RDS e3-e5

Product Overview

RDS E3 and RDS E5 are static/dynamic RDS Encoders supporting all the services and features requested by an advanced user.

RDS E3 and RDS E5 support the most advanced RDS dynamic services, including TMC, ODA, IH, TDC, EWS, Radio Text and Radio Text plus.

RDS E3 and RDS E5 manage up to 8 complete Data Set, each one with 1 Main PS and 10 EON. To assure the best flexibility, any Dataset can be managed via Standard Mode, using UECP commands or via Extended Mode using GPIOs, SNMP commands, REST API commands or ASCII commands.

In addition to standard CENELEC NRSC methods, RDS programming has been enriched with larger PS and RT sets (that are also available in dynamic mode).

RDS E3 and RDS E5 can interface with various Automation Systems and they offer an ASCII protocol for broadcast song/artist information. In case of alarms, they support SNMP alerting for NMS.

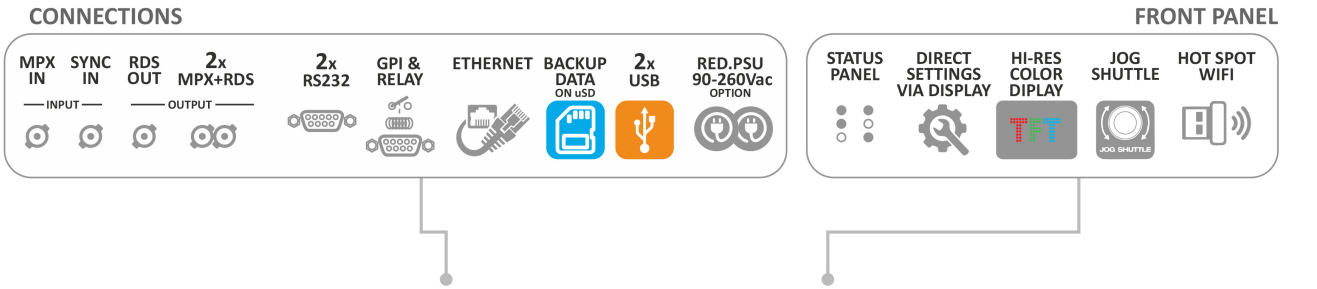
RDS E3 and RDS E5 satisfy the high-end broadcasters' requirements: UECP system features 4 TCP ports, 4 UDP ports, 2 serial ports and 1 SNMP port.

RDS E3 and RDS E5 are RDS 2.0 Ready: they manage the 4 RDS subcarriers specified in the standard that is still under definition. A web interface has been created to control all these functions and it can be used by any browser with any device from the smartphone to the laptop.

RDS E3 and RDS E5 are SNMP v2c in order to satisfy the most demanding deployments. RDS E3 and RDS E5 have an high resolution colour display that allows the display and insertion of the main machine parameters.

