screen

FUTURE SFT

SERIES

Digital, Analog and Dual Cast TV Transmitters

www.screen.it

screen

Screen is a world-renowned company focused on turn-key and end-to-end solutions for all broadcasting needs.

With 30 years of experience, thousands of satisfied customers and more than 60.000 transmitters installed all over the world, Screen is the leading company in digital TV technology.

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FUTURE SFT | SERIES

The combination of ARK-X New Exciter and the SFK Broadband Amplifier Series

The New Multiple Configuration Flexible Hardware Platform

The ARK-X Universal Driver with Multiple Front-End Boards

Widely improved performances compared to ARK6

Flexible Software configuration and fully frequency agile

The New Revolutionary FUTURE SFT Digital, Analog and Dual Cast TV TRANSMITTER SERIES is reaching the highest technology level in both TV Digital Signal Processing and RF domain.

The top performances of this Transmitters Series are possible thanks to the following points:

1) ARK-X: the new evolution of the ARK Series multistandard DTV Drivers, the ARK-X Series, able to meet or exceed all the DTV International Broadcasters requirements.

The improvement of digital adaptive precorrection and configuration flexibility was the key points for this advanced product, developed by the excellent Screen R&D Digital Signalling dept.

2) Latest generation LDMOS devices: more rugged and efficient compared to the past, with a special low-loss design of matching and combining system, together with extremely high-efficiency power supplies (over 96% efficiency).

3) Compactness: a new concept of heatsync and ultracompact power supplies grants the minimum sizes of amplifier modules with air cooling or liquid cooling systems, and a greatly reduced dimensioning of the cooling system itself. A 10 kW rms DTV Transmitter in a single rack is just an example of this extreme compactness.

4) Easy and Fast maintenance: Screen Group's 25 years' experience allowed for designing this new FUTURE SFT SERIES with a significantly improved easy-maintainance concept.

All RF power modules are hot pluggable (both liquid and air cooled versions) for an easy bench testing and/or instant replacement on site.

All RF power modules are equipped with 3 independent power supplies for maximum redundancy and easy single phase or balanced three phases operation selection. These 3 power supplies are also hot pluggable themselves, for a unique way of smart maintainance.

The latest generation of industry higher class power supplies grants over 96% efficiency with wider input AC range capability and greater ruggedness.

5) Smart System Design: latest generation progressive RF combiner with ultracompact unbalancing dummy loads and a smart intercommunication interface between RF modules, drivers and Logical Control System allow for a very clean and easy to maintain system configuration both for liquid and air cooling equipment.

Screen FUTURE SFT is how we are driving the Future!

ARK-X Features

Transmitter, Gap Filler, Transposer, Re-Transmitter
Dual cast Analog + Digital Multi standard

The Universal DRIVER can be customised in 5 different configurations.
All ARK-6 are always and easily upgradable to new features.

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

We call it Universal Driver because of its incredible capability to be configured with one hardware and just software selection.

It is perfect for international broadcasters doing 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. Indeed, it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, a gap filler, all in a single piece of hardware.

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

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

The ARK-X allows selection of operation 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 compatible with all SNMP NMS (Network Management System)

New improved features compared to previous Series:

- Color large-sized display with important monitoring measures: spectrum, constellation, etc
- Upgrade through USB
- Upgrade through OTA
- Licensing upgrade
- T2 + T2 lite simultaneous mode
- ISDBT-Tb De-Compressor Embedded
- Property Crest Factor optimization algorithm (PAPR equivalent)
- Powerful pre-corrections to improve efficiency
- GPS Glonass, Galileo, BeiDou integrated
- 2 input IP redundant with seamless switch (GBE Gigabit Ethernet)
- Pluggable Front End
- New user-friendly web interface
- Backward full compatibility with all ARK6 based TX
- Energy-saving system (automatic power reduction scheduler)
- Anti-thief system
- ATSC 3.0 ready

