Falcon XT

Radio has the power

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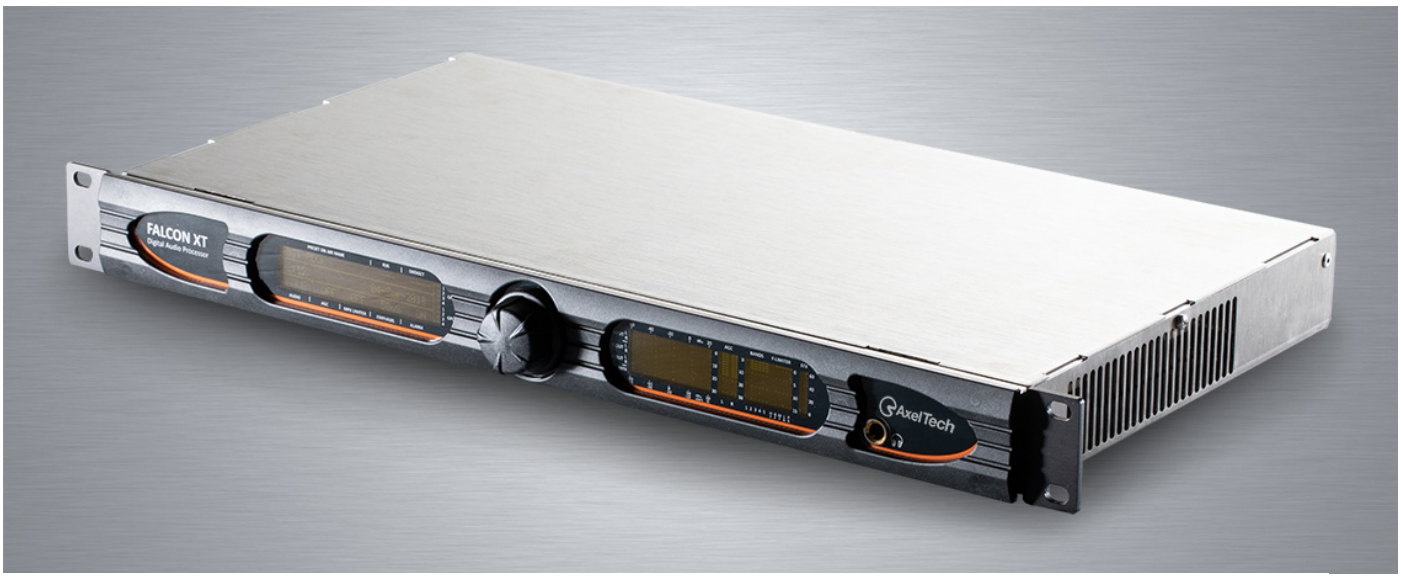
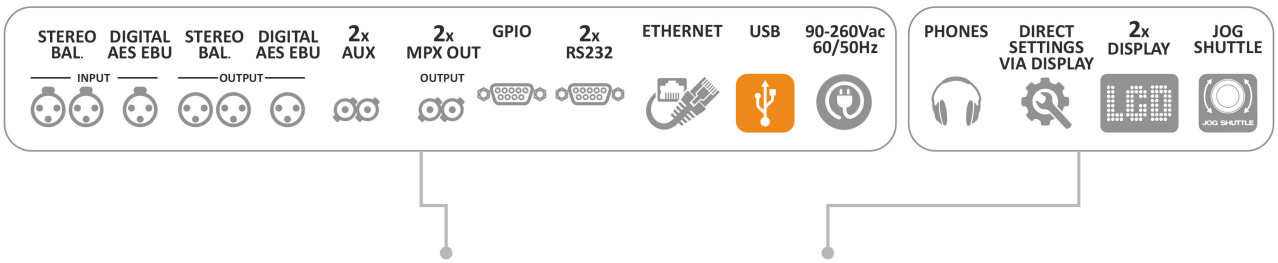
The LAN port and the built-in Web Server allow to control the processor and tune audio from anywhere. The built-in digital Stereo Generator ensures an extremely precise MPX Signal. The RDS Encoder (optional) is in compliance with UECP SPB490, provides 2 Data Set with a wide range of static services, including Radio Text.

