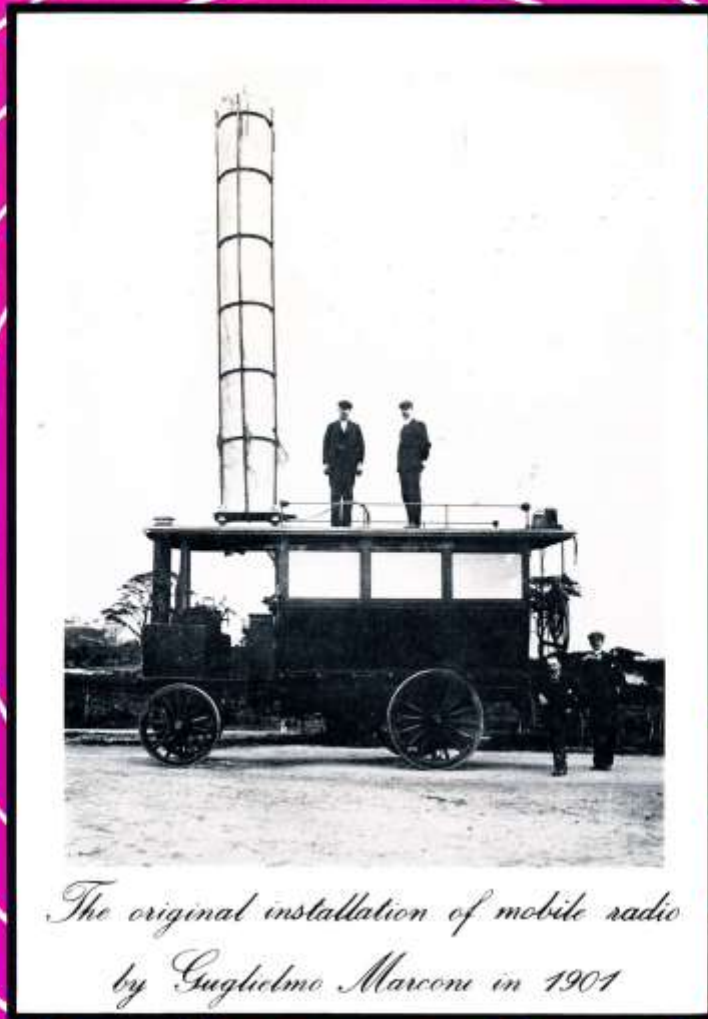


# Over 70 years of mobile radio ...



*The original installation of mobile radio  
by Guglielmo Marconi in 1901*



Courtesy Marconi Instruments Heritage

GEC Mobile Radio is a division of Marconi Communication Systems Limited, one of the seven U.K.-based companies of GEC-Marconi Electronics Limited, which, with an annual turnover of £170,000,000, is one of the largest capital electronics organizations in Europe.

**Products** With the support of such an organization and against a Marconi and GEC background which features 70 years of pioneering in the development of mobile radio, GEC Mobile Radio confidently pursues a policy of continuous advancement and improvement in its products and capability – a policy reflected in the comprehensive range of a.m and f.m, v.h.f and u.h.f equipment.

Also reflected in this product range is the technological expertise of the Great Baddow Research Laboratories, the largest of their kind in Europe, much of whose work is relevant to the division's interests.

**Services** Apart from offering a comprehensive range of equipments, GEC Mobile Radio offers sales and services facilities that are administered from fully equipped depots throughout the United Kingdom. It will also undertake site surveys and will equip and maintain communal fixed station antenna sites for its customers' use.

**Systems Capability** The design, engineering, installation and commissioning of both simple and complex radio communication networks is carried out by an experienced system engineering and management team, backed by the broad experience of Marconi Communication Systems Limited.

Currently operating systems vary from multi-station area coverage networks for police use to port networks for harbour traffic control.

**Present Users** Equipment is being supplied in quantity to the Home Office, the Ministry of Defence, the Post Office, Police, Fire and Ambulance Authorities, County and Borough Councils, and Gas, Water and Electricity Boards throughout the country.

Aircall, the most comprehensive radiotelephone message-handling service in the U.K now uses predominantly GEC mobile equipment with a selective calling facility. Industrial and commercial users include national construction companies, airport authorities, plant hire companies, car hire and taxi concerns, delivery services, security companies, bus and transport companies, service industries and many other industrial users. GEC Mobile Radio equipment is used in similar environments throughout the world.

## Equipment Range

### v.h.f/f.m

RC505/TR personal radio-telephone  
 RC602/TR 6-channel mobile radio-telephone  
 RC620/TR dash-mounting mobile radio-telephone  
 RC701/TR 10-channel 10W base station  
 RC710/TR 25W/50W local or remote fixed station

### v.h.f/a.m

RC555/TR personal radio-telephone  
 RC665/TR dash-mounted 7W mobile radio-telephone  
 RC660/TR-P 4-channel, 5W portable radio-telephone  
 RC751/TR 4-channel, 5W base station  
 RC760/TR 6-channel, 25W fixed station  
 RC1200/LA a.m/f.m 25W linear 'add-on' amplifier

### u.h.f

RC850/TR-P 1 or 10-channel mobile/portable radio-telephone  
 RC860/TR 1 or 10-channel 5W mobile radio-telephone

### Control equipment

RC1002/RCU fixed based station local/extended/remote control  
 RC1500/SC selective calling units

**F.M Personal Radio-telephone****RC505/TR****Features**

- Small lightweight single unit
- Interchangeable loudspeaker/microphone unit
- All solid state
- Low or high-power versions available
- Continuous mains operation versions available
- Battery economizer circuit
- Three-channel capability
- Available to intrinsically safe standards
- Choice of whip, helical or trailing wire antenna

**Description**

The type RC505/TR series of rugged personal v.h.f./f.m radio-telephones is available for both land and marine applications. Versions of this compact lightweight unit are available having r.f. power outputs of 250mW, 500mW, or 1W, with a nominal 12V d.c. power supply from a 225mAh or 400mAh rechargeable battery.

A 2W export model is also offered, utilizing a nominal 18V d.c. rechargeable battery which, as in the other models of this series, clips into position on the base of the unit providing ease of withdrawal and replacement.

An economizer circuit is incorporated which ensures prolonged duty cycle performance from either the standard 225mAh or the 400mAh rechargeable batteries.

The RC505 series is designed to meet the current regulations, and can be supplied with channel spacings of 12.5 or 25kHz. All versions provide up to three preset channels spaced within  $\pm 0.5$  MHz.

Units within this series are available to intrinsically safe standards and an intrinsically safe certificate has been granted for Class 2 operation.

Standard controls include a combined channel selector, on/off switch, a volume control, a variable mute control and a press-to-talk button on the LS/Mic unit.

A choice of whip, helical or trailing wire antenna is offered, utilizing a simple TNC connector and a protective leather carrying case is available as an optional accessory. A range of automatic battery chargers is also offered to suit either the 225mAh or 400mAh rechargeable batteries.

The equipment is approved to British Ministry of Posts and Telecommunications Specification Nos.1251 issue 3 provisional (marine), W6881 (land) and W6771 (mobile specification).

**Data Summary****GENERAL**

**Service:** F3 simplex telephony; single or two frequency phase modulation characteristic.

**Number of channels:** Up to 3 spaced within  $\pm 0.5$  MHz.

**Frequency range:** 66–88MHz; 146–174 MHz.

**Channel spacing:** 12.5kHz or 25kHz.

**Power supply:** Nickel cadmium rechargeable battery 14–8V, choice of 225mAh or 400mAh capacity.

**Battery endurance:** 225mAh – 8 to 10 hours, 400mAh – 15 to 17 hours, calculated for 5% transmit, 85% receiver standby, 10% receive.

**Economizer circuit:** 10:1 with no signal.

**Operating temperature:** –10°C to +40°C

**Storage temperature:** –20°C to +60°C

**Size:**

Height 208mm (8.1in).

Width 84mm (3.3in).

Depth 37mm (1.45in).

**Weight:** 0.62kg (22oz) less battery; 0.79kg (28oz) complete with battery.

**TRANSMITTER**

**R.F. power output:** 250mW (marine onboard), 500mW (land), 1W (marine), 2W (export model).

**Modulation response:** 350Hz–2000Hz  $\pm 3$ dB.

**RECEIVER**

**Sensitivity:** 1.6 $\mu$ V for 100mW a.f. output, 12.5kHz channel spacing and  $\pm 1.5$ kHz deviation.

**Signal-to-noise ratio:** 1.6 $\mu$ V for 15dB, s+n/N ratio.

**Audio output:** 100mW with less than 10% distortion.

**Audio response:** 350Hz to 2000Hz  $\pm 3$ dB.

The information contained herein is subject to confirmation at the time of ordering.

# F.M Mobile Radio-telephone

# RC602/TR

## Features

- High-power 25W operation
- Fully solid state
- Duplex/Talkthrough capability
- Six-channel capability
- Compact dashboard control unit
- Internal power supply regulator
- Internal protection circuitry
- Rugged boot-mounted unit
- Interchangeable plug-in microphone or handset (optional extra)



## Description

The RC602/TR is a v.h.f./f.m high performance mobile radio-telephone capable of operating on up to 6 preset channels in the low, high and police bands, with a channel spacing of either 12.5kHz or 25kHz.