Main Common Features

- ASI MPEG Transport Stream seamless input.
- MPEG Transport Stream over IP TS 102 034 V1.5.2 (2014-04).
- MPEG Transport Stream encapsulated in RTP (Real-time Transport Protocol according to RFC 3550 TS 102 034, clause 7.1.1. FEC management SMPTE 2022-1 (Pro MPEG CoP 3).
- IGMPv2/v3 support.
- MFN and SFN operations.
- Internal GPS / Glonass receiver.
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS).
- Output clock: 1 PPS and 10 MHz.
- Bit rate adaptation plus PCR re-stamping.
- RF main and monitoring outputs (Spectrum, MER, Constellation).
- Test Modes:
  - CW insertion
  - Null packet insertion
- 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.
- Embedded HTTP server
- Management: Embedded SNMP v3 server - Embedded Web server.
- GbE Ports: GbE 1: 10/100/1000 Base T Management port.
- Redundancy: Input autoswitch algorithm supported.
- Security: Authentication for GUI access supported.

Main Features DVB-T/T2 Version

- Signal modulation compliant with:
  - ETSI EN 300 744 v16.1
  - ETSI EN-302 755 (DVB-T2) standard 1.4.1
  - ETSI TS 101 191 v1.4.1 (SFN)
- T2-MI compliant with ETSI EN-102 773 V1.4.1 (T2-MI) standard
- T2-MI input over IP or ASI
- ETR290 and T2-MI alarms
- Full Single-PLP compatibility (including MISO and PAPR reduction)
- Capable to transmit MPLP, Up to 16 PLP
- Bit rate adaptation plus PCR restamping in S-PLP
- Modulated DVB-T2 RF signal input (VHF/UHF) – when operating as repeater.

Main Features ISDB-Tb Version

- Signal modulation compliant with:
  ABNT NBR 15601 & ABNT NBR 15608-1 (ISDB-Tb)
- BTS Input over ASI and over IP
- Modulated ISDB-Tb RF signal Input in rebroadcasting mode
- Emergency flag management (detection and insertion)
- Test Modes:
  - CW insertion
  - Null packet insertion, separated for each Layer
- Remux capabilities (optional):
  - BTS generation from input TS/BTS
  - Up to 2 input sources to build each Transmission Layer
  - PID filtering and remapping
  - Internal Carousel Editing, Store and Playing
  - IIP (including SFN information) insertion
  - BTS Compressor /De-Compressor Embedded

Main Features ATSC Version

- Compliant to ATSC A/53 and A/65 standard
- Compliant to A/153 ATSC-MH standard
- SMPTE310, RF, SSI Input:
  - Support 4 ASI input
  - Support 4 SSI input
  - Support 2 ASI output
  - Support 2 MPEG over IP input/output channels on GBE port 2-3
- Enable/Disable of cable equalizer bypass on input ASI ports
- One RF input to operate in rebroadcasting mode.
- Support the Editing of Virtual Channel Table in Translator mode
- Supports a measure board for the monitoring of the modulated signal: SNR, BER, SER e LOCK
- Amber switching implemented as a search for valid input when the priority one is not locked.
- Test modes: CW, Force Null Packets and PRBS
- Redundancy: Input auto-switch algorithm supported
- Option A/110b compliant for SFN transmission
- Option: A/110b compliant for STL with ATSC-MH transmission


ALARM
WARNING
PS FAULT

ARK-X Configurations

1. Transmitter Only Version

Main Common Features

- ASI MPEG Transport Stream seamless input.
- MPEG Transport Stream over IP TS 102 034 V1.5.2 (2014-04) seamless Input.
- MPEG Transport Stream encapsulated in RTP (Real-time Transport Protocol according to RFC 3550 TS 102 034, clause 7.1.1. FEC management SMPTE 2022-1 (Pro MPEG CoP 3).
- IGMPv2/v3 support.
- MFN and SFN operations.
- Internal GPS / Glonass receiver.
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS).
- Output clock: 1 PPS and 10 MHz.
- Bit rate adaptation plus PCR re-stamping.
- RF main and monitoring outputs (Spectrum, MER, Constellation).
- Test Modes:
  - CW insertion
  - Null packet insertion
- 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.
- Embedded HTTP server
- Management: Embedded SNMP v3 server - Embedded Web server.
- GbE Ports: GbE 1: 10/100/1000 Base T Management port.
- Redundancy: Input autoswitch algorithm supported.
- Security: Authentication for GUI access supported.

