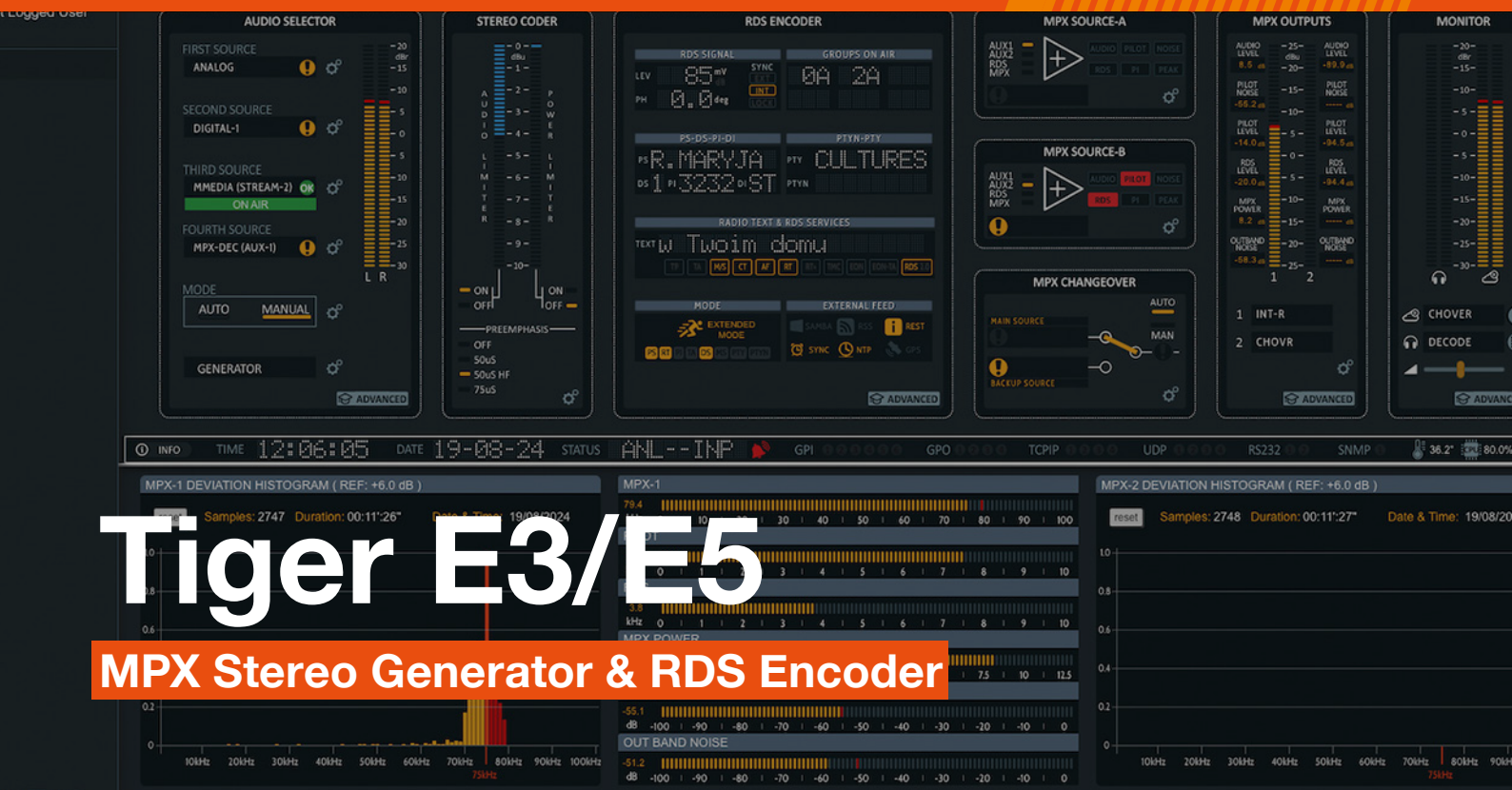




Tiger E3/E5

MPX Stereo Generator & RDS Encoder

>> Everything You've Always Dreamed of Doing and Knowing About Your Signal!

