





# DE 10kW A 30kW

EMISSORES FM

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World Broadcast Experience



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Brochure

## EMISSORES FM ALTA POTÊNCIA

### EMISSORES FM ALTA POTÊNCIA

A família de produtos ET Indium alta potência consiste na associação do número necessário de emissores da série 4U, média potência (2500 – 5000W), para obter a alta potência desejada na saída. Esta associação é feita com um emissor série 2U ou dois emissores da série 2U (versão duplo excitador), os amplificadores de média potência e um combinador. A potência total que se pode obter nesta família de emissores varia entre 7 Kw a 30 Kw e cada sistema pode ser integrado num único rack de 19”.

Estes emissores representam a tecnologia do ponto de vista da eficiência elétrica, dimensionamento físico, peso reduzido, facilidade de utilização e diagnóstico. Adicionalmente, a família dos emissores ELENOS de alta potência disponibiliza o acesso mais completo a todos os parâmetros do sistema emissor, incluindo sistema de proteções, assegurando ainda a capacidade do equipamento operar nas condições mais adversas, mantendo inalterada a potência RF de saída bem, como a qualidade do áudio.

Esta família de emissores foi pensada para garantir a máxima performance reduzindo simultaneamente os custos de operacionalidade, principalmente devidos à utilização de técnicas de eficiência elétrica. Os emissores da série ET Indium Alta Potência atingem níveis de eficiência elétrica nunca vistos no mercado atualmente, ao mesmo tempo que obtém uma performance muito elevada mesmo nas condições mais adversas, como temperaturas elevadas, antenas desajustadas, flutuações na rede elétrica... A grande eficiência dos amplificadores RF, excitador, combinador e fontes de

alimentação permitiu ainda uma notável redução na temperatura de funcionamento, peso e dimensões dos equipamentos. As vantagens daí obtidas são substanciais: instalação simplificada, custos de transporte mais baixos, espaço de alojamento menor e, fundamentalmente, poupança de energia. Como é que tudo isto é possível? Principalmente devido a técnicas RF de design inovador, fontes de alimentação inteligentes e através da utilização de poderosos algoritmos especificamente desenhados para uma gestão muito rigorosa na obtenção da performance.

### Funcionalidades:

#### **Design moderno**

Tamanho ultra compacto, peso reduzido, aspeto cuidado, fácil manutenção e reparação.

#### **Baixo consumo energético**

Forte redução do consumo energético com consequente diminuição dos custos de operação devido ao "State of Art" do seu design.

#### **Fiabilidade**

Máxima fiabilidade e garantia de continuidade de funcionamento mesmo em condições extremamente adversas graças aos protocolos de segurança inteligentes, à tecnologia Icefet e aos algoritmos do Lifextender.

#### **Controlo Total**

Informação total e detalhada do funcionamento do emissor disponível em tempo real, em termos analíticos (tensões, correntes, potência, temperaturas, eficiência, segurança, configurações, níveis de áudio, comunicações).  
Controlo local e remoto através de protocolo série, SMS, GPRS, SNMP e WEB.

#### **Escalável**

Todos os produtos são desenhados para serem escaláveis o que implica a grande vantagem de que, qualquer desenvolvimento/ melhoria implementado na base do sistema/ produto, verá os seus benefícios transferidos automaticamente para todos os equipamentos dessa família de produtos, através de upgrades.



Datasheet

# EMISSORES FM ALTA POTÊNCIA | ET10000

EMISSORES FM ALTA POTÊNCIA | ET10000

## COMPOSITION

Exciter (Indium series)	n°1 Exciter Indium Series single drive configuration n°2 Exciter Indium Series dual drive configuration
Amplifier	n°2 Amplifier E5000 Indium Series
Combiner/Control unit	n°1 2-way combiner IN 5000 - OUT 10000 with an internal load composed by 1 group of 6 resistance of 800 W 50 Ω
RF output connector	1+5/8"
Circuit breaker box	4U (on front or rear panel on demand)

## GENERAL DATA

Output nominal maximum power	10000 W
Output power range	1500 ÷ 10000 W
Operating band	87.5 ÷ 108 MHz
Dimensions: Rack units	min. 20U
Dimensions: W - H - D	56.5 - 105 - 107.8cm
Weight	270 kg
RF power stage technology	ICEFET & ECOSAVING
Automatic power RF control	Stabilized output power value on the set value
Overall output power RF stability	+/- 0.1 dB
Cooling system	Forced air-cooling
Air outlet	On the top or on the rear. Cooling flow 2200 /2400 m3/h (depending on environment)
RS232/RS485	Yes. Connector DB9 Female
Points of measure	RF Sample - MPX Monitor

