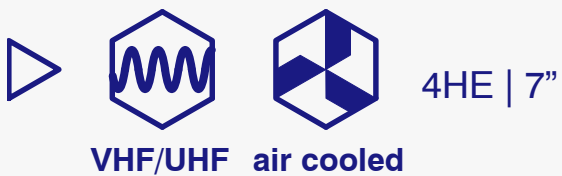
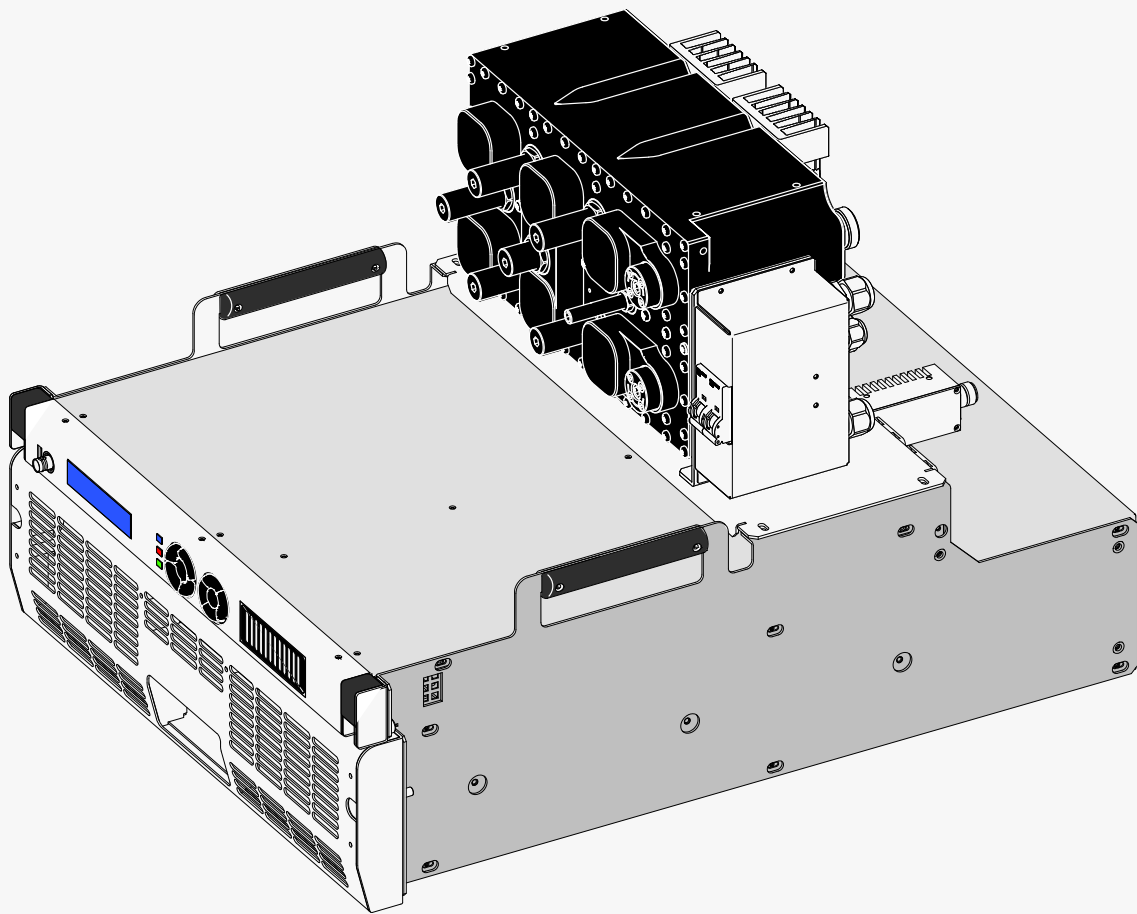


