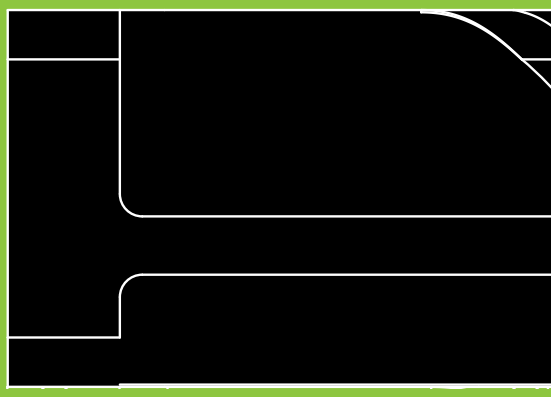

indiumseries EMISSORES FM

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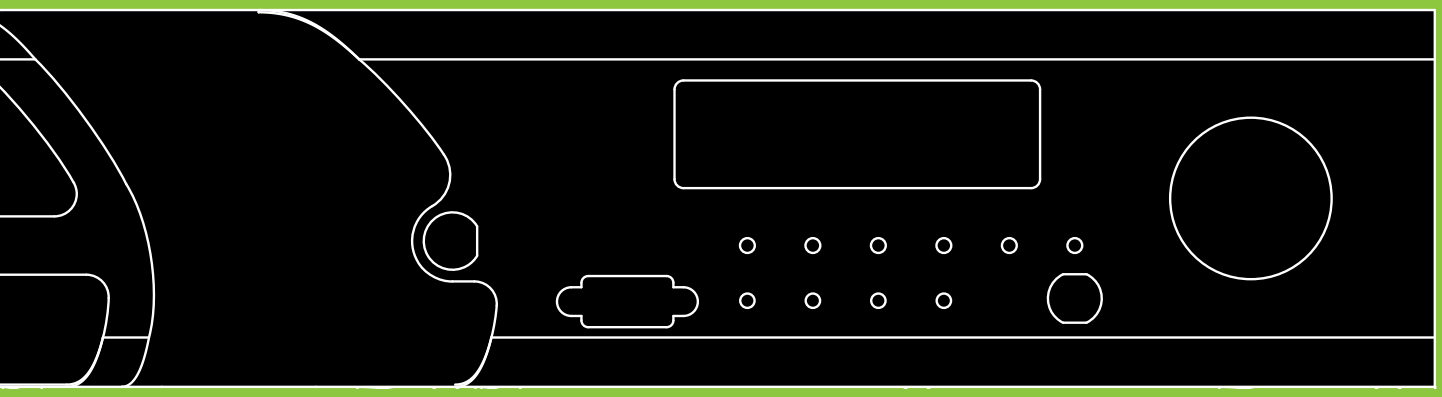

DE 150W
A 2kW

EMISSORES FM

ELENOS®
World Broadcast Experience

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Technical data can be subject to change without notice.

our technologies

Indium

Icefet

Ecosaving

Life Extender

Brochure

EMISSORES FM INDIUM SERIES

Os emissores desta série estão disponíveis em 8 potências diferentes (150W, 300W, 500W, 1000W, 1500W e 2000W.)
Vencedora do "Cool Stuff Award em 2012", esta serie de emissores combina muito alta eficiência, elevada fiabilidade e baixíssimo consumo energético numa esteticamente perfeita caixa de 2U de rack.

A série 2U maximiza o conceito de eficiência energética, solidez e confiança que tem conduzido os projetos ELENOS nos últimos 10 anos.
Todos os emissores desta série são extremamente compactos e leves, o que facilita imenso a sua instalação e reduz os custos dos transportes. A sua elevada eficiência energética permite obter custos de operação verdadeiramente baixos.
A série 2U é caracterizada pela sua extrema fiabilidade ao assegurar elevada performance mesmo nas condições mais adversas de funcionamento, fundamentalmente devido a inteligentes protocolos de segurança, tecnologia ICEFET e algoritmos Lifextender.
Os protocolos inteligentes de segurança são ativados proporcionalmente ao grau de gravidade das condições de funcionamento, garantindo dessa forma a máxima potência de saída, salvaguardando sempre a integridade do equipamento.
Os modelos de 150 a 500 watts podem ser eletricamente alimentados por fonte de alimentação DC de 48V (40 a 56 Vdc), permitindo dessa forma a utilização de energias renováveis, como energia solar e/ou eólica.

Funcionalidades:

Alta eficiência

Consumo extremamente baixo e custos de operação igualmente baixos.

Operação inteligente/ funcionalidades interligadas

Extraordinária performance fundamentalmente pelo uso de poderosos algoritmos operacionais e pela intercomunicação entre os vários módulos que compõem o emissor. Estes algoritmos de software adaptam o emissor às condições ambientais ou a qualquer dispositivo a ele ligado, prevenindo o funcionamento com baixo sinal RF ou qualidade de áudio diminuída.

