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TELEVISION EQUIPMENT
CATV CATALOGUE

APPLICATION SCHEMES ON THE NETWORK 3

TRANSMITTERS WITH INTERNAL MODULATION 4

VERMAX-HL-1310 4

VERMAX-HL-D1550 5

VERMAX-HL-1550EML 6

TRANSMITTERS WITH EXTERNAL DIGITAL MODULATION 7

VERMAX-HL-1550 7

TRANSMITTERS WITH EXTERNAL ANALOG MODULATION 8

VERMAX-HL-1550CM 8

OPTICAL AMPLIFIERS 9

VERMAX-EDFA 9

VERMAX-MLP 10

USER OPTICAL RECEIVERS 11

VERMAX-LTP-078-6 11

VERMAX-LTP-082-15 12

VERMAX-LTP-088-7 13

GROUP OPTICAL RECEIVERS 14

VERMAX-LTP-112-7 14

VERMAX-LTP-112-9 15

VERMAX-LTP-114-9 16

VERMAX-LTP-116-7 17

OPTICAL SWITCHES 18

VERMAX-OS-2X1 18

HEAD STATIONS 19

SNR-IPQAM 19

SNR-IPPAL 20

SNR-IPGW 21

SNR-IPQAM-48

Vermax-HL-1550CM-2x9

OLT P3600-08E-2AC

Vermax-MLP-8x24 P

Vermax-LTP-112-7-ISN

Vermax-LTP-112-9-ISNp

ONU GP1702-2FC-S

VERMAX-HL-1310

- A high-line DFB laser with optical isolation and distributed feedback manufactured by ORTEL (a division of EMCORE Corporation, USA);
- Specially designed for multi-channel transmission of video services;
- AGC system for RF input signals;
- Two power supplies.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1310 ± 20 nm
Output optical power	4 … 31 mW +6dBm … +15dBm
Laser type	DFB laser
Optical modulation mode	Internal modulation
Optical connector type	SC/APC or FC/APC
Optical return loss	> 45 dB
RF Part	
RF input level	75 … 85 dBuV
Frequency range	47 ~1218 MHz
Flatness in band	± 0.75 dB
RF input impedance	-20±1 dB
Input test port	-20±1dB
Laser drive level test port	≥ 16 dB
Input return loss	≥ 50 dB
Adjusting range under AGC mode	-5 …+5 dB
MGC attenuation range	0 …15 dB
Channel Part (59 PAL channels)	
C/N	≥ 52 dB
C/CTB	≥ 67 dB
C/CSO	≥ 62 dB
General Part	
Management	Ethernet, RS-232
Operating temperature	-5 … + 45 °C
Storage temperature	-20 … + 65 °C
Maximum power consumption	≤15 W
Weight	5.5 Kg
Sizes	483 x 395 x 44 мм (1U)
Power voltage	AC: 90-265 V or DC: 48 V

TRANSMITTERS WITH INTERNAL MODULATION

VERMAX-HL-D1550

- Budget transmitter with a wavelength of 1550 nm;
- Recommended for communication lines up to 50 km long;
- Can be used in xPON networks.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1550 ± 10 nm
Output optical power	10 dBm
Laser type	DFB laser
Optical modulation mode	Internal modulation
Optical connector type	SC/APC or FC/APC
Optical return loss	> 50 dB
SBS threshold	+13 … +19 in 0.5 dB increments
RF Part	
RF input level	75 … 85 dBuV
Frequency range	47 - 1218 MHz
Flatness in band	± 1 dB
Adjusting range under AGC mode	-5 …+5 dB
MGC attenuation range	0 … 20 dB
Input resistance	75 ohms
Channel Part	
C/N	≥ 50 dB
C/CTB	≥ 65 dB
C/CSO	≥ 60 dB
General Part	
Management	Ethernet, RS-232
Operating temperature	-5 … + 45 °C
Storage temperature	-20 … + 65 °C
Maximum power consumption	30 W
Weight	5 Kg
Sizes	483 x 395 x 44 мм (1U)
Power voltage	AC: 110-250 V or DC: 48 V