The complete installation comprises the main rugged transceiver unit, a compact control unit suitable for dash mounting, a microphone or handset, a loudspeaker and a quarter-wave antenna.

The transceiver is entirely solid-state, giving an output of 25W from a 13.5V d.c supply. The input voltage can in fact vary from 10-16V as an internal power supply regulator is a standard fitting which gives overall supply stabilization.

Internal sensing circuitry ensures the protection of the unit from antenna mismatch and will prevent damage to the output stage due to open or short-circuit conditions.

Main controls are housed in the compact control unit, which incorporates a channel selector, volume control, variable mute and an off/on switch. A press-to-talk switch is included on the microphone or handset.

The RC602/TR can be offered for either simplex or duplex operation. A talkthrough facility is also available. In its talkthrough mode of operation it is possible to maintain communication with personnel deployed from the vehicle by 'talking through' the high-power RC602/TR from a hand portable to the base station and vice-versa. This mode also allows local communication via hand portables which can be monitored by the base operator.

This equipment is approved by British Ministry of Posts and Telecommunications Specification No.W6771.

## Data Summary

### GENERAL

**Service:** F3 simplex telephony; single or two frequency. Phase modulation characteristic.

**Control:** Via dash-mounted control unit.

**Number of channels:** 6 available, spaced within  $\pm 0.4\%$  of mean carrier frequency.

**Channel separation:** 12.5kHz or 25kHz.

**Frequency ranges:** 70-88MHz,

88-104MHz or 156-174MHz.

**Frequency stability:** Less than  $\pm 0.001\%$  drift over working temperature range.

**Ambient temperature range:**  $-10^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ .

**R.F input and output impedance:** 50 $\Omega$  unbalanced.

**Power supply input:** Nominally 12V d.c positive or negative earth. Voltage range 10-16V. Overall supply stabilization.

### Dimensions:

	Main Unit:	Control Unit:
Height	120mm (4 $\frac{1}{2}$ in)	50mm (2in)
Width	260mm (10 $\frac{1}{2}$ in)	175mm (6 $\frac{1}{2}$ in)
Depth	320mm (12 $\frac{1}{2}$ in)	90mm (3 $\frac{1}{2}$ in)
Weight	5.7kg (12 $\frac{1}{2}$ lb)	0.9kg (2lb)

### TRANSMITTER

**R.F power output:** Nominal 25W into 50 $\Omega$ .

**Spurious radiation:** Not more than 2.5 $\mu\text{W}$  into 50 $\Omega$ .

**A.F input impedance:** 300 $\Omega$ .

**A.F sensitivity:** 2.5mV to  $\pm 2.5\text{kHz}$  deviation at 1kHz.

**Antenna mismatch:** Preset. Will protect transmitter r.f output stage from damage due to open or short circuit condition, or intermediate stages of antenna mismatch.

### RECEIVER

**Signal-to-noise ratio:** Not less than 17dB for 0.5 $\mu\text{V}$  p.d modulated  $\pm 1.5\text{kHz}$  at 1kHz. At least 20dB of noise quieting.

**A.F response:** Within  $\pm 3\text{dB}$  of a 6dB/octave de-emphasis characteristic from 300Hz to 3kHz relative to 1kHz.

**A.F output:** 2W into 3 $\Omega$ .

**Squelch:** Electronic noise operated type; adjustable to open from 0.25 $\mu\text{V}$  e.m.f.

**Spurious responses:** Attenuated at least 70dB relative to the wanted signal.

**Spurious emissions:** Less than 0.02 $\mu\text{V}$  into 50 $\Omega$ .

The information contained herein is subject to confirmation at the time of ordering.

# F.M Mobile Radio-telephone

# RC620/TR

## Features

- 10W operation
- Compact lightweight single unit
- Ten-channel capability
- Fully solid state
- Simplicity of installation and operation
- Illuminated on/off indicator and press-button switch
- Non-stretch rayon covered coiled microphone cable
- Suitable for use with GEC Add-on Selective Call Equipment



## Description

The RC620/TR is an extremely compact and lightweight dash-mounting f.m mobile radio-telephone providing a nominal transmitter power output of 10W. Because of its small size it can be conveniently installed within easy reach of the driver in any type of vehicle, taking up minimum space.

The equipment will operate on up to 10 preset channels with channel spacing of 12.5kHz, 25kHz or 20kHz.

Its design incorporates full solid-state techniques enabling high power and high performance to be obtained from a unit measuring only 230 x 55 x 150mm (9 x 2 1/4 x 6 in) and weighing only 1.8kg (4lb).

The transceiver operates from a 13.5V d.c power supply. Various types of antenna and loudspeaker units can be provided to suit specific applications.

Controls are conveniently located on the front panel of the equipment, including press button on/off switch and illuminated indicator, 10-channel selector switch, rotary volume and mute controls and the hand-held microphone unit which is connected to the set by means of a rayon covered flexible coiled cable.

The RC620/TR can be used in connexion with the RC1500/SC mobile selective call decoder in the GEC selective call system.

It is supplied complete with a range of fittings including antenna and feeder cable, loud-speaker and cable, microphone and mounting tray.

The equipment is type approved to British Ministry of Posts and Telecommunications Specification No.W6771.

## Data Summary

### GENERAL

**Service:** F3 simplex telephony; single or two frequency. Phase modulation characteristic.

**Number of channels:** 10 available, spaced within  $\pm 0.5$ MHz of mean carrier frequency.

**Channel separation:** 12.5kHz (25kHz or 20kHz to customer order).

**Frequency range:** 71.5–88MHz (66–88MHz to customer order). 156–174MHz (146–174MHz to customer order).

**Frequency stability:** Better than  $\pm 0.001\%$  over working temperature range.

**Equipment operation temperature:**  $-15^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .

**Storage temperature:**  $-25^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .

**R.F input and output impedance:** 50 $\Omega$ .

**Power supply:** 13.5V d.c (nominal), positive or negative earth.

**Size:** 230 x 55 x 150mm (9 x 2 1/4 x 6 in).

**Weight approx:** 1.8kg (4lb).

### TRANSMITTER

**R.F power output:** Nominal 10W into 50 $\Omega$  (9W minimum).

**Spurious radiation:** Not more than 2.5 $\mu\text{W}$  into 50 $\Omega$ .

**A.F microphone impedance:** 300 $\Omega$ .

**A.F sensitivity:** 4.0mV for  $\pm 2.5$ kHz deviation at 1kHz.

### RECEIVER

**Signal-to-noise ratio:** Not less than 15dB for 0.5 $\mu\text{W}$  p.d modulated  $\pm 1.5$ kHz at 1kHz.

20dB of noise quieting for 0.5 $\mu\text{V}$  p.d input.

**A.F response:** Within +1dB and -3dB of a 6dB/octave de-emphasis characteristic from 300Hz to 2.5kHz relative to 1kHz.

**A.F output:** 2W into 3 $\Omega$ .

**Squelch:** Electronic noise-operated type; adjustable to open from 0.5 $\mu\text{V}$  p.d or less.

**Spurious responses:** Attenuated at least 70dB relative to the wanted signal.

**Spurious emissions:** Less than 20m $\mu\text{W}$  into 50 $\Omega$ .

The information contained herein is subject to confirmation at the time of ordering.

# F.M Base Station

# RC701/TR

## Features

- 10 watt nominal output power
- Compact attractive unit
- Ten-channel capability
- Supplied with desk microphone
- All solid state
- Extended control capability
- Simplicity of installation and operation
- Adaptable for 12V d.c. working
- Illuminated on/off indicator adjacent to press switch



## Description

The RC701/TR f.m/v.h.f base station is an attractive and compact unit which is very easily installed in office, home or workshop. The attractive sapele finished cabinet blends with almost any office decor and yet is sufficiently robust to give long and reliable service.

The unit is capable of operating on any one of ten preset channels with a channel spacing of 12.5kHz or 25kHz.

Its design incorporates fully solid-state techniques with 10W operation from a relatively small and compact unit using the normal mains power supply, so providing the basis of a simple and economical local communication system. Emergency operation using a 12V d.c. power supply is possible.

Simplicity is a major feature both in installation, requiring only mains and antenna connexion, and also in operation. Controls include a volume control, on/off switch and illuminated indicator, ten-channel selector switch, variable mute control and a press-to-talk switch on the attractive desk microphone.

A further facility is that of extended control, which is achieved without modification to the basic equipment and allows inter-office operation and short-distance remote control of the base station up to 30 m (100ft).

As with other GEC radio-telephones the type RC701/TR is suitable for use with the GEC type RC1500 selective calling system.

The equipment is designed to meet British Ministry of Posts and Telecommunications Specifications.

