

Characteristics >>>

Transmission characteristics

Frequency range	87.5 MHz – 108MHz
Frequency step	10 kHz
Spurious	> 75 dB for frequencies between 87.5 MHz and 137 MHz > 70 dB for other frequencies
Pre accentuation	selectable : 0 µs, 50 µs to 75 µs
V.S.W.R. protection	Self protected against any V.S.W.R.

Environmental conditions

Frequency specifications :	+ 5 °C to + 45 °C
Guaranteed operation with derating	0 °C to + 50 °C
Relative humidity	90%

MPX input

Frequency response	40 Hz to 55 kHz < +/- 0.2 dB 55 kHz to 100 kHz < +/- 0.4 dB
Distortion for +/- 75 kHz excursion	< 0.25% typ.
FM signal to noise ratio	> 70 dB
Modulator phase error	< 2° between 19 and 57 kHz
AM	< 0.1%
Intermodulation distortion	< 0.05%

Mono operation

Frequency response	40 Hz to 15 kHz < +/- 0.5 dB
Out band attenuation	- 35 dB at 19 kHz

Stereo operation (plug-in card stereo codeur - CSS option)

Frequency response	40 Hz to 15 kHz < +/- 0.5 dB
Out band attenuation	18 kHz to 100 kHz > 50 dB
L/R crosstalk 80 Hz to 15 kHz	> 50 dB
L/R crosstalk 40 Hz to 15 kHz	> 40 dB
38 kHz suppression	> 50 dB

Auxiliary (AUX) input

Level	Internally : -11 dBu to -2 dBu @ 10% nominal deviation
Frequency response	50 kHz to 100 kHz (- 20 dB à 50 Hz)

Mains power supply

Voltage	230 V, + 15%, - 20%
Frequency	47Hz to 63 Hz
Power Factor (at nominal operation)	> 0.90 (except exciter)

Interface homme machine

LCD screen	Display of functional parameters and control menus
LEDs	PLL Local Mode V.S.W.R. alarm Power alarm (3 dB)
Buttons	+, - & enter for manual control
Logbook	Last 200 events can be displayed : RF incident power, RF output power, reflected power and VSWR, alarms
Serial interface	Each module includes its own serial interface.

Options

	Tuner plug-in card for HELIOS exciter
	Stereo plug-in card encoder for HELIOS exciter
	Remote control & remote monitoring plug-in card (standard or digital configuration)
	Automatic Switching Unit
	TCP/IP plug-in card
	Double Drive
	1+1

Equipment designed and manufactured in France.

W W W . E C R E S O . C O M



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The ECRESO 5th generation of transmitters E Series range from 20 W to 3 kW offers an unbeatable modular architecture and a large choice of options.

It is the result of 20 years of experience combined with "avant-garde" components.

This modular product range is characterized by its simplicity, reliability, configuration flexibility, operating flexibility and ease of maintenance.

ECRESO transmitters range from 20 W to 3 kW offers the best operating solution: extremely reliable, user-friendly and performing modules.

The new technology used does not prevent them from being affordable.

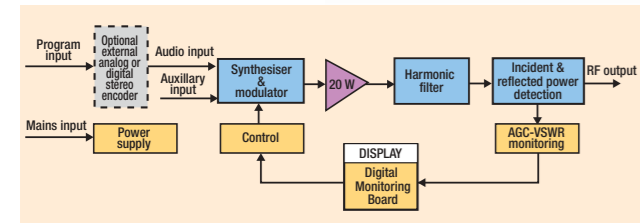
All information contained in the present brochure is subject to confirmation at time of order - Document ref: FM Transmitters from 20 W to 3 kW sales file v1.0 dated July 2002



Modules

Configurations

HELIOS JUNIOR JR
20 W FM Exciter



Helios JR 20 W FM Exciter (mono/MPX)

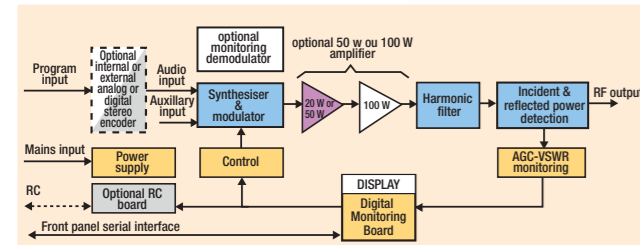
- Stainless steel compact module 1U - 19" - 4,5 kg (9.9 lbs)
- Simple and user friendly configuration via LCD pacific blue display screen
- Low distortion < 0.15 %
- Best FM S/N ratio > 80 dB
- Very good channel separation up to 50 dB within the whole band
- PLL controlled by microprocessor
- Adjustable power from 2 to 20 W
- Very affordable equipment
- Complies with EC, FCC and CCIR standards
- Exceptional manufacturing quality - Made in France
- 3 years guarantee

250 W / 550 W FM Transmitter
Mono / MPX / Stereo



- Composed of standard modules from the range (HELIOS exciter, 250 W/550 W GOLIATH amplifier)
- Module easily interchangeable
- Simple addition of modules (Exciter, Amplifier)
- Delivered "Quick install"
- Redundant - 550 W Goliath module (two MOSFET with stand alone power supply)
- Upgrading (remote control / remote signaling option, or TCP/IP)
- Controlled by RS232 local interface or TCP/IP distant mode
- Optimum weight and volume : Mono / MPX : 20 kg (44 lbs) 4U - Stereo : 25 kg (55 lbs) 5U
- Very affordable equipment
- Complies with EC, FCC and CCIR standards
- Exceptional manufacturing quality - Made in France
- 3 years guarantee