VERMAX-HL-1550EML

- Low cost;
- Highly linear DFB laser with integrated electroabsorption modulator (EML);
- Recommended for transmission of digital television signals;
- Recommended for communication links up to 50 km long;
- Can be used in xPON networks;
- Optional installation of CWDM multiplexer of 1310/1490 and 1550 nm wavelengths.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1550 nm
Output optical power	10 dBm
Laser type	EML (laser with built-in modulator)
Optical modulation mode	Internal modulation
Optical connector type	SC/APC or FC/APC
SBS threshold	+13 ... +19 in 0.5 dB increments
RF Part	
RF input level	72 ... 82 dBuV
Frequency range	47 - 870 MHz
Flatness in band	± 0.75 dB
Adjusting range under AGC mode	-5 ...+5 dB
MGC attenuation range	0 ... 20 dB
Return losses	16 dB
Input resistance	75 ohms
Channel Part	
C/N	≥ 50 dB
C/CTB	≥ 65 dB
C/CSO	≥ 60 dB
General Part	
Management	Ethernet
Operating temperature	-5 ... + 55 °C
Storage temperature	-30 ... + 70 °C
Maximum power consumption	60 W
Weight	5.5 Kg
Sizes	483 x 377 x 44 мм (1U)
Power voltage	AC: 100-250 V or DC: 48 V

VERMAX-HL-1550

- Recommended for communication lines up to 65 km long;
- Can be used in xPON networks;
- Up to 3 EDFA amplifiers can be installed after the transmitter.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1545 - 1560 nm
Output optical power	5 or 7 dBm
Laser type	DFB laser
Optical modulation mode	Digital external modulation
Spectral linewidth	0,65 MHz
Side mode suppression ratio	30 dB
Relative noise intensity	< -160
Optical connector type	SC/APC or FC/APC
Optical return loss	> 50 dB
SBS threshold	+13 ... +19 in 0.5 dB increments
RF Part	
RF input level	75 ... 85 dBuV
Frequency range	47 - 1003 MHz
Flatness in band	± 1 dB
Adjusting range under AGC mode	-3 ...+3 dB
MGC attenuation range	0 ... +15 dB
Input resistance	75 ohms
Return losses	16 dB
Channel Part	
C/N	≥ 52 dB
C/CTB	≥ 65 dB
C/CSO	≥ 63 dB
General Part	
Management	Ethernet, RS-232
Operating temperature	-5 ... + 45 °C
Storage temperature	-30 ... + 70 °C
Maximum power consumption	60 W
Weight	5,5 Kg
Sizes	483 x 455 x 44(1U)
Power voltage	AC: 110-250 V or DC: 48 V

VERMAX-HL-1550CM

- Two equivalent optical outputs;
- Recommended for transmission of both analog and digital television signals;
- Recommended for communication lines up to 200 km long
- Can be used in xPON networks;
- Up to 5 EDFA amplifiers can be installed after the transmitter.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1545 - 1560 nm
Output optical power	5, 7, 9 or 10 dBm
Laser type	DFB laser
Optical modulation mode	Analog external modulation
Spectral linewidth	0,3 MHz
Side mode suppression ratio	30 dB
Relative noise intensity	< -160
Optical connector type	SC/APC or FC/APC
Optical return loss	> 50 dB
SBS threshold	+13 ... +19 in 0.5 dB increments
RF Part	
RF input level	75 ... 85 dBuV
Frequency range	47 - 1003 MHz
Flatness in band	± 1 dB
Adjusting range under AGC mode	-3 ...+3 dB
MGC attenuation range	0 ... +15 dB
Input resistance	75 ohms
Return losses	16 dB
Channel Part	
C/N	≥ 52 dB
C/CTB	≥ 65 dB
C/CSO	≥ 63 dB
General Part	
Management	Ethernet, RS-232
Operating temperature	0 ... + 45 °C
Storage temperature	-40 ... + 50 °C
Maximum power consumption	60 W
Weight	6 Kg
Sizes	483 x 455 x 44(1U)
Power voltage	AC: 100-240 V or DC: 48 V

VERMAX-EDFA

- Built-in electronic attenuator 0...4 dB;
- Optional - installation of an additional optical input and an input reserve switch.