ALPANLINE

COMPACT TRANSMITTERS



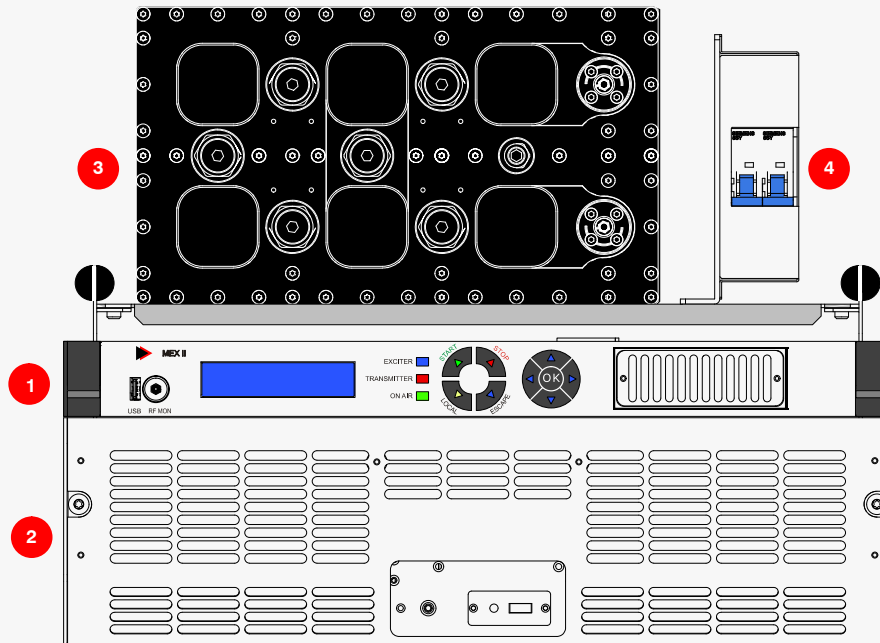
ALPANLINE CONFIGURATIONS

Tab. 1 – Alpan line VHF configuration data

HPAs number		PWR (W)			RF OUT CONNECTOR
		MIN	TYP	MAX	
ALPAN 3	<i>DIGITAL TV standards</i>	750 (MER 33dB)	750 (MER 33dB)	750 (MER 33dB)	7/16"
		700 (MER 36dB)	700 (MER 36dB)	700 (MER 36dB)	
	<i>ATSC 1.0</i>	800			
	<i>DAB</i>	1000			
	<i>ANALOG</i>	1500			

Tab. 2 – Alpan line UHF configuration data

HPAs number		PWR (W)			RF OUT CONNECTOR
		MIN	TYP	MAX	
ALPAN 3	<i>DIGITAL TV standards</i>	650 (MER 33dB)	650 (MER 33dB)	650 (MER 33dB)	7/16"
		600 (MER 36dB)	600 (MER 36dB)	600 (MER 36dB)	
	<i>ATSC 1.0</i>	700			
	<i>ANALOG</i>	1250			



1	MEX-II MULTISTANDARD MODULATOR	3	BAND PASS FILTER (OPTIONAL)
2	AMPLIFIER MODULE	4	MAINS BREAKER

Itelco recently updated its range of compact solid state transmitters for broadcasting market, for both VHF and UHF bands.

The new models maintain the traditional safety features of Itelco transmitters and improve the ease of use by the operators thanks to the extremely simple design.

The standardization among product lines and the optimization of the manufacturing process allows Itelco to be extremely competitive, meeting the customers needs in terms of operating cost reduction, ease of maintenance and spare parts management.

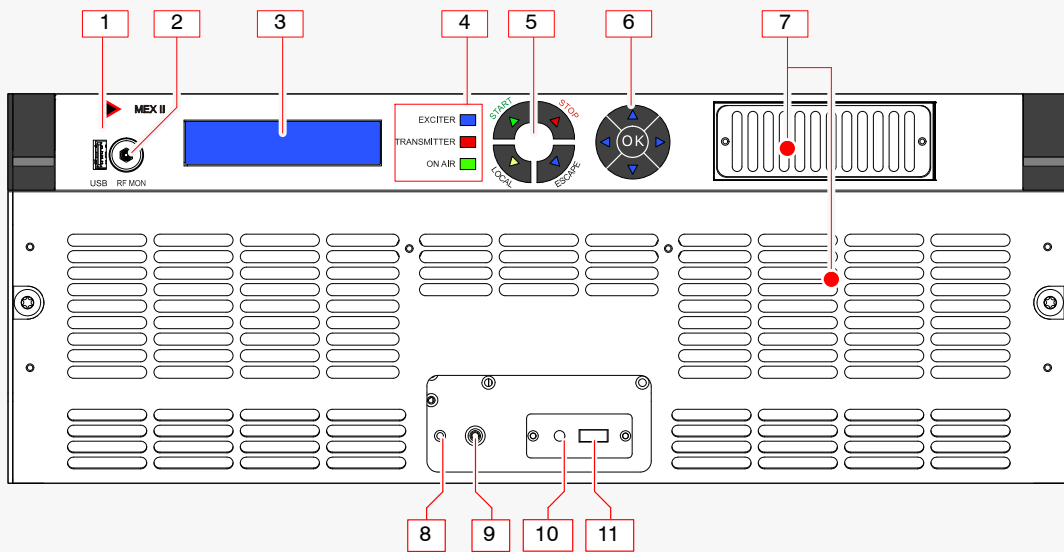
The ALPAN compact transmitter line perfectly meets low power solution requirements, and is capable of delivering up to 1.4kWps (600Wrms DVB-T/H-T2).

