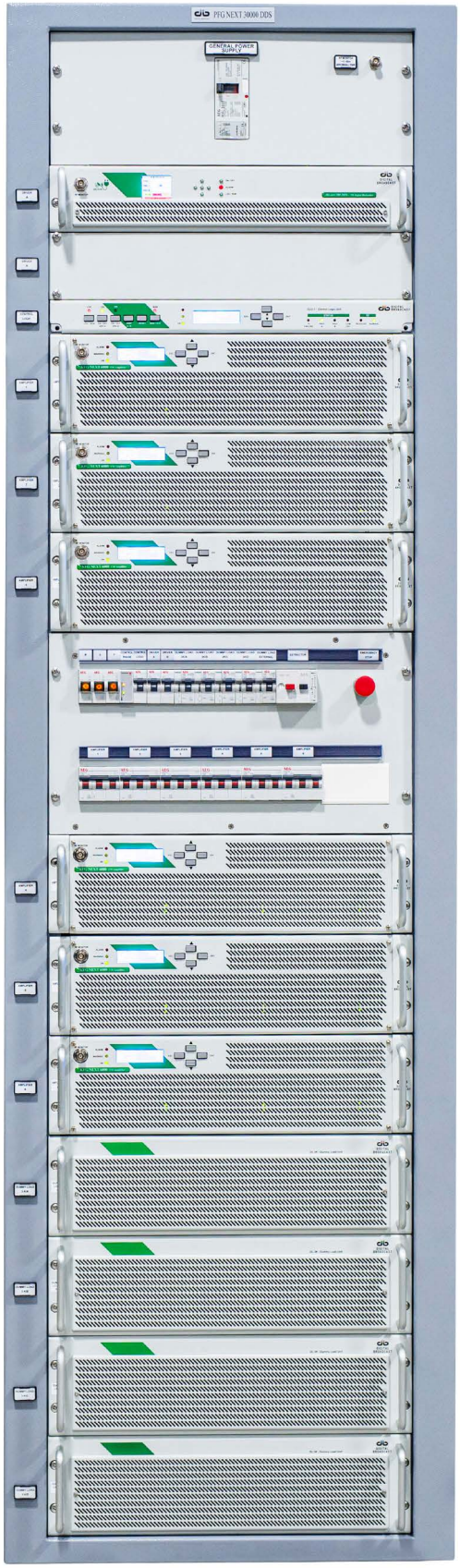
PFG NEXT Series

Ultra High Efficiency
Hot Swappable PSU
Modular FM Transmitters

PFG NEXT Series Specifications



PFG NEXT 30000

Mozart series exciters

The exciter in PFG NEXT series transmitter is the Mozart, latest audio excellence in FM broadcasting.

GREEN RF™ technology

The GREEN RF™ technology, combined with the new 65:1 devices, is the latest evolution of the world-famous patented COLD-FET™ technology applied on DB's transmitters. The main advantages are:

- Ultra high RF efficiency (>70%)
- Higher safety
- Higher reliability
- Lower heating
- Lower AC power consumption
- No more load mismatch failures: all devices have VSWR 65:1 built-in protection.

Uninterrupted service

An intelligent protection system reduces the output power without on-air interruption, keeping the RF devices always within the safe operating parameter in case of:

- Load mismatching
- Environmental over-temperature
- Cooling failure
- Amplifier breakdown

High efficiency cooling system

The air cooling system limits the heat-sink temperature rise only max 10°C above ambient temperature.
This guarantees perfect functioning even in sites with extreme climate conditions and high temperatures.
The PFG NEXT oversized air cooling system widely extends transistor life.
The amplifier modules are equipped with externally mounted redundant fans to allow instant cleaning and replacement, without opening or removing any module and without affecting in any way the on-air transmission.

AAD™ technology

It prevents corrosion from air moisture and increases reliability:

- Components are made in anticorodal aluminium
- Air is ducted to avoid contact with electronic parts
- All electronic boards and cablings are tropicalized with a conformal coating process to protect the circuits against salt air

Hot swappable Power Supply Units

Hot swappable

The PFG NEXT transmitter series are characterized by the presence of hot swappable power supply units for a simplified serviceability and maintenence. Their tool-less and instant installation from front panel make the PFG NEXT transmitters ideal for critical environment systems where no down time can be tolerated.

Automatic Current Sharing (ACS)

A software controlled automatic current balancing system (ACS) is present on each unit to grant a perfect load distribution and so best power supply operating conditions. In case of multiple power supplies installed in the transmitter, the system always works balanced without any current overload even in case of failure of one power supply.

High Redundancy with flexible configuration

Thanks to the various available configurations, we can grant nowadays the best solution matching network requirements and granting maximum robustness and highest efficiency operation at the very competitive price.
Combining our technology background with the introduction of an intelligent Automatic Current Sharing system (ACS software) we have been able to get the transmitter working in the worst fault conditions whilst maintaining the highest output power ever seen.
For instance, if we consider the optional configuration with dual power supply (/DSP1), the power loss, in case of one module fails, will be less than 35%.
Furthermore in case the optional chosen configuration is (/DPS2), i.e. with dual high power power supply, the power loss will be less than 10%, this means that the transmitter will keep on working almost at its full power.