## Data Summary

**Modulation:** F.M.

**Service:** Simplex.

**Frequency ranges (MHz):** 71.5-88, 156-174 (66-88, 146-174, to special order).

**Number of channels:** 10 max.

**Channel spacing (kHz):** 12.5 (25 to special order).

**Power supply:** 100V to 125V and 200V to 250V/50Hz to 60Hz.

**Impedance - antenna:** 50  $\Omega$  unbalanced.

**Operating temperature:** -15  $^{\circ}$ C to +50  $^{\circ}$ C.

**Dimensions (approx.):** 160 x 360 x 240mm  
6  $\frac{1}{2}$  x 14 x 9  $\frac{1}{2}$  in.

**Weight (approx.):** 9.1kg (20lb).

### TRANSMITTER

**Power output:** 9W min.

**Spurious emissions:** 2.5  $\mu$ W in 50  $\Omega$ .

**Response A.F.:** Within +1dB and -3dB of 6dB/oct pre-emph from 300Hz to 2.5kHz.

**A.F. microphone impedance:** 300  $\Omega$ .

### RECEIVER

**Signal-to-noise (12.5kHz):** 15dB for 1  $\mu$ V emf  $\pm$  1.5kHz deviation at 1kHz.

**Power output a.f.:** 2.5W into 3  $\Omega$ .

**A.G.C./lim characteristics:** 1dB for 1  $\mu$ V e.m.f to 100mV r.f. input.

**Muting:** Electronic. Adjustable to open from 0.6  $\mu$ V e.m.f.

**Response a.f.:** Within +1dB to -3dB of 6dB/oct de-emph from 300Hz to 2.5kHz.

**Spurious responses:** Attenuated at least 70dB relative to the wanted signal.

**Spurious emissions:** Less than 20m  $\mu$ W into 50  $\Omega$ .

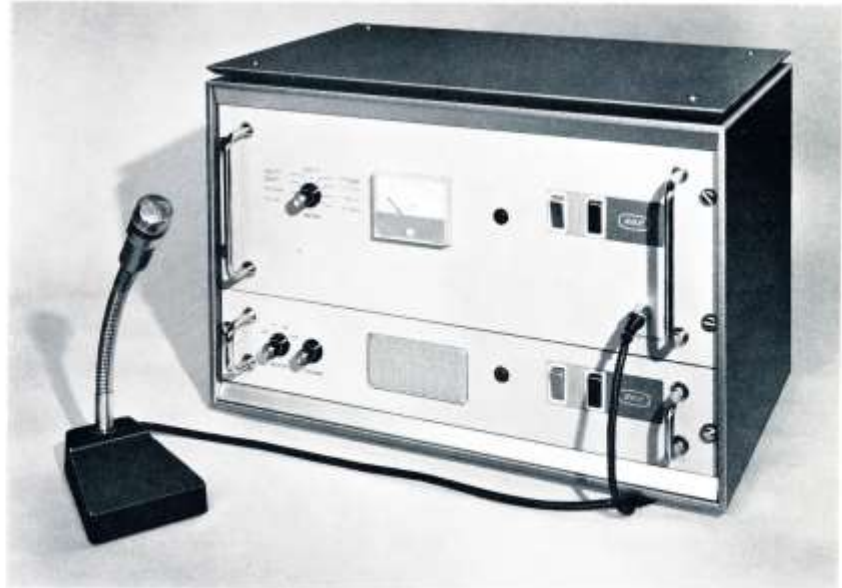
The information contained herein is subject to confirmation at the time of ordering.

# F.M Base Station

# RC710/TR

## Features

- Rugged rack or cabinet mounting units
- Separate withdrawable transmitter and receiver
- Choice of 25W or 50W power output
- Suitable for local, extended or remote control
- One or six-channel capability
- Simplex or duplex operation
- Selective internal metering
- Monitoring loudspeaker with volume control



## Description

The RC710/TR is an f.m./v.h.f. fixed station transmitter-receiver consisting of a rugged free-standing cabinet housing separate withdrawable transmitter, type RC710/T, and receiver, type RC710/R. It is capable of operating on one preset channel or up to six preset channels in the high, low and police bands.

The transmitter, which provides either a 25W or 50W output, will give reliable communication over a wide area. The double frequency superheterodyne receiver is designed as a companion unit and is available separately if required.

The transmitter, which takes the form of a 483mm (19in) rack mounting, interchangeable module measuring only 180mm (7in) high, utilizes valves in its output and driver stages permitting high-power output at an economical price level. The receiver also takes the form of a complete rack mounting module only 90mm (3½in) high, including a mains power supply unit. It is fully solid state and incorporates a monitoring loudspeaker with volume control.

A relay muting circuit is used enabling external circuits to be switched by an incoming radio signal. Mains on/off switches are fitted, together with illuminated indicators. A meter is also provided, together with panel mounted selector switch for internal monitoring and metering.

The type RC710/TR base station can be controlled locally by the plug-in microphone, and facilities are provided for extended or remote control using the GEC RC1002 remote control system. Talk-through facility is available. It can also be used with the GEC RC1550 selective call encoder.

This equipment is approved by British Ministry of Posts and Telecommunications Specification W6601.

## Data Summary

**Modulation:** F.M.  
**Service:** Simplex-Duplex.  
**Frequency ranges (MHz):** 70-84, 82-100, 156-174.  
**Number of channels:** 6 max.  
**Channel spacing (kHz):** 12.5, 25 or 50.  
**Power supply:** 100V to 125V and 200V to 250V ±10%, 50Hz to 60Hz  
**Impedance - antenna:** 50Ω unbalanced.  
**Operating temperature:** -10°C to +50°C.  
**Dimensions (approx.):** 340×340×500mm  
13½×13½×19½in.  
**Weight (approx.):** 20kg (45lb).

### TRANSMITTER

**Power output:** 25W or 50W.  
**Spurious emissions:** 2.5µW in 50Ω.  
**Response a.f.:** ±3dB of 6dB/oct pre-emph from 300Hz to 3kHz.

### RECEIVER

**Signal-to-noise (12.5kHz):** 17dB for 1µV e.m.f ±1.5kHz deviation at 1kHz.  
**Power output a.f.:** 4W into 3Ω.  
**Line output:** 1mW into 600Ω.  
**A.G.C./lim characteristics:** 3dB for 1µV e.m.f to 100mV r.f. input.  
**Muting:** Electronic. Preset threshold of 1µV e.m.f.  
**Response a.f.:** ±3dB of 6dB/oct de-emph from 300Hz to 3kHz.

The information contained herein is subject to confirmation at the time of ordering.

**A.M Personal Radio-telephone**

**RC555/TR**

**Features**

- Small lightweight single unit**
- 500mW r.f output power**
- All solid state**
- Three channel capability**
- Battery economizer circuit**
- Continuous mains operation versions available**
- Interchangeable microphone/loudspeaker unit**
- Available to intrinsically safe standards**
- Choice of whip, helical or trailing wire antenna**
- Shoulder carrying strap**



**Description**

The RC555/TR personal v.h.f./a.m radio-telephone is designed to meet a wide variety of applications in short-range land communications.

The compact transmitter/receiver is housed in a rugged, weatherproof case with an on/off switch controlling three preset channels, volume control, variable mute control and press-to-talk switch on the fist microphone/loudspeaker unit. An advanced economizer circuit ensures exceptional battery duration from either a 225mAh or 400 mAh rechargeable battery. Continuous operation is possible from a mains supply with a battery charger plugged into the hand portable, during which time battery charging will continue. Normal hand portable operation is restored simply by unplugging the battery charger from the RC555/TR.

Units are available to intrinsically safe standards for operation in volatile or explosive atmospheres and all models will operate in temperatures between -10° C and +40° C.

Channel spacings of 12.5kHz or 25kHz are available and channel bandwidth is 1MHz. A choice of whip, helical or trailing wire antenna is offered, being easily interchanged by a TNC connector. A leather carrying case is available as an optional ancillary, and a range of suitable battery chargers can be supplied.

The equipment is approved to British Ministry of Posts and Telecommunications Specification W6880.

**Data Summary**

- Service:** A3 simplex telephony; single or two frequency.
- Number of channels:** Up to 3 spaced within 1.0MHz bandwidth.
- Frequency range:** 68-88MHz, 80-102MHz, 156-174MHz.
- Channel spacing:** 12.5kHz or 25kHz.
- Power supply:** Nickel cadmium rechargeable battery 14.8V, choice of 225mAh or 400 mAh capacity.
- Battery endurance:** 225mAh - 8 to 10 hours  
400mAh - 15 to 17 hours  
calculated for  
5% transmit  
85% receiver standby  
10% receive
- Economizer circuit:** 10:1 with no signal.
- Operating temperature:** -10° C to +40° C
- Storage temperature:** -20° C to +60° C
- Dimensions:**  
Height 208mm (8.1in)  
Width 84mm (3.3in)  
Depth 37mm (1.45in)  
Weight 600gm (21oz) complete with battery



- TRANSMITTER**  
**R.F power output:** 500mW  
**Modulation response:** 350Hz-2kHz +3dB
- RECEIVER**  
**Sensitivity:** 1.6µV for 100mW a.f output, 12.5kHz channel spacing and ±1.5kHz deviation  
**Signal-to-noise ratio:** 1.6µV for 15dB s+s/N Ratio  
**Audio output:** 100mW with less than 10% distortion  
**Audio response:** 350Hz to 2000Hz/±3dB

The information contained herein is subject to confirmation at the time of ordering



# A.M Mobile Radio-telephone

# RC665/TR

## Features

- Compact attractive single unit
- Fully solid state
- 7W power output
- Suitable for use with GEC high-power linear amplifier
- Interconnects with GEC selective call scheme
- Ten-channel capability
- Incorporates safety features
- Illuminated channel indicator
- Simplicity of installation and operation



## Description

The Type RC665/TR is an extremely compact dash-mounted v.h.f./a.m. mobile radio-telephone, featuring fully solid-state design techniques and robust construction.