Models

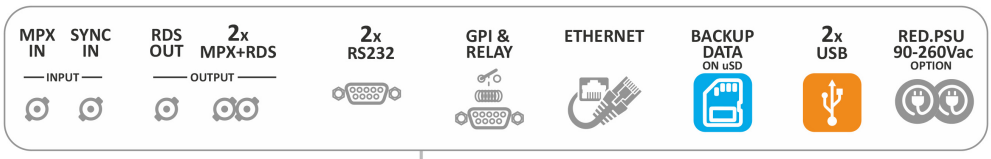
RDS E5



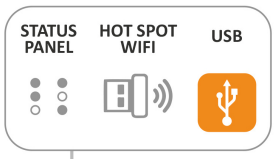
FUNCTIONS

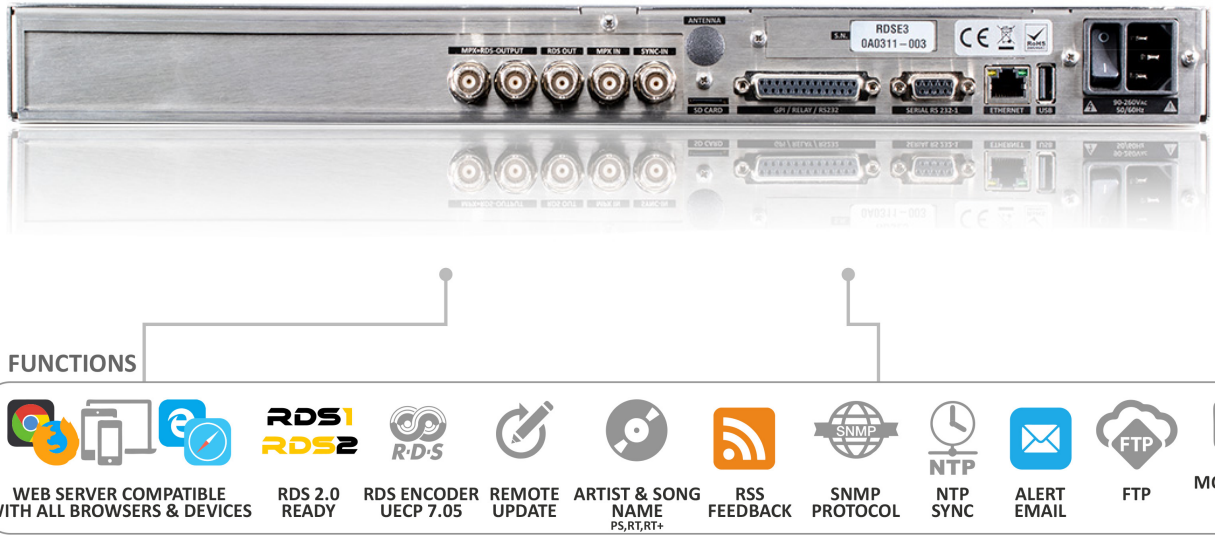
RDS E3

CONNECTIONS



FRONT PANEL





Highlights

General

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

Inputs & Outputs Sections

- Double MPX+RDS output with digital level setting;
- RDS output;
- Bypass HW on RDS+MPX Outputs (MPX to Out 1&2);
- 1 MPX input (wide band);
- 1 19kHz Sync imput to synchronize internal RDS.

Encoder RDS Section

- RDS encoder fully compliant with UECP EBU SPB490 v7.05, CENELEC (Europa) and NRSC (America);
- Fully support for all RDS services, Static and Dynamic services;
- UEPC 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 to any kind of automation system (UECP/SNMP/REST/HTTP/ASCII