Optical Part	
Number of inputs	1, 2 optional
Number of outputs	1
Operating wavelength	1535 -1565 nm
Optical input power range	-10 ... +10 dBm
Output optical power	15 ... 25 dBm (1 dBm step)
Output power stability	±0,5 dB
Noise figure	≤ 5 dB
Optical connector type	SC/APC, LC/APC
WDM multiplexer	No
Channel Part	
C/N	≥ 52 dB
C/CTB	≥ 65 dB
C/CSO	≥ 63 dB
General Part	
Management	Ethernet, RS-232
Supports SNMP	Yes
Operating temperature	-10 ... + 50 °C
Storage temperature	-40 ... + 70 °C
Maximum power consumption	30 W
Weight	6 Kg
Sizes	483 x 475 x 44(1U)
Power voltage	AC: 100-240 V or DC: 48 V

VERMAX-MLP

- Built-in electronic attenuator 0...3 dB;
- Optionally - installation of additional optical input and input redundancy switch (S models);
- Optional installation of CWDM wavelength multiplexer 1310/1490 and 1550 nm (P models);
- Optional optional additional optical input and CWDM multiplexer (SP models).

MAIN FEATURES:

Optical Part	
Number of inputs	1, 2 optional
Number of outputs	4, 8, 16, 32 or 64
Operating wavelength	1535 -1565 nm
Optical input power range	-10 ... +10 dBm
Output power at the port	15 ... 25 dBm depending on the model (1 dBm step)
Total output power	25...39 dBm depending on the model (1 dBm step)
Output power stability	±0,5 dB
Noise figure	≤ 5 dB
Attenuator adjustment range	0...3 dB (step 0.1 dB)
Optical connector type	SC/APC, LC/APC
CWDM multiplexer	Optional
Channel Part	
C/N	≥ 50 dB
C/CTB	≥ 63 dB
C/CSO	≥ 63 dB
Optical Switch (for dual input models)	
Number of input ports	2
Insertion loss	≤ 1.0 dB
Switching time	≤ 5 ms
Switching mode	Automatic switching mode
General Part	
Management	Ethernet, RS-232
Supports SNMP	Yes
Operating temperature	-10 ... + 50 °C
Storage temperature	-40 ... + 70 °C
Maximum power consumption	50 W
Weight	6 Kg
Sizes	483 x 475 x 44 mm (1U) 483 x 440 x 88 mm (2U)
Power voltage	AC: 160-250 V or DC: 48 V

MODEL RANGE:

Number of outputs	Optical output power options per port (1 dBm step)	Device size variants	Type of optical connectors	Possibility to install
4	18 ... 24 dBm	1U, 2U	SC/APC	For all models
8	15 ... 23 dBm	1U	SC/APC	For all models
8	15 ... 24 dBm	2U	SC/APC	For all models
16	15 ... 20 dBm	1U	SC/APC	For all models
16	15 ... 24 dBm	2U	SC/APC	For all models
32	15 ... 22 dBm	2U	SC/APC by default, LC/PC to order	For models with output power 15...21 dBm
64	15 ... 18 dBm	2U	SC/APC by default, LC/PC on order by default in P and SP models	For models with output power 15...17 dBm

VERMAX-LTP-078-6

- Infinitely variable output level control with attenuator;
- External power supply and low power consumption;
- Optional - built-in filter of optical signals with wavelengths 1310 nm/1490 nm, or their output to a separate PON port.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1100...1600 nm for Vermax-LTP-078-6-IS 1550 ± 10 nm for other models
Number of optical inputs	1
Operating input optical power	-10 ... 0 dBm
Optical connector type	SC/APC or FC/APC
WDM filter	Optional
RF Part	
RF output level	78 dBuV
Frequency range	45 ... 1003 MHz
Attenuator adjustment range	0 ... 20 dBm
Number of RF outputs	1
Channel Part	
C/N	≥ 46 dB
C/CTB	≥ 60 dB
C/CSO	≥ 60 dB
General Part	
Management interfaces	No
Maximum power consumption	3 W
Sizes	109 x 80 x 26
Power voltage	DC: 12 V

MODEL RANGE:

Vermax-LTP-078-6-IS	Vermax-LTP-078-6-IS Optical Receiver for CaTV Networks
Vermax-LTP-078-6-ISp	Vermax-LTP-078-6-ISp optical receiver for CaTV networks, 1310/1490 nm wavelengths are output to a separate SC/UPC port
Vermax-LTP-078-6-ISw	Optical receiver for CaTV networks Vermax-LTP-078-6-ISw, wavelengths 1310/1490nm blocked (built-in filter)

VERMAX-LTP-082-15

- High sensitivity and wide power range of input optical signals (-18...+2 dBm);
- Built-in AGC with a wide adjustment range;
- External power supply and low power consumption.