The facia is angled for better visibility, and safety design features include the deep impact resistant moulding and low profile rounded switches and controls. The channel in operation can be read from the illuminated window of the channel selector.

The unit weighs only 1.9kg (4lb) and measures less than 50×200×230mm (2×7 $\frac{7}{8}$ ×9in) but its power output is 6W minimum from a nominal 13.5V d.c. power supply. The power output can be simply and economically increased to 25W by merely adding a GEC type RC1200/LA high power 'add-on' linear amplifier to the RC665/TR radio-telephone.

This equipment is capable of operating on any one of up to 10 preset channels within any 1MHz band of the frequency range. Standard channel spacing is 12.5kHz.

Safety features include reverse battery polarity protection circuitry and the ability of the transceiver to withstand open or short circuit antenna conditions for short periods.

Controls are integral in the facia and include an on/off toggle switch, variable mute and volume controls and an illuminated channel selector. A press-to-talk switch is incorporated in the first microphone which is connected to the unit via a non-stretch rayon flexible coiled cable.

The RC665/TR is capable of using the GEC RC1500/SC mobile selective calling decoder, as are all GEC mobile radio-telephones, for use under the GEC selective call scheme.

The equipment is provided complete with suitable antenna and feeder, loudspeaker and cable, microphone and mounting tray and installation materials suitable for standard applications.

This radio-telephone is designed to meet British Ministry of Posts and Telecommunications Specification No.W6770 and approval has also been obtained for its use in conjunction with the GEC RC1200/LA 'add-on' Linear Amplifier.

## Data Summary

### GENERAL

**Service:** Single or two frequency simplex a.m.

**Frequency ranges:**

68–88MHz.

105–108MHz (Transmitter).

138–141MHz (Receiver).

156–174MHz.

**Channel spacing:** 12.5kHz standard.

**Number of channels:** Ten channels, grouped within any 1MHz portion of the frequency range.

**Antenna impedance:** 50 $\Omega$ , unbalanced.

**Power supply:** 13.5V nominal d.c. floating earth. No damage will be incurred by connexion to a supply level of up to 16V, even with incorrect polarity.

**Ambient temperature:** Operational –10°C to +45°C.

**Size:** 50×200×230mm (2×7 $\frac{7}{8}$ ×9in).

**Weight:** Approximately 1.9kg (4lb).

### TRANSMITTER

**Power output:** 7W nominal (6W minimum)

**Modulation:** Amplitude modulation with automatic gain control to limit peak modulation to a preset maximum, nominally 80%.

**Modulation response:** 3dB down at 300Hz to 2000Hz (12.5kHz channel spacing).

**Spurious emissions:** Less than 2.5 $\mu$ W at a frequency separated by more than 25kHz from the carrier frequency.

**Frequency stability:** Between  $\pm 0.0015\%$  and  $\pm 0.001\%$ , dependent upon frequency band of operation and minimum channel separation required.

### RECEIVER

**Signal-to-noise ratio:** Better than 10dB for an r.f. input of 0.6 $\mu$ V p.d. (1.25 $\mu$ V e.m.f.) modulated 30% at 1000Hz.

**Mute threshold:** Adjustable by panel control for r.f. input levels of 0.4 $\mu$ V to 1.5 $\mu$ V p.d. (0.8 $\mu$ V e.m.f. to 3 $\mu$ V e.m.f.). Noise compensated.

**Frequency stability:** Between  $\pm 0.0015\%$  and  $\pm 0.001\%$ , dependent upon frequency band of operation and minimum channel separation required.

**Audio response:** 3dB down at 300Hz to 2000Hz (12.5kHz channel spacing).

**Audio output:** At least 3W for less than 10% distortion at 1000Hz.

The information contained herein is subject to confirmation at the time of ordering.

# A.M Portable Radio-telephone

# RC660/TR-P

## Features

**Rugged durable portable radio-telephone**

**Compact lightweight single unit**

**Fully solid-state**

**Interchangeable mobile/portable operation**

**Can utilize vehicle battery and antenna**

**5W operation**

**Four-channel capability**

**Available with integral selective calling to special order**



## Description

The RC660/TR-P is a rugged portable v.h.f./f.m radio-telephone, capable of operating on any one of a maximum of four preset closely spaced channels. Standard channel spacings are 12.5kHz or 25kHz according to the frequency range. It is capable of operating on low, mid, high and airbands.

Full solid-state design techniques are incorporated, enabling a power output of up to 5W to be achieved from a compact easily portable unit, consisting of a rugged metal case which houses the transceiver, loudspeaker, antenna and rechargeable battery. The unit measures only 100 x 200 x 230mm (4 x 8 x 9in), and weighs only 4.8kg (10½lb) including batteries.

The standard battery pack is of the rechargeable nickel cadmium type, but alternative heavy duty dry batteries can be employed for emergency operation. A range of battery chargers with automatically timed discharge/charge cycles is available.

The transportable's modest weight and size, combined with relatively high transmitter power, make it ideally suited to applications where temporary communication from a mobile 'fixed' location is required.

For use in a vehicle in its 'semi-mobile' mode, facilities are also provided in the form of standard connectors to couple the unit to the vehicle antenna and battery for compatible mobile performance and prolonged internal battery life.

The RC660/TR-P is supplied complete with telescopic antenna, connectors for external antenna and battery and battery cassette. Optional accessories include a helical antenna and a shower-proof carrying case.

Selective calling can be provided and on this particular transportable consists of a selective call unit which is integrally mounted and does not alter the external dimensions of the radio-telephone, but provides the privacy and advantages of individual communication.

The equipment is type approved to British Ministry of Posts and Telecommunications specifications W6600 and W6770.

## Data Summary

### GENERAL

**Service:** Single or two frequency simplex.

**Frequency ranges:**

RC660/TR-A 68-88MHz.

RC660/TR-M 105-108MHz (transmitter),

138-141MHz (receiver).

RC660/TR-Air 118-136MHz, RC660/TR-H

156-174MHz.

**Channel spacing:** 25kHz or 12.5kHz.

**Number of channels:** Up to four channels, grouped within any 1MHz portion of the frequency range.

**Antenna impedance:** 50Ω, unbalanced.

**Power supply:** 13.5V d.c nominal using rechargeable nickel cadmium cells, or will operate with any d.c supply voltage from 11V to 16V. HP2 batteries are recommended for emergency use.

**Ambient temperature:** Operational -10°C to +55°C. Storage -25°C to +70°C.

**Size:** 100 x 200 x 230mm (4 x 8 x 9in).

**Weight:** 4.8kg (10.5lb) including rechargeable batteries.

### TRANSMITTER

**R.F power output:** 5W nominal (4W minimum).

**Modulation:** Amplitude modulation with automatic gain control to limit peak modulation to a preset maximum, nominally 80%.

**Modulation response:** 3dB down at 300Hz and 2000Hz (12.5kHz channel spacing).

**Spurious emissions:** Less than 2.5μV at any frequency separated by more than 25kHz from the carrier frequency.

**Frequency stability:** Between ±0.001% and ±0.002% for all channel spacings over the operational temperature range.

### RECEIVER

**Signal-to-noise ratio:** Better than 10dB for an r.f input of 0.8μV p.d (1.6μV e.m.f.) modulated 30% at 1000Hz.

**Sensitivity:** More than 1W audio output into 15Ω for an r.f input of 0.8μV p.d (1.6μV e.m.f.) modulated 30% at 1000Hz.

**Mute threshold:** Adjustable for r.f input levels of 0.4μV to 1.5μV p.d (0.8μV to 3μV e.m.f.). Noise compensated.

**Audio distortion:** With an r.f input of 0.5mV p.d (1mV e.m.f.) modulated 30% at 1000Hz distortion is less than 10% at the 2W audio output level.

**Audio response:** 3dB down at 300Hz and 2000Hz (12.5kHz channel spacing).

The information contained herein is subject to confirmation at the time of ordering.

**Marconi Communication Systems Limited**

# A.M Base Station

RC751/TR

## Features

- 5W operation
- Compact attractive unit
- Four-channel capability
- Supplied complete with desk microphone
- All solid state
- Extended control capability
- Simplicity of installation and operation
- Adaptable for 12V d.c. operation



## Description

The RC751/TR v.h.f./a.m base station, an attractive and compact unit, is very easily installed in office, home or workshop. The sapele finished cabinet blends with almost any office decor, measuring only 160 x 360 x 240mm (6 1/8 x 14 x 9 1/2 in), and is sufficiently robust to give long and reliable service.

The unit is capable of operating on any one of four preset channels within any 1 MHz portion of the low and high bands.