GUI & Monitoring

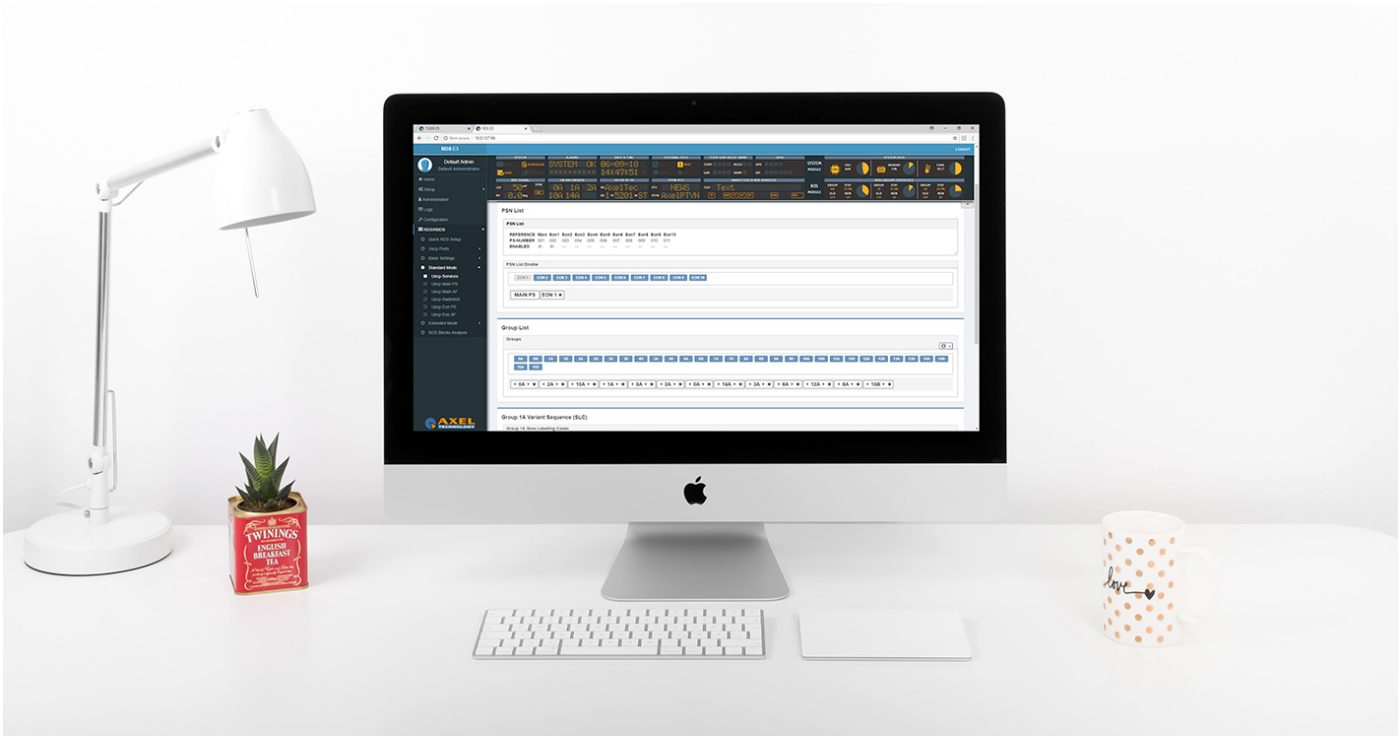
- Fully programmable by Web GUI interface, all the browsers are supported;
- Simple and intuitive GUI, supported by all devices (PC, notebook, tablet, smartphone, etc.);
- Easy and configurable graphical interface;
- Multi user web GUI;
- Map with device geolocation (RX sat or fixed coordinates are required);
- Web GUI with info bubbles;
- Monitoring FM Tuner (as an option);
- RDS Groups data analyser;
- GUI with led meter bars.

PARSER/TXT FILE);

The RDS can autonomously get data from the Radio Automation System (PS/RT/RT+/TA/MS);

Easy RDS page fast setup;

RDS 2.0 Ready.



Communications & Management

Ethernet/USB/RS232/GPIO connections;

Easy WiFi Access - Hot spot WiFi USB to connect directly a wireless device to RDS E3 and RDS E5;

SNMP V2c;

