



**SMARTFM**<sup>®</sup>  
Artificial intelligence for radio

 DIGITAL EXCITER	 CONTROL	 EFFICIENCY	 RELIABILITY	 SOUND PROCESSOR	 FEATURES
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## FM Transmitters 750W to 2000W



### POWERFUL PERFORMANCE

- Digital Modulator with Crystal Clear Signal
- 5-Band Sound Processor
- MPX over AES compatibility
- Highly Reliable



### POWERFUL CONTROL

- TCP/IP, SNMP Management and Email Notifications
- Expert Maintenance Reporting
- Advanced Metering Interface



### POWERFUL SAVINGS

- Up to 72% Efficiency + SmartFM
- Built-in Functionality
- Increased Life Span

# Key Benefits



## DIGITAL EXCITER

- Digital FM modulator « direct to channel»
- Highest signal quality
- Perfect audio fidelity
- Several built-in broadcast tools
- Control of all signal parameters



## 5 BAND SOUND PROCESSOR

- Hosted in direct to frequency Digital Modulator
- Highest quality processing from audio input to RF output
- Powerful DSP-based processing
- Complete 5-band architecture
- Factory presets for all formats
- Easy to fine tune through intuitive GUI
- Real-time meters at each stage
- No additional hardware: maximum reliability, no maintenance.



## ADVANCED CONTROL

- Advanced Measurement Interface (AMI)
- Expert Maintenance Reporting (EMR)
- Intuitive Web Interface
- Full SNMP Management



## UP TO 72% EFFICIENCY

- 6th MOSFET generation (Worldcast Systems design)
- Reduced consumption and operational costs
- Reduced heat and cooling costs
- Longer component life span
- Reduced maintenance costs



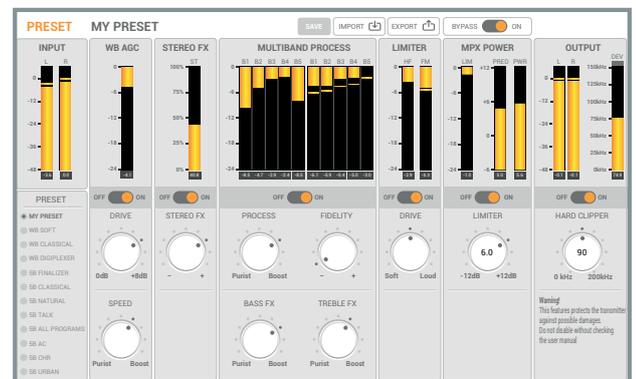
## HIGHLY RELIABLE

- Compact transmitter, modular design
- Protected against VSWR, temperature, overload...
- Switching power supplies with large voltage range
- Active surge current limiting
- Optional Surge Suppressor
- Automatic input switching and recovery (audio and MPX)
- Audio Backup (from  $\mu$ SD card)
- Internal RDS Backup

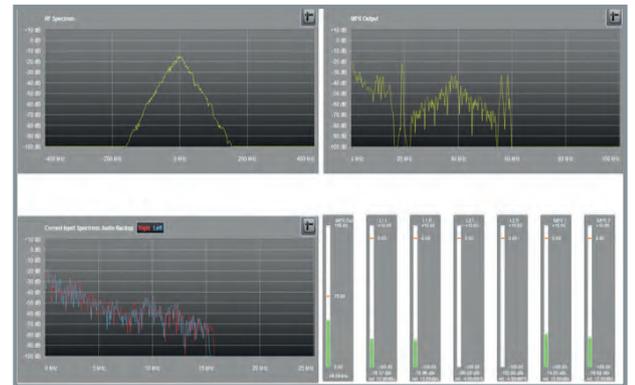


Artificial intelligence for radio

- #1 Enhances the listening experience
- #2 Lowers energy costs by 10 to 40%
- #3 Reduces CO<sub>2</sub> emissions



Sound Processor Interface



Advanced Measurement Interface (AMI)

## Ask us for 1+1 and N+1

Egreso offers a standard warranty of 3 years



on all our FM transmitters and up to 10 Years, yes TEN YEARS Warranty on our range of compact FM transmitters for a small additional charge. No other FM Transmitter Manufacturer even comes close to that commitment or confidence! We can offer the 10 Year Warranty with confidence thanks to:

- Our exceptional design quality
- The outstanding efficiency of our transmitters
- Advanced diagnostics capabilities

# Built-in Features

## Advanced Communication Pack



Intuitive and secured Web Interface (TCP/IP)  
Advanced Measurement Interface  
Full SNMP Management  
Audio Backup on µSD card

## Dynamic RDS Encoder



Supports PI, PS, TP, TA, MS, PTY, PTYN, DI, CT, AF, RT  
Dynamic PS Scrolling  
Pure and stable signal thanks to Digital Modulator  
Delivers Audemat's expertise in RDS

## Scheduler\*



Automatic change of preset  
RF Power scheduling and consumption saving  
Schedule any parameter of your ECRESO FM

\* verify your version compatibility

## Email Notifications



Alarm sending by SMTP  
Easy configuration of each notification  
Same notifications can be sent by SNMP

## Internal Surge Protector



Powerful protection against lightning  
Visible status LED  
Easy to replace

## Multiband Sound Processor\*



DSP based 5-band or wide-band processing  
Presets for all applications and formats  
Intuitive GUI to fine tune your sonic signature  
Low distortion Final Limiter  
MPX Power Limiter (ITU 412)