MAIN FEATURES::

Optical Part	
Output optical wavelength	1100...1600 nm for Vermax-LTP-082-15-IS 1550 ± 10 nm for Vermax-LTP-082-15-ISW55
Number of optical inputs	1
Operating input optical power	-18 ... +2 dBm
AGC system adjustment range	-15 ... -5 dBm
Optical connector type	SC/APC
WDM filter	Optional
RF Part	
RF output level	82 dBuV
Frequency range	45 ... 862 MHz
Number of RF outputs	1
Channel Part	
C/N	≥ 44 dB
C/CTB	≥ 60 dB
C/CSO	≥ 60 dB
General Part	
Management interfaces	No
Maximum power consumption	1,6 W
Sizes	104 x 85 x 25
Power voltage	DC: 5 V

MODEL RANGE:

Vermax-LTP-082-15-IS	Optical receiver for CaTV networks Vermax-LTP-082-15-IS (without optical filter)
Vermax-LTP-082-15-ISW55	Optical receiver for CaTV networks Vermax-LTP-082-15-ISW55, operating wavelength 1550±10 nm

VERMAX-LTP-088-7

- High sensitivity and wide power range of the input optical signals (-15 ... +2 dBm);
- Two high power RF outputs, optionally 1 output and 1 taps (TAP -10/-20 dB);
- External power supply and low power consumption.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1100...1600 nm
Number of optical inputs	1 or 2 optional
Operating input optical power	-15 ... +2 dBm
Optical connector type	SC/APC
WDM filter	No
RF Part	
RF output level	88 dBuV
Frequency range	45 ... 1003 MHz
Number of RF outputs	1
Channel Part	
C/N	≥ 51 dB
C/CTB	≥ 65 dB
C/CSO	≥ 62 dB
General Part	
Management interfaces	No
Maximum power consumption	3 W
Sizes	105 x 67 x 24 mm
Power voltage	DC: 12 V

VERMAX-LTP-112-7

- Electronic adjustment of the level and slope of the frequency response;
- Built-in power supply and low power consumption
- Optionally two redundant optical inputs;
- Optional - SNMP management and monitoring with Vermax NMS software.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1100...1600 nm
Number of optical inputs	1, 2 optional
Operating input optical power	-7 dBm
AGC system adjustment range	-9...+2 dBm, with the possibility of setting the starting point in the range of -9...-4 dBm (step 1 dBm).
Optical connector type	SC/APC
WDM filter	No
RF Part	
Operating RF output power level	108 dBuV
Maximum output power level	112 dBuV
Frequency range	45 ... 862 MHz, optional 45...1003 MHz
Electronic gain control ATT and EQ	0..15 dBuV / 0..15 dB
Number of outputs	2 (default setting is -4 dB splitter, optional tap full power output and tap -10 dB tap)
Channel Part (59 PAL CH, input signal power -1 dBm)	
C/N	≥ 51 dB
C/CTB	≥ 60 dB
C/CSO	≥ 60 dB
General Part	
Management interfaces	Ethernet (optional)
Maximum power consumption	8 W
Sizes	190 x 110 x 52 mm
Power voltage	AC: 150 .. 265 V

MODEL RANGE:

Vermax-LTP-112-7-IS	Vermax-LTP-112-7-IS optical receiver for CaTV networks, single optical input
Vermax-LTP-112-7-ISN	Optical receiver for CaTV networks Vermax-LTP-112-7-ISN, single-optical input, with IP interface
Vermax-LTP-112-7-IDN	Optical receiver for CaTV networks Vermax-LTP-112-7-IDN, two optical inputs, with IP interface

