

## S-VISION

### High Efficiency Broadband Doherty



**S-VISION** Series represents the state of the art of the worldwide TV transmitter technology. In a compact solution **only 1 RU**, it covers a power range up to 130W rms / 220W p.s. and supports DVB-T/H / T2, ISDB-T/Tb, DAB/DAB+/T-DMB, ATSC, PAL and NTSC modulations. Of course, Dual Cast analog and digital configuration is also supported.

**S-VISION** offers adaptive pre-correction in both analog and digital configuration.

**S-VISION** can be a low power transmitter, a regenerative transmitter or even a transposer, Gap Filler with Single Frequency Echo Canceller (perfect for Single Frequency Network), all in a single hardware.

It can be equipped and configured with different input interfaces (Audio/Video, Satellite Receiver, ASI, Gigabit Ethernet or RF).

**S-VISION** allows selection of transmission modes remotely using or SNMP commands or TCP/IP using the Web graphic interface. 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

- Compact 1U 19" Rack chassis
- Output Power up to 130W rms in digital or up to 220W p.s. in analogue
- High efficiency broadband amplifier technology
- DVB-T/H/T2, ISDB-T/Tb, DAB/DAB+/T-DMB, ATSC, PAL, NTSC modulations fully supported
- Embedded Re-Multiplexer/Layer Combiner/TS to BTS (188 to 204 byte) converter for ISDB-Tb
- Adaptive pre-correction circuits
- Powerful echo canceller when OneDriver is used as an on-channel repeater
- Optional high-performance additional echo cancellation circuit
- On-board high stability GPS / GLONASS receiver with battery
- Flexible input interfaces:
  - 4 x ASI inputs (TS, BTS, T2MI, SMPTE-310M) + Analog input
  - 2 x ASI inputs and 2 x Gigabit Ethernet
  - 1 x DVB-S/S2 Satellite Receiver input
  - 1 x RF input
- SNMP, Web Interface and Touch Screen display



## SPECIFICATIONS

### TRANSMITTERS

<b>UHF digital output power:</b>	30 W, 50 W, 80 W and 130 W rms @ MER 40 dB typ.
<b>UHF analogue output power:</b>	50 W, 100 W, 220 W p.s.
<b>VHF digital output power:</b>	up to 100 W rms @ MER 38 dB typ.
<b>VHF analogue output power:</b>	220 W p.s.
<b>Frequency agility:</b>	UHF Band IV and V or VHF Band III
<b>Frequency resolution:</b>	1 Hz
<b>Pre-correction:</b>	Adaptive
<b>RF connector:</b>	N(f), 50 Ohm

### MODULATOR

#### DVB-T/-H/-T2

<b>Standard:</b>	EN300744, EN302304, EN302755, TS1021191, TS102773 (T2-MI), TS102034
<b>Inputs:</b>	4x ASI BNC (f), 75 Ohm or 2x ASI BNC (f), 75 Ohm and 2x RJ45 TS oIP 10/100/1000 Switch seamless between ASI inputs. Hierarchical and not hierarchical (DVB-T)
<b>FFT:</b>	1K (DVB-T2), 2K, 4K, 8K, 8K ext. (DVB-T2), 16K & 16K ext. (DVB-T2), 32K & 32K ext. (DVB-T2)
<b>Code rate:</b>	All modalities available according to the standard Block Short or Normal (DVB-T2) DVB-T: Reed-Solomon (204, 188) DVB-T2: BCH, LDPC
<b>Guard interval:</b>	1/32, 1/16, 1/8, 1/4, 19/256 (DVB-T2), 19/128 (DVB-T2), 1/128 (DVB-T2)
<b>Constellation:</b>	QPSK, 16QAM, 64QAM, 256QAM (DVB-T2). Rotated and non rotated (DVB-T2)
<b>MISO processing:</b>	Supported

#### ISDB-Tb

<b>Standard:</b>	ABNT NBR 15601, ABNT NBR 15603
<b>Inputs:</b>	4x ASI TS/BTS BNC (f), 75 Ohm or 2x ASI TS/BTS BNC (f), 75 Ohm and 2x RJ45 TS/BTS oIP 10/100/1000
<b>FFT:</b>	Mode 1 (2K), Mode 2 (4K), Mode 3 (8K)
<b>Code rate:</b>	1/2, 2/3, 3/4, 5/6, 7/8
<b>Guard interval:</b>	Up to 3 layers
<b>Hierarchical modulation:</b>	1/4, 1/8, 1/16, 1/32
<b>Constellation:</b>	QPSK, 16QAM, 64QAM
<b>Time interleaver:</b>	Fully supported
<b>Partial reception:</b>	Supported

#### DAB/DAB+/T-DMB

<b>Standard:</b>	EN 300401, ETS 300 799
<b>Inputs:</b>	4x ETI (NI[G703], NA5376[G704] or NA5592[G704]) BNC (f), 75 Ohm
<b>Transmission modes:</b>	Mode I, II, III, IV (Automatically detected from the ETI stream, or user selectable)
<b>Operation:</b>	MFN or SFN operations

#### ATSC

<b>Standard:</b>	A/53, A/110
<b>Inputs:</b>	4x ASI / SMPTE-310M BNC (f), 75 Ohm or 2x ASI / SMPTE-310M BNC (f), 75 Ohm and 2x RJ45 TS oIP 10/100/1000
<b>Modulation:</b>	8-VSB
<b>Input bit rate:</b>	19.39 Mbit/s
<b>Bandwidth:</b>	6 MHz
<b>Max processing delay:</b>	Up to 1 second (programmable)

