

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

### Main Features

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

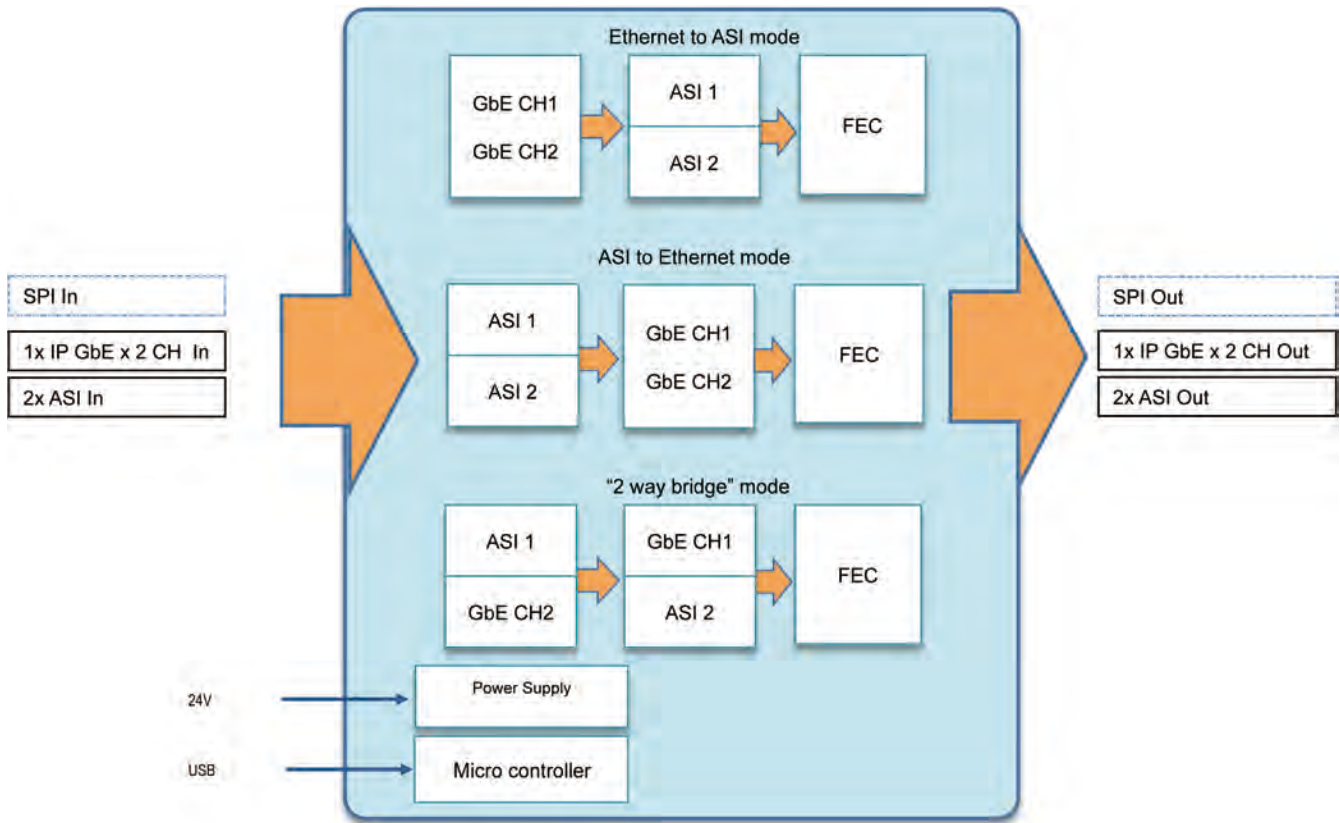
It provides three working modes:

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

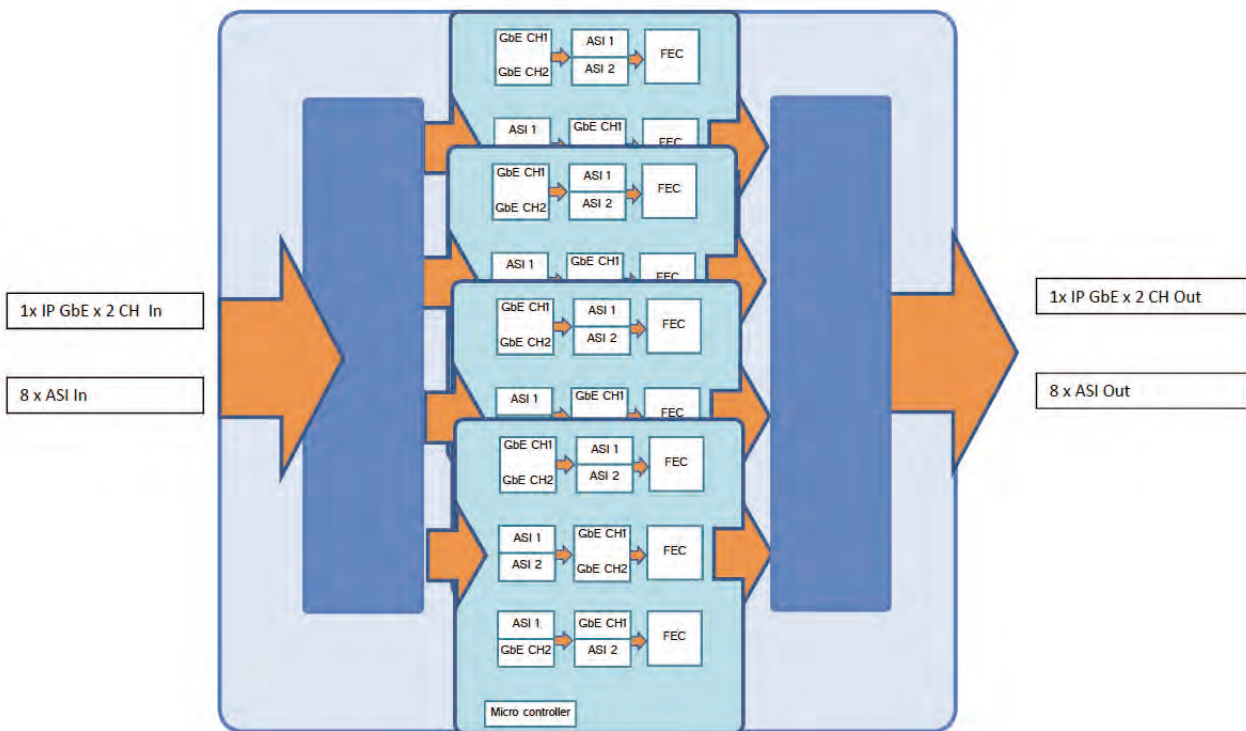
- Fully programmable FEC with several selectable FEC mode:
  - Enable
  - Disable
  - One-dimensional
  - Two-dimensional
- Selectable input buffer size (selectable latency)
- Resynchronization Output Bitrate PCR based
- Device settings and upgrade are managed by the included Graphic User Interface through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



