

A30 FM/DAB Monitoring Receiver

Highlights

- ▶ All-in-one monitoring receiver for FM/RDS, MPX and DAB+
- ▶ Monitoring of FM and RDS parameters
- ▶ Monitoring of DAB ensemble and service information



A30 – FM/DAB Monitoring Receiver (1/2)

RF capabilities

- ▶ Dual FM tuner, DAB+ tuner, 3 RF antenna inputs
- ▶ Large-signal characteristic: Up to 120 dBμV RF input
- ▶ Preset for 30 FM stations (30DAB+ stations/services*)

FM monitoring and measurement

- ▶ Measurement / display of FM & RDS signal parameters RF level, pilot, PI, PS, TP, TA, PTY, RT, BER, ODA AIDs, SNR, freq-offset. MPath, MPX power, MPX deviation, pilot deviation, RDS deviation
- ▶ graphical presentation of MPX power, MPX deviation distribution, MPX deviation peak (see page “A30 enhanced web interface” of datasheet)*
- ▶ Demodulation and control of different FM programs
- ▶ Decoding of RDS parameters including TMC and RT+ messages (RDS Lab)
- ▶ Scan mode (round robin) for monitoring of up to 30 stations*
- ▶ RDS logger for continuous recording of all RDS group data*
- ▶ Internal memory (up to 32 Gigabyte) for logging TMC, RT, RT+, TA, MPX power, MPX deviation ; accessible via FTP*

Optional: DAB/DAB+ demodulation/monitoring

- ▶ Ensemble: label, short label, ensemble ID, date, time, workload, RF level, SNR, CNR, FIC quality
- ▶ Station/service: ID, type, CA, protection, bitrate, samplerate, audio mode, DL, title, artist, programm, cat. slideshow (50 slides)

Audio monitoring and measurement

- ▶ Display of audio level L and R (TRMS) for FM / DAB tuner, MPX Input and audio input

Optional: external MPX input

- ▶ All MPX measurements and display for external MPX input possible*

Audio/MPX output

- ▶ 2x output of audio AES/EBU, analog (switchable), 2x MPX output

High sophisticated alarm concept

- ▶ Alarm reporting via e-mail, SNMP, Web interface, activation of relay contacts, log and warning LEDs

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



A30 – FM/DAB Monitoring Receiver (2/2)

Backup and rebroadcast functions

- ▶ Professional rebroadcasting
- ▶ Passive loop through for audio and MPX with switch over matrix to FM signal triggered by SNMP or GPIO input:
 - Insertion of a backup program (breakdown of main input, power failure)
- ▶ RDS databridge (UECP RDS data output via UDP/IP)
- ▶ Compatible to premium RDS decoding software

IP streaming

- ▶ 1x MP3 live streaming via TCP/IP, selectable (FM, DAB, MPX, Audio input)
- ▶ 2x MP3 live streaming*

Control

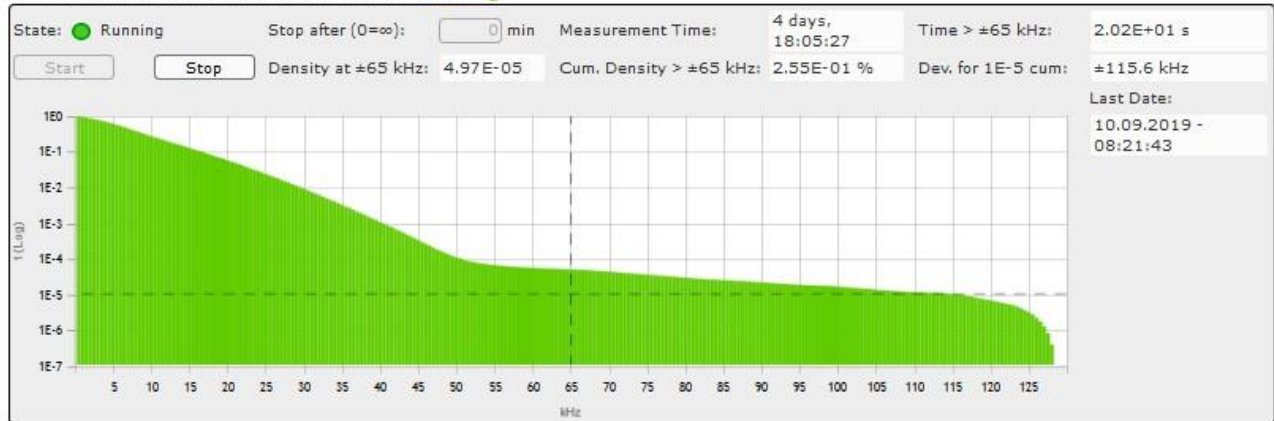
- ▶ Redesigned web interface for easy setup and simply control via standard web browser