The Tiger E3/E5 is a versatile device that has multiple functions within the broadcasting and audio monitoring domain. It serves as an MPX stereo generator and RDS encoder, an FM site control system, and a monitoring IP-audio codec for efficient and high-quality audio monitoring over IP networks. It also integrates advanced features such as audio changeover, audio limiter, MPX changeover, and an integrated FM monitoring system. Additionally, the Tiger E3/E5 includes the new TigerSync Streamer feature (optional), which allows audio distribution to FM transmitters through a simple Internet connection using IceCast.



/// Overview

Connect Any Kind of Sources

The Tiger E3/E5 audio management system is capable of handling various audio sources such as analog, digital, IP audio, backup player, and MPX. It features a 4-channel audio changeover and 2-channel MPX changeover, with the ability to apply delay and time alignment to sources. The system can use the internal audio player as a backup if external sources fail and includes an internal limiter to monitor audio levels. Additionally, it offers options for MPX inputs, digital MPX, and optional tuner integration, making it a versatile solution for managing and decoding MPX and RDS signals, receiving IP audio streaming signals, and analyzing analog and digital audio signals.

Easy Access

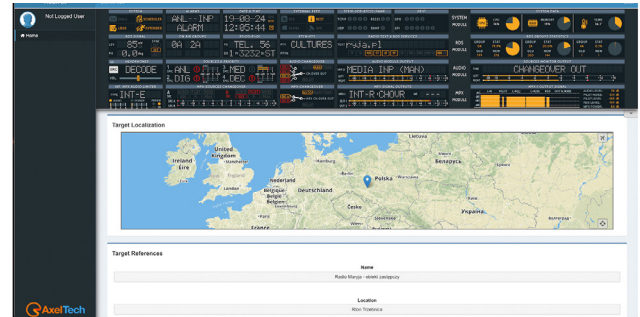
The Tiger E3/E5 is fully configurable via a web interface that is compatible with all web browsers. It supports laptops, tablets, and smartphones with a responsive graphic interface. The device comes with a WiFi USB dongle to create a specific WiFi hotspot, and features 3 IPv4 and 3 IPv6 addresses for concurrent connections.

Easy Maintenance

Tiger E3/E5 offers simplified settings management for first-time users, including Easy Configuration Function and Quick RDS Setup. It also provides Import/Export and Preset Manager for advanced management. The device uses a uSD card to automatically copy all data and can be cloned using the uSD card if needed.

Monitoring

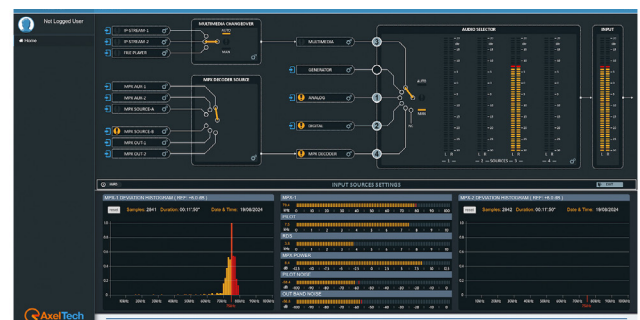
Tiger E3/E5 features a user-friendly GUI with clear and informative elements for easy control of functions. It displays input and output levels, as well as internally generated signals in graphical and numerical formats. The RDS section allows for on-air RDS group analysis, and the MPX section features spectrum analyzers for MPX+RDS signals. The device provides two independent listening paths for internal audio sources, with options for local and remote listening. The MPX decoder allows users to listen to the decoded L&R audio for any of the MPX sources.



