

RFE

MAKING
BROADCAST
SMARTER

HPS5000 - HPS5000/DD

5KW FM Semicompact Transmitter with Hot-Plug P.A. & PSU

HPS5000



HPS Series 5KW FM Semicompact Transmitter



PRODUCT DESCRIPTION

The HPS5000 FM Transmitter features very compact dimensions associated with RFE most innovative technologies in terms of efficiency, costs and maintenance. A reliable device, easy to be used and controlled, including the best performances in a small size.

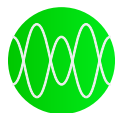
The standard configuration includes various features, while others are available on request.

MAIN FEATURES

- Highest overall efficiency > 73%
- Nominal RF power up to 5000W
- 3 Hot Plug Redundant Power Supplies
- 4 Hot Plug RF Amplifier
- Large LCD color display with touch panel
- UDAQ Ultimate Digital Audio Quality
- Web TCP/IP
- 6th LD-MOS generation VSWR 65:1
- CCIR & FCC compliant
- High stereo performance typ. 60 dB
- DSP Based Audio Processor with:
 - AMC (Automatic Modulation Control)
 - SFP (4 band audio processor w/ Filter Profile)

OPTIONS

- DDS Direct Digital Synthesis
- RDS/RBDS coder
- SNMP v2 remote control
- OIRT and JPN version
- Audio Over IP
- GSM Telemetry
- SFN Reference
- Deep Tropicalization



GENERAL

Power Output	5000W nominal adjustable from 10 to 110%
RF Input Connector	50 ohm - "N" female
RF Output Connector	50 ohm - 7/8" EIA (1+5/8" on request)
RF Monitor	BNC connector From Internal Measurement Coupler.
VSWR	max 1.8:1 [8% of nominal 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 month
Off Lock Attenuation	≤ -80 dBc
Modulation Capability	max ±150 kHz (nominal ±75 kHz±5%).
Power Good Detector	adjustable from 20÷90% of the set power
Audio Presence Detector	adjustable level and delay
Modulation Mode	Mono, Stereo, 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 [for 2f,3f...]	≥80 dBc
RF Spurious	≥80 dB

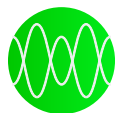
MONO
OPERATION

Audio Input Impedance	600 ohm balanced - ≥10 kOhm.
Audio Input Level	-6 to +12 dBm adjustable in 0.1 dB steps
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	≤-0.15% with or without pre-emphasis [range ±75KHz]
Intermodulation Distortion	0.1%, 1 kHz/1.3 kHz, 1:1 ratio
Transient Intermodulation Distortion	0.1% 2.96kHz square wave and 14 kHz sine wave.
Distortion	0.1% 2.96kHz square wave and 14 kHz sine wave
FM S/N Ratio	≤-75 dB below ±75 kHz deviation (unweighted). ≤-70 dB below ±75 kHz deviation (weighted)

STEREO
OPERATION

Audio Input Impedance	600 ohm balanced -10 KOhm
Audio Input Level	-6 to +12 dBm adjustable in 0.1 dB steps
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	≤-0.15% with or without pre-emphasis [range ±75KHz]
Intermodulation Distortion	0.1%, 1 kHz/1.3 kHz, 1:1 ratio
Transient Intermodulation Distortion	0,1% 2.96kHz square wave and 14 kHz sine wave.
FM S/N Ratio	≤-70 dB below ±75 kHz deviation (unweighted). ≤-70 dB below ±75 kHz deviation (weighted)
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:	2 kOhm unbalanced
Composite Input Level	-6 to +12 dBm
Input Connector	BNC Female
Composite Amplitude Response	±0.1dB, 30Hz to 100kHz.
Total Harmonic Distortion + Noise	0.1% @ 400 Hz
Intermodulation Distortion	0.1%, 1 kHz/1.3 kHz, 1:1 ratio.
Transient Intermodulation Distortion	0.1% 2.96kHz square wave and 14 kHz sine wave.

AES/EBU
OPERATION

FM S/N Ratio	-75 dB below ±75 kHz deviation
Input Connector	XLR female balanced.
Input Impedance	110 ohm
Input Level	-20 to -3 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 in 0.1 dB steps
Frequency Response	±0.1 dB, 50 kHz to 100 kHz
Input Connector	BNC female.

AUDIO PROCESSOR

DSP Technology	Equipped with DSP [Digital Signal Processor] that permits advanced digital audio treatments.
AMC Technology	Automatic Modulation Control, the average deviation value is kept constant within the preset limits, in order to avoid annoying "over-modulation" peaks
4BE Technology	Through a drop-down menu you can select 6 preset audio equalization profiles [Bass Enhancer, Hi Lift, Speech, Pop, Rock and Club].

INTERNAL RDS
CODER -
RDS-ADV option

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.

OTHER FEATURES

Power Reduction	allows the reduction of the output power in a time lapse. Time and power are adjustable from the front panel.
Audio Changeover	allows the automatic switching of the main audio source to a backup audio source in case of the main audio absence.

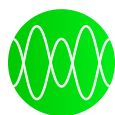
AUXILIARY
CONNECTIONS

RS485	DB9 connector on the back panel.
Telemetry Interface	DB25 connector on the back panel
LAN	RJ45 connector on the back panel
MPX OUT	BNC connector on the back panel.

OPTIONS

	SNMP v2c & Advanced Web Server
	Audio Over IP
	DDS Direct Digital Synthesis





ELECTRICAL

AC Input Power	220 ± 20% VAC 50/60 Hz single phase; 380 ± 10% VAC 50/60 Hz three phase + neutral
AC Apparent Power Consumption	7000 VA max - 32 A max
CosΦ	> 0.95
Cooling	Forced air with three 92x92 DC axial fans [Amplifier]; one 80x80 DC axial fan [Exciter].