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

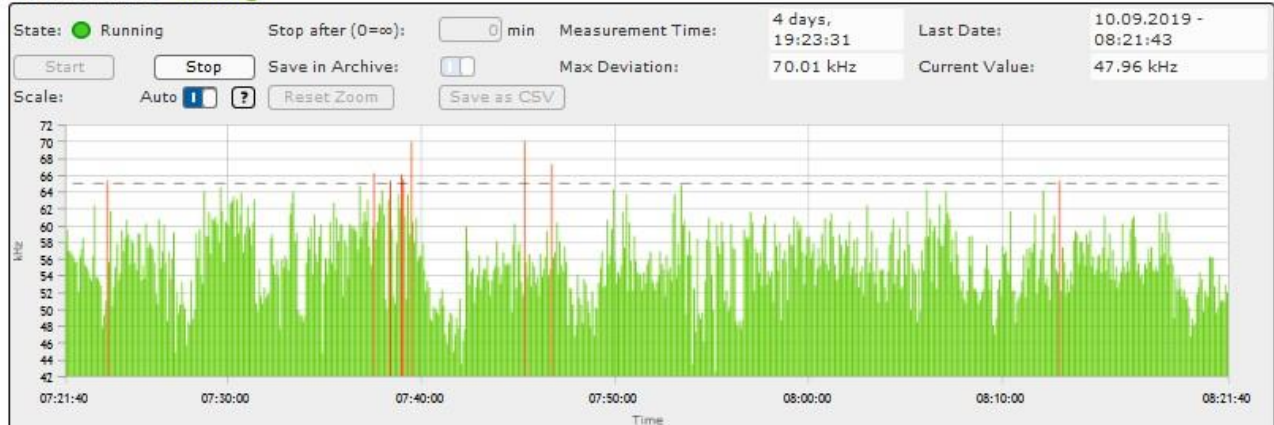


A30 enhanced MPX measurements

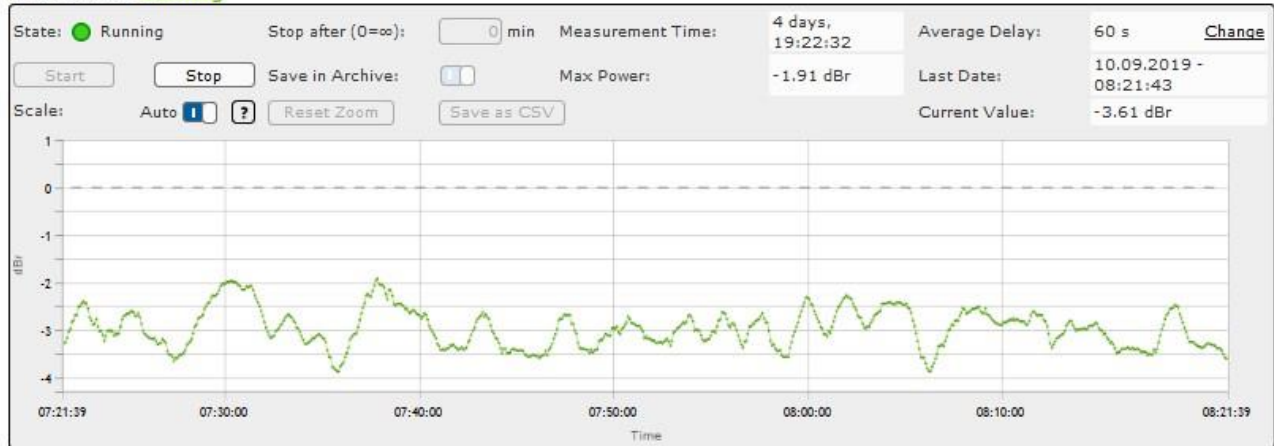
Cumulated MPX Deviation Distribution - Running



MPX Deviation - Running



MPX Power - Running





Technical details (1/5)

Inputs

RF-FM

RF-FM Inputs	2 unbalanced, BNC internal switch matrix
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

RF-DAB

RF-DAB Inputs	1 unbalanced, BNC (optional)
Impedance	50 Ω
Frequency range	168 – 240 MHz (DAB Band III)
RF sensitivity	10 dB μ V
Max. RF input	100 dB μ V

MPX

MPX Inputs	MPX loopthrough optional: MPX measurements
Connector	BNC unbalanced, 1x rear
Impedance	>10 k Ω

Inputs (passive loop through)

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



Technical details (2/5)

Measurement

FM

RF level	20 – 120 dB μ V
SNR	Typ. 65 dB
Frequency offset	+/- 10 kHz
MPATH	0 – 100%
MPX power (graph optional)	-50 – +20 dBr
MPX deviation (graph optional)	120 kHz
MPX distribution cum. graph optional	0 – 120 kHz
Pilot deviation	0 – +10 kHz
Stereo blend	0 – 100 %
RF level	20 – 120 dB μ V

RDS

RDS deviation	Measurement of RDS deviation (error <3 %)
RDS decoding	Via web interface: PI, PS, RT, TA, TP, ODA AIDs, PTY, CT, Additionally via RDS lab SW: -Group sequence, group statistics, content of all group types, TMC , RT+ Optional: TMC Pro, EWR
RDS block error rate	0 – 100 %