Block diagram ASI to IP converter 2 ways

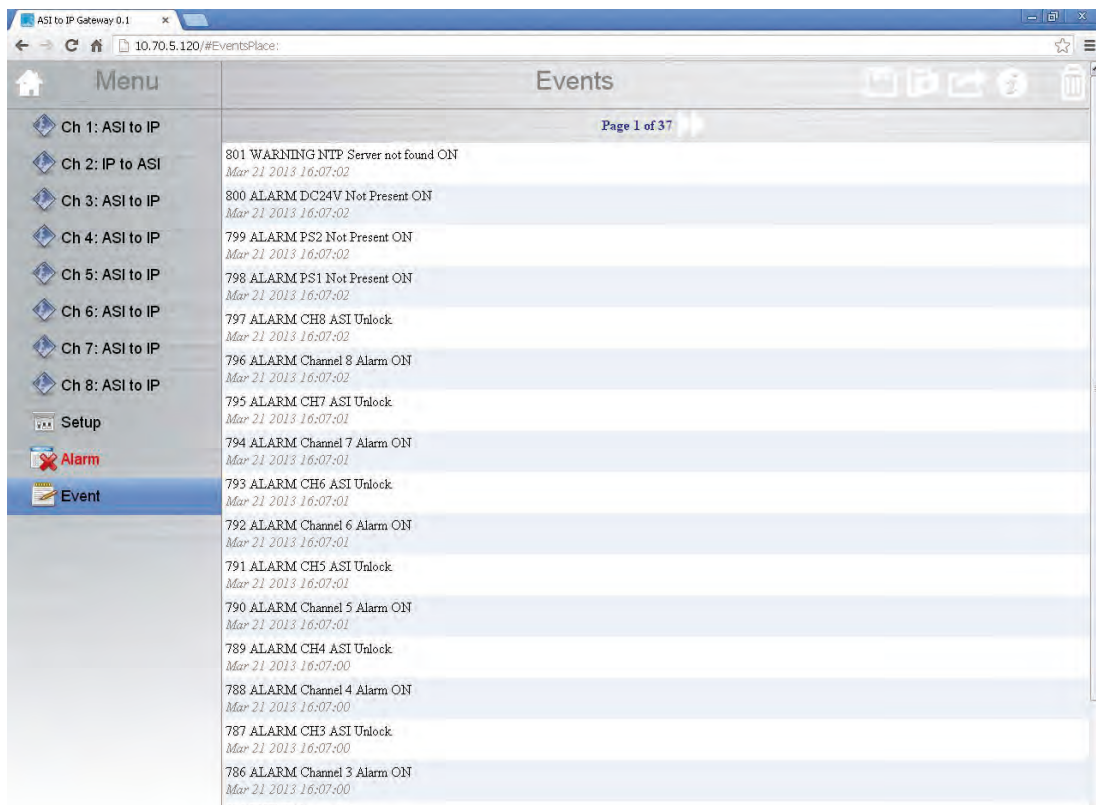
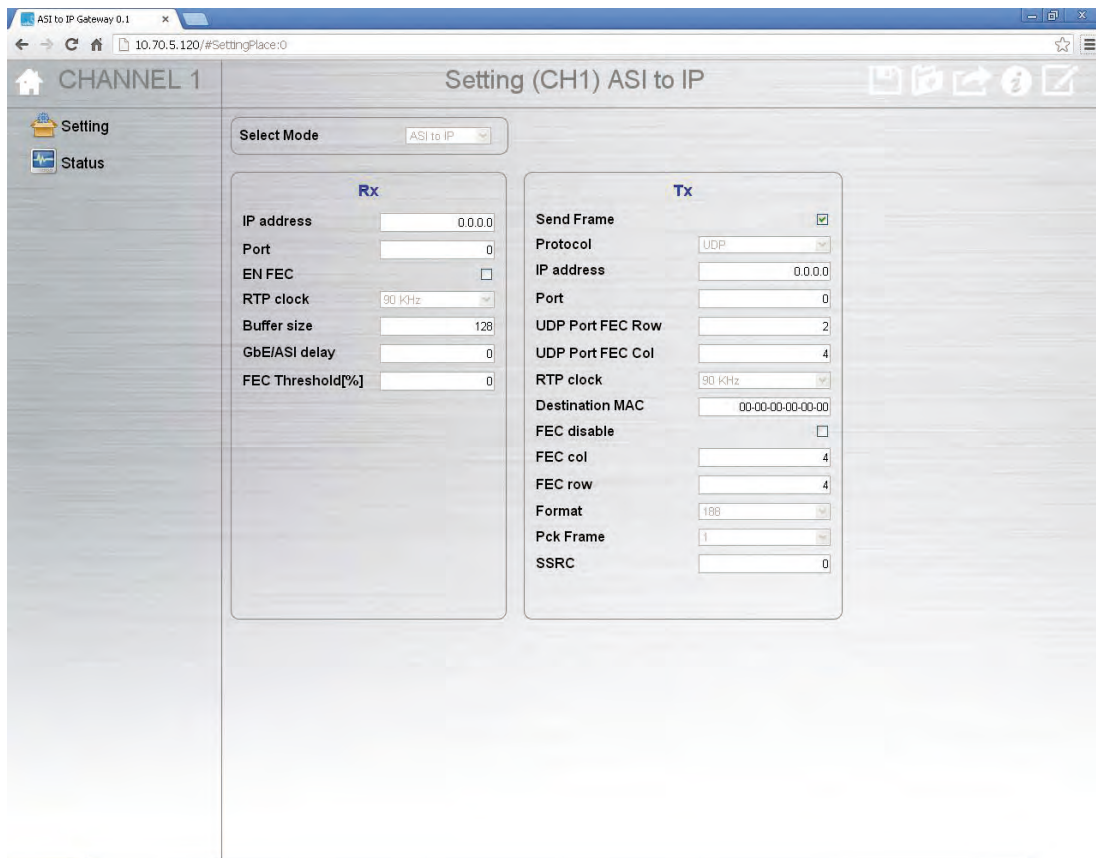


Block diagram ASI to IP converter 8 ways









## Redundant Asi Distributor



XBT 706D

### Description

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

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



Rear View

### Main Features Model XBT706D

#### INPUT

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

#### OUTPUT

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

### Main Features Model XBT706E

#### INPUT

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

#### OUTPUT

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

### Options

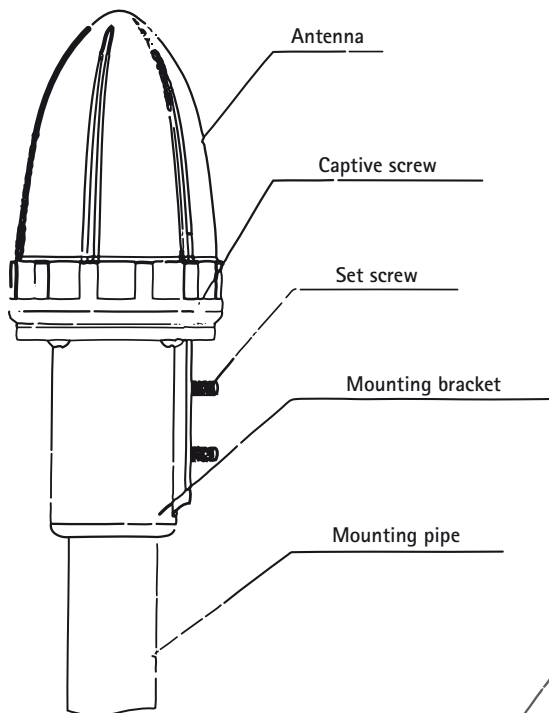
- Double and redundant power supply



## GPS Antenna



> SCS 118 MOBI



### ELECTRICAL SPECIFICATIONS

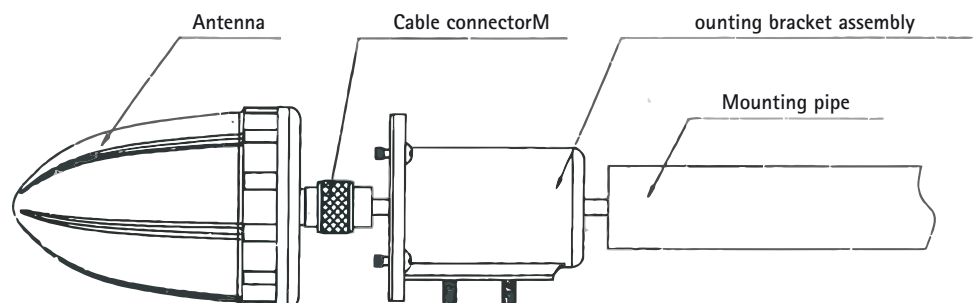
Frequency Range(MHz)	1575.42±10
Polarization	Right hand circula
DC Voltage (V)	4.5 ~ 5.5
DC Current (mA)	≤ 60
Connector	(F) N (F)
Typical Gain of Ceramic Antenna	Better then -145 dBc/Hz
VSWR	Better then -155 dBc/Hz
Input Impedance (Ω)	Less then 10 min.
Amplifier Gain (dB)	26±3
Amplifier Input IP3 (dBm)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