## 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

## EMISSORES FM ALTA POTÊNCIA | ET10000

Class of emission	F3
Stereo emission	According to ITU-R recommendation 450 (pilot tone)
<b>EXCITER PERFORMANCE</b>	
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
<b>INSTALLATION REQUIREMENTS</b>	
Power supply	380 V or 400 V, Threephase + neutral wire 50-60 Hz* 210 V, Threephase (WYE without neutral)*
	* to be specified when placing the order
Power consumption	15 KW
Current consumption @230VAC/Threephase	42 A
Overall efficiency (typical from - 3 dB to Pman)	68%
Power factor	>0.95
Current consumption @380VAC/Threephase	24 A
<b>ENVIRONMENT</b>	
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
<b>TELECONTROL &amp; TELEMETRY</b>	
Remote control	Yes
Remote Control at clean contacts	Yes
SNMP option	Yes (external)





Datasheet

# EMISSORES FM ALTA POTÊNCIA | ET15000

EMISSORES FM ALTA POTÊNCIA | ET15000

## COMPOSITION

Exciter (Indium series)	n°1 Exciter Indium Series single drive configuration n°2 Exciter Indium Series dual drive configuration
Amplifier	n°3 Amplifier E5000 Indium Series
Combiner/Control unit	n°1 3-Way Combiner IN 5000 - OUT 15000 with an internal load composed by 3 group of 6 resistance of 800 W 50 Ω
RF output connector	3+1/8"
Circuit breaker box	4U (on front or rear panel on demand)

## GENERAL DATA

Output nominal maximum power	15000 W
Output power range	1500 ÷ 15000 W
Operating band	87.5 ÷ 108 MHz
Dimensions: Rack units	min. 32U
Dimensions: W - H - D	56.5 - 160.3 - 107.8 cm
Weight	320 kg
RF power stage technology	ICEFET & ECOSAVING
Automatic power RF control	Stabilized output power value on the set value
Overall output power RF stability	+/- 0.1 dB
Cooling system	Forced air-cooling
Air outlet	On the top. Cooling flow 3250 /4500 m3/h (depending on environment)
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor

## 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

## EMISSORES FM ALTA POTÊNCIA | ET15000

Class of emission	F3
Stereo emission	According to ITU-R recommendation 450 (pilot tone)
<b>EXCITER PERFORMANCE</b>	
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
<b>INSTALLATION REQUIREMENTS</b>	
Power supply	380 V or 400 V, Threephase + neutral wire 50-60 Hz* 210 V, Threephase (WYE without neutral)*
	* to be specified when placing the order
Power consumption	22 KW
Current consumption @230VAC/Threephase	63 A
Overall efficiency (typical from - 3 dB to Pman)	68%
Power factor	>0.95
Current consumption @380VAC/Threephase	36 A
<b>ENVIRONMENT</b>	
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
<b>TELECONTROL &amp; TELEMETRY</b>	
Remote control	Yes
Remote Control at clean contacts	Yes
SNMP option	Yes (external)



Datasheet

# EMISSORES FM ALTA POTÊNCIA | ET20000

EMISSORES FM ALTA POTÊNCIA | ET20000

## COMPOSITION

Exciter (Indium series)	n°1 Exciter Indium Series single drive configuration n°2 Exciter Indium Series dual drive configuration
Amplifier	n°4 Amplifier E5000 Indium Series
Combiner	n°1 4-way combiner IN 5000 - OUT 20000 with external CPU/control unit and load (4U)
Dummy load	n°1 dummy load (4U)
Control unit	n° 1 control unit (4U). From the frontal panel/ from PC, a careful analysis of the functioning through detailed measurement of currents, voltages, temperatures and powers
RF output connector	3+1/8"
Circuit breaker box	6U (on front or rear panel on demand)

## GENERAL DATA

Output nominal maximum power	20000 W
Output power range	1500 ÷ 20000 W
Operating band	87.5 ÷ 108 MHz
Dimensions: Rack units	min. 32U
Dimensions: W - H - D	56.5 - 192.5 - 107.8 cm (with fan)
Weight	370 kg
RF power stage technology	ICEFET & ECOSAVING
Automatic power RF control	Stabilized output power value on the set value
Overall output power RF stability	+/- 0.1 dB
Cooling system	Forced air-cooling
Air outlet	On the top. Cooling flow 4000 m3/h (depending on environment)
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor

## 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

## EMISSORES FM ALTA POTÊNCIA | ET20000

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 recommendation 450 (pilot tone)
<b>EXCITER PERFORMANCE</b>	
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
<b>INSTALLATION REQUIREMENTS</b>	
Power supply	380 V or 400 V, Threephase + neutral wire 50-60 Hz* 210 V, Threephase (WYE without neutral)*  * to be specified when placing the order
Power consumption	29 KW
Current consumption @230VAC/Threephase	73 A
Overall efficiency (typical from - 3 dB to Pman)	68%
Power factor	>0.95
Current consumption @380VAC/Threephase	43 A
<b>ENVIRONMENT</b>	
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
<b>TELECONTROL &amp; TELEMETRY</b>	
Remote control	Yes
Remote Control at clean contacts	Yes
SNMP option	Yes (external)





Datasheet

# EMISSORES FM ALTA POTÊNCIA | ET25000

EMISSORES FM ALTA POTÊNCIA | ET25000

## COMPOSITION

Exciter (Indium series)	n°1 Exciter Indium Series single drive configuration n°2 Exciter Indium Series dual drive configuration
Amplifier	n°5 Amplifier E5000 Indium Series
Combiner	n°1 5-way combiner IN 5000 - OUT 25000 with external CPU/control unit and load (4U)
Dummy load	n°1 dummy load (4U)
Control unit	n°1 control unit (4U). From the frontal panel/from PC, a careful analysis of the functioning through detailed measurement of currents, voltages, temperatures and powers
RF output connector	3+1/8"
Circuit breaker box	6U (on rear panel)

## GENERAL DATA

Output nominal maximum power	25000 W
Output power range	2500 ÷ 25000 W
Operating band	87.5 ÷ 108 MHz
Dimensions: Rack units	min. 40U
Dimensions: W - H - D	56.5 - 228.2 - 107.8 cm (with fan)
Weight	400 kg
RF power stage technology	ICEFET & ECOSAVING
Automatic power RF control	Stabilized output power value on the set value
Overall output power RF stability	+/- 0.1 dB
Cooling system	Forced air-cooling
Air outlet	On the top. Cooling flow 4000 m3/h (depending on environment)
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor

## 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

## EMISSORES FM ALTA POTÊNCIA | ET25000

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 recommendation 450 (pilot tone)
<b>EXCITER PERFORMANCE</b>	
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
<b>INSTALLATION REQUIREMENTS</b>	
Power supply	380 V or 400 V, Threephase + neutral wire 50-60 Hz* 210 V, Threephase (WYE without neutral)*  * to be specified when placing the order
Power consumption	37 KW
Current consumption @230VAC/Threephase	92 A
Overall efficiency (typical from - 3 dB to Pman)	68%
Power factor	>0.95
Current consumption @380VAC/Threephase	53 A
<b>ENVIRONMENT</b>	
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
<b>TELECONTROL &amp; TELEMETRY</b>	
Remote control	Yes
Remote Control at clean contacts	Yes
SNMP option	Yes (external)



Datasheet

## EMISSORES FM ALTA POTÊNCIA | ET30000

EMISSORES FM ALTA POTÊNCIA | ET30000

### COMPOSITION

Exciter (Indium series)	n°1 Exciter Indium Series single drive configuration n°2 Exciter Indium Series dual drive configuration
Amplifier	n°6 Amplifier E5000 Indium Series
Combiner	n°1 6-way combiner IN 5000 - OUT 30000 with external CPU/control unit and load (4U)
Dummy load	n°1 dummy load (4U)
Control unit	n°1 control unit (4U). From the frontal panel/from PC, a careful analysis of the functioning through detailed measurement of currents, voltages, temperatures and powers
RF output connector	3+1/8"
Circuit breaker box	6U (on rear panel)

### GENERAL DATA

Output nominal maximum power	30000 W
Output power range	3000 ÷ 30000 W
Operating band	87.5 ÷ 108 MHz
Dimensions: Rack units	min. 40U
Dimensions: W - H - D	56.5 - 228.2 - 107.8 cm (with fan)
Weight	460 kg
RF power stage technology	ICEFET & ECOSAVING
Automatic power RF control	Stabilized output power value on the set value
Overall output power RF stability	+/- 0.1 dB
Cooling system	Forced air-cooling
Air outlet	On the top. Cooling flow 4000 m3/h (depending on environment)
RS232/RS485	Yes. Connector DB9 female
Points of measure	RF Sample - MPX Monitor

### 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

## EMISSORES FM ALTA POTÊNCIA | ET30000

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 recommendation 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	380 V or 400 V, Threephase + neutral wire 50-60 Hz* 210 V, Threephase (WYE without neutral)*  * to be specified when placing the order
Power consumption (typical)	44 KW
Current consumption (typical @230VAC/Threephase)	110 A
Overall efficiency (typical from - 3 dB to Pman)	68%
Power factor	>0.95
Current consumption (typical @380VAC/Threephase)	64 A

### 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 at clean contacts	Yes
SNMP option	Yes (external)