Full solid-state design techniques have been incorporated and a nominal power output of 5W is available from this compact unit when connected to a normal mains power supply. This provides the basis of an economical local communication system.

Simplicity is a major feature both in installation, requiring only antenna and mains connexion, and also in operation. Controls include a volume and on/off switch and illuminated indicator, a channel selector switch, a variable mute control and a press-to-talk switch on the attractive free-standing desk microphone.

A further switch on the unit facia is used for the extended control facility, which is achieved without modification or alteration to the basic equipment, providing extended control of the base station up to 30m (100ft).

As with all GEC mobile radio-telephones and base-stations the RC751/TR is suitable for use with the GEC type RC1500 selective call scheme, providing in this case individual selective local communication involving hand portable, transportable or mobile radio-telephones.

The equipment has been designed to meet British Ministry of Posts and Telecommunications Specification No. W6770.

## Data Summary

**Modulation:** a.m.

**Service:** Simplex.

**Frequency ranges (MHz):** 68-88, 156-174.

**Number of channels:** 4 max.

**Channel spacing (kHz):** 12.5 or 25.

**Power supply:** 100V to 125V and 200V to 250V  $\pm$  10%, 50Hz to 60Hz

**Impedance - antenna:** 50  $\Omega$  unbalanced.

**Operating temperature:** -10°C to +55°C.

**Dimensions (approx.):** 160 x 360 x 240mm (6 1/8 x 14 x 9 1/2 in)

**Weight (approx.):** 9.1kg (20lb)

### TRANSMITTER

**Power output:** 4-5W min.

**Spurious emissions:** 2.5  $\mu$ W in 50  $\Omega$ .

**Response a.f.:** 300Hz to 2000Hz at -3dB.

### RECEIVER

**Signal-to-noise (12.5kHz):** 10dB for 1.6  $\mu$ V e.m.f 30% mod at 1kHz.

**Power output a.f.:** 2W into 3  $\Omega$ .

**A.G.C./lim characteristics:** 6dB for 10  $\mu$ V to 10mV e.m.f r.f input

**Muting:** Electronic. Noise comp. threshold adjustable from 0.8-3  $\mu$ V e.m.f

**Response a.f.:** 0.8 to 3  $\mu$ V e.m.f 300Hz to 2000Hz at -3dB

The information contained herein is subject to confirmation at the time of ordering

# A.M Base Station

# RC760/TR

## Features

Rugged rack or cabinet mounting units

Separate withdrawable transmitter and receiver

25W power output

Suitable for local, extended or remote control

Up to six channels

Simplex or duplex operation

Selective internal metering

Monitoring loudspeaker with volume control

## Description

The RC760/TR is an a.m fixed station free-standing rugged transmitter/receiver designed for use in low, mid, high, police and air bands, operating on up to six preset channels.

The RC760/T is a high powered transmitter with an output power of 25W (the maximum allowed by the Ministry of Posts and Telecommunications) which will provide reliable communication over a wide area.

The RC760/R is a transistorized single-frequency superheterodyne receiver.

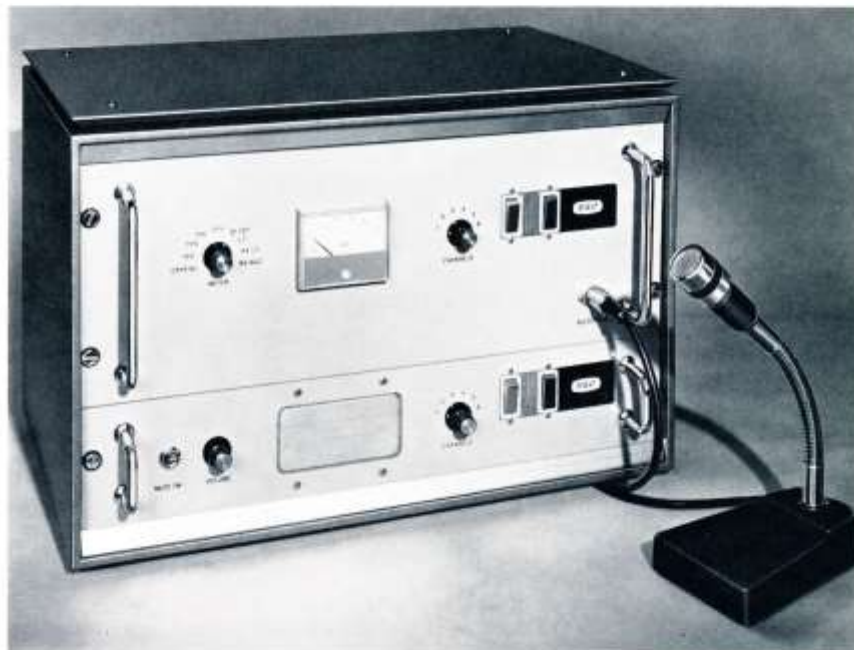
The equipment can have local, extended or remote control as detailed in the GEC RC1002 scheme.

The transmitter module is suitable for 483mm (19in) rack mounting and occupies only 180mm (7in) of rack space. The r.f section uses valves in the output and driver stages, ensuring adequate power at an economic price. The remainder of the equipment is fully transistorized. A meter with panel mounted selector switch is provided for internal metering and this meter may also be used to check important circuits in a companion receiver. A mains on/off switch is provided on the front panel of the unit.

The receiver module is also suitable for rack mounting and operates from an integral mains power unit. The complete receiver occupies 90mm (3½in) of rack space, is fully transistorized and incorporates a monitoring loudspeaker with volume control. The mute circuit operates a relay so that external circuits may be switched by an incoming radio signal. A mains on/off switch and indicator is fitted to the front panel.

This fixed station is suitable for use with the RC1550/SC selective call encoder in the GEC selective call system.

The equipment is type approved to the British Ministry of Posts and Telecommunications Specification W6601.



## Data Summary

**Modulation:** a.m.

**Service:** Simplex-duplex.

**Frequency ranges (MHz):** 68-88, 80-102, 105-108 (Rx), 138-141 (Tx), 118-136 (air), 156-174.

**Number of channels:** 6 max.

**Channel spacing (kHz):** 12.5, 25 or 50.

**Power supply:** 100V to 125V and 200V to 250V ± 10%, 50Hz to 60Hz.

**Impedance - antenna:** 50 Ω unbalanced.

**Operating temperature:** -10°C to +50°C

**Dimensions (approx.):** 340 × 340 × 500mm (13½ × 13½ × 19½in).

**Weight (approx.):** 20kg (45lb).

### TRANSMITTER

**Power output:** 25W.

**Spurious emissions:** 2.5µW in 50 Ω.

**Response a.f.:** -3dB at 250Hz, 6dB at 2000Hz.

### RECEIVER

**Signal-to-noise (12.5kHz):** 10dB for 1.6µV e.m.f 30% mod at 1kHz.

**Power output a.f.:** 4W into 3 Ω.

**Line output:** 1mW into 600 Ω.

**A.G.C./lim characteristics:** 10dB from 1.6µV to 100mV e.m.f r.f input.

**Muting:** Electronic. Preset threshold of 1µV e.m.f.

**Response a.f.:**

-3dB at 300Hz

-10dB at 2500Hz.

The information contained herein is subject to confirmation at the time of ordering.

# V.H.F A.M/F.M Add-on Amplifier

# RC1200/LA

## Features

**25W output from low-power mobile input**

**Suitable for a.m and f.m, v.h.f equipments**

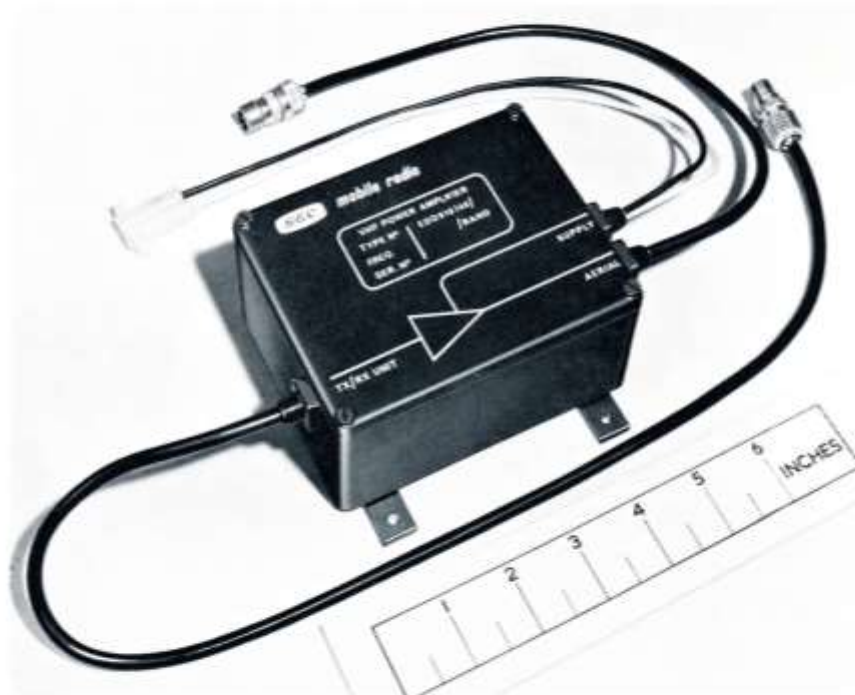
**Economical flexible high-power mobiles**

**Compact robust add-on unit**

**Simplicity of installation, connects only to antenna and power supply**

**Fully automatic operation**

**No modifications to mobile radio-telephone are required**



## Description

The GEC RC1200/LA 'add-on' Linear Amplifier provides a simple and economical means of raising the r.f power output of a lower medium power mobile radio-telephone to that of its high-power counterpart. This small compact unit which measures only 120x100x56mm (4.7x3.8x2.2in) when connected to a nominally 5W mobile radio-telephone will normally provide an r.f output of 25W (the maximum allowed by the British M.P.T). It is suitable for use with both a.m/f.m equipments.

