JMA-2300MK2 series
– dimensions

Display unit

Scanner unit

JMA-2300MK2 series
– specifications

### Display unit
- Model: NCD-2237
- Axial resolution: less than 30m
- Minimum detection range: less than 40m
- Bearing accuracy: less than ±1°
- Display: 10-inch Mono CRT display (640 by 480 pixels)
- Effective diameter: 121mm
- Presentation mode: RM: North / Head / Course-up
  TM: North / Course-up
- Gain: Auto / manual
- Sea / rain: Auto / manual
- Trail indication: OFF, 15s, 30s, 1min, 2min, 3min, 6min, 10min, 15min, All
- Off center: within 66% of PPI radius
- Barge icon: Available
- MARPA+: acquisition mode: Auto / Manual
- MARPA+ targets: 10 targets
- MARPA+ tracking: 20NM
- MARPA+ info: True, Bearing, Range, True course, True speed, CPA, TCPA
- Vector mode and length: True/relative vector, adjustable from 1 to 60 minutes
- Guard zone: 2 zones
- Alarms: CPA/TCPA, New Target, Lost, System Error
- AIS targets (built-in): 50 targets
- AIS info: MMSI, call sign, ship’s name, COG, SOG, CPA, TCPA, heading, distance, longitude/latitude, status etc
- Input (navaid): GGA, GNS, GLL, RMC, VTG, VBW, VHW, THS, HDT, HDG, HDM, DPT, DBT, MTW, ROT, RSA, VDM, VDO, ALR, MWV, VWT, VWR
- Input (heading): IEC61162 (4800bps/38400bps - THS, HDT, HDG, HDM)
- JRC-NSK format (JLR-20/21/30/31)
- Input (speed): IEC61162 (4800bps - VBW, VHW)
- Output: RSD, OSD, TTM, TLL, TTD, GGA, RMC, GNS, GLL, VTG, THS
- Contact out: 1 for external buzzer
- Ext. monitor: Additional cables
  - H frequency: 31.51kHz
  - V frequency: 58.9Hz
  - Dot clock: 30MHz
- Power supply: DC12/24V -10/+30%
- Power consumption: Approx.65W typ.: Approx.85W maximum
- Ambient conditions: Temperature: -25° to +55° (Scanner) / -15° to +55° (Display unit)
  Relative humidity: 0% to 93% non-condensing
  IP code: IP26 (Scanner) / IPx5 (Display front panel)

### Scanner unit
- Model: NKE-2043
- Transmitting frequency: X-band (9410±30MHz)
- Transmitting power: 4kW
- Scanner type: Radome open
- Antenna length: 2ft
- Rotation speed: 16-48rpm
- Beam width: 3dB H:4°, V:25°
- Pulse width/repetition freq.: 0.08μs/4000Hz
- Maximum range: 48NM
- Range scale: 0.125, 0.25, 0.5, 0.75, 1.5, 3, 6, 12, 24, 48, 72 NM

<table>
<thead>
<tr>
<th>Transmitter Frequency</th>
<th>Transmitter Power</th>
<th>Scanner Type</th>
<th>Antenna Length</th>
<th>Rotation Speed</th>
<th>Beam Width H:4°</th>
<th>Beam Width V:25°</th>
<th>Pulse Width/Repetition Freq.</th>
<th>Maximum Range</th>
<th>Range Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-band (9410±30MHz)</td>
<td>4kW</td>
<td>Radar</td>
<td>2ft</td>
<td>16-48rpm</td>
<td>3dB H:4°</td>
<td>3dB V:25°</td>
<td>0.08μs/4000Hz</td>
<td>48NM</td>
<td>0.125-72NM</td>
</tr>
</tbody>
</table>

### JMA-2300MK2 Radar

**10-inch mono display**
**New System-on-Chip technology**
**Semi-Constaview digital signal processing**
**AIS and MARPA+ as standard**
**Newly designed multi-speed scanners**
**Color RGB video output**

- *Specifications may be subject to change without notice.*
- For further information, contact:
  **Japan Radio Co., Ltd.**
  **Main Office:** Fujisawa-cho 38-1, Dorigo Aichike, Zama-shi, Kanagawa, Japan
  **Telephone:** +81-463-219199
  **Fax:** +81-463-219198
  **JRC Branches:**
  - Taipei, Taiwan
  - Jakarta, Indonesia
  - Singapore, Singapore
  - Shanghai, China
  - New York, USA

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- **Display unit**
- **Scanner unit**
- **JMA-2300MK2 Radar**

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**JMA-2300MK2 Radar offers excellent target detection in a compact design**
JMA-2300MK2 series – features

Features
The JMA-2300MK2 continues the success of its predecessor, utilizing the latest digital signal processing for excellent target identification and detection in a compact design including all-new designed scanners.

