L 30558 1938

MARCONI
TYPE CSR-4
COMMUNICATION RECEIVER

For many years Marconi commercial type receivers have been the choice of radio communication services throughout the world.

Marconi engineers have embodied all the latest designs and may desirable new features in this high grade communication type radio receiver type CSR-4.

The finest engineering and manufacturing processes have here been combined to produce a general purpose receiver of exceptional merit which meets every requirement for consistent performance and reliable operation.

The Marconi type CSR-4 is the latest design in communications receiver practice and embodies all the experience gained in many years of supplying radio equipment for vital communications services. The finest engineering and manufacturing processes have been combined with the highest quality materials to produce a general purpose, communications receiver of exceptional merit that will meet every requirement for consistent performance and reliable operation.

A study of the specifications and features which follow will reveal the thoroughness with which every operating requirement has been met.

FEATURES:

- Efficient coil switching on all bands: (No "Plug-in" coils).
- Two stages of R.F. on all bands
- Three stages of intermediate frequency @ 515.0 KC
- 15 Tubes - 11 metal and adapted for best performance.
- Iron core R.F. and I.F. transformers.
- 375 to 175 KC and 1.55 to 30 MC in 5 bands.
- Bandspread on all bands.
- Horizontal wide vision dial with direct precision calibration.
- Cathode ray type tuning indicator
- Variable Selectivity.
- Manual or automatic R.F. gain control
- A.F. gain control.
- Amplified & delayed A.V.C. maintains constant output at all levels.
- Variable tone control - for clear speech.
- Provision to use two crystals in oscillator circuit for spot frequency working.
- Variable C.W. oscillator.
- Quick changeover switch from A.C. supply to emergency operation from batteries.

Send-receive switch and relay, 2 pilot lights.
Output connections for 10,000 or 500 ohms (C.T.)
Push-pull output - 5 watts.
Built-in power unit, completely shielded to prevent hum pick-up.
Operation from 25 or 60 cycle, 115 volts A.C.
High permanence of sensitivity adjustment and calibration.
All adjustments reached from top of cabinet.
Heavy plated steel chassis for rigidity.
High quality precision parts throughout.
Connections for dipole or other antennae.

TYPES

CSR-4 receiver in metal cabinet	-	75951
Dynamic speaker in cabinet	-	80430
CSR-4 receiver, rack mounting	-	75950
Dynamic speaker, rack mounting	-	75952
CSR-4 receiver and dynamic speaker, mounted on rack with 10½" blank panel.	-	75953

CIRCUIT DESCRIPTION

The CSR-4 reciever is a fifteen tube superheterodyne with five tuning bands for reception in the range 1.55 to 30 M.C. and 375 to 175 K.C.. Provision is made to use two crystals for spot frequency working with facilities for quick changeover. The tubes are all of the metal type except for the rectifier, output, push-pull and tuning indicator tubes. The circuit used on all ranges consists of two stages of R.F. amplification, frequency changing rectifier, high frequency oscillator, three stages of I.F. amplification, diode demodulator, audio driver and push-pull power output tubes. In addition, circuits are employed for amplified and delayed A.V.C., variable beat frequency using a position Mu circuit for stability, cathode ray type tuning indicator tube, and a quick changeover switch for emergency operation from batteries. The power supply is built into the receiver chassis and is designed for operation from either 25 or 60 cycle, 115 volt alternating current.

ANTENNA CONNECTIONS

Provision is made for matching either a 75 or 500 ohm transmission line or an open antenna. A separate chassis ground connection is provided permitting the use of either a grounded or ungrounded antenna.

TUNING INDICATOR

A cathode ray type tuning indicator is provided to ensure accurate tuning. Approximate measurement of the incoming signal strength is possible by reference to a table printed in the instructions.

TONE CONTROL

This control permits attenuating the bass register to prevent muffled reception when the receiver is being used in the selective position.

SELECTIVITY CONTROL

A three position switch is used for selecting Manual Sensitivity Control, Automatic Sensitivity Control (AVC) and Continuous Wave or Beat Frequency reception.

The A.V.C. circuit provides amplified and delayed action for the control of sensitivity of all signals above an average level of 5 to 10 microvolts and will maintain substantially constant output for all signals above that level.

Manual control of the gain of the R.F. and I.F. amplifier tubes is provided for use when receiving C.W. or M.C.W. signals.

The beat frequency oscillator is switched on when the switch is turned to the C.W. position, the manual sensitivity control remaining in circuit. Variable control of the B.F.O. is provided to permit varying the pitch of the received signal.

VOLUME CONTROL

Smooth and silent control of the audio gain is provided for by the use of a high quality rotary continuous potentiometer type attenuator.

VARIABLE SELECTIVITY

The normal selectivity of the receiver is such as to permit maximum fidelity reception of speech and music. A switch on the panel permits changing to a highly selective circuit for communications operations when interference conditions so require.

"SEND-RECEIVE" SWITCH

A switch is provided to silence the receiver when required, during periods of transmission. When in the "send" position, plate voltage is removed from the R.F. and I.F. amplifiers, the remaining tubes being left operative to maintain the stability of the receiver.

Illuminated coloured jewels are used to indicate ON-OFF condition of transmitter and receiver.

A relay, located in the receiver, is provided to silence the receiver in synchronism with the transmitter "ON" operation, when required.

OUTPUT CONNECTIONS

A jack is provided for headphones in the plate circuit of the 1st audio stage, while two jacks permit either a 500 or 10,000 ohm match to the output load. The load circuit may also be connected to terminals at the rear of the chassis, a centre tap terminal being provided on the 500 ohms output winding for "phantom" connection of any control.

TUBES

	First R.F. Preselector	RVC 6K7
	Second R.F. Preselector	6K7
	First Detector	6K8
	H.F. Oscillator	6J7
575 KCS.	First I.F.	6K7
	Second I.F.-	6K7
	Third I.F.	6K7
	Second Detector	6H6
	Amplified AVC	6J7
	Beat Frequency Oscillator	6J7
	First Audio	6J5
	Power Output	6K6G
	Power Output	6K6G
	Tuning Indicator	6G5
	Rectifier	5X4G

PERFORMANCE

Frequency Range, Sensitivity, Selectivity and Image Ratio.

Band	Tuning Range	Sensitivity for ½ watt output.	Band width (Selectivity) Sharp	Band width (Selectivity) Normal	Image Ratio
Band 1	30 MC to 13 MC	4/5 Mv.	9.0 KC	12.5 KC	365/1
" 2	16.5 " 6.6 "	1/2 "	8.8 "	12.0 "	5645/1
" 3	7.5 " 3.15"	1/2 "	7.0 "	10.75"	25000/1
" 4	3.5 " 1.55"	1/2 "	6.3 "	10.0 "	50000/1
" 5	375 " 175 "	1/2 "	6.25"	8.75"	not measurable

POWER OUTPUT

Undistorted Power Output - 3 Watts.
Maximum Power Output - 5 Watts.

POWER SUPPLY

115 volts, either 25 or 60 cycle, A.C.

EMERGENCY BATTERY

110 Ma. at 250 volts D.C.
4.1 Amps at 6 volts D.C.

DIMENSIONS - Type #75950

19" wide, 10½" high and 16½" deep.
Weight - 76 lbs.

The control knobs project an additional one inch.

Canadian MARCONI Company,
Dec. 21st, 1938.

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TYPE CSR-4 COMMERCIAL SUPERHETERODYNE RECEIVER

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TOP VIEW, DUST SHIELD REMOVED.