#### Analogue

<b>Standard:</b>	B, G, D, K, M, N, I
<b>Inputs:</b>	Video BNC (f), 75 Ohm, audio Tini-OG "Mini XLR", 6 Pin (m), 600 Ohm
<b>Color system:</b>	PAL, NTSC

### SATELLITE RECEIVER (Option)

<b>Standard:</b>	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)
<b>DVB-S2:</b>	VCM, CCM, Multi Stream and Single Stream, Normal & Short FEC frames
<b>Symbol rate:</b>	1 - 45 Msym/s (DVB-S) 2 - 45 Msym/s (DVB-S2)
<b>Constellation:</b>	QPSK, 8PSK, 16APSK
<b>FEC:</b>	Automatic, all modalities available according to the standard Block Short or Normal DVB-S: Reed-Solomon (204,188) DVB-S2: BCH, LDPC
<b>Roll-Off:</b>	0.2, 0.25, 0.35
<b>Input connector:</b>	F (f), 75 Ohm
<b>Frequency:</b>	L-band 930÷2250 MHz
<b>LNB control voltage:</b>	Off, +13/18 Vdc, 22 kHz, 0.25 A (overload protection)
<b>RF input level:</b>	40 ÷ 100 dBµV (with attenuator)
<b>Output connector:</b>	BNC (f), 75 Ohm
<b>Modality:</b>	188 bytes

<b>Max input bit rate:</b>	80 Mbps (CAM limit: 72 Mbps)
<b>CAM interface:</b>	PCMCIA DVB-CI Common Interface
<b>CAS mode (Conditional Access):</b>	Multicrypt, Simulcrypt
<b>CAS support:</b>	Mediaguard, Viaccess, Irdeto, Conax, BISS with Professional multiprogram CAM (descrambling of up to 24 Elementary Streams) Betacrypt, Cryptoworks, Nagravision with standard consumer CAM (descrambling of up to 4 services)

### REPEATER/GAP FILLER

<b>RF Input</b>	
<b>Signal type:</b>	One DTV channel (DVB-T/H/T2, ISDB-T/Tb, ATSC)
<b>Frequency range:</b>	170 ÷ 862 MHz (agile tuning)
<b>Sensitivity:</b>	-75 ÷ -15 dBm
<b>Selectivity:</b>	> 60 dB ± 4.2 MHz
<b>NF (Pi=-50 dBm):</b>	< 6 dB
<b>Conversion type:</b>	Direct Base Band Conversion (Zero IF)
<b>Return losses:</b>	> 15 dB
<b>Connector:</b>	N (f), 50 Ohm

#### Echo Canceller

<b>Cancellation level:</b>	40 dB, typical
<b>Cancellation window:</b>	20 µs
<b>Selective cancellation window:</b>	1.6 µs (time shift from 2 to 820 µs)
<b>Doppler cancellation:</b>	yes
<b>Maximum echo/signal ratio:</b>	+15 dB (over the main signal), typical
<b>Total delay:</b>	< 10 µs

#### Echo Canceller + additional high performance cancellation option

<b>Cancellation level:</b>	65 dB, typical (over the main signal)
<b>Maximum echo/signal ratio:</b>	> +35 dB (over the main signal), typical
<b>Maximum echo level at input:</b>	-10 dBm
<b>Max. delay compensation:</b>	200 µs (extendable)

### GPS / GLONASS (Option)

<b>Input connector:</b>	N (f), 50 Ohm
<b>Input/Monitor output 10 MHz:</b>	BNC (f), 75 Ohm
<b>Input/Monitor output 1 PPS:</b>	BNC (f), 75 Ohm
<b>Phase noise:</b>	-140 dBc/Hz @ 10 kHz -150 dBc/Hz @ 100 kHz
<b>Stability:</b>	1e-12 / 24 H with disciplined OCXO
<b>Hold-over stability:</b>	5 µs after 5 hours (optional 1 µs after 24 hours)

### MECHANICAL

<b>Chassis:</b>	1U rack 19"
<b>Width:</b>	482 mm
<b>Height:</b>	43.6 mm
<b>Depth:</b>	460.5 mm without fans
<b>Weight:</b>	7.5 Kg

### CONTROLS

TFT touchscreen
Web GUI
SNMP
GPIO

### ENVIRONMENTAL

<b>Operating temperature range:</b>	-5°C ÷ 40°C
<b>Max. relative humidity:</b>	90% non condensing
<b>Max. operating altitude:</b>	2500 m. a.s.l. (>2500 m. optional)

### ELECTRICAL

<b>Power supply:</b>	Single Phase 100÷240 V~ 50/60 Hz, IEC320 C14 Plug
<b>Maximum consumption:</b>	196 W @ 30 W rms (S-VISION 30) 215 W @ 50 W rms (S-VISION 50) 290 W @ 80 W rms (S-VISION 80) 470 W @ 130 W rms (S-VISION 130)
	380 W @ 100 W rms (S-VISION 100V)

### NOTES

To comply with the applicable standards and limit values for the suppression of out-of-band emissions (and in the case of digital standards, also for maintaining the required shoulder distance), the transmitter may only be operated with suitable filters at the RF output.

Specifications are subject to change without notice.