Tiger Web Controller Home



Tiger Web Controller



Tiger Web Controller Input-Manager



TigerSync Streamer

The TigerSync Streamer solution by AxelTech utilizes IceCast to distribute audio to FM transmitters through a simple Internet connection. It ensures precise synchronization for audio playback through inaudible timestamp codes transmitted via the Opus codec. The system achieves an impressive accuracy of a few milliseconds in maintaining synchronization between the decoding units. TigerSync Streamer has proven itself as a powerful technology for enhancing the distribution network through a solid, precise, and low-cost solution.



For more information
about Tiger E3/E5,
visit our website



/// Features

General

- Main Supply 90–260Vac 50/60Hz. 15W;
- Green device – only 15W;
- Full Color Graphic display 480x128 (only Tiger E5);
- Status LED panel with 40 LEDs;
- Rack 1u 19" – Inox steel;
- Redundant PSU (available as an option);
- Redundant PSU 12-36VDC (available as an option);
- High immunity to strong RF fields, designed to be installed in high-power TX sites;
- Fully Digital – No trimmer.

Inputs & Stereo Generator Section

- Analog input on XLR;
- Digital AESEBU input on XLR;
- Double streaming IP input (MP3, OPUS, PCM, VORBIS...);
- Double MPX output with independent source and level;
- Optional Digital MPX AES192 (1 Out);
- Bypass HW on MPX Outputs (Aux-1 to Out 1&2);
- 2 AUX input (MPX/RDS/SCA) wide band – digitally controlled;
- MPX Changeover between external or internal MPX sources;
- 2 Wide Band mixer to mix internal (Stereo generator and RDS) or external (MPX, RDS, or SCA) signals;
- Configurable delay on MPX signals;
- AGC on each single source;
- Limiter, Clipper MPX;
- ITU BS412 control;
- ITU Loudness measurement;
- Outband noise and Pilot Noise Measurement;
- RDS, Pilot, Main Audio, and Sub Audio Measurement;
- Integrated Hi-Quality MPX Decoder.

Process

- 4 channels Audio Changeover Changeover Audio with source priority / restore logic;
- Backup audio player on SD card;
- Configurable delay on Audio sources;
- Configurable UECP Filter on incoming RDS Signal (AUX-1) for rebroadcasting use;
- Capability to digitally erase RDS signal on incoming MPX+RDS Signal;
- Upgrade FW directly on the field managed by the web GUI interface;
- Audio limiter integrated (Band controlled, Psychoacoustic, Look-ahead, ITU BS412);
- Fast DSP Starting time <5 sec (OS < 30 sec).

Encoder RDS Section

- RDS encoder fully compliant with UECP EBU SPB490 v7.05, CENELEC (Europe) and NRSC (America);
- Fully support all the RDS services, Static, and Dynamic services;
- UECP Ports (2 Serials, 4 TCPIP, 4 UDP);
- n.8 Data Set;
- n.10 EON + Main PS for each Data Set;
- Integrated RDS decoder;
- Tuner FM with RDS decoder (as an option);
- Dataset switch managed by UECP/SNMP/REST/HTTP/ASCII PARSER/TXT FILE/GPI;
- Easy to interface with any Radio Automation (UECP/SNMP/REST/HTTP/ASCII PARSER/TXT FILE);
- Capability to connect with any Radio Automation to get data for RDS (PS/RT/RT+/TA/MS);
- Easy RDS page fast setup.

GUI & Monitoring

- Fully programmable by Web GUI interface, all the browsers are supported;
- Simple and intuitive GUI, supported by all devices (PC, notebook, tablet, smartphone, etc. ...);
- Easy and configurable graphical interface;

- Multi-user web GUI;
- Map with device geolocation (RX sat or fixed coordinates are required);
- Web GUI with info bubbles;
- Monitoring FM Tuner (as an option);
- MPX spectrum signal Analyzer on outputs, Aux inputs, and internal signals;
- Dynamical graphics to see the value in the time;
- RDS Groups data analyzer;
- GUI with LED meter bars;
- IP audio streaming encoding for remote audio monitoring, with independent source selection and level;
- Headphones output with independent source selections and level.