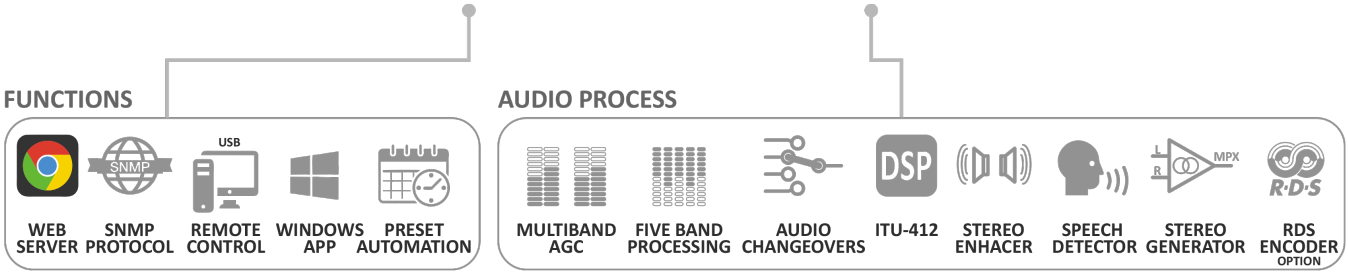
FALCON XT features full connectivity with analog and digital I/O (over XLR connectors) and 2 independent MPX outputs, USB, GPI and serial ports. The hardware bypass circuit is always included to guarantee audio presence and audio programs continuity.



CONNECTIONS

FRONT PANEL





Highlights

General

- Main Supply 90--260Vac 50/60Hz. 15W
- Green device - only 25W
- Dual Graphic display
- 1RU standard 19” - Inox steel
- High immunity to strong RF fields, designed for high power TX sites
- Fully Digital

Inputs Outputs

- Analog input on XLR,
- Analog Input Settings : Sensitivity, Input Mode, Phase Rotator and High Pass Filter
- Analog Output on XLR
- Analog Output Settings: Level, Preemphasis, Source and Impedance.
- Bypass HW on Analog Outputs (Analog Input to Analog Output)
- Digital AESEBU input on XLR
- Digital AESEBU Input Settings: Sensitivity, Input Mode, Phase Rotator and High Pass Filter
- Digital AESEBU Output on XLR
- Digital AESEBU Output Settings: Level, Preemphasis, Source,

Rate, Resolution

- Bypass HW on Digital AESEBU Outputs (Digital Input to Digital Output)
- Automatic audio input changeover
- Double MPX output with independent and level setting.
- Bypass HW on MPX Outputs (Aux-1 to Out 1&2)
- 2 AUX input (MPX/RDS/SCA) wide band

Process & Stereo Generator Section

- 5-Band digital audio processor
- Multiband agc
- Mpx power control - ITU-R BS.412
- Fast DSP Starting time <5 sec (OS < 30 sec)
- Brilliance control
- Expander control
- Overdrive control
- Super bass harmonizer control
- Speech detector
- 3-Band EQ control
- Stereo enhancer function
- Limiter lookahead
- Clipper MPX
- Pilot level and Phase control
- ITU BS412 control

Encoder RDS Section

- Digital RDS encoder
- RDS encoder compliant with UECP EBU SPB490 v7.05, CENELEC (Europa) and NRSC
- (America).
- RDS Level and Phase control
- 2 dataset with 1 Main PS + 10 EON
- Dataset switch managed by UECP/SNMP/ASCII PARSER/GPI.
- Service Groups settings
- UEPC Ports (2 Serials + LAN).
- Access Rights management for each communication port
- RDS Services : PI, AF, PS, RT, CT, M/S, DI, TP, TA, PIN, PTY, SLC0-7, LA, EG, ILS, LSN
- AF: 64 AF lists (max 25 Frequencies)
- RT: 16 strings (max 64 chr)
- RDS Scheduler max 64 events