Audio

Audio level	Separate measuring of audio level L/R (RMS) for tuner and input
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DAB (optional)

RF level	0 – 100 dB μ V
FIC quality	0 – 100%
Audio	Separate measuring of audio level
PAD	DLS, Cat. slideshow
Ensemble decoding	Ensemble ID, label, short label, workload (CU usage), service count, sub-channel count, date, time
Service / subchannel decoding	Service ID, label, short label, CAID, sub-channel ID, CU start, CU size, CA, protection, bitrate, sample rate, type



Technical details (3/5)

Outputs

Multiplex

Multiplex Outputs	2x unbalanced BNC (On request: 1 balanced XLR)
Impedance	< 20 Ω
Level	Max. 15 dBu
Frequency response	20 Hz...95 kHz ± 0.1 dB
Signal/Noise ratio (75 kHz deviation)	Typ. 70 dB stereo
Harmonic distortion	Typ. 0.05%
Stereo separation	> 48 dB

Analog audio

Analog audio output	2x L/R balanced XLR
Impedance	< 20 Ω
Level	max. 15 dBu
Frequency response	20 Hz...15 kHz ± 0.1 dB
Deemphasis	50 μ s (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

Digital audio output	2x AES/EBU balanced XLR
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Front panel

Display: LCD	Graphical, 264x64 pixel
Jog wheel	Impulse, ENTER button
4 duo LEDs	Power, input, output, warning
Serial interface	RS232C, 9 pole sub-D male (for support)



Technical details (4/5)

Alarm functions

Controlling data FM	RF level, MPX power, MPX peak deviation, no pilot, no RDS sync, TA, no TA, PI, PS, block error rate, pilot deviation, RDS deviation, audio level L, audio level R
Controlling data DAB (optional)	Ensemble: RF level, FIC quality Station (Service): audio level L, audio level R, slideshow image update, slideshow image loadtime
Control content (RDS group)	Received within x sec. / change

Scan mode (optional)

Max. stations	30
Setup	Switch over time, RF input 1/2
Control functions	On all alarm functions

Interfaces

Remote control input

Inputs	7 inputs
Connector	15 pole sub-D female

Remote control output

Outputs	7 floating relays (6x SPST, 1x SPDT) (for DC: max. 30 V, 0.5 A)
Connector	15 pole sub-D male

TCP/IP data interface

Data interface	Input/output setup functions
Connector	RJ45
Type	Full duplex 10/100 BASE-T
Data format	HTTP, SNMP, SNMP, optional: FTP
Support interface	RS-232 serial interface on front panel, Sub D-9

MP3-encoder

Type	MPEG 1/2 Layer 3 encoder
Transmission of encoded MP3 data by TCP/IP optional: 2x MP3 stream	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 or via web-browser
Internal input	From FM/DAB tuner module Optional: MPX in, Audio in



Technical details (5/5)

General Data

Power consumption	< 20 W
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 (1/2)

A30 base unit variations

Each base unit includes one dual tuner with one FM tuner channel activated by default. FM tuner

Article no.	Name
VER10300	A30 FM Monitoring Decoder

A30 hardware options

Please note that hardware options are installed at the factory in Flensburg, Germany, and can only be retrofitted independently in individual cases.

Article no.	Name	Description
VER10311	MPX-IN board (*)	▶ Activation of MPX-IN-plug for processing of external MPX signals (not antenna) ▶ Audio, RDS, MPX power, MPX deviation, etc. > Enhanced measurements only with option VER10313 ▶ Parallel processing of MPX signals via MPX-IN and antenna possible. (*) This option excludes option DAB tuner (VER10318).
VER10318	DAB tuner (*)	DAB multi-band tuner for monitoring & control ▶ Up to 2 DAB-tuners may be activated ▶ Dual tuner with 75Ω F-Type connector input ▶ Alarm messages via SNMP or relay ▶ Band scan for easy and convenient setup (*) This option excludes option MPX-IN board (VER10311).

A30 software options

Please note that software options can be retrofitted remotely.

Article no.	Name	Description
VER10314	Activation of second FM tuner channel	▶ Activation of second audio output and second mp3 stream
VER10315	Scan mode (round robin)	▶ Scan mode for cyclic scanning of up to 30 stations ▶ For option dual tuner parallel to other main functions on second tuner Price per unit.
VER10313	Enhanced measurements (MPX measurements, enhanced logging)	▶ Additional measurement und professional presentation of MPX power, cumulated MPX deviation distribution, MPX deviation. ▶ Data logging on internal SD card (Hardware add on) ▶ Enhanced logging: Saving of measurement data and offline display within web interface. ▶ 24/7 Measurement, MPX results are retained for up to 150 days Price per unit.



Options (2/2)

Article no.	Name	Description
VER10312	FM Japan Band	Enables operation within Japan FM band 76 – 90 MHz. Price per unit.
VER10316	Audio in / silence detection	▶ Audio input as source ▶ Monitoring of audio in level, silence detection and alarming ▶ Pass through of audio in signal to audio outputs (e.g. for alarming purposes) Price per unit.