Tamanho e potência muito compactos

Duas unidades de rack de altura, com um peso inferior a 14 kg, com uma relação potência vrs volume e potência vrs peso, inigualáveis.

Tecnologia Planar

Excecional estabilidade, duplicação, fiabilidade e fácil manutenção devido ao uso da tecnologia planar, tecnologia usada em toda a secção RF (módulos RF, combinador, divisor e filtro passa-baixo).

Esta utilização permite a minimização de ligações internas, pontos de soldadura, o que por si só aumenta no tempo a sua a fiabilidade, durabilidade e performance.

Sempre ligado

O controlo remoto e as funções de gestão permitem que os utilizadores possam receber informação e enviar ordens ou comandos para e do emissor através de vários canais de comunicação – SMS, GPRS, TCP/IP e SNMP.

2U

Solar
Renewable

ELENOS ECO SUSTAINABLE

Our photovoltaic systems generate energy which respects the environment

Os emissores ELENOS da serie Indium baixa potência (LPFM) ETG150, 300. 3 e 500.5 estão preparados para funcionar com alimentação DC, em situações em que a energia AC não seja opção.

Os emissores ELENOS da serie Indium baixa potência (LPFM) podem ser adquiridos com a opção DC, que foi especificamente projetada para operar com as energias renováveis, como painéis fotovoltaicos ou aerogeradores, fornecedores de energia DC.

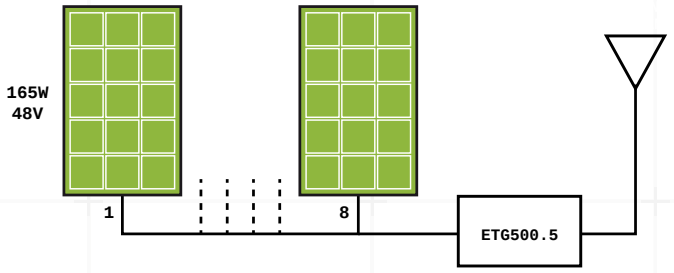
A nova gama de emissores ELENOS da serie Indium baixa potência (LPFM) necessita de uma tensão de alimentação de 48 Vdc (40-56 Vdc), proveniente dos painéis fotovoltaicos ou qualquer outra fonte de energia DC.

As notáveis prestações áudio e RF estão sempre asseguradas e são exatamente idênticas ás prestações obtidas com alimentação AC. A eficiência RF típica é na ordem dos 80%.

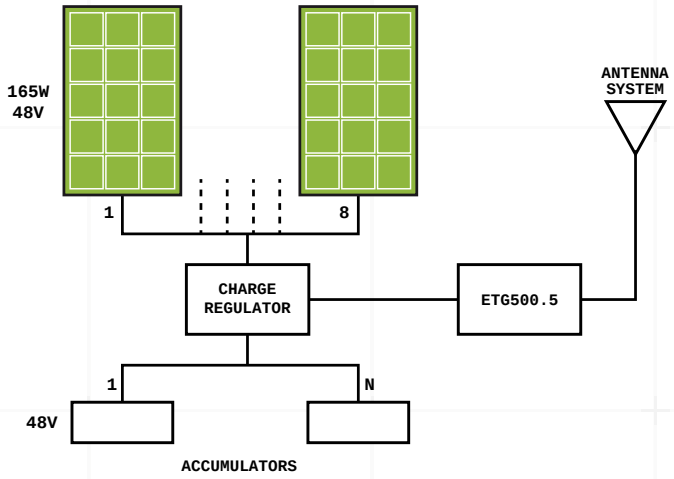
Os consumos típicos dos emissores são os seguintes:

@150W RF: 250W DC.
@300W RF: 500W DC.
@500W RF: 800W DC.

OS dados técnicos dos emissores estão disponíveis para consulta nas brochuras do ETG 150, ETG 300.3 e ETG 500.



