> TRDS Coder series

TRDS4002-LUXOR-B
TRDS7002
TRDS7004

highlights

- Excellent quality/price ratio
- Fully digital with **A/D-D/A 24 bit** converters and **DSP 32 bit**
- R&L audio and analogical SCA outputs and **optical and feeder digital input** (TRDS 7004)
- **Distress system** for the R&L and MPX audio inputs (**Changeover**) (TRDS 7004)
- The RDS coder manages n. 6 data set and dynamic services **TMC, TDC, IH** and **EWS**
- All parameters are managed with **encoder and display** or **dedicated software**

TRDS7002 front view

Features

The **TRDS** family is a set of products that include RDS coder, STEREO coder + RDS, MONO audio processor + RDS, configured with and without display at an extremely competitive price.

All family models are **fully digital**, they use only high quality components like A/D and D/A 24 bit converters and numerical processing at 32 bit.

The versions available are:
> RDS Coder basic model without display (**TRDS 4002-LUXOR-B**)
> RDS Coder with display (**TRDS 7002**)
> RDS Coder + STEREO Coder with display (**TRDS 7004**)

The RDS coder with display version has the same functions as the basic model plus the possibility of managing the programming of the equipment through display and encoder without the use of PC.

The STERO coder + RDS version has the same functions as the RDS coder with display plus the R&L audio and analogical SCA input section, as well as the digital optical and feeder inputs with S:R:C.

The stereo coding is realised digitally as are the input low-pass and the pre-emphasis. The SCA inputs are mixed in analogical form with pass-band of over 100KHz.

All functioning and programming parameters are managed through encoder and display present on the equipment or through dedicated software.

The equipment firmware can be updated through serial port without the need of hardware settings and without interruption of the service.

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New Digital RDS Coder & Stereo Coder

- *Ottimo rapporto qualità/prezzo*
- *Completamente digitali con convertitori **A/D-D/A 24 bit e DSP32Bit***
- *Ingressi audio R&L e SCA analogici ed **ingresso digitale ottico e coassiale** (TRDS 7004)*
- ***Sistema di soccorso** per gli ingressi audio R&L e MPX **(Changeover)** (TRDS 7004)*
- *Il coder RDS gestisce n°6 data set e servizi dinamici **TMC, TDC, IH** e **EWS***
- *Tutti i parametri sono gestiti con **encoder e display** o **software dedicato***

TRDS7002 rear view

Caratteristiche

*La famiglia **TRDS** è un insieme di prodotti che comprende coder RDS, coder STEREO + RDS , processore audio MONO + RDS , in configurazione con e senza display ad un prezzo estremamente competitivo.*

Tutti i modelli della famiglia sono completamente digitali, utilizzano esclusivamente componenti di alta qualità come convertitori A/D e D/A a 24 bit ed elaborazioni numeriche a 32 bit.

Le versioni disponibili sono:
*> Coder RDS modello base senza display (**TRDS 4002-LUXOR-B**)*
*> Coder RDS con display (**TRDS 7002**)*
*> Coder RDS + coder STEREO con display (**TRDS 7004**)*

La versione coder RDS con display ha le stesse funzioni del modello base con in più la possibilità di gestire tramite display ed encoder la programmazione dell'apparato senza l'utilizzo del P.C.

La versione coder STEREO+RDS ha le stesse funzioni del modello coder RDS con display con in più la sezione d'ingresso audio R&L e SCA analogiche oltre agli ingressi ottico e coassiale digitali con S:R:C.

La codifica stereo è realizzata digitalmente come pure i filtri passa basso d'ingresso e la preenfasi. Gli ingressi SCA sono miscelati in forma analogica con banda passante di oltre 100KHz.

Tutti i parametri di funzionamento e programmazione sono gestiti tramite encoder e display presenti sull'apparato oppure tramite software dedicato.

Il firmware dell'apparato è aggiornabile tramite porta seriale senza la necessità di settaggi hardware e senza interruzione del servizio.