One outstanding feature of ALPAN transmitters is their Multi-Standard Capability which makes them compatible with all worldwide standards used for digital television transmission, with a special attention to latest developments. The ALPAN supports line DVB-T2, DVB-T/H, ISDB-T/Tb, ATSC, ATSC 3.0, DAB, and Analog TV.

A band pass filter (*available as option*) can be arranged on the plate close to the mains breaker. Its compactness, modularity and redundancy are keys features of the transmitter as well as of the cooling system. The ALPAN UHF transmitter line is characterized by:

MAIN FEATURES

- **Multi-Standard operation** (DVB-T/H/T2, ATSC, ATSC 3.0, ISDB-T/Tb, DAB, Analog –*all standards*)
- **Dual-Cast operation** (*optional*)
- **Fully broadband** on UHF frequencies
- **Low power consumption**
- **Doherty technology**
- **Latest LDMOS** technology for HPA
- **Hot-pluggable** HPA
- **USB port** for HPA section
- **MEX-II** multi-standard exciter
- **Seamless** input switching between ASI and/or IP (with priority) all combinations in SFN
- **Adaptive precorrection**
- **2 ASI** input
- **2 GbE** available inputs
- **Extremely compact** design
- **Modular** design
- **Easy installation** and maintenance
- **Band-pass filter** option
- **SNMP / Web Server** remote control
- **CAN-bus** internal communication
- **Internal GPS** for SFN operation (*optional*)
- **Remote** software/firmware upgrade
- **High Efficiency** air cooling system



- | | | |
|---|-------------------------|--|
| 1 | USB | USB port used only by <i>Itelco</i> for maintenance purposes.
<i>Not used for communication with DVB-T2 modulator.</i> |
| 2 | RF MONITOR | Connector (SMB; female) for monitoring the RF output signal of the unit. |
| 3 | DISPLAY | High contrast LCD display (blue-white with bright backlight). |
| 4 | SET OF 4 LED INDICATORS | <p>EXCITER (multicolor); indicates MEX status according to the colours, as follows
 <i>BLUE</i> MEX is delivering its nominal RF output power;
 <i>BLUE (blinking)</i> warm up at the switching-on (approx. 30sec); within this time interval all alarms are inhibited;
 <i>BLUE/RED (blinking)</i> warning condition of MEX (MEX is still working);
 <i>OFF</i> MEX is in <i>STOP</i> condition (<i>EXCITER RF OFF</i>).</p> <p>TRANSMITTER (multicolor); it is active only when MEX operates also as control logic of the transmitter where it is housed.:
 <i>BLUE</i> the transmitter is delivering its nominal RF output power;
 <i>BLUE/RED (blinking)</i> warning condition of the transmitter (transmitter is still working);
 <i>RED</i> failure condition of the transmitter (no RF output power);
 <i>OFF</i> when the transmitter is in <i>STOP</i> condition.</p> <p>ON AIR (green); it indicates the on-air unit for TXs without <i>CCU</i> in dual-drive configuration or in 1+1 systems without <i>CCU</i>.</p> |
| 5 | START/STOP LOCAL/ESCAPE | Keyboard. It allows <i>starting/stopping</i> the unit and setting <i>local/remote</i> operating mode.
<i>ESCAPE</i> key allows quitting from current menu. |
| 6 | | Controller keyboard. It allows accessing the menu (listed on right-hand side of the display) and setting the functioning parameters of the unit. |
| 7 | GRID | Grid for cooling air inlet. |

- 8 Push-button; it allows resetting logic section of the unit.
- 9 Connector (SMB, female); it allows monitoring RF output of the amplifier module.
- 10 Indicator led (multicolor); depending on the unit status it is lit:
- | | |
|--------------------------|---|
| <i>SOLID GREEN</i> | when the unit is AC supplied, but it does not deliver RF output power; |
| <i>SOLID BLUE</i> | when the unit is AC supplied and it delivers RF output power (normal operating conditions). |
| <i>BLINKING BLUE/RED</i> | when an alarm with <i>Warning level</i> has occurred (transmitter goes on). |
| <i>SOLID RED</i> | when an alarm with <i>Critical level</i> has occurred (transmitter stops). |
- 11 USB port; PC connection for monitoring the amplifier status. A dedicated software is needed.