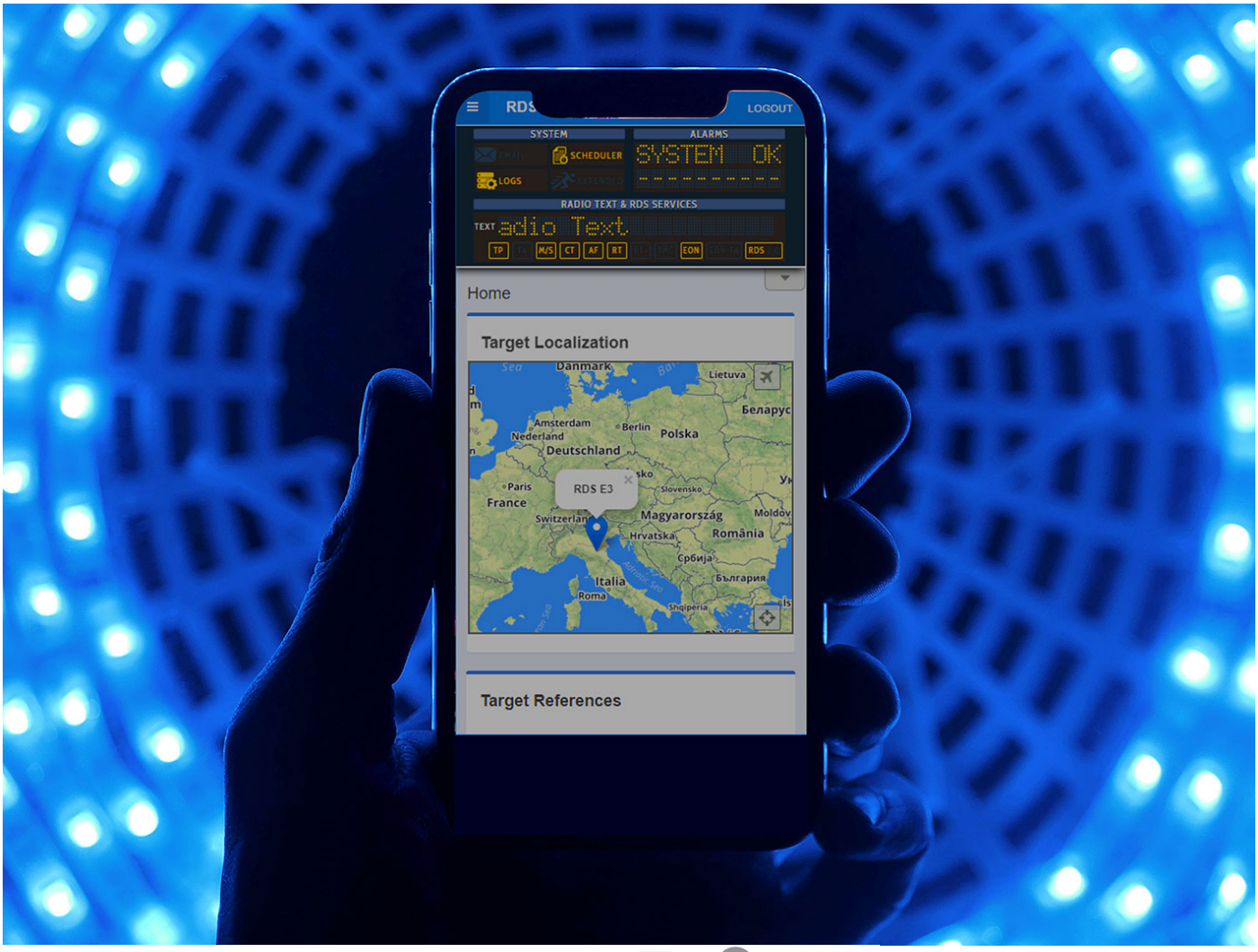
Possibility to set up to 3 NTP Servers (V1, V2, V3, V4);

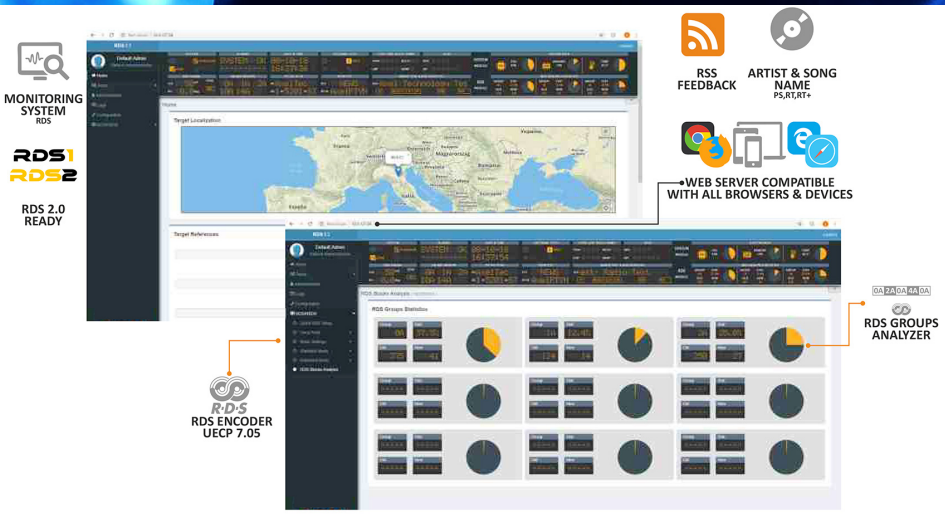
Possibility to send email to 4 receivers and to set 3 different SMPT servers;

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 replace of a faulty unit;
- Import and export configurations function;
- PRESET, with load/save/import /export functions;
- Logs 24/7 with export function;
- 6 levels of right access managment;
- Easy configuration page setup with info connection diagrams;
- REST API available 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.