Monitoring Tuner (optional)

- RF Level measurement;
- Carrier Offset;
- MPX, RDS, and Pilot deviations;
- BLER (Block Error Ratio);
- RDS Decoder (PI, PS, RT, PTY, RT+, TP, TA, M/S, CT, AF, TMC, EON).

Communications & Management

- Ethernet/USB/RS232/GPIO connections;
- 2nd Ethernet (as an option);
- Easy WiFi Access – Hot spot WiFi USB to connect directly a wireless device to the Tiger;
- SNMP V2c;
- Set up to 3 NTP Servers (V1, V2, V3, V4);
- Possibility to send email to 4 receivers and set 3 different SMTP Server;
- IPV4 and IPV6 support (3 addresses IPV4 and 3 addresses IPV6);
- N°2 RS232 for UECP commands;
- 6 GPI and 4 Relay Out (all GPIO are fully programmable by the GUI);
- HTTP, FTP, SNMP, SMTP, UDP, TCP support;
- Alarms via: TRAP (SNMP), email(SMTP), GPO, HTTP;
- External GPS support (Time, Date, and Geolocation);
- uSD Card for clone function for maintenance, and easy replacement of a faulty unit;
- Import and export configuration functions;
- PRESET, with load/save/import /export functions;
- Logs 24/7 with export function;
- 6 levels of right access management;
- Easy configuration page setup with info connection diagrams;
- REST API to manage the device;
- ASCII PARSER interface for easy command line settings;
- SAMBA SHARE function to connect and get data from an external PC;
- Multi-user contemporary access.



**For more information
about Tiger E3/E5,
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/// Options

Analog Left & Right Input

Input Impedance	10Kohm
Nominal Input Level (Sensitivity)	Software Adjustable from -12dBu to + 13,0 dBu (0,1dB step)
Nominal Input Level	-21,0dBu ÷ +24,0dBu
Max Input Level (clipping point)	Selectable +15,0dBu or +24,0dBu
A/D conversion	CS4272, 24 bit / 48 KHz
Input CMRR	>60dB (20Hz-20kHz)

Digital Input

Connector	Balanced on 1 XLR – EMI Suppressed
Input Impedance	110Ω
Standard	AES3
Audio Sample Rate	32/44.1/48/96/192KHz
Adjustable Nominal Input Level (Sensitivity)	From -25,0dBFS to -0,2dBFS (0,1dB step)
Nominal Input Level	-36dBFS ÷ 0,0dBFS
Dynamic Range (Converter Values)	124dB (32KHz) – 126dB (44,1KHz) 126dB(48KHz) – 122dB (96KHz)
Resolution	24 bit

MPX Input – MPX - AUX1/AUX2

Connector	Unbalanced on 2 BNC – EMI Suppressed
Output Impedance	10 Ω
Load Impedance	600 Ω or greater
Maximum Load Capacitance	5nF
D/A Conversion	Texas PCM 1796
Composite Output Level	-0,0dBm to +15,0 dBm (0,1 dBm step)
S/N	≥ 85dB
THD	≤ 0.01%
Separation	≥ 70dB

Backup Player

Support	On Micro SD CARD (max 64GB)
Supported formats	MP3, WAV
Supported Sample Rates	32,44.1,48,64,96 KHz