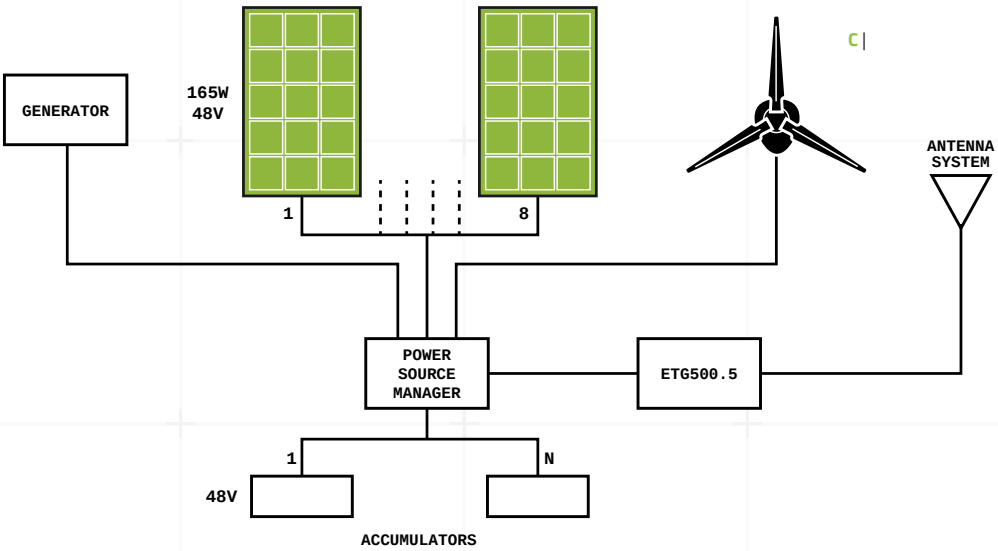
A |



B |

APPLICATION EXAMPLES

A |
Painéis solares fotovoltaicos sem acumuladores / baterias "low cost", altamente fiáveis, implica funcionamento disponível apenas na existência da luz solar.
B |
Painéis solares fotovoltaicos com acumuladores / baterias "low cost", e carregador de baterias para a maioria das situações.
C |
O emissor pode ser eletricamente abastecido através de um sistema completamente redundante de modo a evitar interrupções de funcionamento. Neste caso, a combinação de quaisquer fontes DC, como painéis solares fotovoltaicos, aerogeradores ou até geradores DC, produziriam a energia necessária ao funcionamento do emissor.



C |

Datasheet

GENERAL DATA	
Output Nominal Power	150 W adjustable
Operating band	87.5 ÷ 108 MHz
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor
Displayed Parameters	More than 50 parameters displayed on a wide graphic 0-LED screen
Adjustments	From the frontal panel through OLED/from PC
Number of L-DMOS in amplifier stage	1
RF power stage technology	ICEFET & ECOSAVING
Dimensions: Rack units	2 RU
Dimensions: W - H - D	48.5 - 8.5 - 58.5 cm / 19.11 - 3.35 - 23.05 inches
Weight	9.4 Kg / 20.72 lbs
Number of cooling fans	2
CONNECTORS	
RF Output	N
MPX	BNC Female
LEFT & RIGHT	XLR Female
AES/EBU	XLR Female
AUX	BNC Female
Monitor/19 kHz	BNC Female
RF PERFORMANCE	
Output impedance	50 Ω
Automatic power RF control	Stabilizes the output power value to the Target power level selected
Overall output power RF stability	+/- 0,1 dB
VSWR	2:1 at full power. Automatic power reduction beyond 1.7:1. Transmitter is protected fro open and short circuit.
Harmonics	< -75 dBc
Out of band emission (spurious)	< -80 dBc
AUDIO PERFORMANCE	
MPX input level	+15/-10 dBu for 75 KHz standard deviation
MPX level adjustment	Soft adjust 0.1 dB steps from front panel
MPX input impedance	5 KΩ selectable
L/R input level	+15/-10 dBu for 75 KHz standard deviation
L/R level adjustment	Soft adjust 0.1 dBu steps from front panel
L/R Input Impedance	Selectable 10 K - 600 Ω, balanced
AES/EBU input resolution	24 bits
AES/EBU input sample rate	32,44.1,48,96 KHz Automatically selected
AES/EBU input level	-20 dBFS - 0 dBFS
AES/EBU input impedance	110 Ω balanced
AES/EBU-Analog input automatic changeover	Yes
PILOT Amplitude adjustment	Soft adjust 0.05% steps from front panel
PILOT Phase adjustment	Soft adjust 0.01 degree steps from front panel
PILOT tone frequency	19 KHz
PILOT tone deviation	Soft adjust +/- 7.5 KHz
PILOT tone frequency stability	+/- 1 Hz
THD+N (stereo/mono operation)	< 0.05% with 75 KHz frequency deviation < 0.05% with 100 KHz frequency deviation 30 Hz to 15 KHz
Pre-emphasis	0/25/50/75 microseconds, selectable
Pre-emphasis tolerance	+/- 0.1 dB
FM S/N (MPX operation)	82 dB 20 Hz to 23 KHz @ 53 KHz - detector RMS
FM S/N CCIR (stereo/mono operation)	> = 72 dB weighted > = 72 dB unweighted 400 Hz, 75 KHz frequency deviation, quasi-peak detector, 50 us de-emphasis
Asynchronous AM S/N unweighted	> = 55 dB a 400 Hz, 75 us de-emphasis
Synchronous AM S/N	> = 50 dB a 400 Hz, 75 us de-emphasis