VERMAX-LTP-112-9

- Electronic level and slope control;
- External power supply and low power consumption;
- Optionally SNMP control and monitoring with Vermax NMS software;
- Optional output of optical signals with wavelengths 1310 nm and 1490 nm wavelengths to a separate PON port.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1100...1600 nm
Number of optical inputs	1
Operating input optical power	-9 dBm
AGC system adjustment range	-9...+2 dBm, with the possibility of setting the starting point in the range of -9...-7 dBm (step 1 dBm).
Optical connector type	SC/APC
WDM filter	No
RF Part	
Operating RF output power level	108 dBuV
Maximum output power level	112 dBuV
Frequency range	45 ... 862 MHz, optional 45...1003 MHz
Electronic gain control ATT and EQ	0..15 dBuV / 0..15 dB
Number of outputs	2 (default setting is -4 dB splitter, optional – tap full power output and tap -10 dB)
Channel Part (59 PAL CH, input signal power -1 dBm)	
C/N	≥ 51 dB
C/CTB	≥ 60 dB
C/CSO	≥ 60 dB
General Part	
Management interfaces	Ethernet (optional)
Maximum power consumption	8,5 W
Sizes	142 x 98 x 36 mm
Power voltage	DC: 12 V, 1 A

MODEL RANGE:

Vermax-LTP-112-9-IS	Optical receiver for CaTV networks Vermax-LTP-112-9-IS, without IP-interface
Vermax-LTP-112-9-ISN	Optical receiver for CaTV networks Vermax-LTP-112-9-ISN, with IP-interface
Vermax-LTP-112-9-ISNp	Optical receiver for CaTV networks Vermax-LTP-112-9-ISNp, wavelengths 1310/1490 nm output on a separate SC/UPC port, with IP interface

VERMAX-LTP-114-9

- Electronic adjustment of the level and slope of the frequency response;
- Possibility of independent configuration of the RF outputs — two high power RF outputs or one output and one -10dB output (inserts are supplied with the receiver);
- Optional - two optical inputs with redundancy;
- Optional - output of optical signals with wavelengths 1310 nm and 1490 nm to a separate PON port;
- Optional - management and monitoring via SNMP protocol using Vermax NMS software.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1100...1600 nm
Number of optical inputs	1, 2 optional
Operating input optical power	-9 dBm
AGC system adjustment range	-9...+2 dBm, with the possibility of setting the starting point in the range of -9...-7 dBm (step 1 dBm).
Optical connector type	SC/APC
WDM filter	Optional
RF Part	
Operating RF output power level	108 dBuV
Maximum output power level	116 dBuV
Frequency range	45 ... 862 MHz, optional 45...1003 MHz
Electronic gain control ATT and EQ	0...15 dBuV / 0...15 dB
Number of outputs	2 (stand-alone configuration)
Channel Part (input signal power -6 dBm)	
C/N	≥ 51 dB
C/CTB	≥ 67 dB
C/CSO	≥ 62 dB
General Part	
Management interfaces	Ethernet (additional module required)
Maximum power consumption	14 W
Sizes	235 x 150 x 108 mm
Power voltage	AC: 150-265 V, (DC 35-90 V optional)

MODEL RANGE:

Vermax-LTP-114-9-OS	Optical receiver for CaTV networks Vermax-LTP-114-9-OS, 1 optical input
Vermax-LTP-114-9-OD	Vermax-LTP-114-9-OD optical receiver for CaTV networks, two optical inputs
XX032N0070	SNMP monitoring module for optical receiver Vermax-LTP-114-9
FZ110	10 dB output tap insertion
FP204	4 dB output splitter insert

VERMAX-LTP-116-7

- Self-configuration of RF outputs — two high-power RF outputs or one output and one -10 dB
- (inserts are supplied with the receiver);
- Electronic adjustment of the level and slope of the frequency response;
- Internal power supply and low power consumption
- Optional two optical inputs with redundancy;
- Optional - SNMP management and monitoring with Vermax NMS software.

MAIN FEATURES:

Optical Part	
Output optical wavelength	1100...1600 nm
Number of optical inputs	1, 2 optional
Operating input optical power	-7 dBm
AGC system adjustment range	-9...+2 dBm, with the possibility of setting the starting point in the range of -9...-7 dBm (step 1 dBm).
Optical connector type	SC/APC
WDM filter	No
RF Part	
Operating RF output power level	108 dBuV
Maximum output power level	116 dBuV
Frequency range	45 ... 862 MHz, optional 45...1003 MHz
Electronic gain control ATT and EQ	0...15 dBuV / 0...15 dB
Number of outputs	2 (stand-alone configuration)
Channel Part (input signal power -6 dBm)	
C/N	≥ 51 dB
C/CTB	≥ 67 dB
C/CSO	≥ 62 dB
General Part	
Management interfaces	Ethernet (additional module required)
Maximum power consumption	14 W
Sizes	220 x 205 x 65 mm
Power voltage	AC: 150-265 V, (DC 35-90 V optional)