2. Transmitter with Satellite Receiver

DVB-S2 Input Configuration - Satellite Input Specifications

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

3. Transmitter with Satellite Receiver with DEC

DVB-S2 Input and CAM Configuration - Satellite and CAM Specifications

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

4. Transposer and Re-Transmitter (Regenerative)

Transposer and Re-Transmitter (Regenerative) Configuration - Terrestrial RF IN Specifications

- N. RF Inputs: 1
- Connector type: N Female
- Input impedance: 50 ohm
- Input level: -81 dBm up to -17 dBm
- Supported standards: DVB-T/H, DVB-T2, ATSC, ISDB-T

Front End Option

- Digitizer with Analog A/V Inputs Configuration
- SAT without CAM receiver
- SAT with CAM receiver
- T2/ ATSC/ ISDB- Tb Receiver for Transposer, Re-Transmitter, Gap Filler

5. Transmitter with Analog A/V Inputs

Digitizer with Analog A/V Inputs

- Inputs: 4 SDI, 2 CVBS and 2 L/R
- Supported Composite Standards: NTSC CVBS, PAL (B, D, G, H, I, M, N) CVBS
- Supported SDI Standard: SMPTE 259M-C – Component 4:2:2, 270Mb/s for 525 and 625 lines, 13.5 MHz sampling, 4x3 and 16x9 aspect ratios.
- Outputs: 1 RF, 1 RF Monitor - 2 SDI for inputs bypass
- Test modes: CW, CW AV, Mute Audio Carrier, Mute Audio, Audio Test Tone, Video In, SMPTE Bars, Horizontal Bars, Red Field, ITS0, ITS1, ITS2, ITS3 , ITS4.
- A/V Inputs Specifications:
- Analog Video input:
  - N°Inputs: 2 CVBS
  - Connector type: BNC
  - Input impedance: 75 ohm
  - Supported video standards: PAL B,D,G,H,I,M,N, NTSC
- Analog Audio input
  - N°Inputs: 2 L/R couples
  - Connector type: XLR3 (Cannon f)
  - Input impedance: 600 Ohm balanced
  - Input Level: +6dBm +/- 6 dB

ARK-X Series

Models	Output Band	Working Class	Dimensions	Output Connector	Cooling	DVB W rms	ISDB-T W rms	DTMB W rms	ATSC W rms	ATV ps	MER dB	Shoulders (@ Fo 3.5 MHz ATSC) or (@ Fo 4.3 MHz DVB) or (@ Fo 3.3 MHz ISDB-T)
ARK-X 000/U	UHF	A	1 RU	N	Air	1mw	1mw	1mW	1mw	1mW	> 40	-39
ARK-X 000/V	VHF (I)	A	1 RU	N	Air	1mw	1mw	1mW	1mw	1mW	> 40	-39
ARK-X 000/I	VHF (III)	A	1 RU	N	Air	1mw	1mw	1mW	1mw	1mW	> 40	-39
ARK-X 050/U	UHF	A	1 RU	N	Air	5	5	5	6	10	> 40	-39
ARK-X 050/V	VHF (I)	A	1 RU	N	Air	5	5	5	6	10	> 40	-39
ARK-X 050/I	VHF (III)	A	1 RU	N	Air	5	5	5	6	10	> 40	-39

Specifications and characteristics are subject to change without notice.

ARK-X Configurations

Standard / Front-End	ATV	DVB-T/H	DVB-T2	ISDBT	ATSC	DTMB
None	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Digitalizer A/V Input option	Transmitter with A/V analog inputs	Transmitter with A/V analog inputs (*)	Transmitter with A/V analog inputs (*)	Transmitter with A/V analog inputs (*)	Transmitter with A/V analog inputs (*)	Transmitter with A/V analog inputs (*)
DVB-S/S2	×	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input
DVB-S/S2 + CAM	×	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)
DVB-T/T2	×	Re-Transmitter/ Transposer / GapFiller Echo Canceller	Re-Transmitter/ Transposer / GapFiller Echo Canceller	×	×	×
ISDBT	×	×	×	Re-Transmitter/ Transposer / GapFiller Echo Canceller	×	×
ATSC	×	×	×	×	Re-Transmitter/ Transposer / GapFiller Echo Canceller	×
DTMB	×	×	×	×	×	Transposer / GapFiller Echo Canceller

