

# fot

## analogue transmitters

### TYPES

#### Air cooled

FOT98A AVx/CH 2 W  
 FOT98A AVx/CH 5 W  
 FOT98A AVx/CH 10 W  
 FOT98A AVx/CH 20 W  
 FOT98A AVx/CH 50 W  
 FOT98A AVx/CH 100 W  
 FOT98A AVx/CH 200 W  
 FOT98A AVx/CH 500 W  
 FOT98A AVx/CH 1 kW  
 FOT98A AVx/CH 2 kW  
 FOT98A AVx/CH 4 kW  
 FOT98A AVx/CH 5 kW

#### Liquid cooled

FOT98A AVx/CH 10 kW  
 FOT98A AVx/CH 20 kW

x=m (mono)

x=s (stereo)



Elti has developed ...

### ... the FOT 98A series solid state transmitters engineered for total broadcast reliability

The Elti FOT 98A series are the product of many years experience. All models from the low-power compact design to medium power are modular and built in a 19" rackmount. The units service various television standards. Featuring LDMOS technology, microprocessor operated controls and totally redundant power supply they guarantee maximum on-air reliability. The range also includes configurations that can operate in dual drive, or via a 1+1 system. The transmitter is fitted with remote software upload through internet or WEB server for management and control.

Transmitter FOT are air cooled or liquid cooled.

## the Elti advantage

- DVB-T ready
- Mono/stereo/dual sound version
- Modular construction
- LDMOS technology
- 3/5 slope linearity precorrection
- AGC & ALC
- SAW IF filters and built-in precorrection circuits
- Compact models from 5 W-20 W feature built-in the same 20 W power amplifier (possible reduction of power)
- Full OFFSET in output channel
- NICAM input (optional)
- External reference oscillator frequency controlled by GPS precision  $10^{-9}$  (optional)
- Local/remote management and control

## exciter

The exciter consists of modulator, up-converter, power supply, filter, CPU and power amplifier providing 0,5 W of output power. The built-in IntelStrongARM based CPU and control system manages the entire exciter and can control amplifiers. All important parameters are available on LCD display and can be managed via the front panel keyboard. Integrated 5 slope linearity precorrection guarantees optimised transmitter performance.

## compact versions

Compact versions of the transmitters are available in 2U up to 20 W and in 5U up to 200 W of output power. Compact transmitters perform to the same level as the exciter and include internal amplifier and output filter. Compact models from 5 W-20 W feature a built-in 20 W power amplifier, allowing for power reduction.

## power amplifier

External 500 W power amplifiers are available, and can be doubled to service as transmitters in range from 1kW up to 20kW. All amplifiers are DVB-T ready, using LDMOS technology to offer high performance linearity across the entire operating band.