### MECHANICAL SPECIFICATIONS

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

### Packing List

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





# Test Measurement & Monitoring



# Test Measurement & Monitoring

Multi Viewer

Power Meter Probe

SFN Analyzer

GPS Tester

XBT 52 ASI Killer

TS Compare

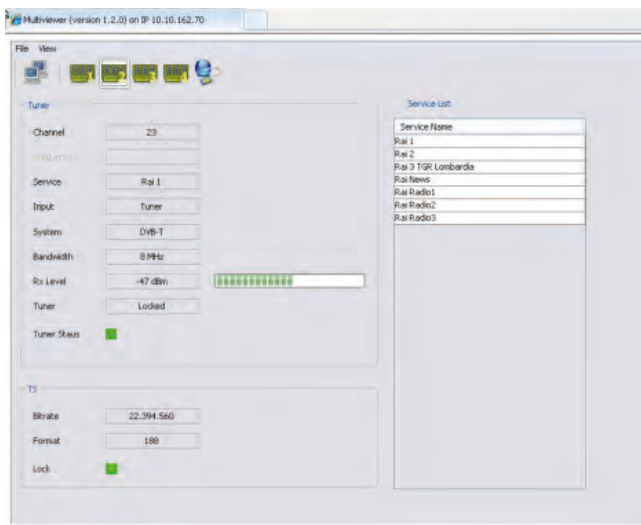
SSBT Broadcast Analyzer



## Multiviewer Monitoring System



Front View



Java Control

### Description

The new MWT family is a professional, attractively priced and compact solution for monitoring digital TV networks. It includes the DVB-T/T2 and the DVB-S/S2 receivers. Typical fields of applications for the MWT family are signal monitoring at the transmitter site, the satellite uplink or the head end. Simultaneous monitoring of signals T/T2 (option S/S2) with possibility to show 4 programs in the same time on display. 4 mini display HD Extensive RF measurements for DVB-T/T2 and DVB-S/S2 signals Available with CAM for encryption monitoring Modular and extremely compact design (3 RU)

### Main Features

- LED backlight provides longer life, uses less power and provides better color saturation
- Space saving design - occupies only 3 RU
- Front controls for power, contrast, tint, color, brightness and NTSC/PAL selection
- Composite video loop through capability for all 4 monitors (always active regardless of power). Loop out termination is provided by auto termination switch in the BNC connector
- Self-powered 3 color tally system
- Low power consumption
- Case made of durable aluminum & steel
- Active matrix technology allows wide viewing angle
- Active matrix technology eliminates distortion
- Single A/C adaptor power supply provides power for all 4 monitors (included)
- Response Time: 10ms/10ms (Rising/Falling)

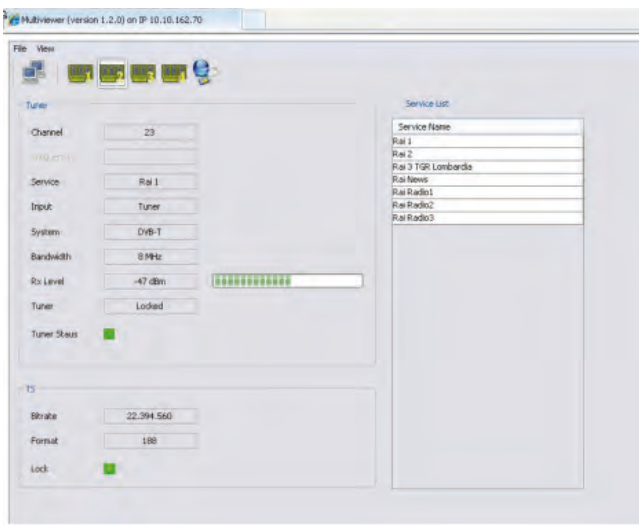




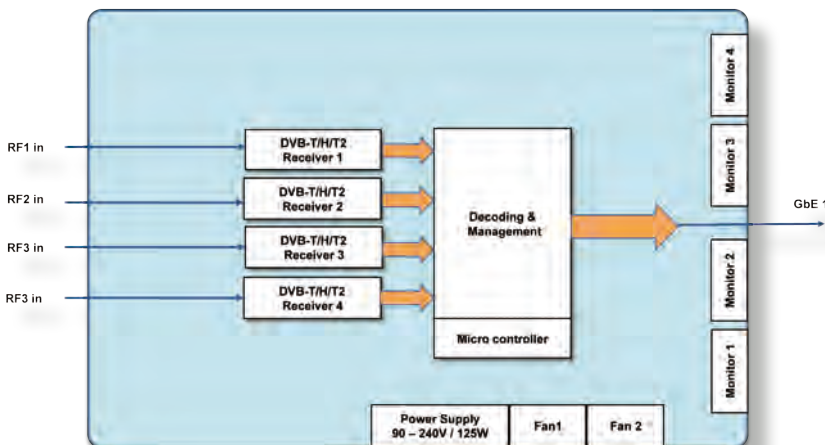
## Multiviewer Monitoring System



Front View



Java Control



Block Diagram

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- Active matrix technology allows wide viewing angle
- Active matrix technology eliminates distortion
- Single A/C adaptor power supply provides power for all 4 monitors (included)
- Response Time: 10ms/10ms (Rising/Falling)



## DVB-T features

DVB-T signal reception features:

- Automatic TPS signaling decoding;
- Fully compliant to all the standard Guard Intervals;
- Fully compliant to all the standard Code Rates
- Fully compliant to all the standard Constellations;
- Fast automatic 2k – 8k acquisition;
- Automatic spectral inversion.

## DVB-T2 features

DVB-T2 signal reception features:

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

## Other Features

Multi viewer provides the following monitoring and statistics:

- SNR estimation;
- MER measure;
- Pre LDPC BER;
- Pre BCH BER;
- Post BCH FER (FEC block Error Rate);
- Percentage signal quality;
- P1 parameters monitoring;
- L1 pre parameters monitoring;
- L1 post parameters monitoring;

Management of the devices is made through:

- Java GUI on Ethernet connection;
- SNMP agent (future release);
- Free front panel push button management

## Physical Outputs

- 1 x SDI-SD Output  
Connector: BNC  
R Input: 75 Ohm  
V Input: 800 mVpp (500 to 1200 mVpp)  
Standard: SMPTE 259M,292M
- 1 x RGB-SD Outputs  
3 Connector RCA (R,G,B)
- 1 x CVBS-SD Outputs  
Composite Video Blanking Sync  
Connector RCA
- 1 x HDMI-HD/SD Output  
Connector HDMI Type A
- 1 x YUV-HD Output  
3 Connector XLR (Y,U,V)
- 1 x Audio Output  
2 audio connectors Left & Right

## Audio/Video decoder features

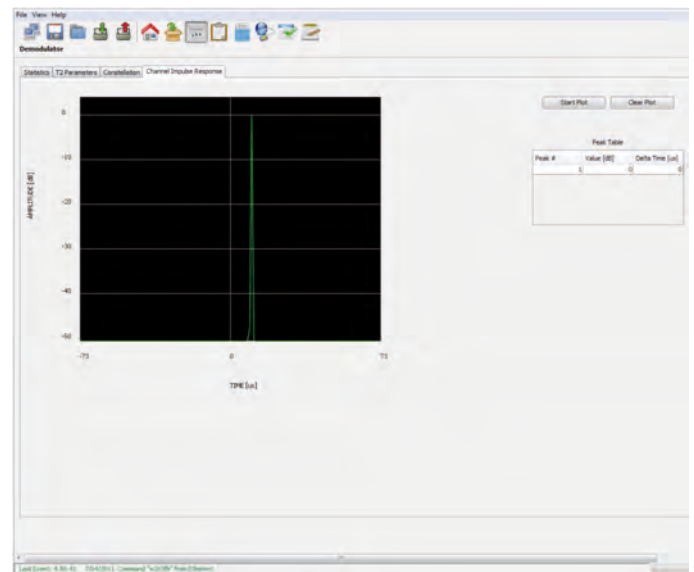
Video standard supported:

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

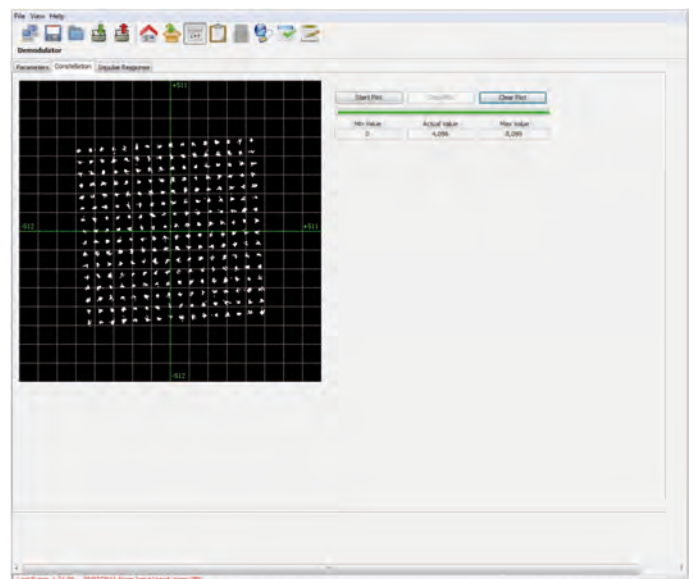
- 1920x180i30
- 1920x1080i25
- 1280x720p60
- 1280x720p50
- HD video resolution supported:
- PAL-BG: 720x576i25
- NTSC: 720x480i

Audio standard supported:

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



Java interface - Impulse Response



Java interface - Rotate Constellation



## RF Portable Power Meter Probe



Power Probe

### Description

The new Screen Service Agile RF Portable Power Probe offers accurate precision at all TV frequencies.

Easy to carry on and easy to connect, directly powered from USB, the New Power Meter Probe has an extraordinary user friendly interface which displays the output power simultaneously expressed in dBm and Watt.

Easy offset setting or accurate value readings.

it need only a common USB cable to power and communicate with normal PC (Windows or Linux SO)

Power Meter Probe is ideal for monitoring forward and reverse power distributed in digital broadcasting system.

### Main Features

- Frequency Range: 10 MHz to 1 GHz
- Detection Range:-35 dBm to 5 dBm (Maximum Physical Input Signal: 15dBm)
- Accuracy: +/-0.5 dBm
- Exceptional Accuracy Over Temperature
- USB Powered
- Software Selectable Offset
- Aluminium Chassis
- Upgradable Firmware
- Dimensions: 11 cm x 5,5 cm / 2,1 inches x 4,2 inches
- Weight: 300g

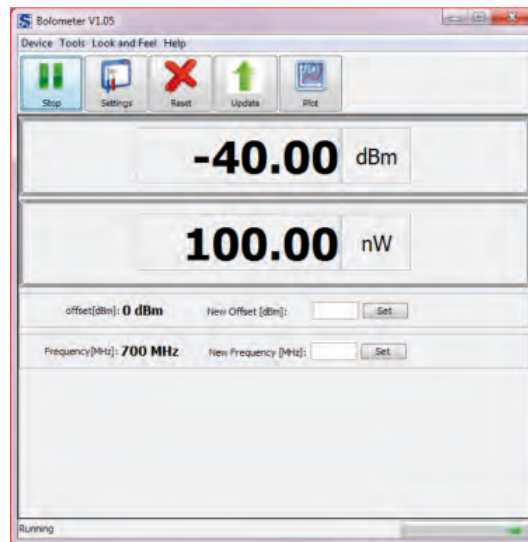


#### Hardware Description:

- Connected: Green Led
- Pc Connected: yellow led
- Data Interface: Connector USB Type B

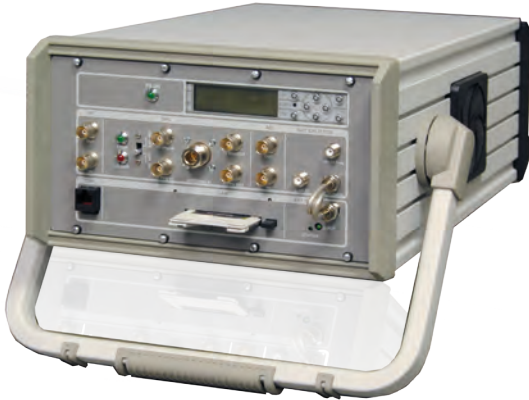


Rf Input: Connector Male type N



Java Software Interface

## Digital Single Frequency Network analyzer



> SFN Analyzer

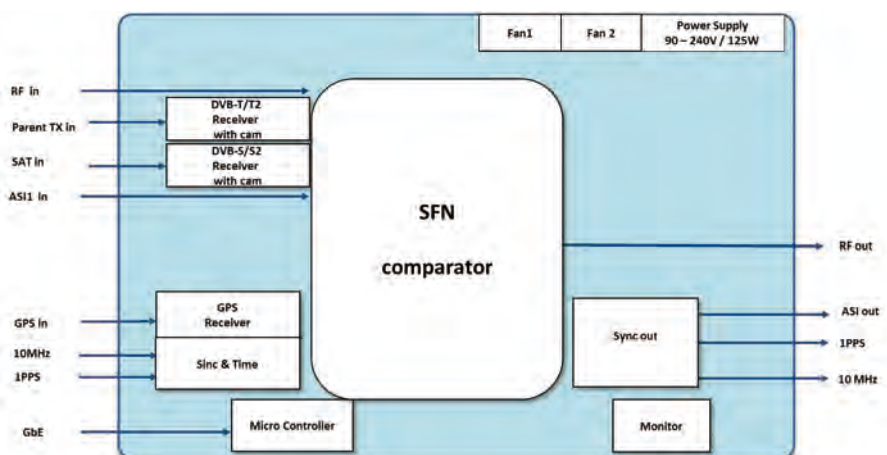
### Description

SFN Concept : Same bits at the same time on the same frequency.

To ensure that all SFN transmitters comply with the time-specific synchronization and the transmit frequency, they are linked to a reference time standard. Global positioning system (GPS) information is provided for this purpose. But if GPS fails, for example, an intact transmitter may soon become the source of a failure. In this case, the transmit frequency and the set delay time of the transmitter will slowly drift, which finally leads to co-channel interference. This will also happen if the delay time or even the transmit frequency is incorrectly set due to an operator error on site. A frequency deviation of only a single hertz already significantly cuts down the system's security margin. In both cases, the resulting co-channel interference may cause reduced radio coverage, a loss of synchronization at a receiver, or even the complete failure of the TV broadcast service. This is why precise echo pattern and frequency deviation measurements are vital for efficient installation and operation of an SFN.

### Main Features

- Allows in a simple manner and without need for additional tools to align a transmitter in a network SFN complex .
- It can perform measurements in service area where there is the contribution of two or more transmitters SFN, and in the presence of anomalies, which have a heavy decay the MER or, in cases "less serious", a distance between the echoes out of guard interval(measurement of the impulse response).
- GPS receivers inside
- Sat receivers with CAM for descrambling
- ASI Input
- RF Input



## Professional GPS Tester for SFN Network



> GPS Tester

### Description

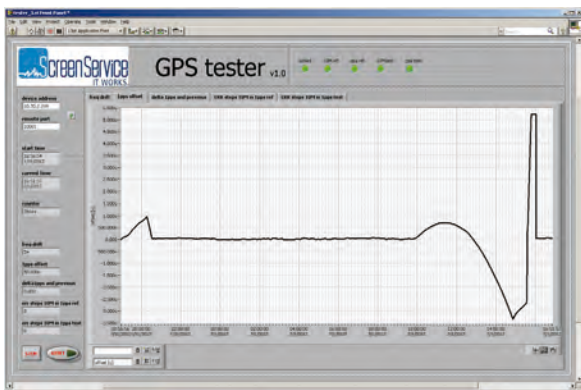
It is a GPS (or any sync source, i.e. rubidium) validator for broadcasting.

