

# arx

digital repeaters

## TYPES

Air cooled

ARX 500 mW

ARX 1 W

ARX 2 W

ARX 5 W

ARX 10 W

ARX 25 W

ARX 50 W

ARX 100 W

ARX 200W

ARX 400 W

ARX 600 W

ARX 800 W

ARX 1,2 kW

ARX 1,6 kW

Liquid cooled

ARX 2 kW LC

ARX 3 kW LC

ARX 5 kW LC



CE1304

Elti has developed ...

**... the new range of ARX digital repeaters for complete restoration as the DVB signal is received and re-transmitted**

The ARX series of regenerative digital repeaters features built-in error correction via the intelligent COFDM modulator that provides error-free retransmission of multi frequency DVB networks. The error-corrected transport stream is also available via ASI output for local re-multiplexing, or monitoring purposes. The modulator allows the repeater to function as a transmitter.

Low power applications are available in compact designs up to 50 W; the range of LDMOS power amplifiers offers scalable solutions up to 5 kW.

Repeaters are air-cooled or liquid cooled.



## the Elti advantage

- 5 years warranty
- Fully compliant with EN 300 744 (DVB-T) and EN 302 304 (DVB-H)
- IFFT 2k, 4k and 8k mode
- High sensitivity input tuner
- Local re-multiplexing
- LDMOS technology
- Remote management and control via TCP/IP, HTTP and SNMP interface
- Settings fully adjustable by software
- Flexible, scaleable and upgradeable
- Plug-and-play installation
- Adaptive digital precorrection and clipping function

## exciter

The exciter is housed in a compact 19" 3U rackmount and, with the A class amplifier, provides 5 W of output power. The high sensitivity input tuner provides optimised reception of the RF DVB signal. The DVB signal is completely demodulated to MPEG-2 TS and error-corrected before retransmission in a fresh COFDM spectrum. Error-corrected MPEG-2 TS is available via ASI output for local re-multiplexing, and the ASI input allows the repeater to function as a transmitter. To optimise repeater performance a digital precorrector is included with an option of adaptive digital precorrection (optional) to correct linear error and non-linear distortion of RF power amplifiers. Various interfaces provide connectivity to the supervisory systems and a remote/local connection to the PC base that features user friendly Elti Device Manager software (EDM).

The compact repeater includes the exciter functions, the power amplifier and output filter internally.

## power amplifier

External amplifiers are available in models supplying 200 W and 400 W of output power. All amplifiers are designed for broadband and employ LDMOS technology to guarantee linearity, compact design and high efficiency. Self-protection circuits assures continuous operation and uninterrupted service.

## control and monitoring

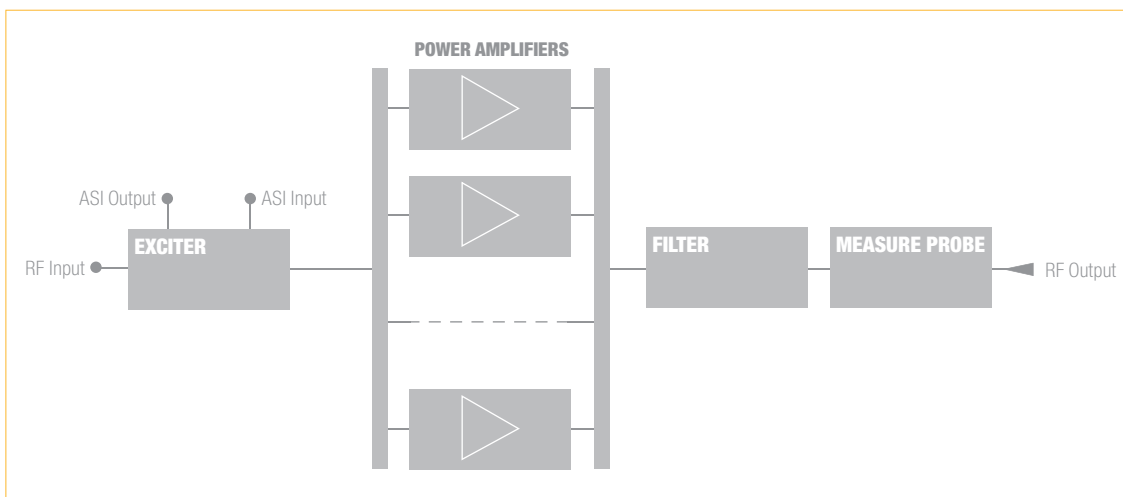
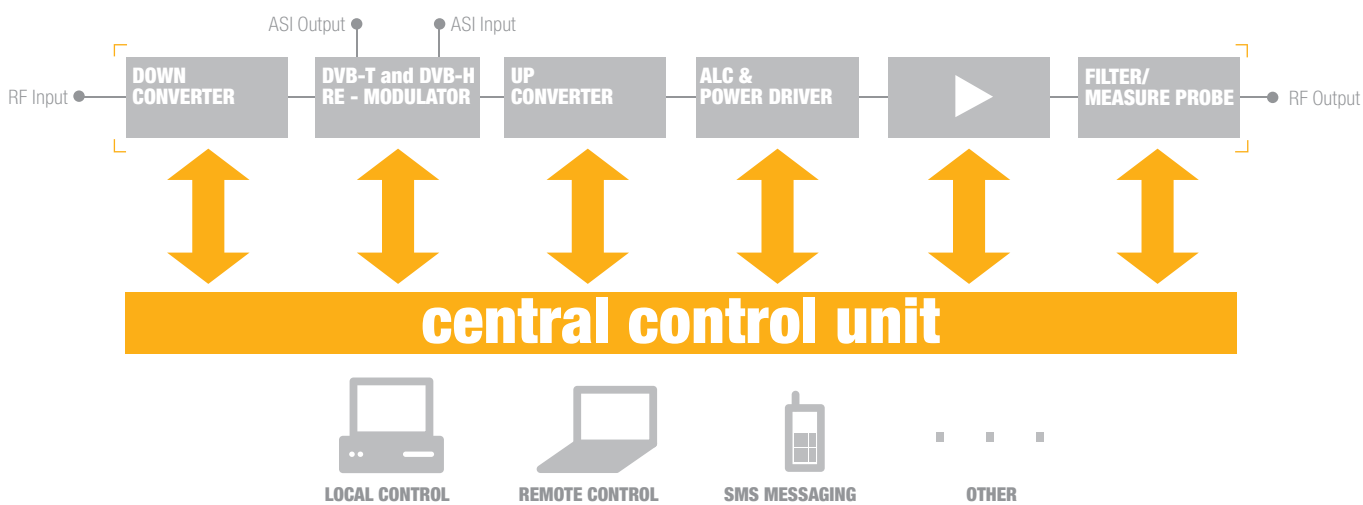
The integrated control unit provides full control over the assembly and additional options/features. PC based control software EDM (Elti Device Manager) with a user friendly graphic interface comes as standard for all Elti DVB-T and DVB-H products. It features:

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

The control software offers the same comprehensive functionality whether used locally or remotely via TCP/IP, SNMP or GSM networks. External connections are provided by:

- Ethernet LAN/WAN for local/network access
- RS 232 for local access

The central control unit allows integration into telemetry system or other supervisory systems. It also offers the control of third party equipment and integration into a single system at the transmission site.



## specifications

## ARX digital repeaters

STANDARD		DVB-T/H
Coding and modulation	Supporting each mode according to EN 300 744 and EN 302 304	
IFFT mode	2k, 4k, 8k	
Useful symbol period	224 $\mu$ s (2k), 447 $\mu$ s (4k), 896 $\mu$ s (8k)	
Modulation	QPSK, 16QAM, 64QAM	
Guard interval	1/4, 1/8, 1/16, 1/32 of useful symbol period	
Inner code rate	1/2, 2/3, 3/4, 5/6, 7/8	
Channel bandwidth	8 MHz, 7 MHz, 6 MHz (Optional), 5 MHz (Optional)	
Hierarchical coding	Included	
GENERAL DATA		
Spectrum polarity	Inverted and non-inverted	
Digital pre-correction	Included	
INPUTS		
RF input	N, 50 $\Omega$	
Level range	- 70 dBm $\div$ + 13 dBm (37dB $\mu$ V to 120dB $\mu$ V)	
GSM modem and antenna	Optional	
GPS receiver and antenna	Optional	
Frequency range	VHF (174 $\div$ 230 MHz) , UHF (470 $\div$ 862 MHz)	
RF OUTPUTS		
Output frequency range	VHF (174 $\div$ 230 MHz), UHF (470 $\div$ 862 MHz)	
RF output power (W rms) <sup>1</sup>	500m, 1, 2, 5, 10, 25, 50, 100, 200, 400, 800, 1.200, 1.600 up to 5kW	
Return loss	> 18 dB	
Power stability	< $\pm$ 0,5 dB	
Output spectrum meets the requirements of non critical and critical (Optional) mask according to EN 300 744		
OPERATING CONDITIONS		
Nominal temperature range	In accordance with ETS 300 019-1-3 (class 3.2) - 5 °C to + 45 °C	
Relative air humidity	In accordance with ETS 300 019-1-3 (class 3.2) 95 % @ 30 °C, no condensation [8 % - 100 % for transportation and storage]	
Max altitude	2.800 m	
MAINS CONNECTION		
Single phase supply	110/230V -15% to +10% 50/60Hz (for devices up to 800 W rms)	
Triple phase supply	3/N/PE ~ 400/230V -15% to +10% 50Hz (for devices from 1.200 W up to 5.000 W rms)	
CONTROL AND MONITORING INTERFACES		
Local control	RS 232, Ethernet	
Remote control	Ethernet, RS 232/422/485 (Optional)	
Supported protocols	TCP/IP, HTTP, SNMP (Optional)	
GSM control	SMS messaging, GPRS (Optional)	
PROTECTION		
Output power, Reflected power, Over current, Over temperature, Over voltage		
CE CONFORMITY		
Low voltage directive	73/23/EEC	
EMC directive	89/336/EEC	
CE Marking directive	93/68/EEC	

<sup>1</sup>after ELTI output filter MER is better than 33 dB at all powers in all configurations!

## POWER CONSUMPTION, WEIGHT AND DIMENSIONS

	$\leq 5$ W	10 W $\leq$ power $\leq$ 50 W	100 W	200 W	400 W	600 W	800 W	1,2 kW	1,6 kW	Up to 5kW
Power Consumption (kW)	0,26	0,69	< 1	< 1,7	< 3,2	< 5	< 6	< 9,2	< 12,5	Upon request
Weight (kg)	20	34	205	205	220	280	300	420	520	
External Dimensions	19" x 3 U x 670 mm	19" x 4 U x 670 mm	19" x 23 U x 900 mm					19" x 31 U x 900 mm	19" x 42 U x 900 mm	
RF output connectors	N, 50 $\Omega$	N, 50 $\Omega$	EIA 7/8", 50 $\Omega$				EIA 1 5/8", 50 $\Omega$			