Speed and simplicity of installation are a major feature requiring merely the connexion, via flying leads, of the compact amplifier unit into the antenna lead and to the power supply. No modifications or internal wiring changes with regard to the low-power mobile radio-telephone, are required, and reversion to low-power operation is achieved by merely reconnecting the vehicular antenna directly to the mobile radio-telephone.

The unit switches automatically from the transmit to the receive state and vice versa. When in the receiving mode the amplifier unit provides a 'straight through' connexion from the antenna to the mobile, with insignificant insertion loss. When transmitting the unit automatically switches to the amplifying mode on sensing the presence of the r.f carrier, and when drive ceases it reverts to the 'straight through' receive state.

The compact 'add-on' amplifier is particularly suitable for use with the GEC RC665/TR mobile radio telephone. Approval of the amplifier in the above modes has been obtained from the British Ministry of Posts and Telecommunications. A patent has been applied for.

## Data Summary

**Frequency ranges:** 71.5-88 MHz, 105-108 MHz 156-174 MHz.

**Power supply:** 13.8V nominal, suitable for 11V-16V.

**Current consumption:**

- i) On TX only: approx. 5A.
- ii) On standby: less than 1mA.

**Power output:** 25W.

**Gain:** 7dB minimum.

**Antenna impedance:** Normally 50Ω

**Temperature range:** -10°C to +60°C.

**Duty cycle:** 1 in 5.

**Output stage protection:** Inherent, owing to 160W power dissipation capability of output stage. Will withstand all phases of mismatch.

**Dimension:** 120x100x56mm (4.7x3.8x2.2in).

**Weight:** 1.05kg (2.25lb).

The information contained herein is subject to confirmation at the time of ordering

## U.H.F Portable Radio-telephone

RC850/TR-P

### Features

- 5W u.h.f portable
- Superior audio quality
- Compact lightweight attractive unit
- Extra long battery duration
- Single or ten-channel capability
- All solid state
- Slide-in dash mounting cradle version available
- Integral selective and revertive call available
- Extended temperature operating range



### Description

The GEC Mobile Radio u.h.f portable transceiver type RC850/TR is capable of operating on any one of up to ten preset channels in the 450-470MHz civil communications band.

It incorporates the advantages of u.h.f operation such as a higher degree of penetration in built-up areas and relatively low electronic noise levels, with superior audio quality, due to its high signal-to-noise ratio and low distortion.

Fully solid-state techniques have been employed in the design of this equipment enabling a nominal r.f power output of 5W to be achieved from this compact and lightweight unit, measuring only 70 x 210 x 250mm (2 7/8 x 8 3/8 x 9 7/8 in) and weighing only 3.2kg (7lb) including rechargeable battery.

A version of the RC850/TR has the advantage that it is capable of operating as a mobile or a portable radio-telephone and is instantly interchangeable between roles by means of a relatively inexpensive car mounting cradle, into which the unit slides, automatically making the correct connexions for mobile operation. When in its mobile role the unit uses the vehicle antenna, loudspeaker and power supply, thus conserving its internal rechargeable nickel cadmium battery, and ensuring comparable mobile performance. In its portable role, after withdrawal from the compact mounting cradle its integral battery, loudspeaker, antenna and carrying handle are used.

Further facilities which can be provided are those of selective calling, where an integral decoder is featured, and revertive calling, without alteration to the external dimensions of the equipment. A two-tone sequential system is used, allowing 90

individual codes, group call and general call can also be provided. Reception of a selective call is indicated by means of an intermittent audio tone, of preset volume, from the receiver loudspeaker, which once initiated continues until cancelled. The encoder section is able to provide nine call codes selected by means of a fascia mounted rotary switch.

An extended operating temperature range version of the GEC RC850/TR is available for use in countries and environments subject to extremes of temperature from -30°C to +60°C providing reliable communication.

The unit has been approved to British Ministry of Posts and Telecommunications Specifications No.101.

### Data Summary

#### GENERAL

**Frequency range:** 450-470MHz (420-450 MHz to special order).

**Operation:** Single or two-frequency simplex.

**Number of channels:** Up to 10, spaced within 2MHz.

**Channel spacing:** 25kHz or 50kHz

**Antenna impedance:** 50Ω nominal, unbalanced.

**Operating temperature range:** -10°C to +60°C or -30°C to +60°C (optional).

**Power supply:** 12V d.c. nominal from internal rechargeable battery.

**Protection:** Full protection is provided against antenna mismatch and incorrect battery polarity.

**Modulation:** Phase modulation (25kHz to 50kHz channelling) or frequency modulation (25kHz channelling only).

**Dimensions:** 250mm wide x 210mm high x 70mm (9 7/8 x 8 3/8 x 2 7/8 in).

**Weight:** 3.2kg (7lb) including standard battery.

#### TRANSMITTER

**Power output:** 5W nominal (4W minimum).

**Spurious emissions:** Less than 2.5μW at any frequency more than 50kHz from carrier.

**Deviation:** Adjustable up to ±15kHz (50kHz channelling) or ±5kHz (25kHz channelling).

**Modulation distortion:** Less than 5% at maximum modulation frequency, maximum deviation.

**Modulation response:** Within ±2dB of a 4dB/octave pre-emphasis characteristic from 300Hz to 3kHz.

#### RECEIVER

**Signal-noise ratio:** 2dB for 1μV (e.m.f) at 1kHz modulation with ±5kHz deviation (50kHz channelling); 20dB for 1μV (e.m.f) at 1kHz modulation frequency with ±1.5kHz deviation (25kHz channelling).

**Spurious response attenuation:** Greater than 80dB.

**A.F power output:** 1.5W into speaker at less than 5% distortion.

**Mute sensitivity:** Adjustable threshold down to 0.25μV (e.m.f).

The information contained herein is subject to confirmation at the time of ordering.

# U.H.F Mobile Radio-telephone

# RC860/TR

## Features

- 5W u.h.f operation
- Single or ten channel capability
- Superior audio quality
- All solid state
- Compact attractive unit
- Selective calling facilities available
- Illuminated channel indicator
- Wide range of operating temperatures



## Description

The GEC Mobile Radio u.h.f transceiver type RC860/TR is capable of operating on any one of up to 10 channels in the 450-470MHz civil communications band.

It incorporates the advantages of u.h.f operation, such as a higher degree of penetration in built-up areas and relatively low electronic noise levels, with superior audio quality, due to its high signal-to-noise ratio and low distortion.

Solid state techniques have been employed in the design of this equipment enabling a nominal r.f output power of 5W to be achieved from this compact and light weight unit which can be mounted within easy reach of the driver in many types of vehicle.

Controls are conveniently mounted on the neat front panel and include an on/off switch, a 10-channel selector switch (where applicable), volume and mute controls and a press-to-talk switch on the hand-held microphone unit, which is connected to the main unit by a flexible coiled cable.

A further facility which can be made available is that of selective calling which is achieved by the addition of GEC selective call equipment.

An extended operating temperature range version of the GEC RC860/TR is available for use in countries and environments subject to extremes of temperature from -30°C to +60°C.

The equipment is designed to meet British Ministry of Posts and Telecommunications specifications.

## Data Summary

### GENERAL

**Frequency range:** 450-470MHz (420-450MHz to special order).

**Operation:** Single or two-frequency simplex.

**Number of channels:** Up to 10, spaced within 2MHz.

**Channel spacing:** 25kHz or 50kHz.

**Antenna impedance:** 50Ω nominal, unbalanced.

**Operating temperature range:** -10°C to +60°C or -30°C to +60°C (optional).

**Power supply:** 12V d.c nominal positive or negative earth.

**Protection:** Full protection is provided against antenna mismatch and incorrect battery polarity.

**Modulation:** Phase modulation (25kHz to 50kHz channelling) or frequency modulation (25kHz channelling only).

**Dimensions:** 250mm wide × 165mm high × 70mm (9½ × 6¼ × 2¾in) approx.

**Weight:** 2.5kg (5.5lb) approx.

### TRANSMITTER

**Power output:** 5W nominal (4W minimum).

**Spurious emissions:** Less than 2.5μW at any frequency more than 60kHz from carrier.

**Deviation:** Adjustable up to ±15kHz (50kHz channelling) or ±5kHz (25kHz channelling).

**Modulation distortion:** Less than 5% at maximum modulation frequency, maximum deviation.

**Modulation response:** Within ±2dB of a 4dB/octave pre-emphasis characteristic from 300Hz to 3kHz.

### RECEIVER

**Signal-to-noise ratio:** 2dB for 1μV (e.m.f) at 1kHz modulation with ±5kHz deviation (50kHz channelling); 20dB for 1μV (e.m.f) at 1kHz modulation frequency with ±1.5kHz deviation (25kHz channelling).