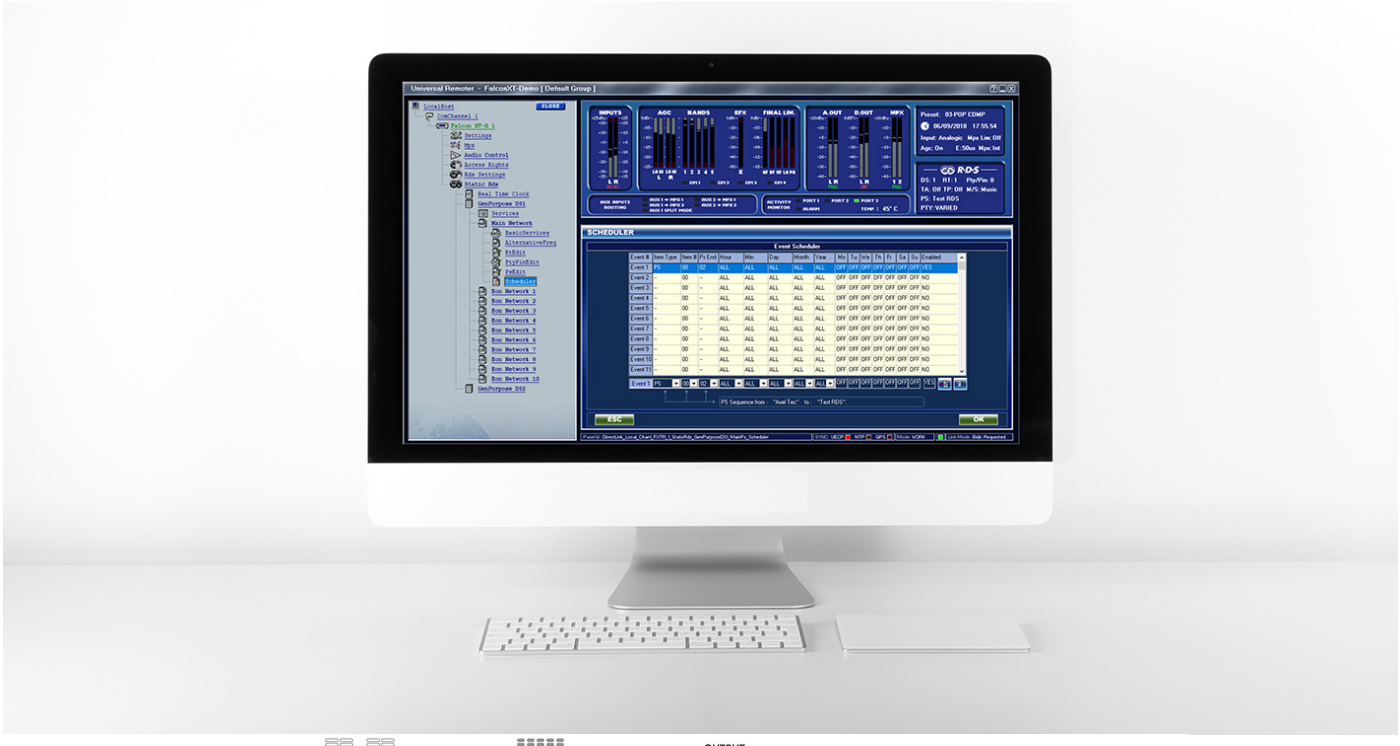
GUI & Monitoring

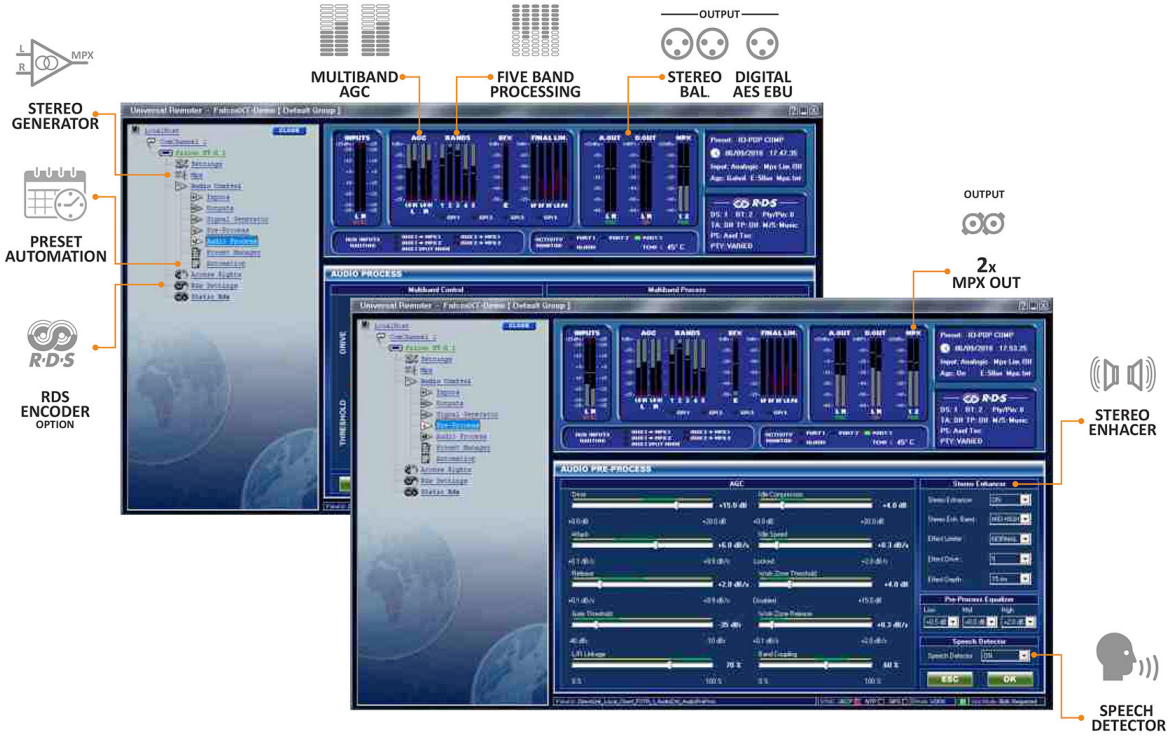
- Fully programmable by Windows GUI interface.
- Simple and intuitive Web GUI.
- RDS Monitor with Data Set, RT number, PTY, TA, TP, M/S, PS on air
- GUI with led meter bars
- Headphones output with level control

Communications & Management

- Ethernet/USB/RS232/GPIO connections
- UECP - Individual Address Manager
- SNMP V1
- NTP Address for Time and Date synchronization
- SNMP Manager Address
- N°2 RS232 for UECP commands
- 4 GPI and 4 GPO (DB 15p F HD)
- HTTP, SNMP, TCP support
- External GPS support for Time and Date Synchronization (by Sat Time Synchronizer)
- Import and export configuration functions
- PRESET, with load/save/import/export functions
- Easy configuration page setup