Amplitude-frequency characteristic (stereo/mono operation)	+/- 0.1 dB (without pre-emphasis) +/- 0.1 dB (with pre-emphasis) 20 Hz to 15 KHz, @ 400 Hz
Stereo Crosstalk (typical)	60 dB @ 400 Hz to 10 KHz
Linear crosstalk	>60 db 20 Hz to 15 KHz
Intermodulation distortion	<0.05% Measured with two of tones 1 KHz & 1.3 KHz, ratio 1:1 at 100% modulation
Class of emission	F3
Stereo emission	According to ITU-R reccomendation 450 (pilot tone)
EXCITER PERFORMANCE	
PLL lock time	<10 sec
Frequency deviation	+/- 75 KHz 0.1 dB steps adjustable
Maximum frequency deviation	+/- 150 KHz
Frequency stability	1 ppm
RF Frequency steps	10 KHz
Phase Response	+/- 0.1 degree from linear phase; 20 KHz to 100 KHz
INSTALLATION REQUIREMENTS	
Power supply	110, 230 Two-Singlephase Version 50-60 Hz VAC
Power consumption (typical)	230 W
Current consumption (typical@230 V)	1 A
Overall efficiency (typical from -3 dB to Pnom)	> = 70%
Power factor	> 0.95
COOLING/NOISE/DATA	
Cooling system	Forced air-cooling
Acoustic noise	< 65 phone @ transmitter room, 2 M distance from the front of the transmitter
ENVIRONMENT	
Temperature range (operating)	-5 ÷ +45 °C, 23 ÷ 113 °F
Temperature range (non operating)	-20 ÷ +55 °C, -4 ÷ 131 °F
Humidity range (operating)	95% @ 40 °C, 104 °F
Humidity range (non operating)	90% @ 55 °C, 131 °F
Altitude range (operating)	<3000 meters / <9840 Feet
Altitude range (non operating)	<15000 meters / < 49200 Feet
TELECONTROL & TELEMETRY	
Remote control	Yes
Remote control, dry contacts	Yes
SNMP option	Yes (external)

Datasheet

GENERAL DATA	
Output Nominal Power	300 W adjustable
Operating band	87.5 ÷ 108 MHz
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor
Displayed Parameters	More than 50 parameters displayed on a wide graphic 0-LED screen
Adjustments	From the frontal panel through OLED/from PC
Number of L-DMOS in amplifier stage	1
RF power stage technology	ICEFET & ECOSAVING
Dimensions: Rack units	2 RU
Dimensions: W - H - D	48.5 - 8.5 - 58.5 cm / 19.11 - 3.35 - 23.05 inches
Weight	9.4 Kg / 20.72 lbs
Number of cooling fans	2
CONNECTORS	
RF Output	N
MPX	BNC Female
LEFT & RIGHT	XLR Female
AES/EBU	XLR Female
AUX	BNC Female
Monitor/19 kHz	BNC Female
RF PERFORMANCE	
Output impedance	50 Ω
Automatic power RF control	Stabilizes the output power value to the Target power level selected
Overall output power RF stability	+/- 0,1 dB
VSWR	2:1 at full power. Automatic power reduction beyond 1.7:1. Transmitter is protected fro open and short circuit.
Harmonics	< -75 dBc
Out of band emission (spurious)	< -80 dBc
AUDIO PERFORMANCE	
MPX input level	+15/-10 dBu for 75 KHz standard deviation
MPX level adjustment	Soft adjust 0.1 dB steps from front panel
MPX input impedance	5 KΩ selectable
L/R input level	+15/-10 dBu for 75 KHz standard deviation
L/R level adjustment	Soft adjust 0.1 dBu steps from front panel
L/R Input Impedance	Selectable 10 K - 600 Ω, balanced
AES/EBU input resolution	24 bits
AES/EBU input sample rate	32,44.1,48,96 KHz Automatically selected
AES/EBU input level	-20 dBFS - 0 dBFS
AES/EBU input impedance	110 Ω balanced
AES/EBU-Analog input automatic changeover	Yes
PILOT Amplitude adjustment	Soft adjust 0.05% steps from front panel
PILOT Phase adjustment	Soft adjust 0.01 degree steps from front panel
PILOT tone frequency	19 KHz
PILOT tone deviation	Soft adjust +/- 7.5 KHz
PILOT tone frequency stability	+/- 1 Hz
THD+N (stereo/mono operation)	< 0.05% with 75 KHz frequency deviation < 0.05% with 100 KHz frequency deviation 30 Hz to 15 KHz
Pre-emphasis	0/25/50/75 microseconds, selectable
Pre-emphasis tolerance	+/- 0.1 dB
FM S/N (MPX operation)	82 dB 20 Hz to 23 KHz @ 53 KHz - detector RMS
FM S/N CCIR (stereo/mono operation)	> = 72 dB weighted > = 72 dB unweighted 400 Hz, 75 kHz frequency deviation, quasi-peak detector, 50 us de-emphasis
Asynchronous AM S/N unweighted	> = 55 dB a 400 Hz, 75 us de-emphasis
Synchronous AM S/N	> = 50 dB a 400 Hz, 75 us de-emphasis