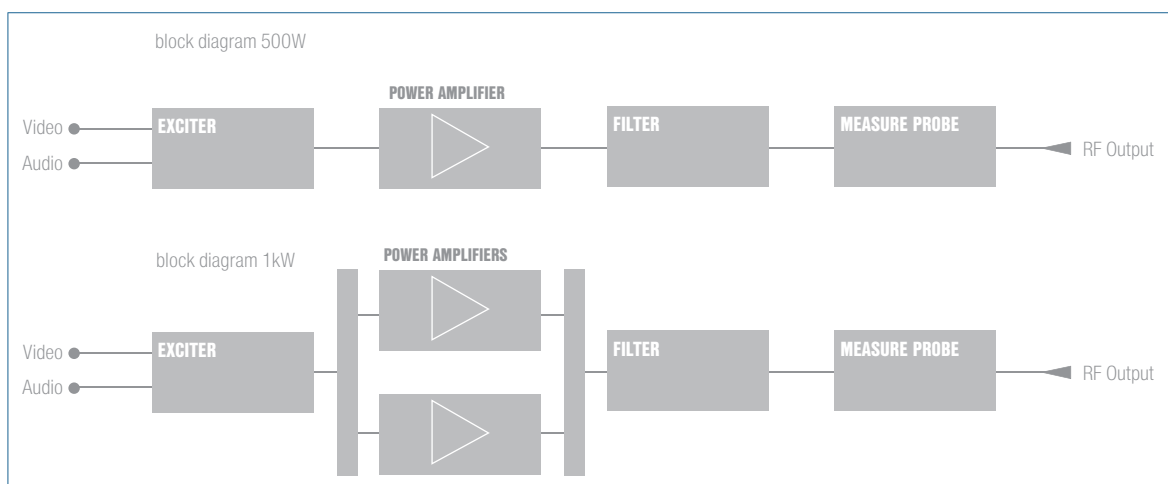
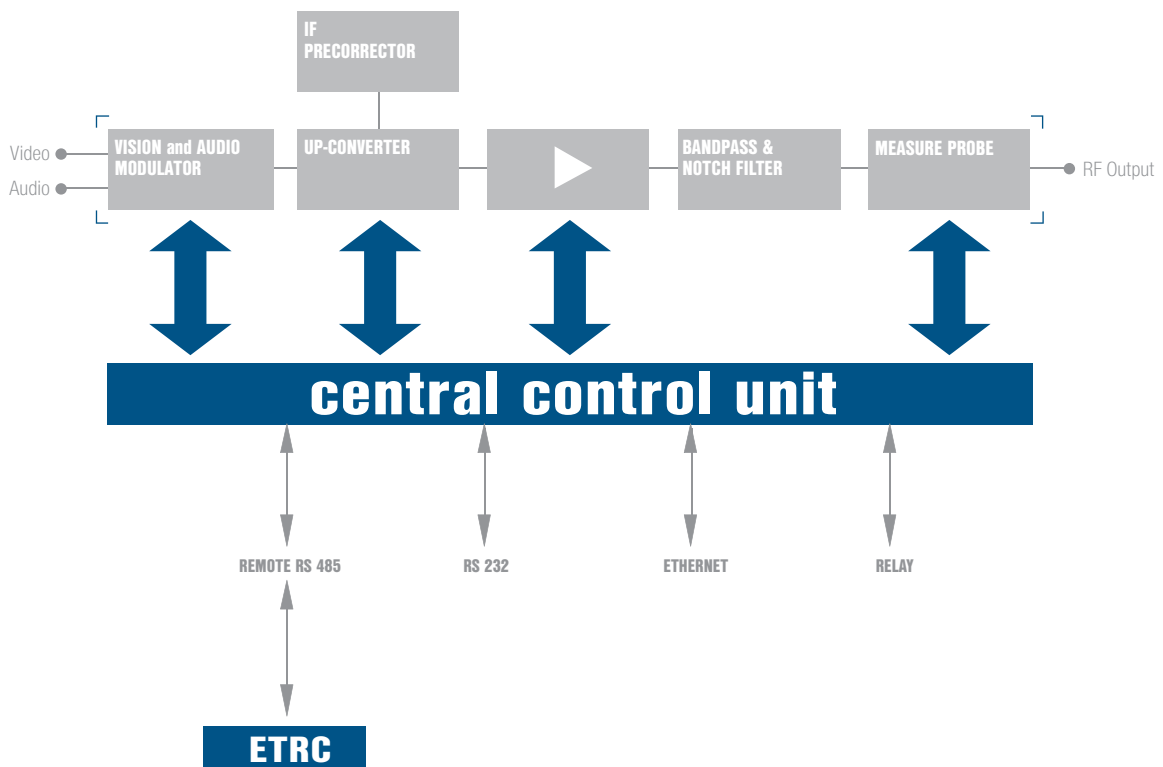
## control and monitoring

The integrated control unit provides full control over the assembly and additional options. It features:

- Control of all parameters related to operation
- Password protection and access control
- Measurement and display of power, voltage, current, temperature
- Alarm history
- Save and restore function

External connections are provided by:

- Ethernet LAN/WAN for local/network access
- RS 232 or RS 485 for local access
- Other/custom specific serial connection