(*) In case of Dual cast ATV+DTV operation mode

ARK-X Configurations:

Automatic Digital/Analog	Transposer Translator Gap Filler	Regenerative Transmitter	Transmitter	SAT RX with CAM	SAT RX
AV > SDI> MOD > RF	RF > IF > RF	RF > ASI > MOD > RF	IP + ASI > MOD > RF	SAT > TS> MOD > RF	SAT > TS> MOD > RF

I/O Specifications		
	Front	
RF Front-End input	Please refer to various configurations for a complete description of all the available front-end modules	
GPS RF Input	N° Inputs: 1 Sensitivity: -165dBm Connectors: TNC/SMA	
RF Output Monitor	N° Inputs: 1 Level: -40dB Connectors: SMA	
Gigabit Ethernet	N° Connectors: 3 Connector: RJ45 Supported standards: IEEE 802.3	
ASI Output Monitor	Connectors used for monitoring purposes: N° outputs: 2 Connector type: BNC Input impedance: 75 ohm Input voltage: 800 mVpp (500 to 1200mVpp) Supported standards: CEI EN 50083-9	
ASI/BTS/SSI/SDI Input	Connectors used as ASI, SMPTE-310 or SDI: N° Inputs: 4 Connector type: BNC Input impedance: 75 ohm Input voltage: 800 mVpp (500 to 1200mVpp)	Supported standards: CEI EN 50083-9 SMPTE 310 SMPTE 259M
	Back	
Opto TLC - DB15	N° Inputs: 4 Connectors: SUB-D 15p Female Max current: -5 mA	
Relays TLS - DB25	N° Outputs: 4 Connectors: SUB-D 25p Female Max voltage: 125VAC / 60VDC @ 0,3A – 30VDC @ 1A	
DB9 – RS232	N° inputs: 1 Connectors: SUB-D 9p Female Speed: up to 230400 bps 8-bit data No parity bits 1 stop bit	
DB9 – RS485 CAM BUS	N° inputs: 1 Connectors: SUB-D 9p Female	
10 MHz Input	N° Inputs: 1 Connector: BNC Input impedance: 50 ohm Input voltage: 2 Vpp	
1PPS Input	N° Inputs: 1 Connector: BNC Input impedance: 50 ohm Input voltage: TTL (min 1,7V) Pulse width: 100us	
10 MHz Output	N° Outputs: 1 Connector: SMB Output impedance: 50 ohm Output voltage: TTL (min 2,4V) Output voltage: 2 Vpp	
1PPS Output	N° Outputs: 1 Connector: SMB Z load: 50 ohm Output voltage: TTL (min 2,4V) Pulse width: 100us	
RF Measure board inputs Linear /Non linear precorrections	N° Inputs: 2 Connector type: SMA Input impedance: 50 ohm Input level: -40 dBm up to -8.5 dBm	Supported standards: DVB-T/T2 ISDB-T ATSC
RF Output	N° Outputs: 1 Connector: N	


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ARK-X Configurations

ARK-X Series - DTV Specifications

DTV Specifications		
Standards		DVB-T, DVB-T2, DVB-H, ISDB-T, ISDB-TB, ATSC, ATSC Mobile DTV, DTMB
Channel bandwidth	DVB-T, DVB-H	5/6/7/8 MHz
	DVB-T2	1.7/5/6/7/8 MHz
	ISDB-T, ISDB-TB	6 MHz
	ATSC	6 MHz
	DTMB	6/8 MHz
Inputs	DVB-T, DVB-H	4 × ASI (HP/LP), 75 BNC,
		2 × RJ-45
	DVB-T2	4 × ASI (HP/LP), 75 BNC,
		2 × RJ-45
	ISDB-T, ISDB-TB	4 × BTS, 75 BNC,
		2 × RJ-45
	ATSC	2 × SMPTE310M or 2 × ASI, 75 BNC
		2 × RJ-45
	DTMB	4 × ASI (HP/LP), 75 BNC,
		2 × RJ-45
Digital audio broadcasting/Mobile TV in the VHF range		
Standards		DAB, DAB+, T-DMB (on request)
Channel bandwidth		1.5 MHz
Inputs		2 × ETI, 75 BNC/high impedance
		2 × RJ-45