Amplitude-frequency characteristic (stereo/mono operation)	+/- 0.1 dB (without pre-emphasis) +/- 0.1 dB (with pre-emphasis) 20 Hz to 15 KHz, @ 400 Hz
Stereo Crosstalk (typical)	60 dB @ 400 Hz to 10 KHz
Linear crosstalk	>60 db 20 Hz to 15 KHz
Intermodulation distortion	<0.05% Measured with two of tones 1 KHz & 1.3 KHz, ratio 1:1 at 100% modulation
Class of emission	F3
Stereo emission	According to ITU-R reccomendation 450 (pilot tone)
EXCITER PERFORMANCE	
PLL lock time	<10 sec
Frequency deviation	+/- 75 KHz 0.1 dB steps adjustable
Maximum frequency deviation	+/- 150 KHz
Frequency stability	1 ppm
RF Frequency steps	10 KHz
Phase Response	+/- 0.1 degree from linear phase; 20 KHz to 100 KHz
INSTALLATION REQUIREMENTS	
Power supply	110, 230 Two-Singlephase Version 50-60 Hz VAC
Power consumption (typical)	430 W
Current consumption (typical@230 V)	1.9 A
Overall efficiency (typical from -3 dB to Pnom)	> = 70%
Power factor	> 0.95
COOLING/NOISE/DATA	
Cooling system	Forced air-cooling
Acoustic noise	< 65 phone @ transmitter room, 2 M distance from the front of the transmitter
ENVIRONMENT	
Temperature range (operating)	-5 ÷ +45 °C, 23 ÷ 113 °F
Temperature range (non operating)	-20 ÷ +55 °C, -4 ÷ 131 °F
Humidity range (operating)	95% @ 40 °C, 104 °F
Humidity range (non operating)	90% @ 55 °C, 131 °F
Altitude range (operating)	<3000 meters / <9840 Feet
Altitude range (non operating)	<15000 meters / < 49200 Feet
TELECONTROL & TELEMETRY	
Remote control	Yes
Remote control, dry contacts	Yes
SNMP option	Yes (external)

Datasheet

GENERAL DATA	
Output Nominal Power	500 W adjustable
Operating band	87.5 ÷ 108 MHz
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor
Displayed Parameters	More than 50 parameters displayed on a wide graphic 0-LED screen
Adjustments	From the frontal panel through OLED/from PC
Number of L-DMOS in amplifier stage	1
RF power stage technology	ICEFET & ECOSAVING
Dimensions: Rack units	2 RU
Dimensions: W - H - D	48.5 - 8.5 - 58.5 cm / 19.11 - 3.35 - 23.05 inches
Weight	9.4 Kg / 20.72 lbs
Number of cooling fans	2
CONNECTORS	
RF Output	7/16″ DIN Female (or on demand) or N on demand
MPX	BNC Female
LEFT & RIGHT	XLR Female
AES/EBU	XLR Female
AUX	BNC Female
Monitor/19 kHz	BNC Female
RF PERFORMANCE	
Output impedance	50 Ω
Automatic power RF control	Stabilizes the output power value to the Target power level selected
Overall output power RF stability	+/- 0,1 dB
VSWR	2:1 at full power. Automatic power reduction beyond 1.7:1. Transmitter is protected fro open and short circuit.
Harmonics	< -75 dBc
Out of band emission (spurious)	< -80 dBc
AUDIO PERFORMANCE	
MPX input level	+15/-10 dBu for 75 KHz standard deviation
MPX level adjustment	Soft adjust 0.1 dB steps from front panel
MPX input impedance	5 KΩ selectable
L/R input level	+15/-10 dBu for 75 KHz standard deviation
L/R level adjustment	Soft adjust 0.1 dBu steps from front panel
L/R Input Impedance	Selectable 10 K - 600 Ω, balanced
AES/EBU input resolution	24 bits
AES/EBU input sample rate	32,44.1,48,96 KHz Automatically selected
AES/EBU input level	-20 dBFS - 0 dBFS
AES/EBU input impedance	110 Ω balanced
AES/EBU-Analog input automatic changeover	Yes
PILOT Amplitude adjustment	Soft adjust 0.05% steps from front panel
PILOT Phase adjustment	Soft adjust 0.01 degree steps from front panel
PILOT tone frequency	19 KHz
PILOT tone deviation	Soft adjust +/- 7.5 KHz
PILOT tone frequency stability	+/- 1 Hz
THD+N (stereo/mono operation)	< 0.05% with 75 KHz frequency deviation < 0.05% with 100 KHz frequency deviation 30 Hz to 15 KHz
Pre-emphasis	0/25/50/75 microseconds, selectable
Pre-emphasis tolerance	+/- 0.1 dB
FM S/N (MPX operation)	82 dB 20 Hz to 23 KHz @ 53 KHz - detector RMS
FM S/N CCIR (stereo/mono operation)	> = 72 dB weighted > = 72 dB unweighted 400 Hz, 75 KHz frequency deviation, quasi-peak detector, 50 us de-emphasis
Asynchronous AM S/N unweighted	> = 55 dB a 400 Hz, 75 us de-emphasis
Synchronous AM S/N	> = 50 dB a 400 Hz, 75 us de-emphasis

