AQUABROADCAST

COBALT

CM-5000-1

COBALT C-10 Exciter
A-5000 Amplifier

Option: Dual Exciter



Fully Featured FM Transmitter

Single or Dual Exciter

Datasheet and Specifications

Specifications are subject to change without notice

02112026

Fully Featured CM-5000-1 FM Transmitter

COBALT C-10 Exciter
(Optional: Dual Exciter)



A-5000 Amplifier
(Dual RF inputs)



- Hot-swappable power supplies
- Backup (redundant) power supply included with the amplifier
- Hot-swappable fans

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FEATURES

- Full-band tuner from 87.5 to 108 MHz
- Efficiencies exceeding 70% with hot-swappable power supplies and automatic power control.
- One 5000W solid-state RF power amplifier equipped with robust LDMOS transistors, with two (2) independently metered RF inputs (1 + 1 internal).
- Total output power of 5000 W
- RF output connector: EIA 7/8" flange, 50 ohms
- Designed for 24/7 continuous operation
- Comprehensive protection: high ROE, overload, overcurrent, and overheating
- Transmitter compliant with IEC, ETSI, and CCIR
- Supports mono and stereo transmission with direct-synthesized digital modulation
- Integrated 4-band audio processor with ITU-R BS412.9 limiter
- UECP-compatible dynamic RDS encoder
- MPX digital (AES192)
- Audio-on-Fault Switching, Silence Detection, and Audio Player USB Backup
- Compatible with Shoutcast/Icecast stream input
- GPS Synchronization for SFN Operation
- RGB display on the front panel with full system monitoring
- Remote control via Ethernet HTTPS and SNMP (v1/v2c/v3)
- Web Audio Monitoring and Control
- Advanced automation, programming, and configuration tools
- Includes Control Unit for real-time monitoring and recording of FWD and RFL power

Options

- MicroMPX
- MicroMPX SFN
- 2wcom MOIN IP Codec
- 6-band audio processor
- FM tuner

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Cobalt A-5000 Amplifier Specifications

GENERAL

Output Power (W)	5000W
General Efficiency	Up to 78%
RF Output connector	7/8 EIA, 50 ohm
Input Power	110-264 VAC Single phase or 208/400VAC Three phase 47-63Hz
Dimensions WxDxH (inch)	19 x 24 x 4RU (7")
Dimensions WxDxH (cm)	48.3 x 60 x 17.8
Weight	38kg / 84lb

PREAMP

Power Stability	≤ ± 0.25dB
Asynchronous/AM noise	≤ -60dB
Synchronous AM s/n ratio	≤ -60dB
RF Harmonic and Spurious suppression AM s/n ratio	Exceeds ETSI/CCIR/FCC requirements
VSWR operation	1.5:1 with automatic downscaling to higher VSWR
RF Output	EIA 7/8"

POWER SUPPLIES

Type	Hot swappable
Number of Power Supplies	3 Standard

ENVIRONMENTAL

Altitude	15,000 ft / 4,420m AMSL
Temperature range	0 to +45ºC working -10 to +50ºC storage
Humidity	95% @ 35ºC, non-condensing



Front panel view



Back panel view

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Cobalt C-10 Specifications

GENERAL

Output Power (W)	10
Range (W)	1-15
RF Output connector	N-Type (Female)
Input ACV @ 50/60Hz	100-240 (277 North America only)
Power Connector	IEC 13A filtered
Power consumption	~50W @ max power
AC-RF efficiency typ	~30%
Dimensions WxDxH (inch)	19 x 15 x 1RU (1.75")
Dimensions WxDxH (cm)	48.3 x 38 x 4.45
Weight	3.7kg / 8.14lb

MODULATOR

Transmitter type	Solid-state FM Stereo transmitter
Modulator	Direct-to-channel (DDS)
RF Output Frequency Range	VHF Band II, 87-108MHz
RF Frequency Steps	100kHz
Frequency Stability	±1 ppm or ±150Hz range with internal 10MHz clock reference
FM Modulation Range Capability	75kHz default, 100% modulation user adjustable up to 105kHz 140%, maximum 300kHz

RF

Power Stability	≤ ± 0.25dB
Asynchronous/AM noise	≤ -60dB
Synchronous AM s/n ratio	≤ -60dB
RF Harmonic and Spurious Suppression	Meets ETSI requirements
VSWR operation	Fully protected against gradual or sudden VSWR condition Proportional power reduction from VSWR 1.5:1