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Technical specifications

	TRDS4002-LUXOR-B	TRDS7002	TRDS7004
Parameters	*Value*	*Value*	*Value*
GENERALS			
User Interface		LCD - 2 x 40 with Encoder	LCD - 2 x 40 with Encoder
Primary Power	115 - 230 VAC ±10%	115 - 230 VAC ±10%	115 - 230 VAC ±10%
Phisical Dimensions (W x H x D)	483 x 44 x 280 mm	483 x 44 x 280 mm	483 x 44 x 280 mm
Weigh	3,0 kg	3,2 kg	3,5 kg
Environmental working temperature	-10 to + 40 °C	-10 to + 40 °C	-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	BNC unbalanced	BNC unbalanced	BNC unbalanced
Pilot frequency synch.	19KHz +/- 2Hz	19KHz +/- 2Hz	19KHz +/- 2Hz
Input level	-30 / +12dBu (Sinusoid. o TTL)	-30 / +12dBu (Sinusoid. o TTL)	-30 / +12dBu (Sinusoid. o TTL)
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	BNC unbalanced	BNC unbalanced
Impedance	10 Kohm	10 Kohm	10 Kohm
Input level	Gain 0dB / Out.MPX	Gain 0dB / Out.MPX	Gain 0dB / Out.MPX
Maximum input level	+20dBu	+20dBu	+20dBu
OUTPUTS 1 & 2			
D/A converter	24 bit	24 bit	24 bit
Connector	BNC unbalanced	BNC unbalanced	BNC unbalanced
Impedance	50 ohm	50 ohm	50 ohm
Output level	Gain 0dB / Inp.MPX	Gain 0dB / Inp.MPX	-12dBu to +12dBu - step 0,1dB (Adj - Sw) (inp.MPX / Gain0dB)
Maximum Output level	+20dBu	+20dBu	+6/+18dBu (+20dBu)
STEREO CODER OPERATION			
Pilot Tone			19 KHz ±0.1 Hz
Pilot frequency level			-8dBu to -32 dBu - step 0,1 dB
Pilot frequency phase			- 12° to +12° - 0.1° step
Attenuation with 38 KHz suppressed carrier			min. -90 dB
MPX output noise			-90 dBu
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			
Limiter			Right and Left Channel
AGC			Right and Left Channel
Stereo S/N FM Ratio			> 81 dB RMS (typical 84dB)
Total Harmonic Distortion			< 0.05% 30 Hz ÷ 15 kHz
Intermodulation distortion			≤ 0.03% with 1 kHz and 1,3 kHz tones
Stereo separation			68 dB, 30 Hz to 15 kHz
RDS OPERATION			
Standards	Cenelec 50067 Specification	Cenelec 50067 Specification	Cenelec 50067 Specification
Command formats	UECP - SPB490 Ver.6.1 / 2003	UECP - SPB490 Ver.6.1 / 2003	UECP - SPB490 Ver.6.1 / 2003
Static services	DI,PI,M/S,TP,TA,TP,TPY,RT,CT,AF,PIN,EON,PSN	DI,PI,M/S,TP,TA,TP,TPY,RT,CT,AF,PIN,EON,PSN	DI,PI,M/S,TP,TA,TP,TPY,RT,CT, AF,PIN,EON,PSN
Dynamic service	TMC,TDC,EWS,IH	TMC,TDC,EWS,IH	TMC,TDC,EWS,IH
RDS Groups	0A, 1A, 2A, 3A, 5A, 6A, 8A, 9A, 14A	0A, 1A, 2A, 3A, 5A, 6A, 8A, 9A, 14A	0A, 1A, 2A, 3A, 5A, 6A, 8A, 9A, 14A
Data Set	N° 6	N° 6	N° 6

	TRDS4002-LUXOR-B	TRDS7002	TRDS7004
Parameters	***Value***	***Value***	***Value***
RDS MODULATION			
Subcarrier frequency	57 KHz ±1.5 Hz	57 KHz ±1.5 Hz	57 KHz ±1.5 Hz
Bandwidth	+/- 2,4KHz (-50dB)	+/- 2,4KHz (-50dB)	+/- 2,4KHz (-50dB)
Synchronisation	Internal / external	Internal / external	Internal / external
RDS phase adjustment	Adjustable up to 360 degrees in 0.33-degree increments	Adjustable up to 360 degrees in 0.33-degree increments	Adjustable up to 360 degrees in 0.33-degree increments
ELABORATION			
A/D conversion	24 bit (Dynamic range 105dB)	24 bit (Dynamic range 105dB)	24 bit (Dynamic range 105dB)
D/A conversion	24 bit (Dynamic range 123dB)	24 bit (Dynamic range 123dB)	24 bit (Dynamic range 123dB)
DSP elaboration	32 bit, fixed point	32 bit, fixed point	32 bit, fixed point
OTHER CONNECTORS			
Serial port	3 RS232 DB9 Connector., (1 USB Optional)	3 RS232 DB9 Connector., (1 USB Optional)	3 RS232 DB9 Connector., (1 USB Optional)
Serial connection rate	1200 to 115200 Baud	1200 to 115200 Baud	1200 to 115200 Baud
Ethernet	(1 RJ45 Connector Optional)	(1 RJ45 Connector Optional)	
Keyboard interface			
REMOTE input	8 Input + 8 Output (Optional)	8 Input + 8 Output (Optional)	8 Input + 8 Output (Optional)
STANDARD COMPLIANCE			
Safety	EN60215:1997	EN60215:1997	EN60215:1997
EMC	EN 301 489-11 V1.4.1	EN 301 489-11 V1.4.1	EN 301 489-11 V1.4.1

CE 99/5/CE **Revision: 03/10**

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