Amplitude-frequency characteristic (stereo/mono operation)	+/- 0.1 dB (without pre-emphasis) +/- 0.1 dB (with pre-emphasis) 20 Hz to 15 KHz, @ 400 Hz
Stereo Crosstalk (typical)	60 dB @ 400 Hz to 10 KHz
Linear crosstalk	>60 db 20 Hz to 15 KHz
Intermodulation distortion	<0.05% Measured with two of tones 1 KHz & 1.3 KHz, ratio 1:1 at 100% modulation
Class of emission	F3
Stereo emission	According to ITU-R reccomendation 450 (pilot tone)
EXCITER PERFORMANCE	
PLL lock time	<10 sec
Frequency deviation	+/- 75 KHz 0.1 dB steps adjustable
Maximum frequency deviation	+/- 150 KHz
Frequency stability	1 ppm
RF Frequency steps	10 KHz
Phase Response	+/- 0.1 degree from linear phase; 20 KHz to 100 KHz
INSTALLATION REQUIREMENTS	
Power supply	110, 230 Two-Singlephase Version 50-60 Hz VAC
Power consumption (typical)	690 W
Current consumption (typical@230 V)	3 A
Overall efficiency (typical from -3 dB to Pnom)	> = 70%
Power factor	> 0.95
COOLING/NOISE/DATA	
Cooling system	Forced air-cooling
Acoustic noise	< 65 phone @ transmitter room, 2 M distance from the front of the transmitter
ENVIRONMENT	
Temperature range (operating)	-5 ÷ +45 °C, 23 ÷ 113 °F
Temperature range (non operating)	-20 ÷ +55 °C, -4 ÷ 131 °F
Humidity range (operating)	95% @ 40 °C, 104 °F
Humidity range (non operating)	90% @ 55 °C, 131 °F
Altitude range (operating)	<3000 meters / <9840 Feet
Altitude range (non operating)	<15000 meters / < 49200 Feet
TELECONTROL & TELEMETRY	
Remote control	Yes
Remote control, dry contacts	Yes
SNMP option	Yes (external)

Datasheet

GENERAL DATA	
Output Nominal Power	1000 W adjustable
Operating band	87.5 ÷ 108 MHz
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor
Displayed Parameters	More than 50 parameters displayed on a wide graphic 0-LED screen
Adjustments	From the frontal panel through OLED/from PC
Number of L-DMOS in amplifier stage	2
RF power stage technology	ICEFET & ECOSAVING
Dimensions: Rack units	2 RU
Dimensions: W - H - D	48.5 - 8.5 - 58.5 cm / 19.11 - 3.35 - 23.05 inches
Weight	13.2 Kg / 29.1 lbs
Number of cooling fans	3
CONNECTORS	
RF Output	7/16″ DIN Female
MPX	BNC Female
LEFT & RIGHT	XLR Female
AES/EBU	XLR Female
AUX	BNC Female
Monitor/19 kHz	BNC Female
RF PERFORMANCE	
Output impedance	50 Ω
Automatic power RF control	Stabilizes the output power value to the Target power level selected
Overall output power RF stability	+/- 0,1 dB
VSWR	2:1 at full power. Automatic power reduction beyond 1.7:1. Transmitter is protected fro open and short circuit.
Harmonics	< -75 dBc
Out of band emission (spurious)	< -80 dBc
AUDIO PERFORMANCE	
MPX input level	+15/-10 dBu for 75 KHz standard deviation
MPX level adjustment	Soft adjust 0.1 dB steps from front panel
MPX input impedance	5 KΩ selectable
L/R input level	+15/-10 dBu for 75 KHz standard deviation
L/R level adjustment	Soft adjust 0.1 dBu steps from front panel
L/R Input Impedance	Selectable 10 K - 600 Ω, balanced
AES/EBU input resolution	24 bits
AES/EBU input sample rate	32,44.1,48,96 KHz Automatically selected
AES/EBU input level	-20 dBFS - 0 dBFS
AES/EBU input impedance	110 Ω balanced
AES/EBU-Analog input automatic changeover	Yes
PILOT Amplitude adjustment	Soft adjust 0.05% steps from front panel
PILOT Phase adjustment	Soft adjust 0.01 degree steps from front panel
PILOT tone frequency	19 KHz
PILOT tone deviation	Soft adjust +/- 7.5 KHz
PILOT tone frequency stability	+/- 1 Hz
THD+N (stereo/mono operation)	< 0.05% with 75 KHz frequency deviation < 0.05% with 100 KHz frequency deviation 30 Hz to 15 KHz
Pre-emphasis	0/25/50/75 microseconds, selectable
Pre-emphasis tolerance	+/- 0.1 dB
FM S/N (MPX operation)	82 dB 20 Hz to 23 KHz @ 53 KHz - detector RMS
FM S/N CCIR (stereo/mono operation)	> = 72 dB weighted > = 72 dB unweighted 400 Hz, 75 KHz frequency deviation, quasi-peak detector, 50 us de-emphasis
Asynchronous AM S/N unweighted	> = 55 dB a 400 Hz, 75 us de-emphasis
Synchronous AM S/N	> = 50 dB a 400 Hz, 75 us de-emphasis

