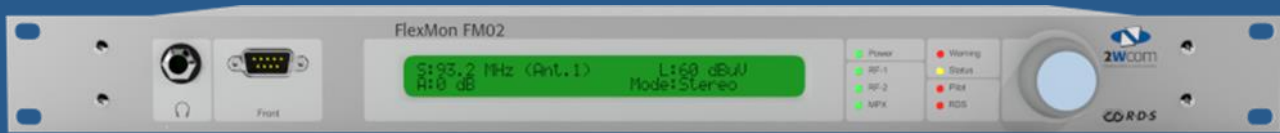


FM02

FM rebroadcast receiver

Highlights

- ▶ FlexMon FM02 Professional FM Monitoring Receiver



FM02 – FM rebroadcast receiver (1/2)

RF capabilities

- ▶ Single tuner, 2 RF antenna inputs
- ▶ Large-signal characteristic: Up to 120dB μ V RF input
- ▶ Preset for 8 FM stations

FM/MPX monitoring and measurement

- ▶ Display of FM & RDS signal parameters:
RF level, selected mode, pilot, MPX deviation (output level), PI, PS, TP, TA, PTY, RT, BER, ODA AIDs*
- ▶ Monitoring of one FM program at the time
- ▶ Decoding of RDS parameters including TMC and RT+ messages (RDS Lab)*
- ▶ RDS Logger for continuous monitoring*
- ▶ Internal memory (up to 32 Gigabyte) for logging TMC, RT, RT+, TA ; accessible via FTP*

Audio monitoring and measurement

- ▶ Display of audio output level L+R/2 (M)

High sophisticated alarm concept

- ▶ Alarm reporting via e-mail, SNMP, Web interface, activation of relay contacts:
RF level, audio, no pilot, PI, PS, no RDS sync, TA, no TA, block error rate, station change, case temp

Backup-, alarm- and rebroadcast function

- ▶ Professional rebroadcasting
- ▶ Passive loop through for Audio and MPX with switch over matrix to FM signal triggered by RDS/PTY31 (optional), SNMP or GPIO input:
 - ▶ Insertion of an alarm program (e.g. emergency warning)
 - ▶ Insertion of a backup program (breakdown of main input, power failure)
- ▶ RDS data bridge (UECP RDS data output via DTE/UDP)

* This function is optional. Please find the complete list of options at the end of the document.



FM02 – FM rebroadcast receiver (2/2)

IP streaming

- ▶ MP3 live streaming via TCP/IP

Control

- ▶ Integrated web interface for easy setup and simply control via standard web browser

Compatibility

- ▶ Fully compatible to premium RDS decoding software RDS Lab



Technical details (1/4)

Inputs

RF

Inputs	2 unbalanced, BNC
Impedance	50 Ω
Frequency range	87.5 – 108.0 MHz 76.0 – 90.0 MHz (Japan) 50/100 kHz steps
RF sensitivity (S/N 40 dB, stereo)	35 dB μ V
Max. RF input	120 dB μ V

MPX (optional)

Input	Selection from RF input (internal FM tuner) or external signal
Connector	BNC unbalanced, 1x rear
Impedance	> 10 k Ω

Inputs (passive loop through)

MPX connector	BNC
AES/EBU connector	XLR
Audio L connector	XLR
Audio R connector	XLR

RDS/ancillary data

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

Measurement FM

RF level	20 – 120 dB μ V
MPX	MPX level

Measurement RDS

RDS decoder	PI, PS, TP, TA, PTY, RT, Optional: ODA AIDs, Content of all group types, TMC, RT+ (via RDS Lab tool)
RDS Block Error Rate	0 – 100%, resolution 1%



Technical details (2/4)

Measurement audio

Audio	Peak level (L+R)/2
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Outputs

Multiplex

Output	1 unbalanced BNC, AX coupled
Impedance	< 20 Ω
Level	Max. 15 dBu
Frequency response	20 Hz – 95 kHz \pm 0.1 dB
Signal/noise ratio (75 kHz deviation)	Typ. 70 dB stereo
Harmonic distortion	Typ. 0.05 %
Stereo separation	> 48 dB

Analog Audio

Output	L/R balanced XLR
Impedance	< 20 Ω
Level	Max. 15 dBu
Frequency response	20 Hz – 15 kHz \pm 0.1 dB
Deemphasis	50 (optional 75 μ s)
Signal/noise ratio (75 kHz deviation)	Typ. 70 dB stereo
Harmonic distortion	Typ. < 0.1 %
Stereo separation	> 40 dB

Digital audio

Output	AES/EBU balanced XLR
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Digital audio

Output	MPEG ½ layer 3 output via TCP/IP-interface
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Headphone

Connector	6.35 mm
Impedance	600 Ω



Technical details (3/4)

Front panel

Display: LCD	2 x 40 characters
Jog wheel	Impulse, ENTER button
8 LED's	Power, RF 1, RF 2, MPX, warning, status, RDS, pilot

Alarm functions

Controlling data	RF level, audio, no pilot, PI, PS, no RDS sync, TA, no TA, block error, station change, case temp
Control content (RDS group)	received within x sec/change
Alarm types	Potential free relays, E-mail, SNMP
Alarm report	via serial port or TCP/IP

Interfaces

Remote control input

Input	7 inputs
Connector	15 pole sub D female

Remote control output

Output	6 standard relays (SPST) 1 change-over relays (SPDT) (for DC: max. 30 V, 1 A, 10 W)
(Messages)	15 pole sub-D male

Data interfaces

Interface	1 serial interface for setup data and setup function (RS-232C)
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TCP/IP data interface

setup	Input/output setup functions
Connector	RJ45
Type	Full duplex 10/100 BASE-T
Data format	HTTP, SNMP, SNTp, optional: FTP



Technical details (4/4)

MP3-encoder

Type	MPEG 1/2 Layer 3 encoder
Transmission of encoded MP3 data by TCP/IP	Adjustable MPEG encoder quality in 3 steps Adjustable sample rates for latest live-stream-technology Reception of audio-live-stream by shoutcast compatible media player like WinAmp or VLC
Internal input	From tuner module
Type	MPEG 1/2 Layer 3 encoder

General data

Power consumption	40 VA
Case dimensions	19", 1 RU, depth: 310 mm, width: 424 mm, front panel: 484 mm
Weight	< 5 kg
Material	Steel plate (aluminum-zinc coated)
Operating temp. range	0 – +45°C
Storage temp. range	-40 – +70°C
Languages	English

Power supply

Standard AC	1 internal IEC power connector voltage range 90 – 260 VAC (nominal 100 – 240 VAC) frequency range 47 – 63 Hz (nominal 50 – 60 Hz)
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Options

FM02 base unit

Each unit includes one single tuner and two RF antenna inputs.

Article no.	Name
VER17201-DE	FlexMon FM02 Demodulator

FM02 software options

Please note that software options can be retrofitted remotely.

Article no.	Name	Description
VER17252	TMC/RT+ Monitoring	RDS decoding of TMC/RT+ into plain text for FM02
VER17120	RDS Logging	Saving of RDS data (TMC, RT, RT+, TA) as "csv-file" (1 file per day) on an internal SD card (a. decoded / b. raw data) and collection of files via FTP. Decoding of TMC messages is only possible with appropriate "location tables" (non 2wcom, for more information please contact us)
VER10312	FM Japan Band	Enables operation within Japan FM band 76 - 90 MHz.