**Spurious response attenuation:** Greater than 80dB.

**A.F power output:** 2W into 3Ω speaker at less than 5% distortion.

**Mute sensitivity:** Adjustable threshold down to 0.25μV (e.m.f).

The information contained herein is subject to confirmation at the time of ordering.

## Control Equipment

RC1002/RCU

### Features

**Selection of suitable control systems from three basic units**

**Attractive desk telephone unit incorporating loudspeaker**

**Unobtrusive wall-mounting line amplifier unit**

**Rack mounted relay panel can be housed in base station cabinet**

Fixed based station equipment can be controlled by three basic methods depending upon the relative locations of the operator and equipment.

#### A. Local control

This is the simplest form of controlling a base station using a desk microphone and the loudspeaker built into the base station. A press-to-talk switch is incorporated into the microphone base. The base station transmitter and receiver are built into an attractive table cabinet.

#### B. Extended local control

In the situations where it is not convenient to have the base station within reach of the operator, a modern style desk telephone controller is available. This is connected by multiway cable, up to 30m in length, to the base station. The desk controller has built-in loudspeaker and volume control and a handset with press-to-talk switch. An additional control button allows talk through at the base stations if required.

#### C. Remote control

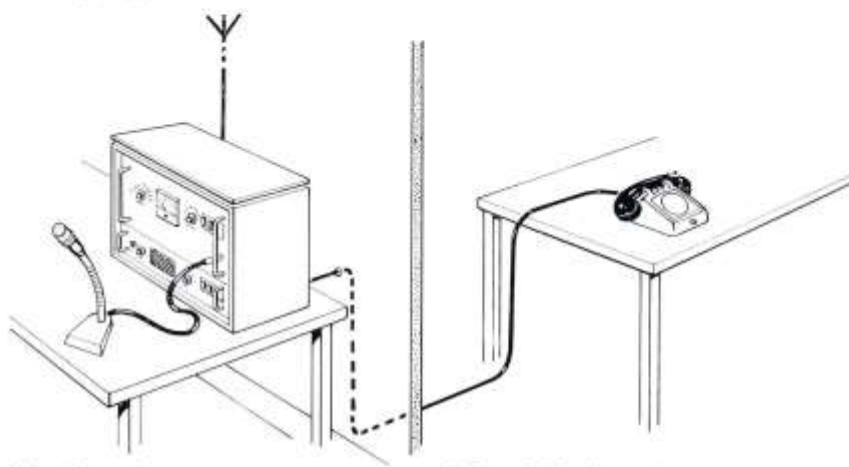
When larger range communication is required than can be achieved by a local antenna, it is necessary for the base station to be located at some convenient and higher point, and connected to the control office by means of either landlines or a u.h.f link.

When remote control of base stations is used the distance between the operator and the transmitter/receiver may extend to many miles. In the case of either u.h.f link or land lines the control signals must be converted to d.c or a.c signals which are sent over the control circuit and detected at the base station.

Remote control over telephone lines can be provided by the three units as shown. The operator uses a remote control telephone containing a loudspeaker and volume control and a handset with press-to-talk switch. Located within 30m of the operator's remote

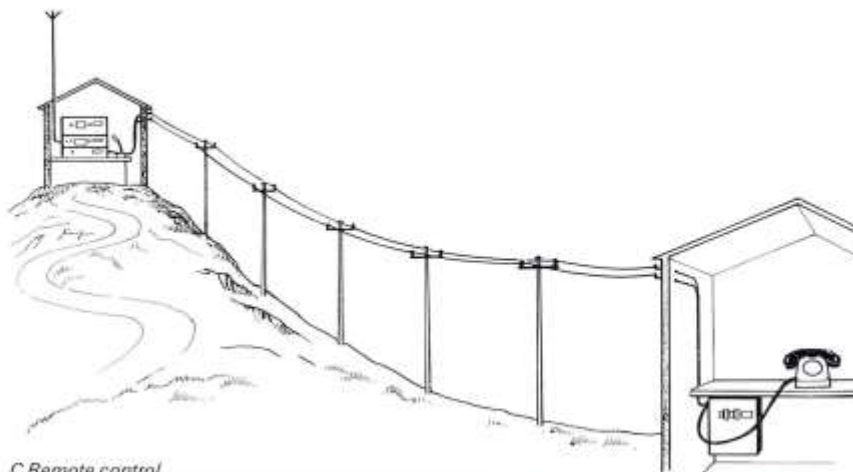


*Desk telephone, wall mounting line amplifier unit, and rack mounting relay panel*



*A Local control*

*B Extended local control*



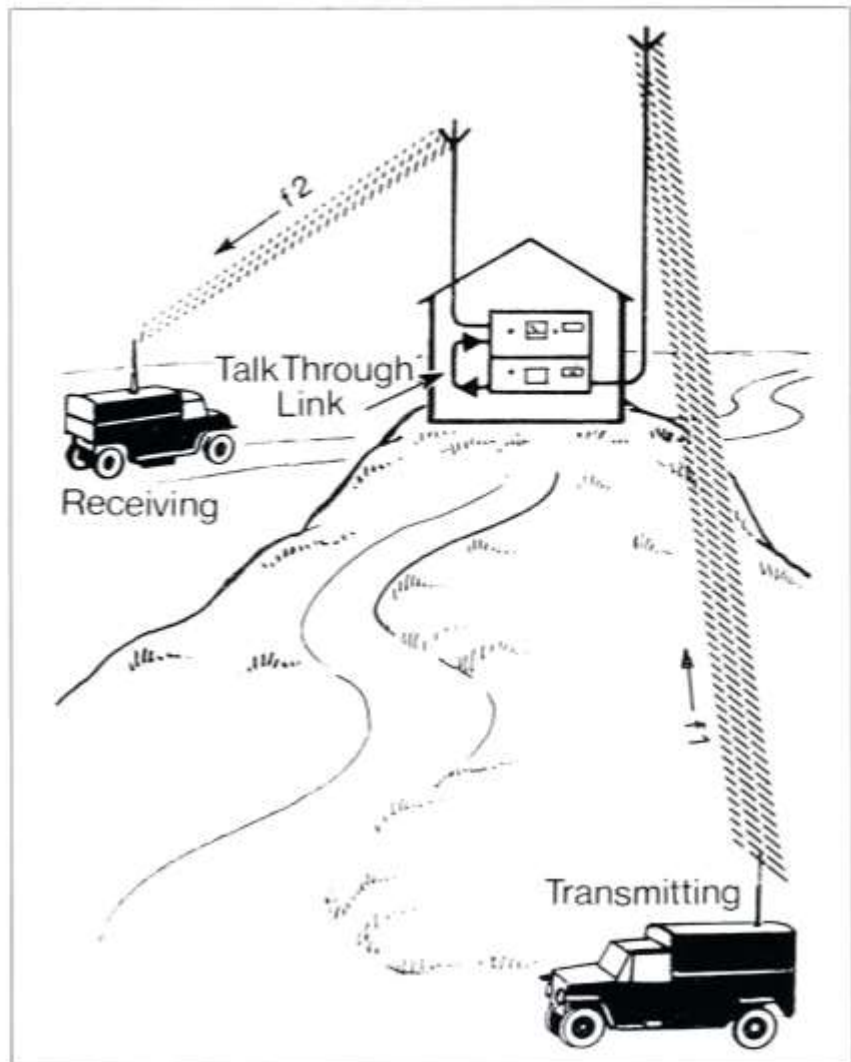
*C Remote control*



control telephone is a small, wall mounting Line Control Unit. The telephone line is connected to this unit. At the far end, the telephone line terminates onto a remote control panel built into the base station cabinet and converts the control signals to operate the transmitter and receiver. The possible control functions are: press-to-talk, talk through, main-to-standby (if the transmitter and receiver are duplicated).

## Talk through

Talk through working of a base station allows the automatic retransmission by the base station of transmissions received from a mobile. By this means, one mobile may 'talk-through' the base station to another mobile and the conversation between the mobiles can be monitored by the base station operator. This function is controlled from a special push button on the desk controller and the conversation between the mobiles is monitored by the operator.



*Duplex talk through operation*

## Data Summary

### Telephone line remote control equipment

**Remote control telephones:** Up to 10 depending upon control function.

**Line conditions:** 2000  $\Omega$  max loop resistance. Max attenuation at 800Hz, -15dB.

**Switching conditions:** 50V to each leg or legs to earth.

**Microphone amplifier:** Vogad or fixed gain types output 0dBm to line.

**Loudspeaker amplifier:** Output not less than 2W for -16dBm input at 1kHz.

**Power supplies:** 100V-125V or 200V-230V a.c.

**Ambient temperature:** Operating -10°C to +50°C. Storage -20°C to +60°C.

Dimensions	Desk Telephone Unit	Wall Mounted Unit	Relay Unit
	230 × 220 × 130mm (9 × 8.5 × 5in)	230 × 305 × 125mm (9 × 12 × 4.7in)	490 × 90 × 130mm (19 × 3.5 × 5.2in)
Weight	1kg (2.2lb)	5.5kg (12.5lb)	3kg (6.5lb)

The information contained herein is subject to confirmation at the time of ordering.