Specifications may be subject to change without notice

ARK-X Series - ATV Specifications

Analog TV Specifications		
		ITU-R BT 470.7
Analog TV	standards	B/G, D/K, M, M1, N, I, I1
	Color transmission	PAL, NTSC, SECAM (not available)
	Sound transmission	IRT dual-sound coding, FM single sound and NICAM728 (13 dB/20 dB), FM single sound(-10 dB)
	Inputs	1 × video (75 BNC), 2 × audio (bantam)
Video	Video input	0,5 to 1,5 V
	Regulation of output power	+/- 3%
	Variation of output power	+/- 2%
	Differential gain	+/- 3%
	Differential phase	+/- 3°
	Low frequency linearity	8%
	ICPM	+/- 2°
	S/N	>60 dB
	K Factor	2%
	20 T	3%
	Spourius and Harmonics radiation	>60 dB
	In Channel IMD	> 58 dB
Sound	Modulation capability	+/- 120 KHz
	Monoaural input	settable 0 to 12 dBm
	Pre-Emphasys	75 / 50 S
	Frequency response	+/- 0,5 dB from 30 to 15000 Hz
	Harmonic distorsion	0,5% from 30 to 15000 Hz
	FM Noise	60 dB with de-emphasis
	AM Noise	50 dB from 30 to 15000 Hz
	Synchronous AM noise (parasitic AM)	> 50 dB
	IRT Sound	available on request
	NICAM Sound	available on request

Specifications may be subject to change without notice


MONITOR
ON
STBY
LOCK
ALARM
WARNING
PS FAULT
ON
ALARM

FUTURE SFT SERIES

Easy-Maintenance design

The FUTURE SFT Transmitter Series is the result of the intense activity of Screen R&D on High Performance RF Amplifiers, combined with the new widely improved software precorrection capability and very efficient power supplies (>96%).

The FUTURE SFT Transmitter Series features a built-in SFN adapter and very advanced SWDT® (Software Defined Transmitters) technology, that allows implementing different modulation patterns – either digital or analog – (DVB, ATSC, ISDB-T, DTMB, DAB, DAB+,T-DMB, ATV, etc.) in the same hardware.

Moreover, the SWDT® technology allows selection of operation modes in various ways: remotely, using a clean 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 complete remote control of the transmitters by serial protocols or TCP/IP ports, thanks to the internal Web server or built-in SNMP.

SFK 142 1400 W rms Amplifier

New SFK Amplifier Series

- Latest generation LDMOS
- Hot pluggable amplifier modules
- Ultra Compact Design
- Hot pluggable redundant Power Supplies for instant replacement
- Powerful cooling system suitable to work in extreme ambient conditions
- Easy and Fast maintenance design