ASCII PARSER interface for easy command line settings





Special Features

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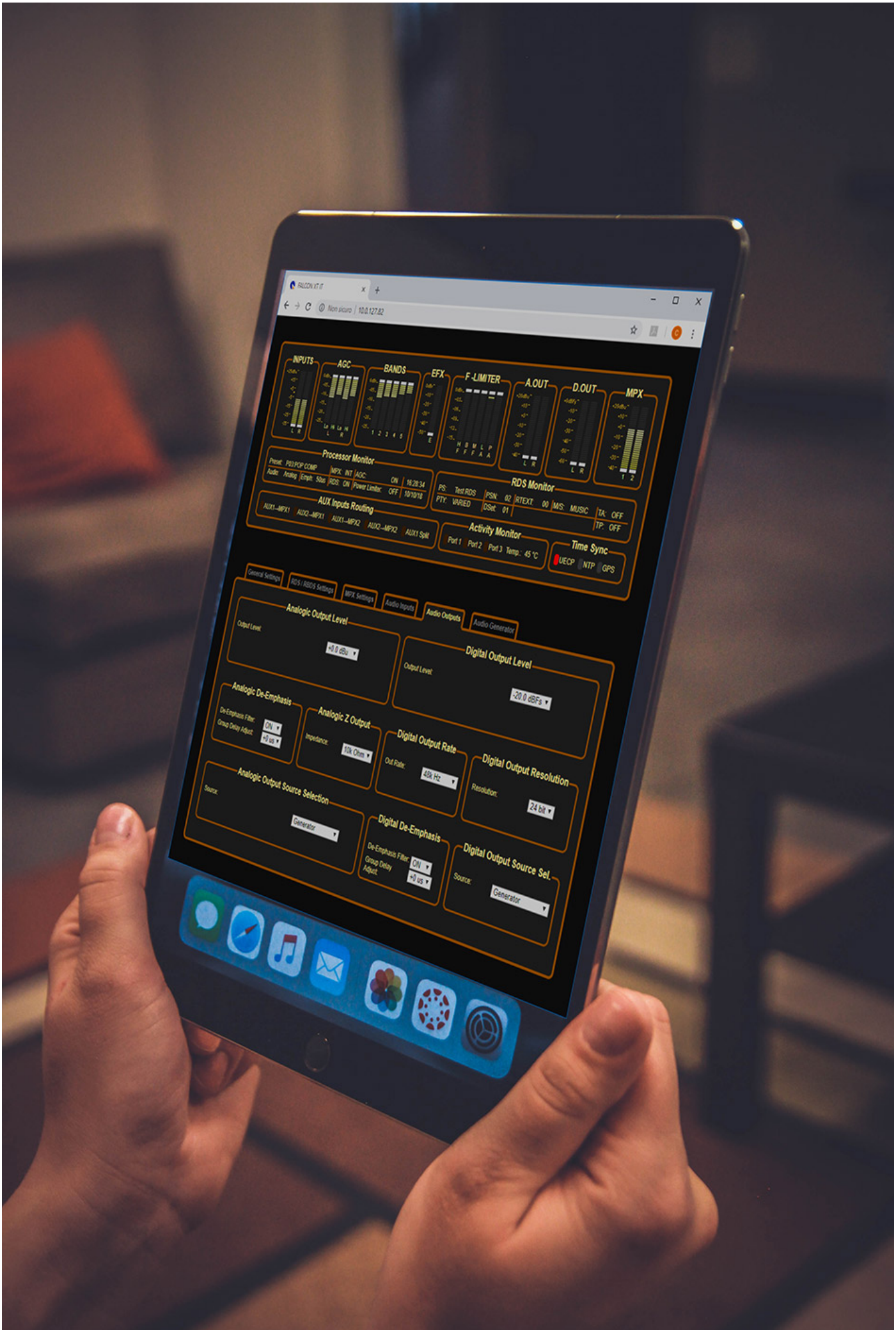
The hardware bypass circuit is always included to ensure audio presence and audio programs continuity. Falcon XT meets the most demanding broadcasters with extremely sophisticated audio features and high standards level: 5-band control compression, dual-band power AGC, three-band EQ and Brightness control.

The Stereo Enhancer parameterized command provides to radio station sound, spacing effect and large stereo horizon opening.

With phases control of mono audio signals, the voice sounds more natural, the Expander control allows to minimize background or unwanted noise, while the Overdrive and the

Super Bass improve the sound on low and very low frequencies, creating an impressive effect of loudness. Furthermore, the SuperBass Harmonizer controls the distortion of bass sound/low frequency, creating a unique sound effect, increasing the energy transmitted by the low frequency. Listening experience becomes beyond compare.