STEREO ENCODER

Performance Modes	400Hz/1kHz test tones at modulation level ≤75kHz
Frequency response	Stereo, Mono L+R, Mono L, Mono R
Pre-emphasis	20Hz-15kHz ±0.02dB
Pilot tone	0, 50 or 75µs
Subcarriers suppression	19kHz, adjustable level 0-12%
Stereo Suppression	≤ -70dB
Stereo SNR	≥75dB AES/EBU input
Stereo THD+N	≥70dB Analogue input
Crosstalk	≥80dB with 75us de-emphasis ≥75dB without de-emphasis on both inputs <0.03% ≥70dB, between L+R and L-R due to channel matching, both inputs

MONO PERFORMANCE

Frequency response	20Hz - 15kHz ±0.02dB
Pre-emphasis	0, 50 or 75 µs
Mono SNR	≥100dB, with 75us de-emphasis
Mono THD+N	≤0.002% analogue input, ≤0.001% AES input, with 75us de-emphasis

ANALOGUE AUDIO PERFORMANCE

Frequency response	10Hz-53kHz ±0.03dB 53kHz-70kHz ±0.3dB
FM SNR	≥90dB, with 75us de-emphasis
THD+N	≤0.003% with 75us de-emphasis

DIGITAL

Frequency response	0-90kHz ±0.005dB ≥100dB, with 75us de-emphasis
FM SNR	≤0.001% with 75us de-emphasis
THD+N	

AUDIO INPUTS

Analogue	2 x XLR female, 10kΩ impedance, level adjustable 0-24dBu AES/EBU via RJ45 per StudioHUB+ Level adjustable -20-0dBFS, sampling rates 32-192kHz
Digital	

AUDIO OUTPUT

Headphones Out	14" (6.3mm) female stereo socket software adjustable volume minimum load impedance 16Ω

WIDEBAND INPUTS

Analogue MPX	BNC, 10kΩ impedance, level adjustable 0-12dBu AES/EBU via RJ45 per StudioHUB+ level -20-0dBFS, sampling rate 192kHz left channel
Digital MPX	
Analogue RDS	BNC, 10kΩ impedance, level adjustable from 0.1-10Vpp

WIDEBAND OUTPUTS

Analogue MPX	BNC, 10Ω impedance, level adjustable 0-12dBu
Analogue Pilot	BNC, 10Ω impedance, level adjustable 0-12dBu

RDS GENERATOR

Type	Fully Dynamic RDS/RDS2/RBDS Generator
Protocols	ASCII commands, UECP protocol and X-Command Multi-port
Ports	UART over USB-B & Ethernet

WIDEBAND INPUTS

10MHz input	BNC, 50Ω terminated
1PPS input RF	BNC, 50Ω terminated
sample output	SMA, 50Ω, -30dBc
UART over USB	USB-B, system control
USB	USB 2 x USB-A, storage & FW upgrade
Ethernet	1 x RJ45
RS232	DB25 shared connector, system control GPIO
	DB25 shared connector, 8 x output & 8 x input, all optically isolated
Interlock/ External RF Off	DB25 shared connector,programmable logic/polarity DB25 shared connector,
Analogue voltage output	4-channel 0-5V range

ENVIRONMENTAL

Altitude	15,000 ft / 4,420m AMSL
Temperature range	0 to +45ºC working. -10 to +50ºC storage
Humidity	95% @ 35ºC, non-condensing

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Aqua Broadcast was formed by a diverse and experienced team of people with extensive Broadcast and electronics experience. We love Broadcast just as much as you do, and we saw the need to do things differently to all our competitors.

With an international presence and offering multi-lingual staff, Aqua Broadcast has positioned itself as a dynamic and innovative company, driven by its passion for Broadcast and Studio products.

Our strategically located offices worldwide mean you are never out of touch due to time zones. Sales and support are available round the clock. Whether it's a phone call, or email we are always with you every step of the way.

At our core are our customers. We focus on designing and building products for engineers and station owners who demand reliability, ease of use, with cutting-edge design and features. Listening to customer's ideas, feedback and success stories allows us to build products that are feature rich, reliable as well as easy to use.

For details of your local dealer or Distributor, please refer to our website or contact us.

The purchaser will be responsible for all import taxes, customs, duties, freight costs and insurance.

Warranty Information

At Aqua Broadcast Ltd, we are devoted to building the highest quality products and the never-ending pursuit of providing a better experience to our customers.

Our warranty statements are a continued commitment to providing reliable solutions with our technologies. All Aqua Broadcast Ltd benefit from a 2 year Manufacturer's Warranty. Further information on the Warranty can be seen in each products user manual, or by contacting us.

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