SFT Series - MAIN Specifications

Main Specifications		
Frequency range	UHF (Band IV/V)	470 to 862 MHz, in 1 Hz Step
	VHF (Band III)	170 to 255 MHz, in 1 Hz Step
Available standards (all standars are full compliant)	Digital TV and Analog TV	DVB-T, DVB-T2, DVB-H, ISDB-Tb, ATSC, ATSC Mobile DTV, DTMB, ATV
Power Supply	AC Line Voltage	380 to 415 (3 phases), 208 to 240 Delta or Star; 47 Hz to 63 Hz (specify at order)
	AC Line variations	+/- 15%
	Power factor	0,98
Environmental Conditions	Altitude	2500 m above sea level (> 2500 m on request)
	Operating temperature range	-10°C to +45°C at sea level, upper limit derated of 2 °C per 300m over 1000 m above sea level
	Relative humidity	95 %, not-condensing
	Cooling method	Forced Air / liquid with external heat exchanger with redundant pump and fan
RF output	Output power range	See Specific Data Sheet or selection table in next pages
	RF load impedance	50 Ohm
	VSWR	Power reduction after exceeding the set value or switch off after three attempts
	RF Output connector	See Specific Data Sheet or selection table in next pages
Transmitter size	Rack Unit, Weight, Dimensions	See Specific Data Sheet or selection table
Digital Modulation Performance	MER	up to 38 dB (typ. 36dB)
	Shoulders (@ Fo 3.5 MHz ATSC) or (@ Fo 4.3 MHz DVB) or (@ Fo 3.3 MHz ISDB-T)	up to -42 dB (typ. -39dB)
Synchronization	Reference frequency	10 MHz, 0.1 V to 5 V (Vpp) or TTL, BNC
	Reference pulse	1pps (1 Hz, TTL, BNC)
Operations Control and Monitoring	Remote	Web based Interface
		SNMP V1 V2 V3
		Telnet access via ethernet
	Local	Extensive front panel control (color display, keypad)
		Local terminal on RS232 or LAN
		USB for upgrade
Compliance and Conformity	RoHS	2011/65/EC
	Radio Equipment Directive (RED)	2014/53/EU
	Safety	EN 60215
	EMC	EN 301-4891-1 - ETSI EN 302 296-2 V1.2.1 (2011-05)
	FCC	Part 74
	WEEE	2012/19/EU
	Manufacturing	ISO 9001:2015

Specifications may be subject to change without notice

SFT Series - Selection tables

Selection Table UHF (/U)										
Models	Output Band	Working Class	Dimensions	N. Amplifiers	Amplifier Model	Output Connector	Cooling	DVB ISDB-T DTMB W rms	ATSC W rms	Analog Peak Sync (W)
SFT 100 U	UHF	AB	1 RU compact			N	Air	10	12	50
SFT 500 U	UHF	AB	1 RU compact			N	Air	50	60	100
SFT 151 U	UHF	AB	2 RU compact			7/16"	Air	150	180	400
SFT 301 U	UHF	AB+C	3 RU compact			7/16"	Air	300	400	500
SFT 351 U	UHF	AB+C	1 x 22 RU			7/16"	Air	350	500	1000
SFT 701 U	UHF	AB+C	1 x 22 RU	1	SFK 701 U	7/16"	Air	700	800	1400
SFT 102 U	UHF	AB+C	1 x 22 RU	1	SFK 102 U	7/8"	Air	1000	1200	2000
SFT 142 U	UHF	AB+C	1 x 22 RU	1	SFK 142 U	7/8"	Air	1400	1800	2700
SFT 152 U	UHF	AB+C	1x 30 RU	2	SFK 701 U	7/8"	Air	1600	1800	3600
SFT 202 U/ A or L	UHF	AB+C	1 x 30 RU	2	SFK 142U/ A or L	1+5/8"	Air/Liquid	2000	2300	4500
SFT 372 U/ A or L	UHF	AB+C	1 x 40 RU	3	SFK 142 U/ A or L	3+1/8"	Air/Liquid	3700	4500	7500
SFT 502 U/ A or L	UHF	AB+C	1 x 40 RU	4	SFK142U/ A or L	3+1/8"	Air/Liquid	5000	6000	10000
SFT 622 U/ A or L	UHF	AB+C	1 x 40 RU	5	SFK142U/ A or L	3+1/8"	Air/Liquid	6200	7500	12000
SFT 752 U/ A or L	UHF	AB+C	1 x 45 RU	6	SFK 142 U/ A or L	3+1/8"	Air/Liquid	7500	9000	15000
SFT 103 U/ A or L	UHF	AB+C	1 x 45 RU	8	SFK 142U/ A or L	3+1/8"	Air/Liquid	10000	12000	20000
SFT 153 U/ A or L	UHF	AB+C	2 x 45 RU	12	SFK 142 U/L	3+1/8"	Liquid	15000	18000	30000
SFT 203 U/ L	UHF	AB+C	3 x 45 RU	16	SFK 142 U/L	4+1/2"	Liquid	20000	24000	40000
SFT 303 U/L	UHF	AB+C	4 x 45 RU	24	SFK 142 U/L	4+1/2"	Liquid	30000	36000	60000
SFT 403 U/L	UHF	AB+C	5 x 45 RU	32	SFK 142 U/L	52/120	Liquid	40000	48000	80000
SFT 503 U/L	UHF	AB+C	6 x 45 RU	40	SFK 142 U/L	52/120	Liquid	50000	60000	100000
SFT 603 U/L	UHF	AB+C	8 x 45 RU	48	SFK 142 U/L	52/120	Liquid	60000	72000	120000

