RFE

MAKING
BROADCAST
SMARTER

DS1000/DDS

1000W FM Transmitter - w/DDS

RFE MAKING BROADCAST SMARTER

PRODUCT DESCRIPTION
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The DS1000/DDS FM Transmitter features in a very compact dimensions all of RFE's most innovative characteristics. An extremely reliable device, easy to be used and controlled, including the best performances in its class, in a small size.

The DS1000/DDS transmitter is compatible for HD Radio and DRM+ mode for future technology upgrade with additional RF input for a modulated RF Digital signal.

The standard configuration includes various features, while others are available on request.

MAIN FEATURES

- Highest overal efficiency
- Large LCD color display with touch panel
- Nominal Output Power 1000W
- UDAQ Ultimate Digital Audio Quality
- High stereo performance typ. 60 dB
- 6th LD-MOS generation VSWR 65:1
- CCIR & FCC Compliant
- DDS Direct Digital Synthesis
- Compatible for HD Radio and DRM+ mode

OPTIONS

- RDS/RBDS coder
- SNMP v2 remote control
- OIRT and JPN version
- Audio Over IP
- GSM Telemetry
- SFN Reference
- Deep Tropicalization
- Compatible for HD Radio and DRM+

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GENERAL	**Power Output**	1000W adjustable from 10% until to 110% of nominal power
	RF Output Impedance	50 Ohm, unbalanced
	RF Output Connector	7/16" standard (1+5/8" optional)
	Monitor RF	BNC connector.
	VSWR max admissible	1.8:1 @full power - foldback activates beyond 1.5:1 @full power
	Frequency Range	87.5 ÷ 108.00 MHz, Programmable in 10 kHz steps. (Other frequencies on request)
	Frequency Stability	≤±1 ppm from -5 to 45°C Frequency accuracy best than± 50 Hz in short period ± 150 Hz max after one year
	Off Lock Attenuation	≤ -80 dBc
	Modulation Capability	max ±100kHz (nominal ±75 kHz±5%).
	Power Good Detector	adjustable from 20÷90% of the power (switchover threshold)
	Audio Presence Detector	adjustable level and time
	Modulation Mode	Mono, Stereo, AES/EBU,Multiplex, SCA, RDS
	Preemphasis	Flat/50/75µs selectable from front panel
	Residual AM Synchronous	≤ -50 dB
	Asynchronous AM S/N Ratio	≤-70 dB @100% AM without Modulation
	Synchronous AM S/N Ratio	≤-60 dB @100% AM with Modulation
	RF Harmonics	≥ 75dBc - Exceeds EBU/CCIR/FCC requirements.
	RF Spurious	≥ 80dBc - Exceeds EBU/CCIR/FCC requirements.
MONO OPERATION	**Audio Input Impedance**	600 ohm balanced - ≥10 kOhm.
	Audio Input Level	-6 to +12 dBm adjustable
	Input Connector	XLR female
	Audio Frequency Response	±0.1 dB, 30 Hz to 15 kHz
	Total Harmonic Distortion	<0.1% with or without pre-emphasis (range ±75KHz)
	Total Harmonic Distortion + Noise	<0.1% with or without pre-emphasis (range ±75KHz)
	FM S/N Ratio	≤-75 dB below ±75 kHz deviation (unweighted).
STEREO OPERATION	**Audio Input Impedance**	600 ohm balanced -10 KOhm
	Audio Input Level	-6 to +12 dBm adjustable
	Input Connector	XLR female
	Audio Frequency Response	±0.1 dB, 30 Hz to 15 kHz
	Total HarmonicDistortion	<0.1% with or without pre-emphasis (range ±75KHz
	Total HarmonicDistortion + Noise	<0.1% with or without pre-emphasis (range ±75KHz)
	FM S/N Ratio	≤-75 dB below ±75 kHz deviation (unweighted).
	Stereo Separation	≥ 50dB from 30Hz to 15kHz (typ 60dB @ 1kHz)
	Crosstalk attenuation	Main to Sub ≤-60 dB 30 Hz to 15 kHz
	38 kHz Suppression	≤ -75 dBc
	Pilot Frequency	19 kHz ± 2 Hz
	Output Pilot	1 Vpp. (selectable), BNC female

MULTIPLEX OPERATION	**Composite Input Impedance:**	>10kOhm unbalanced
	Composite Input Level	-6 to +12 dBm
	Input Connector	BNC Female
	Composite Amplitude Response	±0.1dB, 30Hz to 100kHz.
	FM S/N Ratio	≤ -75 dB below ±75 kHz deviation
	THD+N (30 Hz to 15 KHz)	< 0.1%
AES/EBU OPERATION	**Input Connector**	XLR female.
	Input Impedance	110 ohm
	Input Level	-12 to -0 dBfs
	Data Format	24 bit (automatic)
	Sampling Frequency	from 32 to 96 kHz (automatic)
SCA, RDS OPERATION	**Input Impedance**	≥ 2 kOhm
	Input Level	-6 to +12 dBm adjustable
	Frequency Response	±0.1 dB, 50 kHz to 100 kHz
	Input Connector	BNC female.
OTHER FEATURES	**Power Reduction**	permits the reduction of the output power. Time and power adjustable from the front panel.
	Audio Changeover	permits the automatic switching of the main audio source to a backup audio source in case of the main audio absence.
AUXILIARY CONNECTIONS	**Digital Input**	**SMA Female for RF Digital input (Optional)**
	Telemetry Interface	connector DB25 back panel (I/O and Relay Contact)
	LAN	RJ45 connector back panel (Web Interface)
	MPX OUT	connector BNC back panel.
OPTIONS		SNMP v2c
		Audio Over IP
		RDS Internal Coder
INTERNAL RDS CODER (optional)	**Type**	Dynamic, Compliant to CENELEC Spec. (EN50067)
	Frequency	57 kHz ± 3 Hz
	Synchronization	19kHz ± 3 Hz Internal or External (Software selectable)
	Interface	RS232 Asynchronous (1200 to 19600 baud) LAN/IP using the RDS-IP-100 Optional Interface
	Services	PI, PS, TP, TA, PTY, M/S, DI, CT, RT, AF, IH.
	Memories	6 memory programs.
	Coding	Differential and Bi-phase
	Amplitude Modulation	Double band with Carrier Suppression
	Other Feature	In case of RDS coder fault the Transmitter keep broadcasting.
ELECTRICAL	**AC Input Power**	230 VAC ± 10% 50/60 Hz± **4**% single phase
	AC Apparent Power Consumption	1435VA @ 1kW
	Efficiency	≥ **70** %
	CosΦ	> 0.99
	Cooling	Forced air.
	Acoustic noise	< 56 dBa @ 1 meter max.
ENVIRONMENTAL	**Operating temperature**	-10°C to +50°C
	Max Operating Altitude	4500 mt. , derating applicable
	Relative Humidity Range	0 to 95% (Non condensing)
PHYSICAL DIMENSION	**Mounting**	Standard 19" chassis 2 U rack
	Size	W x 483 mm. D x 520 mm. H x 88 mm
	Weight	~ 8 Kg