SPECIFICATIONS

RF DATA	
Frequency range	<ul style="list-style-type: none"> ■ VHF band III 174 to 254 MHz ■ UHF band IV–V 470 to 690 (700) MHz <i>Doherty mode</i> 470 to 860 (870) MHz <i>class AB (Optional upon request)</i>
RF Output power	refer to Tab. 1, Tab. 2
RF Output connector	refer to Tab. 1, Tab. 2
Shoulder	> 38 dB Typ.
MER	> 35 dB (DAB > 30 dB)
Crest factor	8.5 to 9.5 dB
Spurious Emissions	< -60 dBc (with optional filter)
Harmonic Emissions	< -60 dBc (with optional filter)
In band Spurious Emissions	< -70 dBc
STANDARDS	
■ Digital TV	
Standards	DVB-T (fully compliant with EN 300 744, TS 101 191) DVB-T2 (EN 302 755, TS 102 773; TR101 290; TS 102 2831) ISDB-T/T _b (ARIB STB-B31, TR-B14) ATSC, ATSC Mobile DTV, ATSC 3.0 DTMB
Channel Bandwidth	<ul style="list-style-type: none"> ● DVB-T 5/6/7/8 MHz ● DVB-T2 1.7/5/6/7/8 MHz ● ISDB-T/T_b 6/8 MHz ● ATSC 3.0 6 MHz, 7 MHz, 8 MHz ● DTMB 8 MHz
Inputs	<ul style="list-style-type: none"> ● DVB-T/T2, ISDB-T/T_b, DTMB 2 BNC 75 Ω, DVB ASI, TS 188/204 packets, continuous and burst mode, 2 RJ45 GbE ● ATSC, ATSC 3.0 2 SMPTE310M or 2 ASI, 75 Ω BNC, 2 RJ45
■ Digital Radio/Mobil tv in VHF band	
Standards	DAB, DAB+, T-DMB
Channel Bandwidth	1.536 MHz
Inputs	<ul style="list-style-type: none"> ● ETI 2 BNC 75 Ω, (NI, G703), (NA, G7049 5376, (NA, G704) 5592 and jitter tolerance according to G.823 ● EDI 2 RJ45, IP, RTP, UDP, IGMP (v2 & v3)
■ Analog TV	
Standards (compliance to CCIR report 642-2 volume XI part I, ETS 300 384)	B/G/D/K/K1/M/N/I/I1/L
Color transmission	PAL, NTSC, SECAM
Sound transmission	IRT dual-sound config, FM single sound and NICAM728 (-13 dB/-20 dB) <i>optional</i> , FM single sound (-10 dB)
Inputs	<ul style="list-style-type: none"> ● Video 2 BNC 75 Ω, 1 V_{pp} ± 6 dB. Manual Gain or AGC on ITS line, DC Restore, White Limiter (85–95%), Sync Restore (20–30%) ● Audio 2 XLR 600 Ω/5 kΩ balan/unbal, 0 dBm -3 dB +19 dB. In wideband mode input 2 works up to 120kHz (MPX) ● Additional Audio 1 BNC 50 Ω/5 kΩ for MPX (up to 120 kHz) and 1 BNC 50 Ω for auxiliary services for standard M ● NICAM audio 2 XLR 600 Ω/5 kΩ balan/unbal, 0 dBm ± 10 dB ● NICAM data input 1 BNC TTL 728 Kbit/s ext. data, 1 BNC TTL 728 kHz ext. clock
MAINS SUPPLY VOLTAGE	
Ac supply	208V _{ac} - 230V _{ac} single phase
Frequency	50/60 Hz ± 4%
Power factor	> 0.95
Efficiency (COFDM)	VHF: up to 27% <i>class AB</i> / up to 35% <i>Doherty</i> UHF: up to 22% <i>class AB</i> / up to 35% <i>Doherty</i>
THD	< 6%
Safety	EN 60215/EN 60950
EMC	EN 301489

REMOTE INTERFACES	
Local control	Display(s), Keyboard(s), and USB ports
Remote control	Ethernet for HTTP (Web Server)/SNMP/NTP/SSL, RS232, Parallel
Test points	RF out monitor, RF amp output, RF exciter output
SYNCHRONIZATION	
Reference frequency	Internal (OCXO or integrated GPS)/Internal locked to the External (BNC 50 Ω, 10 MHz)
Reference pulse	1 pps Internal (integrated GPS)/External (BNC 50 Ω, TTL)
Internal reference Accuracy	± 1 · 10 ⁻⁸ (0 to 70 °C) ± 5 · 10 ⁻¹⁰ per day (after 30 day) ± 1 · 10 ⁻⁷ per year
METERING	
■ <i>Digital TV</i>	– forward output power – reflected power
■ <i>Analog TV</i>	– vision carrier output power – sound carrier output power – forward output power – reflected power
COOLING	
	forced air
MECHANICAL	
DIMENSIONS (W x H x D, in mm)	482 x 372 x 635
WEIGHTS (kg)	30
COLOUR	light grey
ENVIRONMENTAL	
Ambient temperature range	0 °C to +55 °C
Storage temperature range	-30 °C to +70 °C
Relative humidity (@ 40 °C)	95% without condensation
Max. Operating altitude (asl)	Up to 3000 meters
Safety rules	EN 60215 / EN 60950
EMC	EN 301489



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