Detail of hot swappable power supply units on PFG NEXT

Human Interface, Connectivity and Web Remote Control

Main parameters are fully controllable and adjustable by Web and SNMP interfaces:

- Operation Frequency.
- Output power.
- Input connector impedance for Left and Right connectors.
- Insertion and adjustment of the limiter.
- Choice of the active input connectors.
- Enabling of the input audio connectors.
- Audio sensitivity of all the inputs.
- Pre-emphasis value.
- Audio mode selection.
- Foldback VSWR threshold setting (in % value).
- Deviation for:
  - total input signal
  - 19 kHz pilot
  - RDS signal
  - SCA signal
  - AUX signal
  - AES/EBU signal
- Phase of 19kHz pilot.
- Warning levels for:
  - audio lower than a specific settable threshold
  - audio over a specific settable threshold
  - low power (the output power is lower than a specific settable threshold)
  - reflected power higher than a specific settable threshold (VSWR)
- Audio low times (how much time the audio remains lower than the specific threshold)
- Audio over times (how much time the audio remains higher than the specific threshold)
- Power scheduler by day and hour in the week
- Network parameters settings:
  - MAC address (read only)
  - IP address
  - Subnet mask
  - Gateway
- SNMP parameters settings:
  - IP addresses for TRAP
  - read community name
  - write community name
  - trap type
  - informs timeout
  - informs retries
- WEB accesses settings:
  - user name
  - password
- NTP parameters settings:
  - preferred and backup servers
  - update interval
  - time zone
  - status (read only)
- E-mails configuration (e-mail sent in case of alarm reporting the complete status of the unit and, as attachment, the log file in .txt format):
  - station ID (label to identify the station)
  - account Username
  - account Password
  - server SMTP URL
  - server SMTP port
  - security and Authentication mode
  - destination Addresses (up to 5 different E-mail addresses can receive the notification)

SOFTWARE	
Update:	Available without proprietary tools: • Firmware remotely upgradable by TCP/IP for modulator board and web board • Automatic firmware checking before installation • Possibility to return to the previous firmware after the installation of new one • Possibility to select by WEB or SNMP which firmware to activate
Configuration download	The configuration of the active memory can be downloaded and stored in the PC. This file can be uploaded in another unit of other equivalent system to set it with the same configuration without any other adjustment

MONITORING	
Web log file	Up to 64000 events recorded in the web board Log file downloadable in text format
SNMP	SNMP v2c with Traps and Informs
Weekly scheduler page	For every day it is possible to set up to 4 configurations

Parallel Remote Control Connector Interface (optional)

A parallel remote control connector interface is available with dry relay outputs and opto-isolated inputs with the following signals:

Parallel Remote Signals (TLS)	RF On Local/remote Audio presence in the input Alarm status RF overpower Status of each of the 6 available memories (active / not active)
Parallel Remote Controls (TLC)	RF On RF Off Reset alarms Configuration changing (among 6 possible configurations)

Efficiency Enhancement

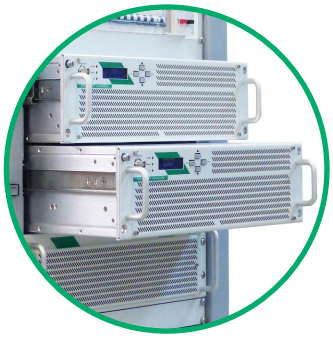
PFG NEXT design is optimized to get minimum RF losses and excellent performances of the active elements in order to increase the AC efficiency up to more than 70%.

Maximum redundancy

Due to optimized ACS system, extremely low output power loss in case of power supply failure. In dual power supply configuration power loss in case of one power supply failure. In dual power supply configuration power loss in case of one power supply failure will be less than 35%.

Easy maintenance, without off-air

The power supply plug-in modules and hot-plug fans can be safely and instantly removed from the front panel without interrupting the transmission.



All PFG NEXT transmitters over 5 kW can be equipped optionally with the hotplug system to instantly extract the amplifier modules with transmitter in full power.

Latest generation LD-MOS devices increase DC to RF efficiency up to 85%, with a drastic reduction of energy consumption.

Hot-plug fans: 5 minutes maintenace time, no need to open or switch off unit.

Hot-plug power supplies: 2 minutes maintenance time, no need to open or switch off the unit.

