

RADAR TYPE 1010

1010

SUMMARY OF DATA

PURPOSE

Radar Type 1010 is an I.F.F. Mark 10 secondary radar that can interrogate on Modes 1, 2, 3/A or C, or a sequence of interlaced modes. The replies from transponders are detected to produce video outputs to external video processing equipment. Radar Type 1010 also provides synchronising and suppression pulses for external equipment, and has side lobe suppression facilities when used with a compatible S.L.S. aerial outfit.

MAJOR EQUIPMENT

The major equipment of Radar Type 1010 is the 5840-99-115-8746 Interrogator. The 5895-99-525-0154 Coder-Decoder is also included in the 'E' List for Radar Type 1010, but as it is only fitted in 'computer' ships it has a separate handbook.

PHYSICAL DATA

The dimensions of the 5840-99-115-8746 Interrogator are:

Height		Width		Depth		Weight	
inches	cm	inches	cm	inches	cm	lb	kg
48	122	24	61	24	61	434	198

POWER REQUIREMENTS

5840-99-115-8746 Interrogator requires two supplies of 115 V \pm 10% 45 to 65 Hz, single phase.

Equipment Mains 300 VA
Auxiliary Mains 70 VA

ENVIRONMENT TEMPERATURE RANGE

Operational 0 °C to 55 °C
Storage -10 °C to +70 °C

TRANSMISSION CHARACTERISTICS

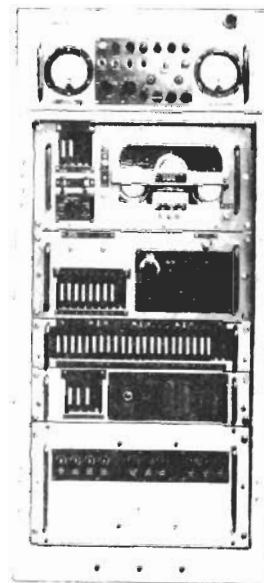
Frequency : 1030 MHz \pm 0.1 MHz
Peak Power Output : 33 dBW + 0.5 dB (can be reduced by 6 dB by rearranging links on fixed attenuator)
Pulse Durations : 0.6 μ s to 1.0 μ s
Pulse Rise Time : 0.05 μ s to 0.1 μ s
Pulse Fall Time : 0.05 μ s to 0.2 μ s
P.R.F. : 150 Hz to 450 Hz

RECEPTION CHARACTERISTICS

Frequency : 1090 MHz \pm 0.1 MHz
Bandwidth : 10 MHz at -3 dB
Noise : Not greater than 9.0 dB
Spurious Frequencies : Responses outside the passband are at least 80 dB below the 1090 MHz response.
I.F. : 60 MHz

EXTERNAL TRIGGER

Pulse Amplitude : not less than +5 V into 75 ohms
Pulse Duration : 0.5 μ s to 5 μ s
Pulse Rise Time : not greater than 0.1 μ s
P.R.F. : Minimum 150 Hz
Maximum 1 kHz, inputs exceeding 450 Hz are automatically reduced to be within the range 150 Hz to 450 Hz.



5840-99-115-8746
INTERROGATOR

RECEIVER INHIBIT INPUT

Pulse Amplitude : +5 V to +15 V into 75 ohms.
 Pulse Duration : 0.5 μ s to 5 μ s.
 Pulse Rise Time : not greater than 0.1 μ s.

VIDEO OUTPUTS

12 mode separated video outputs (three of each mode) and two mixed video outputs are provided. The mixed video includes identification pulse groups to facilitate recognition of mode replies. A switch is provided to inhibit the transmission of Mode 3.

Video Pulse Amplitudes +2 V to +5 V into 75 ohms.

SUPPRESSION, SYNCHRONISING AND SWITCHING PULSE OUTPUTS

Pulse Amplitudes +5 V into 75 ohms

Other pulse characteristics with timing relative to the last interrogation pulse P3.

(a) Transponder suppression

Pulse Duration 28 μ s adjustable

Pulse timing P3-25 to P3 +3 μ s

(b) S.L.S. Switching

Pulse Duration 0.5 μ s

Pulse Duration leading edge coincident with P1⁻⁰
+0.3 μ s

(c) P1 Out

Pulse Duration 0.5 μ s

(d) P3 Out

Pulse Duration 0.5 μ s

(e) Decoder Sync.

Pulse duration 0.5 μ s to 1.0 μ s

Pulse Timing P3 -30 μ s

MAINTENANCE FACILITIES

(a) Voltage and current metering

(b) Transmitter power continuously indicated by meter.

(c) Automatic fault detection circuits cause lamps to light if following parameters are faulty:-

Transmitter peak power 'Tx ALARM' lamp

Receiver gain)

Receiver noise) 'Rx ALARM' lamp

HANDBOOK

BR 4211

ESTABLISHMENT LIST

S1672

INSTALLATION SPECIFICATION

E1157