R V R Elettronica TRDS7003 Audio Mono Processor and RDS Coder Installation Guide

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R V R Elettronica TRDS7003 Audio Mono Processor and RDS Coder

Product Information

- The TRDS7003 is a MONO digital audio processor with RDS coder. It features two mono inputs balanced on XLR connectors, a S/PDIF digital input, and an optical digital input. The inputs can be set-up as left only, right only, or left+right. It also has an MPX input.
- The TRDS7003 is equipped with a distress change-over system with adjustable thresholds and intervention times. This system allows for seamless switching between inputs, both during the change-over to a secondary source and when returning to the primary source. The RDS carrier will automatically switch off if there is no audio signal on the selected sources.
- The mono digital and analog audio inputs have preemphasis and low-pass filters at 15KHz. They also feature low over-shoot clipper and clutter products, as well as AGC (Automatic Gain Control) with adjustable threshold, gain, and intervention times.
- The TRDS7003 generates the RDS carrier using fully digital technology, ensuring high modulation quality and spectral purity. The RDS coder supports various RDS services, including TMC, TDC, IH, and EWS.
- All audio and RDS parameters can be adjusted using the encoder and display (2X40) located on the front panel or through the provided software. The software allows for saving RDS data and audio parameters on file for programming the equipment.
- The programming of RDS parameters can also be done using any UECP-SPB490 compatible software or the provided software (UECP-SPB490 compatible).
- The equipment firmware can be updated through the serial port without the need for hardware settings or interruption of service.
- The TRDS7003 has two independent outputs that can be configured to supply different signals and levels. For example, output 1 can supply the mono+rds signal, while output 2 can supply only the RDS signal.

Product Usage Instructions

1. Connect the audio sources to the TRDS7003 using the appropriate connectors (XLR, S/PDIF, optical, MPX).
2. Set the desired input configuration (left only, right only, or left+right) using the provided controls.
3. Adjust the distress change-over system thresholds and intervention times according to your needs.
4. Ensure that there is an audio signal on the selected sources to prevent the automatic switch-off of the RDS carrier.
5. Use the encoder and display on the front panel or the provided software to adjust audio and RDS parameters. Save the parameters on file if needed.
6. If desired, program RDS parameters using UECP-SPB490 compatible software.
7. Update the equipment firmware through the serial port when necessary.
8. Configure the outputs according to your requirements for supplying different signals and levels.
9. Ensure proper power supply and observe the environmental working temperature specified in the technical specifications.

Highlights

- Excellent quality/price ratio
- Fully digital with A/D-D/A 24-bit converters and DSP 32-bit
- Distress system for all audio inputs (Changeover)

- Automatic switch-off RDS carrier in case of no audio signal
- The RDS coder manages n. 6 data set and dynamic services TMC, TDC, IH, and EWS
- Saving on file of RDS data and of all programming audio parameters

Overview

Front view

Rearview

Features

- The TRDS 7003 version is a MONO digital audio processor with an RDS coder, it is made of two mono inputs balanced on xlr connector, a S/PDIF digital input, and an optical digital input with the possibility of set up as left only, right only, and left+right as well as an MPX input.
- It is equipped with a distress change-over system between any input with adjustable thresholds and intervention times, both during the change-over on the secondary source and of return on the primary source. Automatic switch-off of the RDS carrier in case of no audio signal on selected sources.
- The mono digital and analogical audio inputs are equipped with preemphasis and low-pass at 15KHz, very low over-shoot clipper and clutter products as well as AGC with adjustable threshold, gain, and intervention times.
- Two independent outputs that can be configured to supply different signals and levels, for example, output 1 can supply the mono+rds signal, and output 2 only the RDS signal.
- RDS carrier is also generated with fully digital technology able to guarantee very high modulation quality and spectral purity. The coder also supports all the more diffused RDS services, including TMC, TDC, IH, and EWS.
- All AUDIO and RDS parameters can be amended through the encoder and display (2X40) located on the front panel, or through the provided software. Through the software, it is possible to save on file both the RDS data and the AUDIO parameters that will be needed to program the equipment.