GPS Tester is able to compare 2 different synchronization sources where one of the two can be used like a reference and the second one like the sync source under testing.

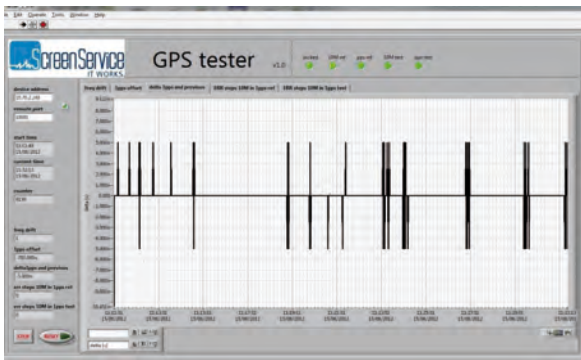
The equipment shows failure condition, such as:

- Phase jumps.
- Uncorrelated 10 MHz toward 1 PPS.
- Come back from holdover status.
- 1PPS jumps.
- 1PPS offset.
- Number of cycles among each 1PPS.
- Frequency drift.

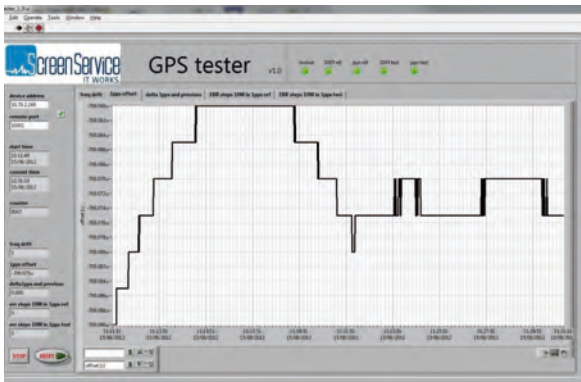
SFN quality depends on 2 parameters: frequency stability and symbol timing. As center frequency drift, null shift across spectrum; this force receiver to re-compute channel equalization all the time - this will reduce the capability of set-top-boxes to receive clean pictures. Symbol timing can affect coverage in 2 different ways; first has an effect similar to center frequency instability. Timing errors have more important effect where we want to use the full power of SFN solutions. It is important to remember that SFN implies covering large areas and signal will not stop to affect coverage outside planned area; therefore, it is vital that we have enough margin. All transmitter received in a given area must fall within Guard interval or have a power ratio enough for demodulation.



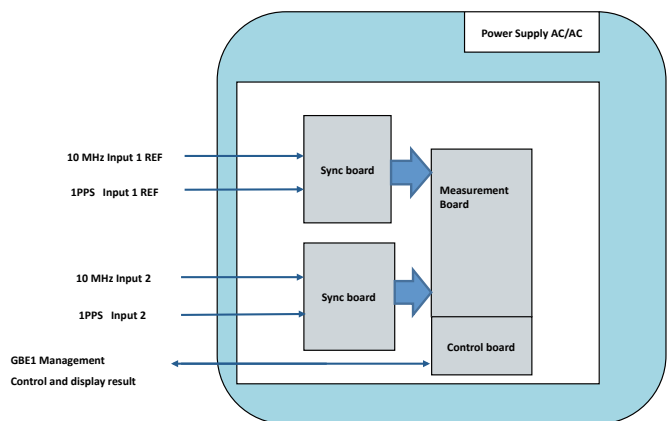
> GPS Tester Overview control software



> Delta 1PPS and previous



> 1PPS Offset



> GPS GTester Block Diagram



## XBT 52 ASI Killer



> ASI Killer

### Description

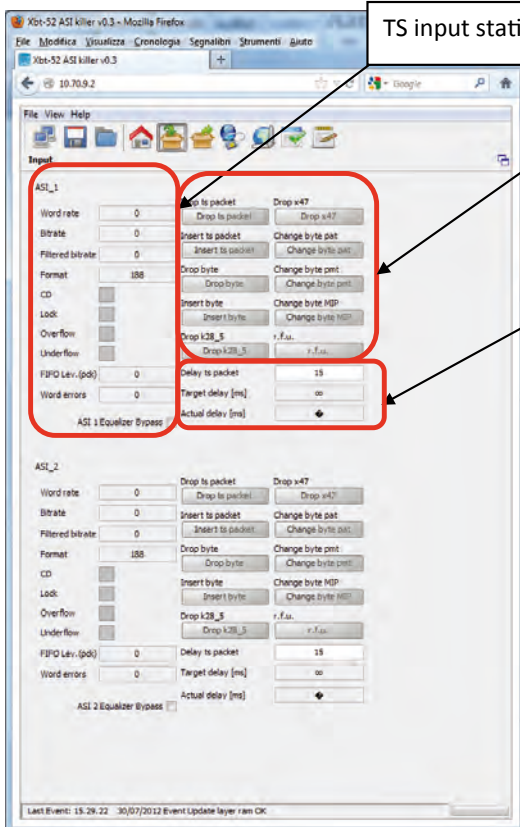
It allows in a simple manner and without need for additional tools to inject errors or delay in a TS.

Generated errors:

- Drop TS packet: delete one random packet from the TS
- Insert TS packet: insert one packet in a random position of the TS
- Drop byte: delete one random byte from the TS
- Insert byte: insert one byte in a random position of the TS
- Drop k28\_5: generates an ASI word error
- Drop x47: delete the Sync byte of a random packet
- Change byte PAT: induce one error in the PAT
- Change byte PMT: induce one error in the PMT
- Change MIP: induce one error in the MIP

Induced delay:

- Delay TS packet: insert a delay as number of TS packets stored and forwarded
- Target delay: the delay time to be reached
- Actual delay: the delay time actually reached

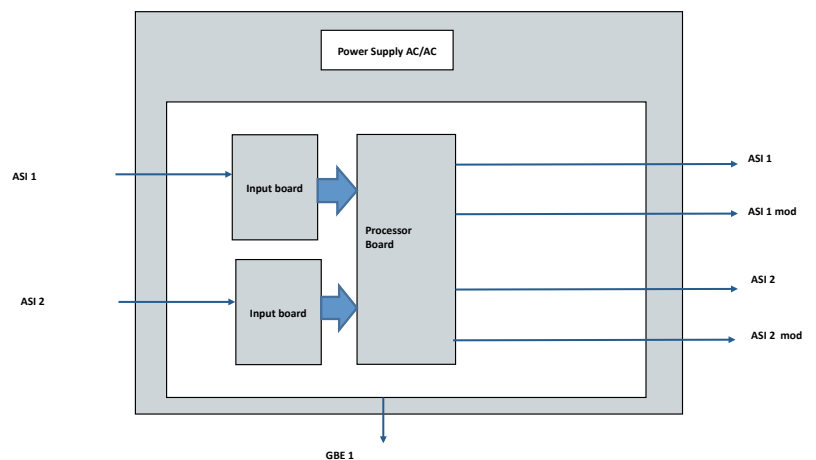


> ASI Killer Interface

TS input statistics

Generate errors

Induce delay



> ASI Killer Interface Block diagram



### Professional TS Compare



> ASI Compare

#### Main Features

##### Inputs 2 selectable inputs between:

- 2 ASI
- 1 RF Satellite
- 2 RTP channels

##### Standard input data flow:

- TS (ISO-IE ---- C 138181.1) ISDBT BTS (ABNT NBR 15601)