\* verify your version compatibility

## Single Frequency Network



10 MHz input for RF Carrier synchronization  
Adjustable program delay (on audio / MPX inputs)

## Digital Stereo Encoder



High speed DSP circuitry  
Subcarrier Perfect synchronization  
Amazing signal quality

## MPX Over AES Input



Improved MPX signal quality  
No hardware change  
Compatible with MPX over IP APT codecs

## Expert Maintenance Reporting (EMR)



EMR is a proactive service which sends regular reports on the status of key parameters such as temperatures, currents and voltages, plus information on the performance and lifespan of components such as the fan and the power supply of the transmitter. Thanks to a powerful firewall-friendly Web protocol, EMR works securely over a regular Internet connection (ADSL, 3G, ...) even when the connection bandwidth is limited.



# Technical Features

Watch more about  
ECRESO FM Transmitters

Specification	ECRESO FM 1000W - Limited to 750W	ECRESO FM 1000W	ECRESO FM 2000W
Frequency range	87.5 to 108 MHz by 10 kHz steps		
Frequency stability	< 10 <sup>-6</sup> per year		
HF output	7/16 Type, 50 Ω		
Power range	Range: 50-750 W, Setting: 0-750 W	Range: 50-1000 W, Setting: 0-1000 W	Range: 200-2000 W, Setting: 0-2050 W
VSWR	< 1.35, optimal performance: < 1.1, protection : >1.5		
Spurious and harmonic suppression	> 75 dBc		
Efficiency	up to 76%	up to 72%	up to 72%
Max consumption	1150 W	1550 W	3050 W
Voltage	184 VAC to 264 VAC, 47 Hz - 63 Hz		
Power factor	> 0.9		
Fuses	10 AT		No fuses, circuit breaker
Analog input (LINE1)	2 XLR connectors, balanced, >10 kΩ (600 Ω jumpers selectable), software adjustable level (-18/+18 dBu range)		
AES Input (LINE2)	1 XLR connector, balanced, >110 Ω, software adjustable level (-20 to 0dBFS range), AES 16,24,32 bits, up to 192 kHz		
2 Composite (MPX/SCA/RDS) inputs	BNC type, unbalanced, >5 kΩ, software adjustable level (-18/+18 dBu range)		
<b>Composite operation</b>			
Modulation	≥150%±75kHz reference		
Bandwidth	> 40 Hz to 53 kHz @ 0.1 dB, > 20 Hz to 60 kHz @ 0.2 dB, > 60 kHz to 80 kHz @ 0.4 dB		
Intermodulation distortion	< 0.05%		
FM S/N ratio	> 80 dB RMS @ 75 kHz deviation		
AM noise	>55 dB, weighted/unweighted, sync/async, RMS/CCIR (20-20 000 Hz)		
<b>Stereo operation</b>			
Bandwidth	> 20 Hz to 15 kHz @ 0.1 dB		
38 kHz discontinuance	> 50 dB		
Stereophonic crosstalk	> 50 dB		
<b>Mono operation</b>			
Bandwidth	> 40 Hz to 15 kHz @ 0.1 dB		
Out of band rejection	> 40 dB @ 19 kHz		
Preemphasis	0 μs, 50 μs or 75 μs		
<b>Environmental / Physical specifications</b>			
Overall dimensions	482.6 X 3U X 470 mm (WxHxD)		482.6 X 3U X 690 mm (WxHxD)
Enclosure depth required	600 mm		700 mm
Mounting	19" enclosure, with 4 M6X12 screws		
Weight	~13 kg / ~18 kg		
Operating temperature	Nominal: 5°C to 45°C, Maximum: 0°C to 50°C		
Warehousing temperature	-20°C to +70°C, <10 years		
Humidity	5 - 95 % non-condensing relative humidity		
Altitude	Up to 3900 m		
Cooling	1 fan: ~30 l/s		2 fans: ~60 l/s
Marking	CE, FCC, ICC		
Standards	1999/5/CE (R&TTE), ETS 302 018 (EMC), ETS 300 384 (Radio), NF EN 60215 (Safety)		

Technical specification are subject to change without prior notice – 11/2018

## Order information

STANDARD VERSION	
REF	DESCRIPTION
TF00354-x	ECRESO FM 1000W - Limited to 750W
TF00996-x	ECRESO FM 1000W
TF00367-x	ECRESO FM 2000W
Software Options	
CD00103	SmartFM
SP01319	Communication Pack
CD00106	Basic RDS
CD01001	5 Band Sound Processor
Hardware Options	
SP01319	GPIO board
SP01615	Analog GPIO board
SP01322	RF metering board
ST01792	SFN Option
SP01260	Internal surge protector

STANDARD VERSION	
REF	DESCRIPTION
10 Years Warranty	
EMR4	10 Year Warranty (Up to 750W)
EMR5	10 Year Warranty (1000W and 2000W)
Expert Maintenance Reporting	
EMR6	Expert Maintenance Reporting

ON DEMAND SERVICES
Redundancy solutions : 1+1, N+1
Dummy loads, adapters, cables
Cavity filters, combiners and antenna systems
Coverage Study
Turnkey solutions for broadcasting site

### Head Office

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