

GRC-105

VHF- UHF GROUND TO AIR MILITARY AVIATION TRANSCEIVER

**VHF 108 ~ 137MHZ AND
UHF 225~ 400 MHZ
FULL BAND COVERAGE**



ECOM GRC-105 is a synthesized VHF and UHF ground-to-air transceiver covering the commercial and military aviation frequencies 108.000~136.975 MHz VHF and 225~400MHz UHF bands. It is available in VHF, UHF or VHF + UHF bands. It complies with rugged MIL-STD 810E environmental and EMC specifications.

The state-of-the-art design provides aviation mode AM communication. It operates on either or both the VHF and UHF bands simultaneously to monitor both bands at the same time. Each band has a dual watch feature allowing operation on four frequencies; one main communication channel in each band and a second distress watch channel in each band. When used with a wide band antenna for each band the GRC-105 provides reliable long-range communication coverage.

GRC-105 is ideally suitable for ground ATC role, at military air bases, shipboard control or commercial flight control. The GRC-105 has a modular design, built-in test (BIT) routines, microprocessor control and software programming. The design has a built-in growth potential. GRC-105 is readily configurable for a wide variety of ATC interfaces, and is compliant with digital and analog crypto equipment.

Frequency selection is done by simple front panel controls, with direct frequency entry in the 108~136.975 MHz and 225 ~ 400 MHz bands in 25KHz steps or up to 32 user preset channels, one of which can be programmed as a distress watch frequency. The equipment can operate both on 110/220 mains AC supply with automatic switch over to 12/24 V standby batteries for continuous operation.



FEATURES

- **108~136.975 and 225~ 400 MHz military and aviation band coverage (either or both)**
- **760 VHF and 7,000 UHF channel direct freq entry**
- **32 programmable channels with alphanumeric names**
- **Simultaneous VHF & UHF op.**
- **Dual Channel Watch in each band (monitor guard channel)**
- **2 line alphanumeric LCD display**
- **25 Watts PEP power output**
- **BITE Built-in Test Equipment**

GENERAL DESCRIPTION:

The GRC-105 is a versatile transceiver designed for use in air space environments that are shared by military and civilian aircraft. It has two independent transceivers, under common control, covering 108 ~137 MHz civil and 225~400 MHz military aviation bands. Both units can operate simultaneously replacing two separate VHF & UHF ground stations. (108 ~ 117.975 is receive only as per ICAO regulations).

The radio has a sensitive receiver that delivers a loud audio output a front panel mounted speaker. The transmitter has a solid-state power amplifier with a 25-Watts PEP output power, providing reliable long-range communication.

An advanced micro controller providing flexible operation and user-friendly operation controls the system. The unit has a 12 key keypad and a 32 character (16x2) LCD display to display the frequency in use and preset channel. The user can program 32 preset channels, (16 each in VHF and UHF) which contain both channel frequency and an associated 16-character name of the channel, e.g. OPRN ATC 123.700.

Versatile operational features include channel scanning to monitor more than one channel at a time. A programmable guard channel is available to watch a distress channel besides the normal frequency in use.

Specification	VHF	UHF
Frequency coverage	108 ~ 136.975 MHz 25 KHz step 108 ~ 117.975 Receive Only	225 ~ 400 MHz in 25 KHz steps
Frequency Stability	± 5ppm	± 2ppm
Number of channels	960 direct input and 16 user programmable	7000 direct input and 16 user programmable
Guard Channel	User programmable	
Mode of Operation	AM (6K00A3E)	
Frequency Generation & Control	Microprocessor controlled PLL Synthesized	
Display	LCD 2 lines x 16 characters	
Power Source	12/24VDC (60W) / 220VAC 50 Hz	
Operational Temperature	-30deg C to +60deg C	
Altitude	18,000 ft	
Antenna Impedance	50 Ω	
Connector	PL-259 Type	UHF Type
Receiver	Double Conversion	
Sensitivity @ 10db NQ	<1.0uV	
Selectivity (adjacent channel)	> 60db	> 65db
Intermodulation	> 60db	> 60db
Spurious Response	> 60db	> 60db
Audio Output	>4 Watts @ 10% THD	
Transmitter Output	25 Watts PEP nominal ± 1db across the band	
Spurious Emissions	< 60 dB	
Modulation Distortion	<10% at 50% mod 400 ~ 3000 Hz	
Audio Processor	VOGAD	
Hum and Noise	<45db below carrier with 50% modulation	
Mechanical Package	19" rack or desk top casing	
Dimensions	19" x 5.0" x 12"	
Weight	<10.5 Kg	
MIL STANDARD COMPLIANCE	810 E (thermal compliance)	

Available as:

- (i) GRC-105 dual 118-136 and 225-400 MHz (ii) GRC-105U UHF 225-400 MHz (iii) GRC-105U VHF 118-136 MHz
Specifications subject to change without notice or obligation