##### Output Monitoring on BNC connector (ASI out), software selectable:

- Input 1 and 2 presence
- Alarm input difference
- Alarm input delay over threshold
- Alarm input PID 1 and PID 2 not present

##### Parameters Monitoring:

- Input 1 and 2 presence
- Alarm input difference
- Alarm input delay over threshold
- Alarm input PID 1 and PID 2 not present

##### Monitoring

- Input not present
- Identical Inputs
- Current inputs (standard)
- Delay Monitoring between inputs
- Data Packets Monitoring not identical

##### Clock Lock 10MHz synchronization possibility:

- Internal
- From 10 MHz external clock
- From GPS

#### INPUT/OUTPUT

##### INPUT

- ASI N° Inputs: 2
- (1 Input for 2 channels)
- Connector: BNC - R Input: 75 Ohm - V Input: 800 mVpp (500 to 1200mVpp) Standard: CEI EN 50083-9 / SMPTE 259M,292M

##### RF N° Inputs: 1

- RF Input : Tuning band from 950 MHz to 2150 MHz
- Rx Standard: DVB-S (ETSI EN 300 421) - DVB-S2 (ETSI TR 102 376)
- LNB power High Band - 10600 MHz Low Band - 9750 MHz
- DiSEqC (Vertical / Horizontal Polarization)
- Symbol Rate: DVB-S mode 4 to 30 Msps -DVB-S2 mode 10 to 30 Msps
- Modulation supported: DVB-S2 mode 8PSK/QPSK, LDPC+BCH - DVB-S mode QPSK, Viterbi + RS

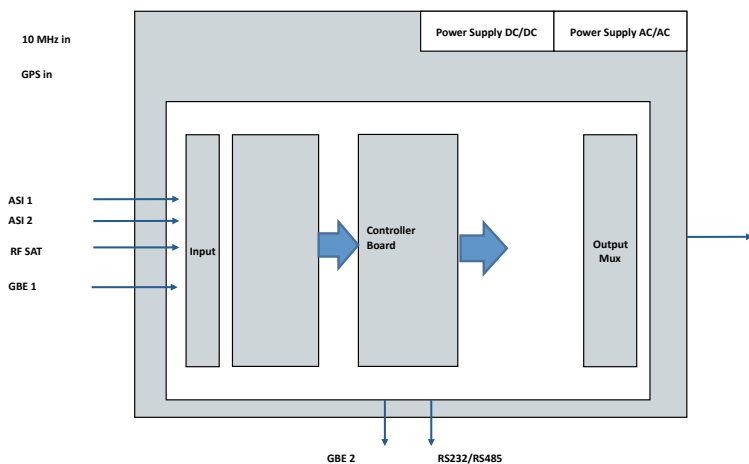
##### OUTPUT

##### ASI N° Outputs: 1

- Connector: BNC R Input: 75 Ohm
- V Input: 800 mVpp (500 to 1200 mVpp) Standard: CEI EN 50083-9

##### Reference clock

- GPS 10 MHz 1 PPS



> TS Compare Block Diagram

## SSBT Broadcast Analyzer



> Broadcast Analyzer 1RU for monitoring

### Main Features

- ETR290 Analyzer
- Simultaneous monitoring of up to four RF signals
- RF modules for DVB-T/DVB-T2 and DVB-S/DVB-S2
- IP module for electrical and optical (SFP) connections
- Support for DVB, transport streams
- T2-MI support
- Simple operation and configuration

The SSBT Analyzer makes it possible to simultaneously monitor an 4 RF signal, 1 ASI signal And one IP flows.

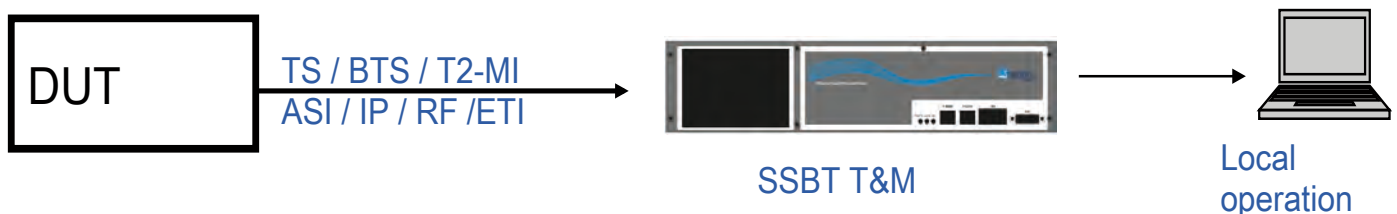
Interface modules for DVB-T/DVB-T2, DVB-S/ DVB-S2 as well as for IP (optical/electrical) are available. All relevant errors at the RF, IP, TS and T2-MI level are recognized and reported immediately. Thumbnail display and electronic program guide (EPG) simplify visual monitoring of the transmitted contents. Remote access is supported via an integrated web server allowing independent, simultaneous access from different locations. SNMP and SNMP traps are supported for integration into central network management systems.

High-quality analysis functions and easy-to-understand displays complement the system's extensive array of monitoring functions. The analysis functions include program clock reference (PCR) analysis and buffer analysis

SSBT Broadcaster Analyzer family is a professional, attractively priced and compact solution for monitoring digital TV networks. Typical fields of applications are signal monitoring at the transmitter site, the satellite uplink or the head end.