## specifications

## FOT analogue transmitter

## RF CHARACTERISTICS

Frequency range	VHF (170 - 230 MHz), UHF (470 - 862 MHz)
Output power (W)	2, 5, 10, 20, 50, 100, 200, 500, 1.000, 2.000, 4.000 , 5.000 and up to 20.000
Vision/sound amplification	common
Vision/sound power ratio	10/1 or 20/1/0,2
Intermodulation distortion (with precorrection) (V.C. -8 dB; C.Sb. -16 dB; S.1C -10 dB)	-58 dB ref. to peak sync
TV standard	B, D, G, H, I, K or N
Type of emission	vision C3F sound 1, 2 F3E
Sound FM carrier deviation	max. 50 kHz
Harmonic emission	≤ 60 dB
Spurious emission	≤ 70 dB
Variation of output power with black/white transition	± 0,2 dB
Vision carrier frequency stability	150 Hz / 3 months
External drive frequency	10 MHz

## VIDEO CHARACTERISTICS

Video input	base-band video
Nominal input voltage	1 V <sub>pp</sub> ± 3 dB
Nominal input impedance	75 Ω
Return loss	> 34 dB
Vision modulation	A5C, negative (vestigial sideband)
Modulation depth	87,5 % (adjustable)
Group delay variation (0,2 to 4,8 MHz)	≤ ±35 ns
Differential gain	≤ 3 %
Differential phase	≤ ± 2°
Signal to noise ratio	typ. 55 dB rms, unweighted typ. 62 dB weighted according to CCIR Rec. 567 referred to B/W transition signal

## AUDIO CHARACTERISTICS

Input connector	XLR
Nominal input level (at dev. = ±50kHz)	+ 6 dBm (0 dBm)
Input impedance	600 Ω balanced (10 kΩ unbalanced)
Pre-emphasis	50 μs ± 0,5 μs
Amplitude vs. frequency response	30 Hz to 15 kHz ± 0,2 dB
Stereo crosstalk	> 36 dB
Dual sound crosstalk	> 70 dB
Total harmonic distortion	≤ 0,5 %
FM signal to noise (rms value) ratio (at dev.=±50kHz)	> 60 dB unweighted; > 65 dB weighted
Synchronous AM noise (at dev. = ±50kHz)	≤ - 40 dB

## METERING

Output power, Reflected power, Output amplifier transistors current and voltages, Driver amplifier transistors current and voltages, Temperature on the amplifiers, Power supply voltage, Video modulation, Audio deviation left and right, SYNC level, IF video level, Right sound carrier, Left sound carrier

## PROTECTION CIRCUITS

High output power, High reflected power, Output amplifier overtemperature, Driver amplifier overtemperature, Over currents, Over voltages

## INDICATIONS

MODE, SYNC, AGC, ALC, LOCK2, EXT REF, FILTER B.B., SC MODE, SC1 LOCK, SC2 LOCK, VC LOCK, KEY LOCK, OMT Start/Stop, Stand-by

## OTHER SPECIFICATIONS

Ambient temperature working range	- 5 to + 45 °C (ETS 300 019)
Voltage power supply	AC 230 V -15 % to +10 %
Frequency	50 Hz
Relative humidity	90 % (max.)

## CONTROL AND MONITORING INTERFACES

Local control	RS 232, Ethernet
Remote control	Ethernet, RS 232 or 485 (Optional)
Supported protocols	TCP/IP, HTTP (Optional)
GSM control	SMS messaging and GPRS (Optional)

## POWER CONSUMPTION, WEIGHT AND DIMENSIONS

	2 W	5 W	10 W	20 W	50 W	100 W	200 W	500 W	1 kW	Up to 20 kW
stand by	75				100			240	253	
average	100	200	250	270	440	480	880	1.830	3.020	
white level					400	420	790	1.590	2.450	
black level					480	540	980	2.075	3.580	
External dimensions	19" x 2 U x 670 mm				19" x 5 U x 670 mm			19" x 23 U x 900 mm		
Weight	15				60			200	210	
RF output connectors	N female, 50 Ω							EIA 7/8", 50Ω		