PFG NEXT 6000 with rack light

Technical specifications

GENERAL	
Frequency range	87.5 to 108 MHz adjustable with 10kHz step
Output impedance	50 Ω unbalanced
Deviation capability	±75 kHz, up to ±180 kHz with distortion < 0.5%
Pre-emphasis	0, 25, 50, 75 us (selectable)
Spurious and harmonic suppression	Exceeds CCIR/FCC requirements
Synchronous AM (ref. 100% mod.)	< - 58 dB
Asynchronous AM (ref. 100% mod.)	< - 50 dB
RF probe	-50 dBc, 50 Ω, BNC
Power stability	< 2% (ALC)
Overall RF efficiency	≥ 70% (typ. 72%)
Modulation monitoring	BNC connector
Pilot tone	Phase and Amplitude adjustable from dispaly and WEB interface
Log file	Up to 200 dated events available from display and up to 64000 dated events available from WEB interface

AUDIO INPUTS	
Modulating input signal	Mono, Stereo (Left, Right, Left + Right), Encoded stereo (MPX), SCA, RDS, AUX, Digital AES/EBU
MONO	
Audio input levels for ± 75 kHz deviation	Adjustable from -9 to +18 dBu
Audio response	±0.3 dB (30 Hz to 15 kHz)
Audio Impedance	10 kΩ Balanced or 600 Ω balanced
Audio connector	XLR
STEREO	
Audio input levels for ± 75 KHz deviation	Adjustable from -9 to +18 dBu
Audio response	±0.3 dB (30 Hz to 15 kHz)
Audio Impedance	10 kΩ Unbalanced or 600Ω balanced
Audio connector	XLR (Left & Right)
MPX (External coder)	
Audio input levels for ± 75 kHz deviation	Adjustable from -6 to +6 dBu or from +6 to +18 dBu (selectable at order)
Audio response	±0.15 dB (30 Hz to 100 KHz)
Audio impedance	> 5 kΩ Unbalanced
Audio connector	BNC
RDS/SCA/AUX (with separated connectors)	
Audio input levels for ± 75 kHz deviation	Adjustable from -19.5 to +7.5 dBu
Audio Impedance	2kΩ (others on request) Unbalanced
Audio connector	BNC
AES/EBU	
Audio input levels for ± 75 kHz deviation	Adjustable from -15 to 0 dBFS
Audio Impedance	110Ω
Audio connector	XLR

FRONT PANEL

Front panel menu	Accessible from LCD dispaly
Direct function push buttons	Available on the front panel for the following functions: ON/OFF (stand-by) Local/Remote Reset Alarms
Status leds	Presence of leds to indicate the status of the unit at the first glance
Working parameters leds:	Audio Status RDS/AUX input signal present Audio presence on the input (Left or Right) Limiter inserted MPX input signal active Stereo operation with internal stereo coder MONO operations Control status Interlock PLL locked

AC POWER REQUIREMENTS

AC supply voltage	230 VAC, single-phase or 230/380 VAC, three-phase
AC supply frequency	50 Hz or 60 Hz
Power factor	>0.9

ENVIRONMENT

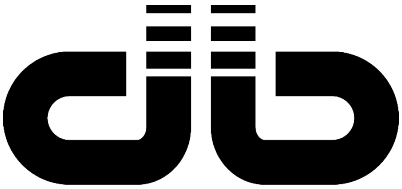
Cooling	Forced air
Service	Continuous 24/24h
Operating temperature	-5°C to +45°C Derate 3°C per 500 m above 2000 mt asl
Relative humidity	Up to 95%

MODEL	OUTPUT POWER (W)	OUTPUT CONNECTOR	RACK UNIT	RACK SUPPLIED
PFG NEXT 1000	1000	DIN 7/16	19”x3U	No rack
PFG NEXT 2000	2000	EIA 7/8”	19”x4U	No rack
PFG NEXT 3000	3000	EIA 7/8”	19”x4U	No rack
PFG NEXT 3500	3500	EIA 7/8”	19”x4U	No rack
PFG NEXT 6000/1x	6000	EIA 7/8”	19”x4U	No rack
PFG NEXT 6000/2x	6000	EIA 7/8”	19”x19U	19”x19U
PFG NEXT 7000/1x	7000	EIA 1+5/8”	19”x5U	No rack
PFG NEXT 7000/2x	7000	EIA 1+5/8”	19”x19U	19”x19U
PFG NEXT 10000	10 kW	EIA 1+5/8”	19”x24U	19”x24U
PFG NEXT 10000/4x	10 kW	EIA 1+5/8”	19”x34U	19”x34U
PFG NEXT 12000	12000	EIA 1+5/8”	19”x24U	19”x24U
PFG NEXT 12000/4x	12000	EIA 1+5/8”	19”x34U	19”x34U
PFG NEXT 15000	15 kW	EIA 3+1/8”	19”x34U	19”x34U
PFG NEXT 20000	20 kW	EIA 3+1/8”	19”x34U	19”x34U
PFG NEXT 25000	25 kW	EIA 3+1/8”	19”x34U	19”x34U
PFG NEXT 30000	30 kW	EIA 3+1/8”	19”x45U*	19”x45U
PFG NEXT 40000	40 kW	EIA 4+1/2”	2 rks 19”x41U	2 rks 19”x41U

**External final unbalance load of 10 kW*

Features are subject to change without any notice

ISO 9001:2008



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