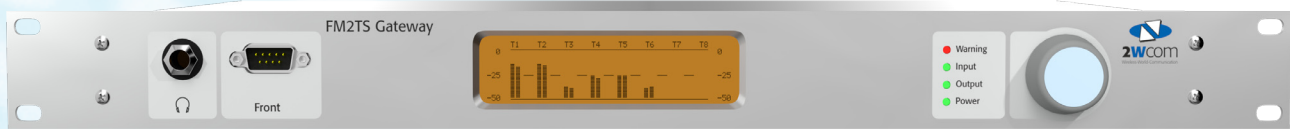



# FM2TS Gateway

Professional, flexible  
MPEG Encoding Gateway



 Energy efficient,  
no moving harddisks

- Professional FM Tuner concept:  
8 FM Tuner modules with digital output for MPEG encoding, streaming
- FM know how:  
Programmable FM tuner parameters (soft mute, Stereo to Mono blending)  
RDS data forwarding
- Multiple, free programmable, free combinable and redundant TS outputs  
(2 IP ports, 2 ASI ports)
- Optional: Advanced IP robustness with Pro MPEG FEC
- 8 channel MPEG encoding to transport stream (MPTS/SPTS) via IP or ASI  
and streaming via IP (RTP, optional: UDP Unicast/Multicast)
- Monitoring of FM quality parameters and RDS signal parameters (PI, PS)
- Alarm reporting via: e-mail, SNMP, Web interface, activation of relay contacts
- Audio live streaming for monitoring (MPEG 1/2, AAC-LC/LD, HE-AAC) via  
IP port or ASI
- Decoding of all RDS parameters including TMC and RT+ messages and con-  
version into UECP per channel (Ver. 6.+ compliant) for RDS forwarding
- Large signal immunity: Up to 120dBµV RF input
- Integrated web server for easy setup and simple control via standard web  
browser



according to CENELEC EN 60950,  
EMV EN55022 and EN55024

## FM2TS Gateway – Technical Details

### Inputs

#### RF

Tuner	8 independent FM tuner
Connector	8x F-Connector
Impedance	75 Ω
Frequency Range	87.5...108.0 MHz
RF sensitivity (S/N 40 dB, stereo)	50 kHz steps
RF input level range	20 dBμV
Input Frequency Accuracy	25 ... 120 dBμV
Amplitude response	< ± 2 kHz
SNR (A)	< ± 0,3 dB
SNR quasi peek unweighted	> 65 dB (>63 dB)
SNR quasi peek weighted (ITU (CCIR) Rec. 468-2)	> 63 dB (with 15 kHz low pass)
Total harmonic distortion	> 56 dB
Crosstalk attenuation	> 68 dB
Return loss	> 38 dB
De-Emphasis	> 15 dB
	50 μs, 75 μs

### Outputs

#### MPEG-Encoder

Supported Codecs	MPTS and multiple SPTS RTP, UDP IP Unicast/Multicast MPEG 1/2 Layer 1/2/3, AAC-LC, HeAAC-v1/v2, AAC-LD, G.711, G.722, PCM acc. ETSI TS 101 154 (MPEG-1)
Sampling frequencies PCM processing	ISO/EIE 11172-3(Layer II) 16, 22.05, 24, 32, 44.1 and 48 kHz Loudness Measurement and Compensation (optional)
Framework System Framework TS Format	Compliant to CALM and EBU R128 TS Multiplexing ISO/IEC 13818-1 MPEG-2 Transport Stream (TS)
FEC	Pro-MPEG Code of Practice #3 release 2 compliant
Configuration	user configuration for selection of encode and TS-output parameters: PAT/PMT, SDT, PSI/SI tables
Audio streaming (for monitoring)	MPTS and multiple SPTS RTP, UDP IP Unicast/Multicast Adjustable MPEG Encoder quality Adjustable sample rates -6 dB fullscale at ± 40 kHz input signal frequency shift
Audio level	

#### RDS/Ancillary data

Data output format	UECP (Ver. 6.+ compliant), transparent (other formats possible)
Data output	via serial interface or TCP/IP

#### Headphone (front)

Connector	6.35 mm
Impedance	600 Ω
Output channel selection	switchable

### Alarm functions / Control

#### FM/RDS

FM control	Mute Enable, Mute Attenuation, Mute Threshold (Start, End), Stereo Blend Threshold (Start, End), Tuner Mode (Auto, Stereo, Mono)
RDS control	PI, PS, DI, MS, TA, PTY, RT, RT+, CT
RDS decoder	PI, PS, TA, TP, PTY, CT, RT, RT+
RF level Alarm	25...120 dBμV, resolution 1 dBμV
FM / Audio alarm	Failure monitoring (Pilot, RDS sync, silence detection, L, R)

Signal Muting alarm

Muting of input signals <= 10 dB below  
reference value

Hardware alarm

Power supply failure, fan failure, case temp.  
Serial interface, potential free relay contact,  
SNMP, E-mail (e.g. to send automatically SMS)

Alarm types

Can be read out via TCP/IP

Alarm report

Enhanced logging functions and local event  
logging (permanent storage)

NTP Server

Two NTP-Server configurable

### Interfaces

#### Front panel

LCDisplay  
Jog wheel  
8 LED's

Graphical, 264x64 pixel  
impulse, ENTER button

#### Remote control input

Connector

Power 1, Power 2, Warning, Status  
7 opto-isolated inputs  
(excludes option: 24 relay contacts)

#### Remote control output

optional:

15 pole sub-D female

12 floating relays (10x SPST, 2x SPDT)

(for DC: max. 30 V, 0.5 A)

26 pole sub-D male

24 floating relays  
(excludes: 7 opto isolated inputs)

#### Setup

RS-232C (Front)

1x serial interface for setup data and setup  
function

USB

2x USB 2.0 Interface for  
service, configuration and firmware updates

#### TCP/IP

Type

2x data and 1x control  
Auto switching 10/100/1000 BASE-T,  
Unicast, Multicast  
ARP (RFC 826), IPv4 (RFC 791), IPv6 (RFC  
2460), ICMP (RFC 792), TCP (RFC 793,  
RFC 1323), UDP (RFC 768), NTP v3 (RFC  
1305), TFTP (RFC 1350, RFC 2347), Telnet  
(RFC 854 to RFC 861), SNMPv2c (RFC 1901,  
1905, 1906), HTTP 1.1 (RFC 2616)

Data format

Modules

2x SFP slot (according SFF-8724 Multi Source  
Agreement)  
1000BASE-T, 1000BASE-SX (data)  
1x RJ45 (control)

#### ASI out

Data  
Connector

MPEG2 TS  
BNC 270 Mbps

### General data

Power consumption	60 VA
Case dimensions	19", 1 HU, 310/424/484 mm
Weight	5 kg
Housing	Steel plate (aluminum-zinc coated)
Operating temp. range	0...+45°C
Storage temp. range	-40...+70°C
Redundant power supply	2x internal, 90...260 V, 47...63 Hz 2x power port, aut. switchover
Redundant fan technology	2x internal cooling fan aut. switchover

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These data are subject to  
modifications and amendments.  
Errors excepted