INPUTS
AGC
BANDS
EFX
F-LIMITER
A.OUT
D.OUT
MPX
Processor Monitor
RDS Monitor
AUX Inputs Routing
Activity Monitor
Time Sync
Analogic Output Level
Digital Output Level
Analogic De-Emphasis
Analogic Z Output
Digital Output Rate
Digital Output Resolution
Analogic Output Source Selection
Digital De-Emphasis
Digital Output Source Sel.

GENERAL

AC Rate	230 Vac/110 Vac 50 Hz/60 Hz 30 VA
Power factor	0.9
Type of power supply	Switching power supply
Processing architecture	Fully digital, based on DSP 24 bit/100 Mhz. Signal processing is performed by phase linear filter
Weight	≈ 5 Kg
Operating Temperature	-5°C/+50°C
Safety Standard	CE, ETL, UL.
Grounding	One more earth terminal is provided in Falcon XT body to connect audio earth connection

ANALOG INPUT MODULE

A/D Conversion	24bit Sigma-Delta Conversion (Crystal CS4272)
Connectors	XLR, female - Electronically balanced
AD Clipping Point	+24.0dBu
Operative Nominal Level	From – 12.0dBu to +12.0dBu (0.1dBu Step)
Line Impedance	10 kΩ (Electronically balanced selectable) EMI–suppressed
Distortion	less than 0.01% TDH+NOISE (0.0dBu 1 kHz)
AD Dynamic Range	108 dB RMS (110 dB A weighted)
Input Modes	Stereo, Mono (Left), Mono (Right), Mono (Left+Right)

DIGITAL INPUT MODULE

Connectors	XLR, female – Electronically balanced
Format	AES3/EBU
Sample rates	32 kHz/44.1 kHz/48 kHz/64 kHz/88.2 kHz/96 kHz with src and jitter correction
Operative Nominal level	From 0.0 dBFs to -24dBFs (0.1 dBu step)
Dynamic Range	125 dB (Typ), 122 dB (Min)
Distortion	less than 0.01% TDH+NOISE (0.0dBu 1kHz)
Input Modes	Stereo, Mono (Left), Mono (Right), Mono (Left+Right)

ANALOG OUTPUT MODULE

D/A Conversion	24bit Sigma-Delta Conversion (Crystal CS4272)
Connectors	XLR, male - Electronically balanced
Output Level	-6.0dBu to +20.0dBu (0.1dBu Step) – Max (+20dBu)
Impedance Source	10 Ω
Load Impedance	600 Ω or greater
THD + Noise	Less than 0.01% (0.0dBu @ 1 kHz)

ANALOG OUTPUT MODULE

Signal to noise Ratio	>80 dB unweighted - 100% Mod. 20 Hz – 15 kHz
L/R CrossTalk	< –70 dB, 20 Hz–15 kHz

DIGITAL OUTPUT MODULE

Connectors	XLR, Male – Electronically balanced
Format	AES3/EBU
Sample rates	32 kHz/44.1 kHz/48 kHz/64 kHz/88.2 kHz/96 kHz with src and jitter correction
Resolution	16 bit – 20 bit – 24 bit
Operative Nominal level	From 0.0 dBFs to - 25dBFs (0.1 dBu step)
Dynamic Range	125 dB (Typ), 122 dB (Min)
Distortion	less than 0.01% TDH+NOISE (0.0dBu 1Khz)
Input Modes	Stereo, Mono (Left), Mono (Right), Mono (Left+Right)

REMOTE INTERFACE

Digital Inputs GPIn	4x GP In optocoupled
Digital Outputs GPOut	4x GP Out Open Collector optoisolated
Serial Interface	2x RS-232 Serial protocol ports EMI filtered
USB	1x Universal Serial Bus port – B type EMI filtered
Ethernet Port and Parser ASCII protocol	Ethernet (option), over RJ45 connector with web server interface.