- The programming of the RDS parameters can also be carried out through any UECP-SPB490 compatible software or by using the provided software (obviously UECP-SPB490 compatible).
- The equipment firmware can be updated through a serial port without the need of hardware settings and without interruption of the service.

Technical specifications

Parameters	**Value**
GENERALS	
User Interface	LCD – 2 x 40 with Encoder
Primary Power	115 – 230 VAC ±10%
Phisical Dimensions (W x H x D)	483 x 44 x 280 mm
Weigh	3,5 kg
Environmental working temperature	-10 to + 40 °C
ANALOGUE AUDIO INPUTS	
Conversion	24 Bit
Connector	XLR 3P. Fem. Balanced
Impedance	600ohm/10 kohm
Input level	-12dBu to +12dBu – step 0,1dB (Adj.-Sw)
Maximum input level	+16dBu
PILOTE INPUTS	
Connector	
Pilot frequency synch.	
Input level	
DIGITAL AUDIO INPUTS	
Connector	Optical TOS-LINK + Pin RCA
Data format	AES/EBU – S/PDIF – EIAJ340
Sampling frequency	32 to 96KHz
ANALOGUE MPX INPUTS	
Connector	BNC unbalanced
Impedance	10 Kohm
Input level	Gain 0dB / Out.MPX
Maximum input level	+20dBu
OUTPUTS 1 & 2	

D/A converter	24 bit
Connector	BNC unbalanced
Impedance	50 ohm
Output level	-12dBu to +12dBu – step 0,1dB (Adj – Sw) (inp.MPX / Gain0dB)
Maximum Output level	+6/+18dBu (+20dBu)
PROCESSOR OPERATION	
Preemphasis	50/75 microsec.
Preemphasis linearity + Low-Pass Filter	From 30 Hz to 15 KHz ±0.15 dB
15 KHz low-pass filter	Ripple from 30 HZ to 15 KHz ±0.1 dB
Low-pass filter 19 KHz attenuation	Min. -56 dB
Clipper	Channel mono1&2 -Digital R&L
AGC	Channel mono1&2 -Digital R&L
AGC range	Max gain+12dB – Min.gain -12dB
AGC speed	Att.0,5dBs to 2dBs – Rel.0,05dBs to 0,5dBs
Output noise	Max -92dBu
Total Harmonic Distortion	< 0.02% 30 Hz ÷ 15 kHz
Intermodulation distortion	£ 0.03% with 1 kHz and 1,3 kHz tones
RDS OPERATION	
Standards	Cenelec 50067 Specification
Command formats	UECP – SPB490 Ver.6.1 / 2003
Static services	DI, PI, M/S, TP, TA ,TP, TPY, RT, CT, AF, PIN, EON, PSN
Dynamic service	TMC,TDC,EWS,IH
RDS Groups	0A, 1A, 2A, 3A, 5A, 6A, 8A, 9A, 14A
Data Set	N° 6
RDS MODULATION	
Subcarrier frequency	57 KHz ±1.5 Hz
Bandwidth	+/- 2,4KHz (-50dB)
Synchronisation	Internal
RDS phase adjustment	Adjustable up to 360 degrees in 0.33-degree increments

Parameters	*Value*
ELABORATION	
A/D conversion	24 bit (Dynamic range 105dB)
D/A conversion	24 bit (Dynamic range 123dB)
DSP elaboration	32 bit, fixed point
OTHER CONNECTORS	
Serial port	3 RS232 DB9 Connector., (1 USB Optional)
Serial connection rate	1200 to 115200 Baud
Ethernet	
Keyboard interface	
REMOTE input	8 Input + 8 Output (Optional)
STANDARD COMPLIANCE	
Safety	EN60215:1997
EMC	EN 301 489-11 V1.4.1

- All pictures are RVR's property and they are only indicative and not binding. The pictures can be modified without notice.
- These are general specifications. They show typical values and are subject to change without notice.

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Documents / Resources

	R V R Elettronica TRDS7003 Audio Mono Processor and RDS Coder [pdf] Installation Guide TRDS7003 Audio Mono Processor and RDS Coder, TRDS7003, Audio Mono Processor and RDS Coder, Processor and RDS Coder, RDS Coder

References

- R.V.R. Elettronica - Broadcast Systems