

JMA-1020

SPECIFICATIONS

GENERAL

1. Maximum range: 16 Nautical Miles
 2. Minimum range: Less than 25 m on the .125 NM range
 3. Range scales

Range (NM)	Number of Rings	Range ring Interval(NM)
0.125	2	0.0625
0.25	2	0.125
0.5	2	0.25
0.75	3	0.25
1.0	4	0.25
1.5	6	0.25
3.0	6	0.5
6.0	6	1.0
12.0	6	2.0
16.0	4	4.0
 4. Range discriminations: Less than 25 m
 5. Range ring accuracy: Better than $\pm 0.9\%$ of maximum maximum range of the scale in use, or 8 m, whichever is the greater.
 6. Bearing accuracy: ± 1 degree
 7. Display device: LCD:115 x 86.4 mm (320x240 dots)
 8. Environmental conditions:

Scanner unit	Temperature	-15°C to +55°C
	Humidity	Up to 95% at 35°C
Display unit	Temperature	-10°C to +50°C(Except LCD) 0°C to +50°C(LCD)
	Humidity	Up to 95% at 35°C
- Note LCD performance will be slightly deteriorated in response speed and brightness during extreme low temperatures.
9. Input power: 10.2 V to 16 V
 10. Power consumption: Approx.30 W

11. AVR: Floating AVR system

SCANNER UNIT

- | | | |
|---------------------------|----------------------------------|--------------|
| 1. Dimensions: | Diameter | 450mm |
| | Height | 227mm |
| 2. Weight: | Approx. | 5 Kg |
| 3. Polarization: | Horizontal | |
| 4. Beam width: | Horizontal | 5.2° nominal |
| | Vertical | 30° |
| 5. Sidelobes: | Less than | -20 dB |
| 6. Rotation: | Approx. | 32 rpm |
| 7. Transmitter frequency: | 9445 | MHz |
| 8. Peak power output: | 2 | KW |
| 9. Pulse length/PRF: | 0.08 μ s/ 2250Hz | |
| | (0.125,0.25,0.5,0.75 nm) | |
| | 0.3 μ s/ 1200Hz(1,1.5 nm) | |
| | 0.8 μ s/ 600Hz(3,6,12,16 nm) | |
| 10. Duplexer: | T-junction with diode Limiter | |
| 11. Mixer: | MIC front end | |
| 12. IF amplifier: | Center frequency | 60 MHz |
| | Bandwidth | 3/10 MHz |
| 13. Noise figure | Less than | 10 dB |
| 14. Characteristic | Linear | |

DISPLAY UNIT

- | | | |
|-------------------|---|--------|
| 1. Dimensions: | Width | 187 mm |
| | Depth | 83 mm |
| | Height | 183 mm |
| 2. Weight: | Approx. | 1.2 Kg |
| 3. Mounting: | Table, Overhead, or Flush mount | |
| 4. Video: | 4 levels quantitized | |
| 5. Tuning: | Auto/ Manual | |
| 6. Bearing scale: | 360° scale graduated at intervals of 5° | |
| 7. VRM: | 3 digit readout | |

- | | |
|---------------------|---|
| 8. EBL: | 3 digit readout |
| 9. Alarm: | Audible alarm with zone mark |
| 10. Off Center: | 1/4 radius below |
| 11. Timed TX: | Rotation period 10,20 or 30 scans
Repetition period 3,5,10,15 min. |
| 12. LANGUAGE: | English, French, Spanish,
Italian, Norwegian, German |
| 13. Features: | VRM, EBL, Cursor with LL,
Interference rejection, Target
expansion, Target alarm, LL or
TD readout, Waypoint with LL,
Off set, Timed TX, Target trail,
Auto tune |
| 14. External input: | |
| NAV-AID | NMEA0183 (RMA, RMB, RMC,
GLL, GTD, VTG, BWC sentence)
NMEA0182 |
| Compass | NMEA0183 (HDM,HDT,VWH,
or HSC sentence) |

CERTIFICATION

TO : FEDERAL COMMUNICATIONS COMMISSION

SUBJECT : TEST DATA FOR TYPE ACCEPTANCE OF THE RADAR 1500
RADAR
FCC ID : CKEJMA1020

SUPPLIER : JAPAN RADIO CO.,LTD./ SEATTLE BRANCH
1011 SW Klickitat Way,Bldg.B,Suite 100 Seattle,WA98134
PHONE: 206-654-5644

MANUFACTURE : JAPAN RADIO CO.,LTD
Akasaka Twin Tower (MAIN)
17-22, Akasaka 2-chome, Minato Ku, Tokyo, Japan

This equipment has been tested in accordance with the requirements contained in appropriate commission regulation. To the test of my knowledge, these tests were performed using measurement procedures consistent with industry or commissions standards and demonstrate that the equipment complies with the appropriate standards.

Each unit manufactured, imported or marketed, as defined in the commission's regulations, will conform to the sample(s) tested within the variations that can be expected due to quantity production and testing on a statistical basis. I further certify that the necessary measurements were made by JAPAN RADIO CO.,LTD, 1-1 Simorenjack, 5 Chome Mitaka Shi Tokyo, JAPAN.

I, the undersigned as Senior Engineer of JAPAN RADIO CO.,LTD, TOKYO JAPAN, graduated from the Tokushima Industrial High School and have been with this organization for the 25 years specializing the Inspection and Quality Control of various type of marine radar equipments as well as assisting in their production.

JAPAN RADIO CO.,LTD



K.YUASA

MARINE LCD RADAR
JMA-1020
SYSTEM DESCRIPTION

The JRC LCD radar JMA-1020 is two piece radar system consisting of 6 inches monochrome raster scan liquid crystal display unit and the scanner unit interconnected by a single cable.

The MTR is installed within a 1 feet radome scanner . The scanner weight is approximately 5 Kg .

The antenna is rotated 32 rpm by it's driving motor. This has a 5.2 degree horizontal beamwidth, 30 degree for vertical.

The transmitter operates with 3 pulse length and 3 prf. The magnetron, M1537, rated output is 2.0 KW and is driven by solid state modulator.

The receiver has a microwave-frontend, containing the mixer and local oscillator, and IF amplifier.

The power supply, operated at about 75 KHz, converts the ship's input power to necessary DC voltages required in the radar system.

The display unit consists of 6" LCD with it's display control circuits, maincontrol circuit, panel switch circuit and video buffer circuit.

The maincontrol circuit accepts all inputs and generates appropriate output signals to control the scanner TX/RX units.

The panel switch circuit provides electronic directions to the maincontrol circuit to determine the displayed functions.

The following specifications summarize the characteristics of the JMA-1020 system.