Amplitude-frequency characteristic (stereo/mono operation)	+/- 0.1 dB (without pre-emphasis) +/- 0.1 dB (with pre-emphasis) 20 Hz to 15 KHz, @ 400 Hz
Stereo Crosstalk (typical)	60 dB @ 400 Hz to 10 KHz
Linear crosstalk	>60 db 20 Hz to 15 KHz
Intermodulation distortion	<0.05% Measured with two of tones 1 KHz & 1.3 KHz, ratio 1:1 at 100% modulation
Class of emission	F3
Stereo emission	According to ITU-R reccomendation 450 (pilot tone)
EXCITER PERFORMANCE	
PLL lock time	<10 sec
Frequency deviation	+/- 75 KHz 0.1 dB steps adjustable
Maximum frequency deviation	+/- 150 KHz
Frequency stability	1 ppm
RF Frequency steps	10 KHz
Phase Response	+/- 0.1 degree from linear phase; 20 KHz to 100 KHz
INSTALLATION REQUIREMENTS	
Power supply	230 Singlephase Version 50-60 Hz VAC
Power consumption (typical)	1430 W
Current consumption (typical@230 V)	6.2 A
Overall efficiency (typical from -3 dB to Pnom)	> = 70%
Power factor	> 0.95
COOLING/NOISE/DATA	
Cooling system	Forced air-cooling
Acoustic noise	< 65 phone @ transmitter room, 2 M distance from the front of the transmitter
ENVIRONMENT	
Temperature range (operating)	-5 ÷ +45 °C, 23 ÷ 113 °F
Temperature range (non operating)	-20 ÷ +55 °C, -4 ÷ 131 °F
Humidity range (operating)	95% @ 40 °C, 104 °F
Humidity range (non operating)	90% @ 55 °C, 131 °F
Altitude range (operating)	<3000 meters / <9840 Feet
Altitude range (non operating)	<15000 meters / < 49200 Feet
TELECONTROL & TELEMETRY	
Remote control	Yes
Remote control, dry contacts	Yes
SNMP option	Yes (external)

Datasheet

GENERAL DATA	
Output Nominal Power	1500 W adjustable
Operating band	87.5 ÷ 108 MHz
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor
Displayed Parameters	More than 50 parameters displayed on a wide graphic 0-LED screen
Adjustments	From the frontal panel through OLED/from PC
Number of L-DMOS in amplifier stage	2
RF power stage technology	ICEFET & ECOSAVING
Dimensions: Rack units	2 RU
Dimensions: W - H - D	48.5 - 8.5 - 58.5 cm / 19.11 - 3.35 - 23.05 inches
Weight	13.2 Kg / 29.1 lbs
Number of cooling fans	3
CONNECTORS	
RF Output	7/16″ DIN Female
MPX	BNC Female
LEFT & RIGHT	XLR Female
AES/EBU	XLR Female
AUX	BNC Female
Monitor/19 kHz	BNC Female
RF PERFORMANCE	
Output impedance	50 Ω
Automatic power RF control	Stabilizes the output power value to the Target power level selected
Overall output power RF stability	+/- 0,1 dB
VSWR	2:1 at full power. Automatic power reduction beyond 1.7:1. Transmitter is protected fro open and short circuit.
Harmonics	< -75 dBc
Out of band emission (spurious)	< -80 dBc
AUDIO PERFORMANCE	
MPX input level	+15/-10 dBu for 75 KHz standard deviation
MPX level adjustment	Soft adjust 0.1 dB steps from front panel
MPX input impedance	5 KΩ selectable
L/R input level	+15/-10 dBu for 75 KHz standard deviation
L/R level adjustment	Soft adjust 0.1 dBu steps from front panel
L/R Input Impedance	Selectable 10 K - 600 Ω, balanced
AES/EBU input resolution	24 bits
AES/EBU input sample rate	32,44.1,48,96 KHz Automatically selected
AES/EBU input level	-20 dBFS - 0 dBFS
AES/EBU input impedance	110 Ω balanced
AES/EBU-Analog input automatic changeover	Yes
PILOT Amplitude adjustment	Soft adjust 0.05% steps from front panel
PILOT Phase adjustment	Soft adjust 0.01 degree steps from front panel
PILOT tone frequency	19 KHz
PILOT tone deviation	Soft adjust +/- 7.5 KHz
PILOT tone frequency stability	+/- 1 Hz
THD+N (stereo/mono operation)	< 0.05% with 75 KHz frequency deviation < 0.05% with 100 KHz frequency deviation 30 Hz to 15 KHz
Pre-emphasis	0/25/50/75 microseconds, selectable
Pre-emphasis tolerance	+/- 0.1 dB
FM S/N (MPX operation)	82 dB 20 Hz to 23 KHz @ 53 KHz - detector RMS
FM S/N CCIR (stereo/mono operation)	> = 72 dB weighted > = 72 dB unweighted 400 Hz, 75 KHz frequency deviation, quasi-peak detector, 50 us de-emphasis
Asynchronous AM S/N unweighted	> = 55 dB a 400 Hz, 75 us de-emphasis
Synchronous AM S/N	> = 50 dB a 400 Hz, 75 us de-emphasis