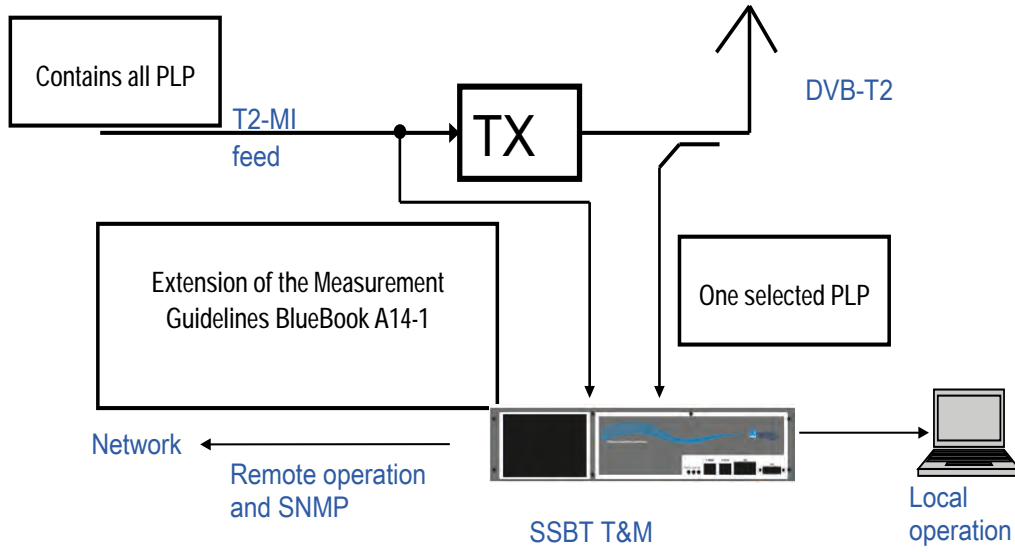


> Broadcast Analyzer 2RU

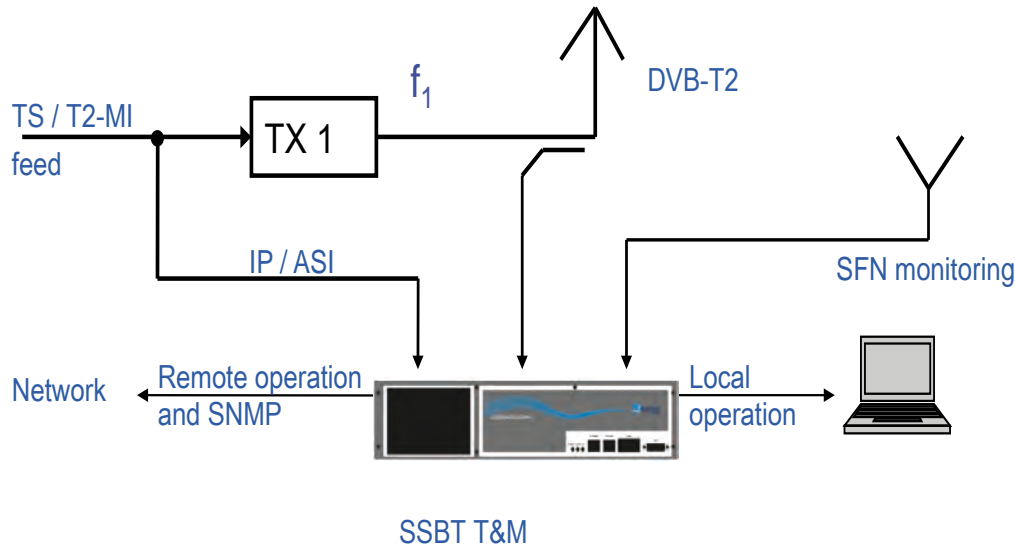


Transport stream analysis for developers and network operators

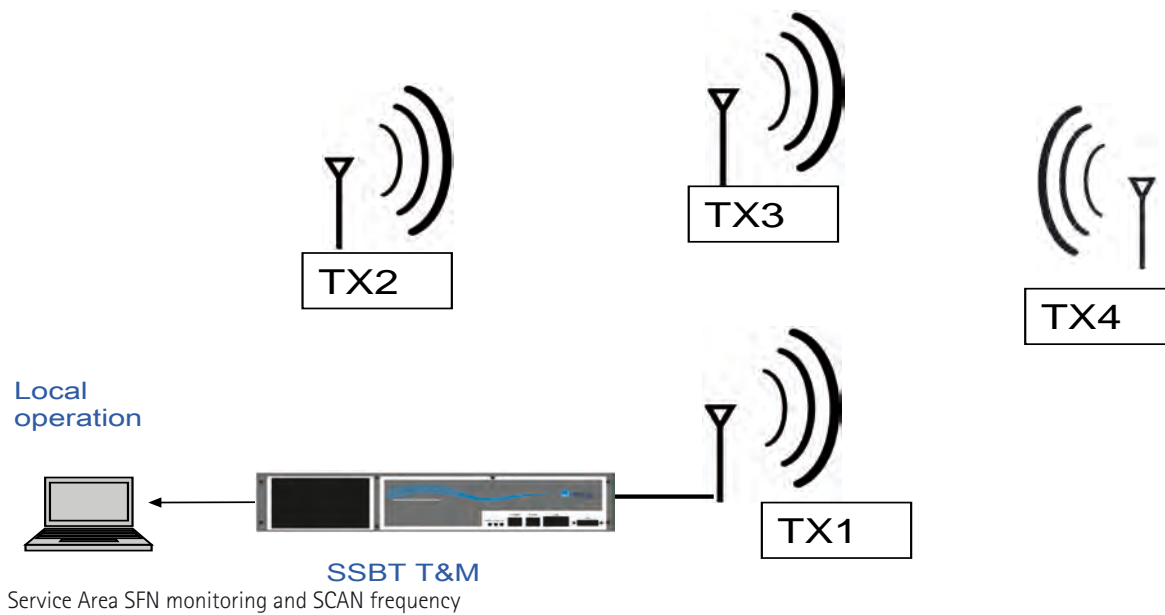




T2 TX Monitoring

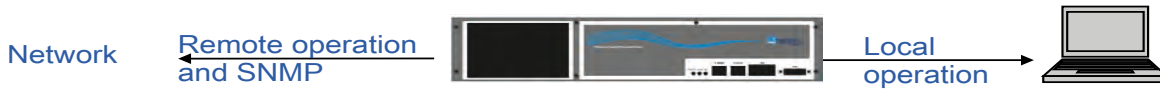
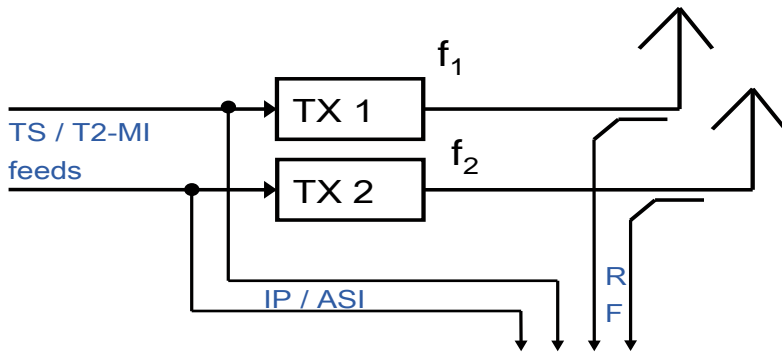


T2 TX Monitoring including SFN



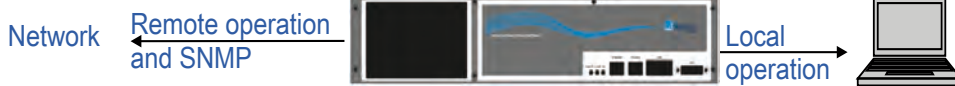
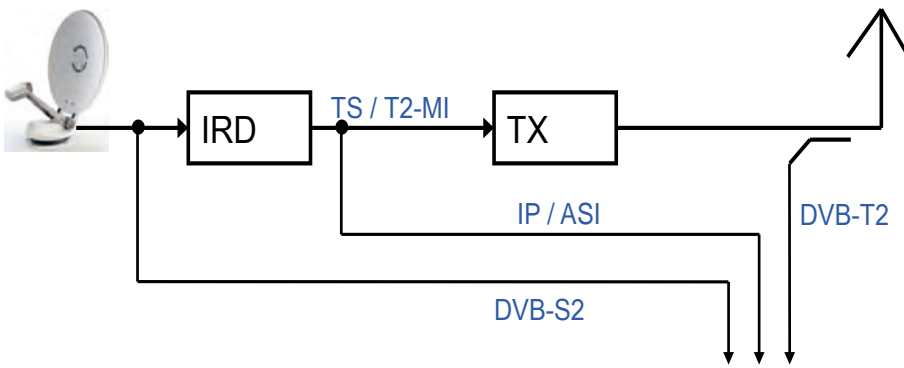
Service Area SFN monitoring and SCAN frequency