HELIOS
20/50/100 W FM Exciter



Helios 20/50/100 W FM Exciter

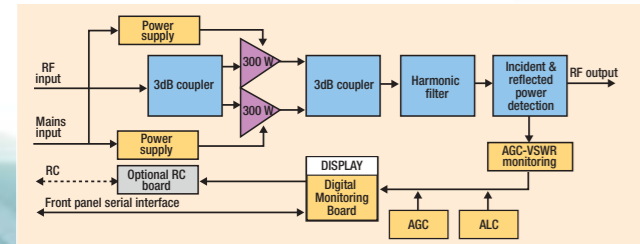
- Stainless steel compact module 2U - 19" - 10 kg (22lbs)
- Simple and user friendly configuration via LCD display screen, locally by RS232 or remotely with TCP/IP
- Low distortion < 0.15 %
- Best FM S/N ratio > 80 dB
- Very good channel separation up to 50 dB within the whole band
- External clock synchronization (GPS)
- PLL controlled by microprocessor
- Adjustable power from 2 to 20 W, 5 to 50 W or 10 to 100 W (depending on version)
- Very affordable equipment
- Sub-assemblies modularity (configuration flexibility)
- Easy upgrading (stereo coder card, remote control / remote monitoring option, and/or dry loops and/or TCP/IP, embedded FM receiver)
- Controlled by RS232 local interface or TCP/IP distant mode
- Complies with EC, FCC and CCIR standards
- Exceptional manufacturing quality - Made in France
- 3 years guarantee

1 kW FM Transmitter
Mono / MPX / Stereo



- Composed of standard modules from the range (HELIOS exciter, 550 W GOLIATH - GOLIATHPLUS amplifier)
- Module easily interchangeable
- Simple addition of modules (Exciter, Amplifier and GOLIATH Plus coupler)
- Delivered "Quick install"
- Redundant - 550 W Goliath module (two MOSFET with stand alone power supply)
- Controlled by RS232 local interface or TCP/IP distant mode
- Optimum weight and size: 1 kW : 7U - 40 kg (88 lbs)
- Very affordable equipment
- Complies with EC, FCC and CCIR standards
- Exceptional manufacturing quality - Made in France
- 3 years guarantee

GOLIATH
550 W FM Power Amplifier



Goliath 550 W FM Power amplifier

- Stainless steel compact module 3U - 19" - 15 kg (33lbs) GOLIATH - 17 kg (37.4lbs) GOLIATHPLUS
- Simple and user friendly configuration via LCD display screen, locally by RS232 or remotely with TCP/IP
- Redundant: two MOSFET amplifiers with their own power supply
- High efficiency > 50 % with the exciter
- Module "hyper" protected (V.S.W.R, temperature, overpressure, voltage peak, lightning etc.)
- Power loss, V.S.W.R., and overheating indicators
- Standard modules for the whole range : 550 W, 1, 2 and 3 kW
- Upgrading (remote control / remote signaling option, or TCP/IP)
- Controlled by RS232 local interface or TCP/IP distant mode
- Very Affordable Equipment
- Complies with EC, FCC and CCIR standards
- Exceptional manufacturing quality - Made in France
- 3 years guarantee

2 kW / 3 kW FM Transmitter
Mono / MPX / Stereo



- Composed of standard modules from the range (HELIOS exciter, 550 W GOLIATH amplifier)
- Module easily interchangeable
- Simple addition of modules (Exciter, Amplifier and 4/6 ways coupler)
- Delivered "Quick install"
- Redundant - 550 W Goliath module (two MOSFET with stand alone power supply)
- Controlled by RS232 local interface or TCP/IP distant mode
- Optimum weight and volume: 2 kW : 145 kg - 27 U (319 lbs) 3 kW : 180 kg - 27 U (396 lbs)
- Very affordable equipment
- Complies with EC, FCC and CCIR standards
- Exceptional manufacturing quality - Made in France
- 3 years guarantee

Cards (totally "plug and play" directly or to the back panel) or independent modules are available to upgrade ECRESO FM transmitters from 20 W to 3 kW.



Remote control and remote monitoring card

(Standard or digital) :



AUTOMATIC SWITCHING UNIT

DUAL DRIVE, 1+1 SYSTEM

The Automatic Switching Unit assures monitoring of the connected equipment (exciter or complete transmitter) and switching, in case of main transmitter failure for a non-stop transmission program. Independent module rack 19" - 3 U delivered with adapted coaxial relay.

Several monitoring levels are available : remote control (dry loops) or remote monitoring (relays). These cards, pluggable to the rear panel, include distant control advanced functions (power, temperature) and enable total remote access to the transmitter with RS232.

TUN Option card



Receiver / demodulator control card pluggable in HELIOS

On top of RDS monitoring, TUN card allows:

- checking of audio and stereo presence
- listing the transmitted program on the jack located on HELIOS' front panel

TCP/IP option Card



The TCP/IP card (delivered with 3 customized web pages) allows connection of the transmitter to a network via TCP/IP protocol.

This TCP/IP card, pluggable to the rear panel, gives access to Telnet terminal (control system), FTP terminal (downloading), Web server and SMTP client (Alarms sent via email or SMS message).

CSS Option card



Analog stereo encoding card pluggable to HELIOS' (only) rear panel.



CONTROL UNIT

The Control Unit (CU) has been developed under a stable and open LINUX environment. The CU enables a quick and user-friendly access (color graphical 1/4 VGA display, bright keyboard and various menus) to the modules of the system.



The CU detects failures, their types and localization in real time. CU communicates with each subset of the transmitter using a CAN bus.



The CU includes full TCP/IP interface: it allows on top of that access to SNMP protocol for integration in network supervision systems (Network management).