ENVIRONMENTAL

Acoustic noise	< 56 dBa @ 1 meter.
Operating temperature	-10°C to +50°C
Max Operating Altitude	3000 mt [with adequate air evacuation system in site, for higher altitudes please contact our technical support].

**PHYSICAL
DIMENSION**

Relative Humidity Range	0 to 90%
Mounting	Standard 19" chassis 6 U rack
Size	W x 483 mm. D x 600 mm. H x 264 mm
Weight	36 Kg





RFE MAKING
BROADCAST
SMARTER

TECHNICAL SPECIFICATIONS
HPS5000

Detailed picture



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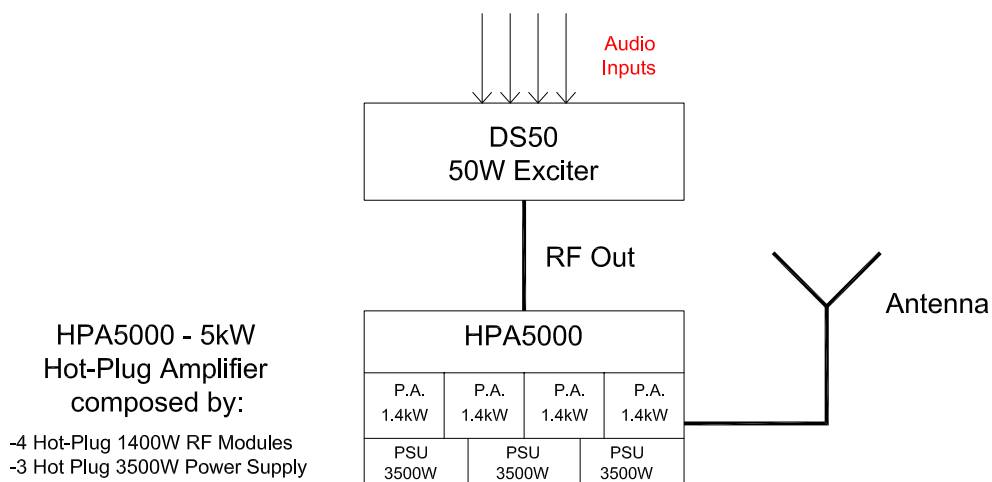
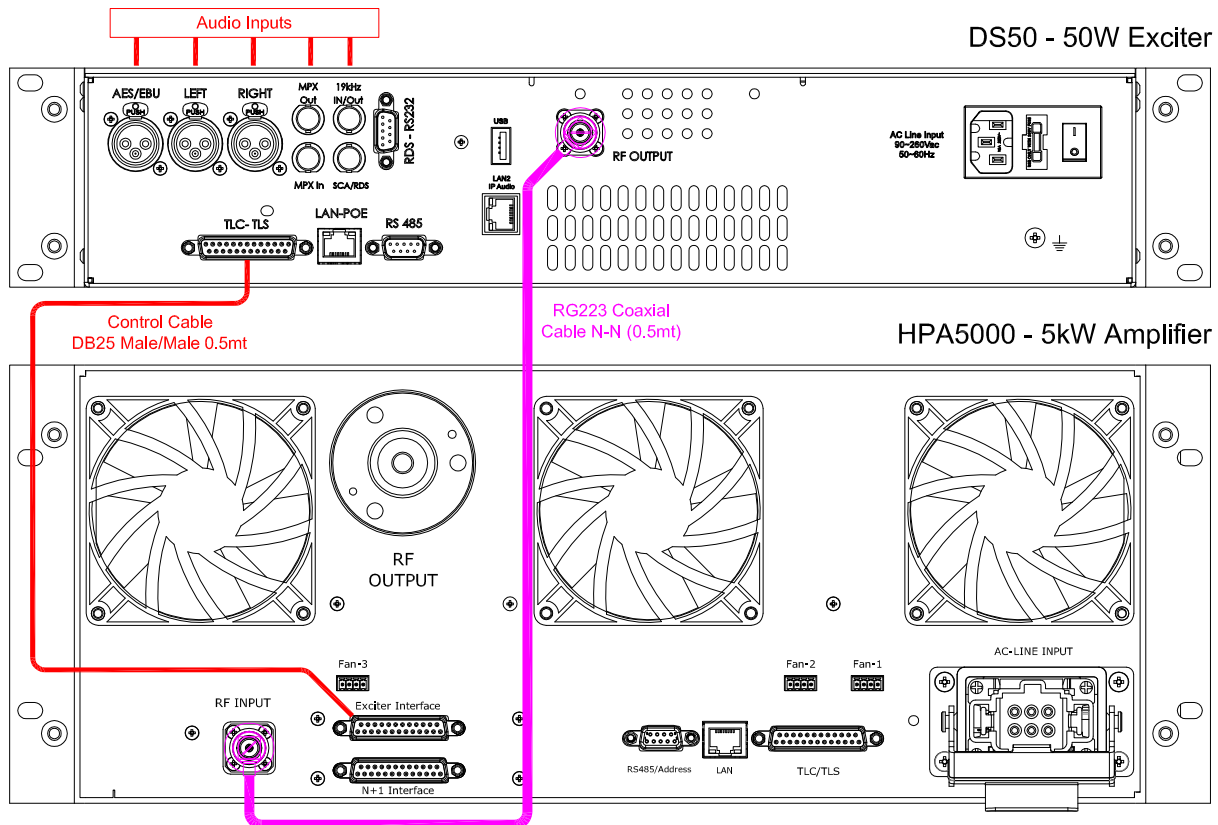


Rear Panel Picture





Rear Panel Connectors





Dual Drive Version (Dual Exciter & Controller)