Amplitude-frequency characteristic (stereo/mono operation)	+/- 0.1 dB (without pre-emphasis) +/- 0.1 dB (with pre-emphasis) 20 Hz to 15 KHz, @ 400 Hz
Stereo Crosstalk (typical)	60 dB @ 400 Hz to 10 KHz
Linear crosstalk	>60 db 20 Hz to 15 KHz
Intermodulation distortion	<0.05% Measured with two of tones 1 KHz & 1.3 KHz, ratio 1:1 at 100% modulation
Class of emission	F3
Stereo emission	According to ITU-R reccomendation 450 (pilot tone)
EXCITER PERFORMANCE	
PLL lock time	<10 sec
Frequency deviation	+/- 75 KHz 0.1 dB steps adjustable
Maximum frequency deviation	+/- 150 KHz
Frequency stability	1 ppm
RF Frequency steps	10 KHz
Phase Response	+/- 0.1 degree from linear phase; 20 kHz to 100 kHz
INSTALLATION REQUIREMENTS	
Power supply	230 Singlephase Version 50-60 Hz VAC
Power consumption (typical)	2000 W
Current consumption (typical@230 V)	8.7 A
Overall efficiency (typical from -3 dB to Pnom)	> = 70%
Power factor	> 0.95
COOLING/NOISE/DATA	
Cooling system	Forced air-cooling
Acoustic noise	< 65 phone @ transmitter room, 2 M distance from the front of the transmitter
ENVIRONMENT	
Temperature range (operating)	-5 ÷ +45 °C, 23 ÷ 113 °F
Temperature range (non operating)	-20 ÷ +55 °C, -4 ÷ 131 °F
Humidity range (operating)	95% @ 40 °C, 104 °F
Humidity range (non operating)	90% @ 55 °C, 131 °F
Altitude range (operating)	<3000 meters / <9840 Feet
Altitude range (non operating)	<15000 meters / < 49200 Feet
TELECONTROL & TELEMETRY	
Remote control	Yes
Remote control, dry contacts	Yes
SNMP option	Yes (external)

Datasheet

GENERAL DATA	
Output Nominal Power	2000 W adjustable
Operating band	87.5 ÷ 108 MHz
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor
Displayed Parameters	More than 50 parameters displayed on a wide graphic 0-LED screen
Adjustments	From the frontal panel through OLED/from PC
Number of L-DMOS in amplifier stage	3
RF power stage technology	ICEFET & ECOSAVING
Dimensions: Rack units	2 RU
Dimensions: W - H - D	48.5 - 8.5 - 58.5 cm / 19.11 - 3.35 - 23.05 inches
Weight	13.2 Kg / 29.1 lbs
Number of cooling fans	3
CONNECTORS	
RF Output	7/16″ DIN Female
MPX	BNC Female
LEFT & RIGHT	XLR Female
AES/EBU	XLR Female
AUX	BNC Female
Monitor/19 kHz	BNC Female
RF PERFORMANCE	
Output impedance	50 Ω
Automatic power RF control	Stabilizes the output power value to the Target power level selected
Overall output power RF stability	+/- 0,1 dB
VSWR	2:1 at full power. Automatic power reduction beyond 1.7:1. Transmitter is protected fro open and short circuit.
Harmonics	< -75 dBc
Out of band emission (spurious)	< -80 dBc
AUDIO PERFORMANCE	
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MPX level adjustment	Soft adjust 0.1 dB steps from front panel
MPX input impedance	5 KΩ selectable
L/R input level	+15/-10 dBu for 75 KHz standard deviation
L/R level adjustment	Soft adjust 0.1 dBu steps from front panel
L/R Input Impedance	Selectable 10 K - 600 Ω, balanced
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PLL lock time	<10 sec
Frequency deviation	+/- 75 KHz 0.1 dB steps adjustable
Maximum frequency deviation	+/- 150 KHz
Frequency stability	1 ppm
RF Frequency steps	10 KHz
Phase Response	+/- 0.1 degree from linear phase; 20 KHz to 100 KHz
INSTALLATION REQUIREMENTS	
Power supply	230 Singlephase Version 50-60 Hz VAC
Power consumption (typical)	2700 W
Current consumption (typical@230 V)	11.7 A
Overall efficiency (typical from -3 dB to Pnom)	> = 70%
Power factor	> 0.95
COOLING/NOISE/DATA	
Cooling system	Forced air-cooling
Acoustic noise	< 65 phone @ transmitter room, 2 M distance from the front of the transmitter
ENVIRONMENT	
Temperature range (operating)	-5 ÷ +45 °C, 23 ÷ 113 °F
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