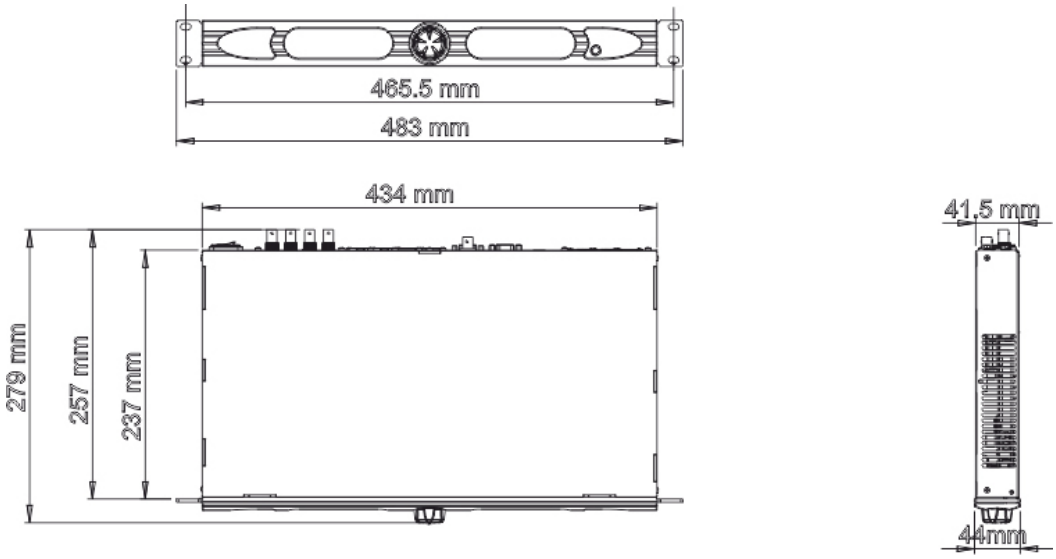
MPX/COMPOSITE OUTPUT

Mod Power Limiter	adjustable from -1.0dB to +12dB according to ITU-R BS.412
Pilot Frequency	19 kHz +/- 1Hz
Pilot Level	-25.5 to -14.0dB in 0.1dB/Step - Ref 100% Mod
Pilot Stability	19 kHz, ± 1 Hz.
Pilot Phase	Adjustable +/- 12 deg. 1 deg step
Pilot THD+Noise	0.03% (TDH 0.002%)
Stability	+/-10 ppm (-10 to +55 °C)
Signal-to-Noise Ratio (S/N)	> 85dB on a 60 kHz Bandwitdh, referenced to 100% modulation, unweighted
Distortion	<= 0.01% THD - Bypass mode, de-emphasized, 20 Hz – 15 kHz bandwidth, referenced to 100% modulation, unweighted
Stereo Separation	Greater than 70 dB, 30 Hz – 15 kHz
Linear Crosstalk	>-80 dB - main channel to sub-channel or sub-channel to main channel referenced to 100% modulation
38 kHz Suppression	>= 70 dB (referenced to 100% modulation)
Pilot Protection	> 65 dB relative to 10% pilot injection, ± 500 Hz
Crosstalk M/S	70 dB

MPX/COMPOSITE OUTPUT	
Crosstalk S/M	70 dB
MPX clipping & limiting	Based on look-ahead techniques
RDS/RBDS Protection	better than - 55 dB @ 56kHz, better than - 65dB@57 kHz (MPX Clipper Disabled)
Pre-emphasis	50usec, 75usec/+- 3usec adjust control
MPX Outputs	2, with independent level controls
Connector Type	BNC, floating, EMI suppressed
Levels	- 6.0 dBu to + 12.0dBu, 0.1 dB/step
Load Impedance	600 Ohm or greater
Source impedance	10 Ohm
Maximum Load Capacitance	5nF
MPX Modes	Stereo, Mono, L+R, L.-R, Pilot only, No Pilot
MPX Clipper	On/Off and adj 95% to 105 %, 1% step

SINE WAVE GENERATOR	
Purpose	Test
Freq	30 Hz - 100 Hz - 400 Hz - 1 kHz - 5 kHz - 10 kHz - 15 kHz
Level	from 0% to 120% of modulation
Modes	Left=Right, Left=-Right, Left or Right Only

Dimensions



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