MPX & RDS Signal

Pilot Frequency	19 KHz +/- 1Hz
Pilot Injection	Adj from -25,0dB a -15,5dB (0,1 dB step); 6 to 18% of total deviation
Pilot Stability	±10 ppm (-10 to +55°C)
Pilot Distortion	0,05% (typical)
Pilot Distortion + Noise	0,068% (on 100KHz band)
Composite out THD	0,01% (typical on the whole band)
Stereo Separation	>70 dB (typical on the whole band)
Linear Crosstalk Main to Sub / Sub to Main	>70 dB (minimum)
Digital filtering / band	30 Hz to 15 kHz (-0,1dB), 17 kHz (-70 dB), 19 kHz (-100 dB)
57 kHz (RDS/RBDS) Protection	Better than 51 dB
Pre-emphasis	Off, 50uS, 75uS (+/-0,1dB)
Freq Response	±0,3 dB (30Hz-15kHz)
Operation	Mono / Stereo
MPX/RDS Output	Adj from -10,0 dB to 15,0 dB (0,1 dB step)
Signal/Noise Ratio	≥ 85 dB (on 100 kHz band)
Carrier Suppression	> 85 dB

Digital Output MPX - Option

Connectors:	Balanced on 1 XLR – EMI Suppression
Input impedance:	110 Ω
Format:	AES192
Sample rate:	192 KHz
Output level adjustment:	From 0,0 dBFS to -30,0 dBFS (0,1 dB steps)

/// Options

System

GPIO Inputs/Outputs	6 GPI / 4 GPO
Communication Port	2xRS232, 3xUSB, 1xLAN
Synchronization	Ext(Pilot Mpx)/Int/ Auto
Synchronization Monitoring	Yes
RDS Level adjustment	Digitally controlled
Phase adjustment	Yes, 0 ÷ 359.9°
Separate outputs for RDS+MPX and for RDS only	Yes
Command to activate the RDS SCA	Yes
Side Chain Mode, Loop through mode, Bypass feature	Yes
RDS Subcarrier	100% Digitally Generated Shape
CENELEC – EN50067 compliant –	Yes
Accurate Clock Time (CT) Sync with Internet Connection	Yes
Remote TA actuation for Traffic Announcements	Yes
GPS module for automatic synchronization of the built-in Real Time Clock (RTC)	Optional (USB External)
RDS decoder for rebroadcasting RDS Data	Yes
Firmware can be upgraded on the field	Yes
Front-panel Colour TFT Display	No (Tiger E3) Yes (Tiger E5)
Data may be entered on-site with Front-panel knob	No (Tiger E3) Yes (Tiger E5)
Front Panel Leds	40
Operating Temperature	0°C ÷ 50°C

RDS Features

Group supported	All
Group Sequence	Configurable
PS	8 DSN x MAIN+10 PSN
PI	8 DSN x MAIN+10 PSN
PIN & PTY	RDS/RBDS
AF Method A	up to 1024 (64 lists)
AF Method B	up to 1024 (64 lists)
RT	Yes, 32 messages
RT rate adjustment	Group Sequence
RT+ for songs and content tagging	Yes
TP	Yes
TA Control	Command, Software, GPI
PTYN	Yes
EON	10 PSN
CT	Yes
TMC, EWS, IH, TDC	Yes
Free Format Groups (FFG)	Yes
Open Data Application (ODA)	Yes
PS Scrolling	Yes
Scrolling by characters, by word, auto centre, truncate long words	Yes (Characters – from 1 up to 8)

Communication

Connection with Automation Software	Yes
Network Connectivity	4 TCP ports / 4 UDP / 1 SNMP
Configuration Software	Web Server, FTP
Password Protection	Yes
ASCII Protocol	Configuration Messages
REST Command	Yes
Alert notifications on user-defined events via SNMP traps or E-mails	Yes
Embedded SNMP agent permitting active management tasks	Yes
Supported Network Protocols	HTTP, SMTP, UDP, TCP, NTP, FTP
UECP Protocol	EBU SPB490 Ver.7.05
PI Calculator	Yes
RDS 2.0 Ready	Yes

PSU

Power Supply	90-260 Vac / 47-63 Hz 15W
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Dimensions

Dimensions (W; H; D)	485 x 44 x 240 mm
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