# Add-on Selective Calling Units

# RC1500/SC Series

## Features

Suitable for use with any mobile radio system

Audio and visual call indication

Sequential five-tone system

100,000 code capability

Attractive desk encoder unit

General, group and individual call capability

Compact easily installed mobile decoder



*Desk encoder and compact mobile decoder of the selective calling system*

## Description

The GEC RC1500/SC series is an optimally designed selective calling scheme which has extensive capabilities and can be used in connexion with all mobile radio-telephones as simple add-on units.

It consists of a five-tone sequential system whereby five tones from a possible ten are selected, giving a total capacity of 100,000 separate codes, and reducing the chance of false calls to a negligible minimum. The short duration of the code ensures that persons on the same channel, without selective call facilities, have the minimum amount of interference.

Equipments in the system include an attractive desk encoder type RC1550/SC which is normally connected to the base station either locally or remotely and operates from a mains power supply, and a compact mobile decoder unit type RC1500/SC which is associated with the mobile transceiver.

Visual indication is provided indicating that the mobile is suitably set for the reception of a call.

When a selective call is received the mobile operator has his attention attracted in three main ways:

- (i) Audio: the mobile radio speaker is energized.
- (ii) Visual: an indicator light is energized on the unit fascia.
- (iii) External: addition contacts can be made available to switch on external warning devices.

The above remain 'on' until reset so that if the operator is not present at the time of the call he will be alerted when he returns. Group and general call facilities can be made available which had the added capability of base station cancellation.

The mobile unit can detect calls even in low signal-to-noise ratio conditions when normal voice communication would be extremely difficult thus alerting the mobile operator that an attempt has been made to call him.

The selective call can be manually overridden enabling the base station operator to monitor the channel before initiating a call.

The mobile decoder unit is designed to interface with all mobile radio-telephones requiring little or no modifications to internal wiring of the mobile transceiver. A Patent has been applied for in connexion with GEC selective call equipment.

## Data Summary

### ENCODER

**Occupied band:** 1.124–2.11 kHz.

**Output impedance:** Suitable for interfacing with any microphone circuit.

**Tone duration:** 40ms.

**Call duration:** 240ms – one extra tone length required to operate audio switch.

**Types of code selection:** Up to 1,000 addresses; three banks of decode push buttons. Separate transmit button. System can be expanded up to 100,000 addresses.

**Power supply:** 240V a.c.  $\pm 10\%$ , 40–60Hz.

**Dimensions:** Approx 330 x 290 x 140mm (13 x 11.5 x 5.5in).

### DECODER

**Tone input level range:** A.G.C. action incorporated to accommodate any input level from 50mV to 5V r.m.s.

**Input impedance:** 3 or 15 $\Omega$ .

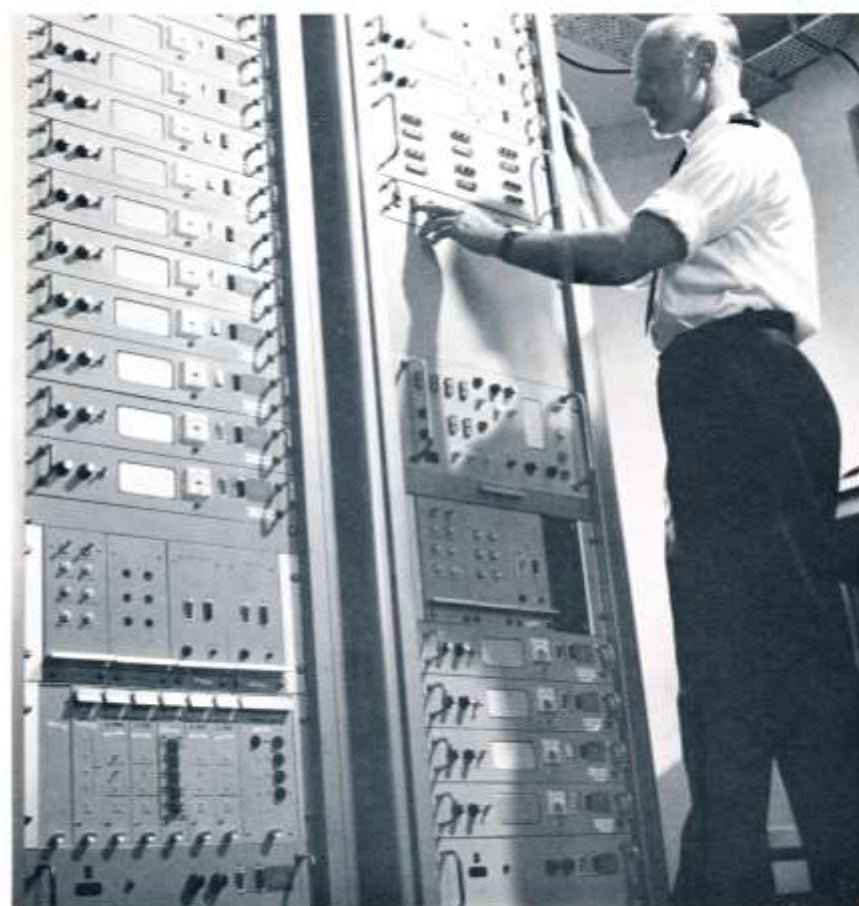
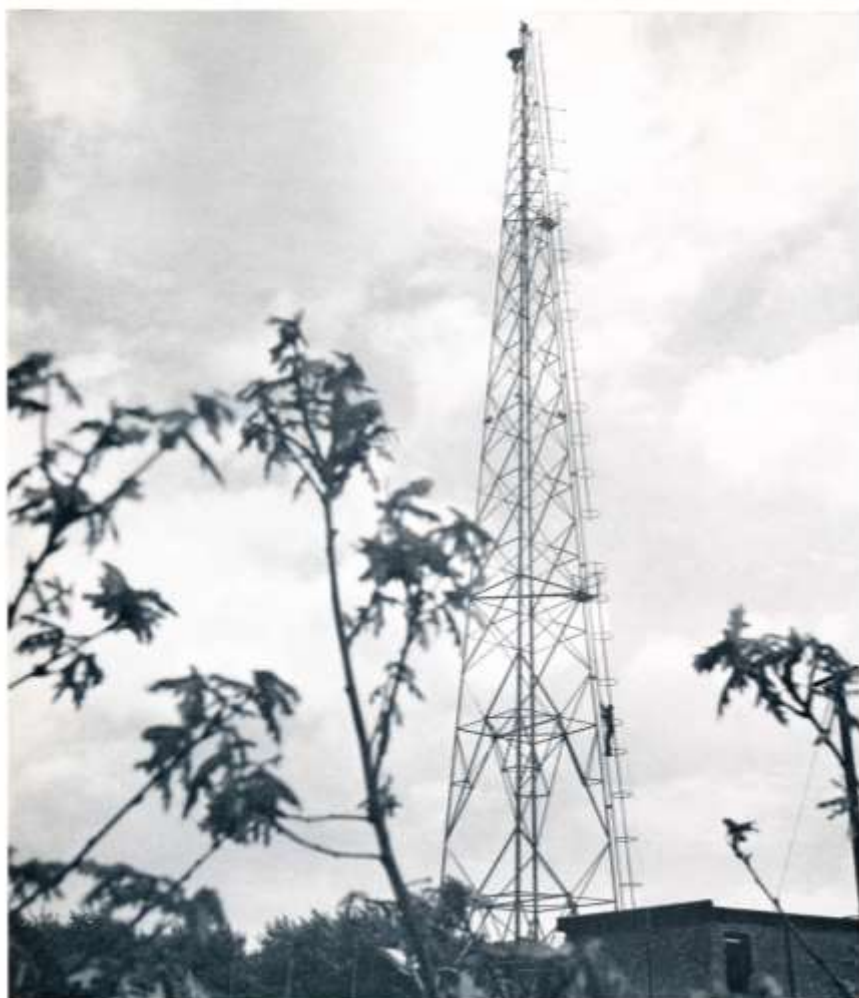
**Tone S/N ratio for 90% recognition of calls:** 0dB in 3kHz bandwidth.

**Power supply:** 10–16V d.c.

**Current consumption:** With ON lamp illuminated – 250mA. With CALL lamp illuminated – 400mA.

**Dimensions:** Approx 203 x 73 x 48mm (8 x 2.8 x 1.8in).

The information contained herein is subject to confirmation at the time of ordering.



*Above:* GEC Mobile Radio site survey vehicle carrying out a local radio coverage survey

*Top left:* Installation of radio communication equipment and antennas at Titchfield for the control of shipping traffic in Southampton Harbour

*Bottom left:* Installation of transmitter receiver equipment at Broughton for the Lancashire County Fire Brigade radio communication system

## **Marconi Communication Systems Limited**

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