Selection Table VHF Band III (/V)										
Models	Output Band	Working Class	Dimensions	N. Amplifiers	Amplifier Model	Output Connector	Cooling	DVB ISDB-T DTMB W rms	ATSC W rms	Analog Peak Sync (W)
SFT 100 V	VHF (III)	AB	1 RU			N	Air	12	15	50
SFT 151 V	VHF (III)	AB	2 RU compact			N	Air	150	180	200
SFT 251 V/ C	VHF (III)	AB	2 RU compact			7/16"	Air	250	300	350
SFT 251 V/ M	VHF (III)	AB	1 x 22 RU	1	SFK 112 V/A	1+5/8"	Air	250	300	550
SFT 501 V	VHF (III)	AB	1 x 22 RU	1	SFK 501 V/A	1+5/8"	Air	500	600	1100
SFT 102 V	VHF (III)	AB	1 x 22 RU	1	SFK 112 V/A	1+5/8"	Air	1000	1200	2300
SFT 202 V/ A or L	VHF (III)	AB	1 x 40 RU	2	SFK 112 V/A or L	1+5/8"	Air/Liquid	2000	2400	4500
SFT 302 V/ A or L	VHF (III)	AB	1 x 40 RU	3	SFK 112 V/A or L	3+1/8"	Air/Liquid	2800	3500	6000
SFT 402 V/ A or L	VHF (III)	AB	1 x 45 RU	4	SFK 112 V/A or L	3+1/8"	Air/Liquid	3600	4500	8000
SFT 502 V/ A or L	VHF (III)	AB	1 x 45 RU	5	SFK 112 V/A or L	3+1/8"	Air/Liquid	4500	5500	10000
SFT 602 V/ A or L	VHF (III)	AB	2 x 40 RU	6	SFK 112 V/A or L	3+1/8"	Air/Liquid	5500	6500	12000
SFT 702 V/ A or L	VHF (III)	AB	2 x 40 RU	8	SFK 112 V/A or L	3+1/8"	Air/Liquid	7000	8000	16000
SFT 103 V/ A or L	VHF (III)	AB	2 x 45 RU	10	SFK 112 V/A or L	3+1/8"	Air/Liquid	9000	11000	20000
SFT 123 V/ L	VHF (III)	AB	3 x 40 RU	12	SFK 112 V/L	3+1/8"	Liquid	10500	12500	23000
SFT 153 V/ L	VHF (III)	AB	3 x 40 RU	16	SFK 112 V/L	3+1/8"	Liquid	15000	17000	30000

Specifications and characteristics may be subject to change without notice.

Code	Options
DD	Option Dual Driver, including automatic change-over switch unit
X2	Front End Audio/Video digitalizer to input in A/V direct to modulator
X3	Front End Receiver SAT
X4	Front End Receiver SAT+CAM
A1	Front End Retransmitter ATSC
D1	Front End Retransmitter DVB-T/T2
I1	Front End Retransmitter ISDB-T
GF	Gap Filler with echo canceller SW Option
IR	ISDB-T ReMux SW Option
ID	ISDB-T DeCompressor SW Option
IF	IF 36MHz output for up converter stage
E1	ETI HW Input interface (only for DAB modulator in VHF band)
2A	TX with 2 amplifiers (not for compact version)
1+1	Exchanger 1+1 standby system kits
N+1	Exchanger N+1 standby system kits
DC	DC power supply
HAO	High altitude operation

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