MODEL RANGE:

Vermax-LTP-116-7-OS	Optical receiver for CaTV networks Vermax-LTP-116-7-OS, 1 optical input, no IP interface
Vermax-LTP-116-7-OSN	Optical receiver for CaTV networks Vermax-LTP-116-7-OSN, 1 optical input, with IP interface
Vermax-LTP-116-7-OD	Optical receiver for CaTV networks Vermax-LTP-116-7-OD, 2 optical inputs, no IP interface
Vermax-LTP-116-7-ODN	Optical receiver for CaTV networks Vermax-LTP-116-7-ODN, 2 optical inputs, with IP interface
XX032N0070	SNMP monitoring module for optical receiver Vermax-LTP-116-7
FZ110	10 dB output tap insertion
FP204	4 dB output splitter insert

VERMAX-OS-2X1

- Automatic and manual switching modes;
- Support for remote monitoring via SNMP;
- Optional - RF signal recognition function (triggers when the RF signal level drops in addition to the optical signal)

MAIN FEATURES:

Optical Part	
Output optical wavelength	1200...1600 nm
Number of optical inputs	2
Operating input optical power	-15 ... +24 dBm
Number of optical outputs	1
Losses incurred	1,3 dB
Optical connector type	SC/APC
Switching types	Automatic, manual
Maximum switching time between inputs	500 ms
General Part	
Supports management and monitoring via SNMP	Yes
Management interfaces	Ethernet
Maximum power consumption	2 W
Sizes	483 x 270 x 44 mm
Power voltage	AC: 160 .. 250 V

MODEL RANGE:

Vermax-OS-2x1	Vermax-OS-2x1 optical switch
Vermax-OS-2x1-RF	Vermax-OS-2x1-RF optical switch, with RF signal recognition function

SNR-IPQAM

- 16, 32, 48 or 64 QAM carriers on each output (DVB-C (EN 300 429), ITU-T J.83A/B/C and GB / T170), flexible adjacent and non-adjacent carrier modes;
- Ethernet ports with redundancy;
- Intelligent empty packet removal and autofill flow (stacking);
- Real-time bitrate monitoring of received streams;
- Support for adding NIT, CAT, SDT, BAT tables;
- Support PID filtering, PSI/SI table remapping and updating;
- Support PCR correction, PCR jitter at output less than 200 ns.
- Support UDP data stream reception;

MAIN FEATURES:

Input	
IP interfaces	2 ports for 1000Base-T, Ethernet
	4 ports for 10G SFP/SFP+ optional
	Built-in switch for 12 ports GbE optional
Maximum bitrate per port	900 Mb/s (9600 Mb/s optional)
Data format	TS - UDP (RTP optional), unicast and multicast, IGMP V2/V3
	MPTS, SPTS and DATA support
VOD service	NGOD Protocol D6
Output	
IP interfaces	Ethernet
RF out	1 or 2 RF outputs for 16/32/48/64 carriers per card, depending on the version, 75 ohms.
Frequency range	50...1000 MHz
Symbolic speed	3000...6952 KSym/s
Output level	85...120 dBuV, 1 dB step
Qualitative indicators	MER > 40 dB, CNR > 43dB
Modulation format	16 / 32 / 64 / 128 / 256 QAM, ITU-T J.83 Annex-A/B/C
Data processing	
PSI analysis	Supports PID remapping in 32 QAM streams
Multiplexing mode	PCR fine-tuning
	Support for adding SI data
PCR correction	PCR output jitter less than 200 ns
Scrambler mode	6 CAS
	Scrambling standard: ETR289, ETSI 101 197, ETSI 103 197
General	
Management	Web, SNMP v2-3
Power supply	AC: 100-240 V (2 blocks in the version at 48, 64QAM)
Power consumption	200 W
Sizes	284 x 444 x 44 mm 480 x 440 x 44.5 mm (version at 48, 64QAM)
Weight	5.6 Kg

MODEL RANGE:

Model	Max. number of carriers	Number of RF outputs	IN-OUT Ports	Transport protocols
SNR-IPQAM-16	16	1	2 ports for 1000Base-T, Ethernet	UDP
SNR-IPQAM-32	32	1 or 2 (depending on the hardware version)	2 ports for 1000Base-T, Ethernet	UDP
SNR-IPQAM-48	48 (64-192 optional)	2 (per card)	4 ports for 10G SFP/SFP+ (in addition, a 12-port switch is built in)	UDP / RTP

SNR-IPPAL

MAIN FEATURES:

Input	
Interfaces	2 or 4 GbE ports (up to 64 streams)
Transport protocols	UDP/RTP, unicast и multicast, IGMP v2/v3
Package length	188 / 204 bytes
Decoder	
Video codecs	HEVC/H.265, H.264/AVC, MPEG-2
Audio codecs	MPEG-1/2 Layer 1/2, (HE-)AAC, AC3
Data types	CC, Teletext, DVB subtitles
Video resolutions	HEVC/H.265: 1080@60P, 1080@60I, 1080@50P, 1080@50I, 720@60P, 720@50P H.264/AVC: 1080@60I, 1080@50P, 1080@50I, 1080@30P, 1080@25P, 720@60P, 720@50P, 576@50I, 480@60I MPEG2: 1080@60I, 1080@50I, 720@60P, 720@50P, 576@50I, 480@60I
Modulation	
Number of carriers	32 adjacent or non-adjacent carriers 64 (32x2) adjacent or non-adjacent carriers in the 400MHz band
Connectors types	F female, 75 Ohm
frequency range	47...862 MHz
frequency band	400 MHz
Output power level	98 dBµV
Return loss	14 dB
Out-of-band emissions	60 dB
Video signal-to-noise ratio	60 dB
CNR	60 dB (single carrier) ≥ 55.5 dB (with 32 carriers)
TV modulation standards	PAL B/G/D/K/K/M/N/I, NTSC M, SECAM
Other parameters	
Output image resolution	480i/576i
OSD Logo	JPG, BMP or PNG format Titles: adjust scrolling speed and direction
Output audio level setting	0 - 100%
General	
Management	Web, SNMP v2-3
Power supply	AC: 220 В ± 10% V DC: 48 V (optional)
Sizes	420 x 440 x 44,5 mm 483 x 330 x 88 mm (version at 64 carriers)

MODEL RANGE:

SNR-IPPAL	2 GbE inputs, 1 RF output, 32 non-contiguous carriers in 400 MHz bandwidth
SNR-IPPAL 64	4 GbE inputs, 2 RF outputs of 32 non-contiguous carriers in the 400 MHz band

SNR-IPGW

- SRT protocol support
- Support about 8-12 HD/SD programs (bitrate: 8Mbps) when converting UDP (Multicast) to HTTP/RTP/RTSP/HLS.

MAIN FEATURES:

Input	
Interfaces	1 x 100/1000M RJ45, полный дуплекс
Transport protocols	HTTP, UDP(SPTS), RTP(SPTS), RTSP, HLS
Input type	IP streaming
Output	
Interfaces	1 x 10/100/1000M RJ45, full duplex
Transport protocols	SRT(Unicast), HTTP (Unicast), UDP (SPTS, Multicast) HLS и RTMP
Input type	IP streaming
Management and monitoring	
Interfaces	1 x RJ45 100/1000M
Protocol	HTTP Web interface
Management and monitoring	
Power supply	AC 220V±10%, 50/60Hz
Operating temperature	0~45 °C
Storage temperature	-20~80 °C

NAG is a leading telecom and IT solution provider representing a 20-year history of expertise. NAG has been working with a large number of customers in the CIS and around the world since 2004 providing the following solutions:

- full range of equipment for telecom operators;
- L2 and L3 Networking solutions;
- SOHO WiFi Routers and IPTV STB equipment;
- intelligent video surveillance systems with built-in analytics;
- Servers and Storages;
- Infrastructure and Power supply solutions.

With over 650 dedicated employees, including a strong engineering team of 150+ employees, NAG operate offices in Dubai (UAE), Almaty (Kazakhstan) and Tashkent (Uzbekistan). Our logistics centers in Washington (USA) and Shanghai (China) allow working directly with foreign partners and ship out goods with the highest quality and optimized timelines.

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— developer of equipment and solutions for the telecommunications industry, industry and business. We have accumulated extensive experience in the development and construction of communication networks, data transmission networks, as well as network infrastructures and information security systems.