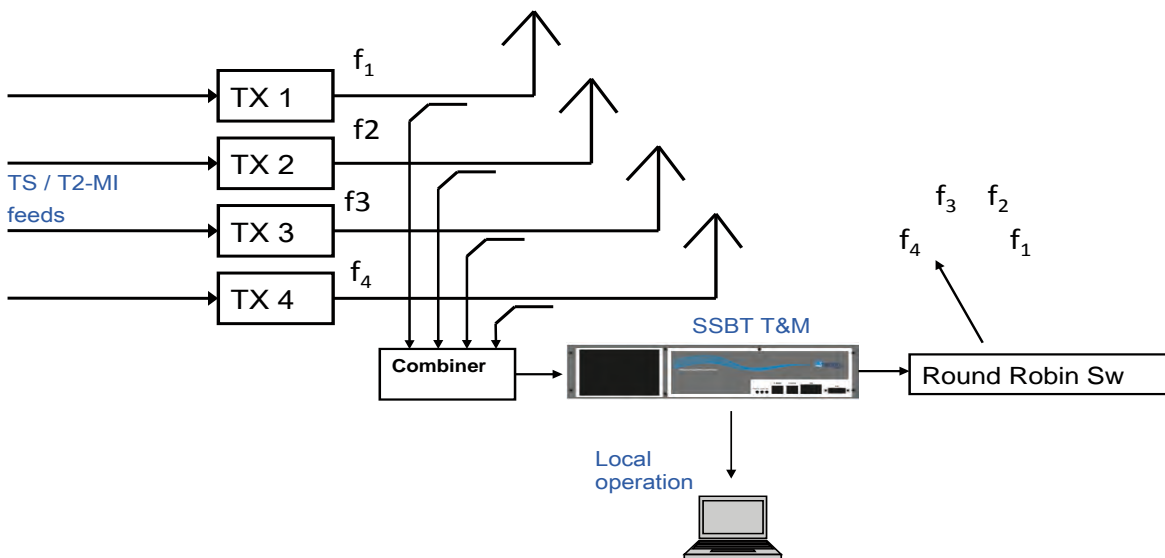
SSBT T&M

2 TX in DVB-T2 simultaneous monitoring with IP feed



SSBT T&M

TX monitoring site with DVB-T2 TX and S2 feed



4 TX in DVB-T2 Simultaneous monitoring (round robin)



## Features and Functions

### Monitoring (simultaneous and uninterrupted real time measurements)

RF monitoring of various RF characteristics, including MER, BER and level, Constellation diagram.  
RF transmission parameter monitoring comparison of the transmission parameters with predefined settings.  
Shoulder attenuation monitoring of upper and lower shoulder (DVB-T and DVB-T2) (every s).  
Echo pattern monitoring with level and timing of up to 8 impulses (DVB-T and DVB-T2) (every 10 to 25 s)

Monitoring of TR 101 290 priority 1, 2 and 3  
Bit rates monitoring

TS modification detection of changes in the transport stream  
EPG/EIT monitoring of the presence of EIT tables according to the signaling in the SDT tables and the template definitions

### Analysis

Spectrum display (DVB-T and DVB-T2)  
Echo pattern display of up to 8 impulses (DVB-T and DVB-T2)

EPG display of the electronic program guide based on all EIT tables received  
Thumbnail display with lower frame rate for all unencrypted services and additional program details of one selected TS  
PCR analysis of PCR accuracy, overall jitter, drift, offset and distance  
PTS analysis

PID utilization with visualization of TS packet distribution within TS  
PID list with list of all transport stream elements with detailed description

### Operation

View selector: convenient selection of measurement displays  
User rights management with protection against unauthorized use by defining user-specific operation rights  
Event navigator with point- and click-based filtering of monitoring report  
Hiding of events time-limited or unlimited suppression of monitoring results for specific measurements or PID's  
Round robin monitoring for a predefined set of frequencies/channels using one input

### Network functions

Remote display with remote access to SSBT GUI Viewer application Java-based remote access to monitoring results from different locations multiple user access.  
SNMP simple network management protocol for integration into network management systems  
Streaming of one selected PID or service to any point in the network (to any IP address)

### Miscellaneous

High MER measurement increases the MER measurement for DVB-T and DVB-T2 to typ. 38 dB  
TS capture with event-controlled recording of TS segments to hard disk  
Logging to file of report entries to hard disk

The screenshot displays a software interface with the following sections:

- Contents summary:** A grid of video thumbnails for channels including CANALES PROVVISORIO, ITALIA1 PROVVISORIO, RETE4 PROVVISORIO, Boing, Cartoonito, and ClassTV MSNBC.
- Service rate summary:** A bar chart showing bit rates for services: Servizio 27 (0.02% - 6,016 bit/s), Servizio 28 (0.03% - 7,520 bit/s), Servizio 29 (0.03% - 7,520 bit/s), Servizio 30 (8.14% - 2,025,888 bit/s), Ghost (0.04% - 10,528 bit/s), CANALES PROVVISORIO (7.91% - 1,968,736 bit/s), ITALIA1 PROVVISORIO (6.20% - 1,541,600 bit/s), RETE4 PROVVISORIO (6.20% - 1,543,104 bit/s), Boing (8.87% - 2,207,872 bit/s), Cartoonito (8.88% - 2,209,376 bit/s), ClassTV MSNBC (8.14% - 2,025,888 bit/s), and Mediaset HD (41.16% - 10,242,241 bit/s).
- Tests summary:**
  - Errors after last update (1 sec.):
  - Errors after previous update (2+ sec.):
    - 2.3 PCR Error
    - 2.3b PCR Discontinuity Indicator Error
    - 2.5 PTS Error
    - 3.2 SI Repetition Error
    - 3.4 Unreferenced PID Error
    - 3.4a Unreferenced PID Error
- PID summary:** A list of PID values and their bit rates:
  - 0x06f5 (1781) Rate: 0.719% - 178976 bit/s
  - 0x06fe (1790) Rate: 5.446% - 1355104 bit/s
  - 0x06ff (1791) Rate: 0.719% - 178976 bit/s
  - 0x0708 (1800) Rate: 5.446% - 1355104 bit/s
  - 0x0709 (1801) Rate: 0.719% - 178976 bit/s
  - 0x071c (1820) Rate: 8.359% - 2080032 bit/s
  - 0x071d (1821) Rate: 0.496% - 123328 bit/s
  - 0x0ab4 (2740) Rate: 40.492% - 10075296 bit/s
  - 0x0ab7 (2743) Rate: 0.713% - 177472 bit/s
  - 0x0baf (2991) Rate: 0.054% - 13536 bit/s
  - 0x187e (6270) Rate: 0.006% - 1504 bit/s
  - 0x1fff (8191) Rate: 12.090% - 3008150 bit/s

> Simple User interface with Thumbnail display

The user interface has a clear structure and is very easy to operate. Configuration and operation are distinctly separated from each other. This makes work for the user fast and efficient. All monitoring functions and limits can be configured down to the very last detail.

Protection against unauthorized use is provided by defining user-specific operation rights.



The screenshot shows a software window titled 'main' with a status bar at the top right displaying '17:06:45'. The main area is divided into three sections:

- Left Panel:** A list of error types with corresponding status icons (green, yellow, red). The list includes:
  - 2.2 CRC Error (Green)
  - 2.3 PCR Error (Yellow)
  - 2.3a PCR Repetition Error (Green)
  - 2.3b PCR Discontinuity Indicator Error (Yellow)
  - 2.4 PCR Accuracy Error (Green)
  - 2.5 PTS Error (Yellow)
  - 2.6 CAT error (Green)
  - Priority 3 (Red)
  - 3.1 NIT Error (Green)
  - 3.1a NIT Actual Error (Green)
  - 3.1b NIT Other Error (Green)
  - 3.2 SI Repetition Error (Red)
  - 3.3 Buffer Error (Green)
  - 3.4 Unreferenced PID Error (Yellow)
  - 3.4a Unreferenced PID Error (Yellow)
  - 3.5 SDT Error (Green)
  - 3.5a SDT Actual Error (Green)
  - 3.5b SDT Other Error (Green)
  - 3.6 EIT Error (Green)
  - 3.6a EIT Actual Error (Green)
  - 3.6b EIT Other Error (Green)
  - 3.6c EIT PF Error (Green)
  - 3.7 RST Error (Green)
  - 3.8 TDT Error (Green)
  - 3.9 Empty Buffer Error (Green)
  - 3.10 Data Delay Error (Green)
- Details Section:**
  - Errors after last update (1 sec.):** Empty.
  - Errors after previous update (2+ sec.):**
    - 3.2 SI Repetition Error (Red)
    - 3.4 Unreferenced PID Error (Yellow)
    - 3.4a Unreferenced PID Error (Yellow)
- Table:** A table with two columns: 'Timestamp' and 'Description'. It contains 20 rows of error logs, all with the description 'Maximum time interval between sections over 500ms. [ ... ] Pid 0x31 table 0x81' or similar. The first row is highlighted in blue.

At the bottom right of the table area, there are 'Reset' and 'Close' buttons.

### Monitoring of DVB specific TS

DVB transport streams are monitored in line with the TR 101 290 measurement guidelines. All measurements specified in the TR 101 290 measurement guidelines under priorities 1, 2 and 3 are carried out simultaneously for every component of all transport streams being monitored



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