Special features

Broadcast “All” Your Information

RDS E3 and RDS E5 are the result of the long-time AxelTech experience in RDS encoder development.

RDS E3 and RDS E5 can simultaneously receive UECP commands through 4 TCP ports, 4 UDP ports and 2 serial ports, enabling the most demanding network operator to connect all the dynamic sources to the RDS encoder.

In addition to the accurate use of the RDS through UECP commands, RDS E3 and RDS E5 enable the end user to benefit from more simple and flexible ways to send information to the encoder by offering: REST API commands, ASCII Parser and SAMBA connection to Radio Playouts.

RDS E3 and RDS E5 can automatically get information from the Radio Playouts thus eliminating the need of Middleware Software between the Playout and the RDS encoder.

Opened To The Future

RDS E3 and RDS E5 are RDS 2.0 Ready. Their DSP can generate the multicarrier signal needed for the new RDS standard. Once this standard is defined, with a simple software upgrade the end user will be able to have a RDS 2.0 compliant encoder without any replacement that would vanify the initial investement.

Easy Access

RDS E3 and RDS E5 are fully configurable via WEB interface. Their web server is compatible with all the available web browsers (Chrome, Firefox, Edge, Opera, Safari etc.).

RDS E3 and RDS E5 supports laptop, tablet and smartphones simplifying the browsing and setting of the device. They have a responsive-kind graphic interface that adapts the viewing mode according to the resolution and position (portrait/landscape) of the current viewing device.

The provided WiFi USB dongle creates a specific WiFi hotspot that enables the access to

the device without the need of cabled or wireless net.

RDS E3 and RDS E5 have 3 IPV4 and 3 IPV6 addresses to ensure simultaneous connection to all the broadcasting and monitoring systems.

Easy Maintenance

Any first-time user can benefit from RDS E3 and RDS E5 simplified settings management.

QUICK RDS SETUP is the easier way to set the main RDS parameters.

IMPORT/EXPORT and PRESET MANAGER are available for RDS E3 and RDS E5's advanced management.

These functions can be used for the whole device configuration or only for some selectable modules (SYSTEM, RDS, and TUNER).

RDS E3 and RDS E5 use a uSD card to create an automatic copy of all the device data when the user changes anything. If the device needs to be replaced or duplicated, the uSD card can be used to clone it.

Monitoring

RDS E3 and RDS E5 are provided with modern GUI (Graphical User Interface) that uses clear elements and useful information. The wide range of the available banners allows the user to monitor any function. The selected banners are always visible in any menu.

In the RDS section, a specific area is available for on-air RDS group analysis (static and dynamic) to evaluate services balancing.

Thanks to the FM Tuner (as an option), the FM signal can be received and decoded. With this feature it is possible to check MPX, RDS and Pilot deviations, BLER (Block Error

Ratio) and RDS Decoder (PI, PS, RT, PTY, RT+,TP, TA, M/S, CT,AF,TMC, EON).

Technical Specifications

MPX Input – MPX

Connector	Unbalanced on 2 BNC – EMI Suppressed
Input Impedance	50K

RDS+MPX Output - MPX

Outputs number	3 (2RDS out + 1 RDS)
Connector	Unbalanced on 3 BNC – EMI Suppressed
Output Impedance	10 Ω
Load Impedance	600 Ω or greater
Maximum Load Capacitance	5nF
RDS Output Level	0 to 8191 mVpp (1 mVpp step)
S/N	> 85dB
Carrier Suppression	> 85dB

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
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)

System	
In-field firmware update	Yes
Front-panel Colour TFT Display	No (RDS E3) Yes (RDS RDS E5)
Data may be entered on-site with Front-panel knob	No (RDS E3) Yes (RDS RDS 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, long words' truncation	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
Embedded SNMP agent for active management tasks	Yes
Supported Network Protocols	HTTP, SMTP, UDP, TCP, NTP, FTP

Communication

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

Dimensions

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

Weight	< 3Kg

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