System-on-Chip
JRC engineers custom designed the System-on-Chip (SoC) inside the new JMA-2300MK2 series to be an extremely powerful tool. With such a small chip, weighing less than a sugar cube, performance remains at our high standards. At the same time, the SoC technology makes the compact radar very power efficient.

AIS and MARPA+
The new radar has the ability to display 50 AIS symbols, and 10 MARPA+ tracking targets as standard. The high quality of the display provides outstanding target definition and discrimination. The second generation MARPA+ continues JRC’s successful MARPA+ technology first found in the previous JMA-2300 radar series. Our engineers continued developing and improving the technology, until now, with MARPA+, manual or automatic target tracking is even more reliable.

DirecTrak
Based on JRC’s patented technology found in the bigger radars, the new JMA-2300MK2 integrates Semi-Constaview. This allows fast processing of targets, showing true trails in Head-Up mode, without interference of fixed targets, such as land or mass.

MARPA+, Semi-Constaview, DirecTrak: function name

JMA-2300MK2 series – operation

Simple operation
Smooth and simple operation is guaranteed with the solid and responsive touch of the keys.

Cursor key
Range
GAIN, SEA, RAIN
Multi key
Soft keys

Multi key
This allows you immediately run through and go into all various menus by rotate and press.

Soft keys
The display unit incorporates 4 soft keys just below the display corresponding to the most used functions in a specific operation using the multi key. You instantly see the options you have, without losing the sight of the radar picture.

Languages
This JMA-2300MK2 radar series supports the English, Japanese, Chinese, Korean, Spanish, Portuguese, French and Norwegian.

SART
The radar is capable of picking up SART signals, enabling an immediate response for search and rescue efforts.

JMA-2300MK2 series – configuration

System diagram

What’s standard?
Display
Scanner (4 or 6kW)
Power cable (2m)
Scanner cable
Length 4kW: 15m, 6kW: 20m
Sun cover
Spare parts
Manuals

What’s optional?
Rectifier
Radar scanner cable
S-Link scanner cable
Sonar unit
Spare parts
GPS compass

What’s available?
1 Available to be used 5/10/15/20m at DC12V power input.
2 Available direct connection with optional JRC GPS sensors.

NKE-2043 4kW
NKE-2063 6kW
RADAR scanner
NBD-865
NBD-865 (4kW)
NBD-865 (6kW)
Cable type:
CFQ-5741-05/10/15/20/30m (6kW)
CFQ-5741-05/10/15/20/30m (4kW)

Power Supply
Joint cover
网吧
Display unit
NCD-2237
Ext. monitor
NCD-2237

JMA-2300MK2 series 
Radar - excellent target detection in compact design
**JMA-2300MK2 series – features**

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**AIS and MARPA+**
The new radar has the ability to display S阿森 AS symbols, and 10 MARPA ability tracking targets as standard. The high quality of the display provides outstanding target definition and discrimination. The second generation MARPA+ continues JRC’s successful MARPA technology first found in the previous JMA-2300 radar series. Our engineers continued developing and improving the technology, until now, with MARPA+, manual or automatic target tracking is even more reliable.

**DirecTrak**
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**Semi-Constaview**
The JMA-2300MK2 continues the success of its predecessor, utilizing the latest digital signal processing for excellent target identification and detection in a compact design including all-new designed scanners.

**Languages**
This JMA-2300MK2 radar series supports the English, Japanese, Chinese, Korean, Spanish, Portuguese, French, and Norwegian.

**MARPA+, Semi-Constaview, DirecTrak**
function name

---

**JMA-2300MK2 series – operation**

**Simple operation**
Smooth and simple operation is guaranteed with the solid and responsive touch of the keys.

**Cursor key**

**Range**

**Multi key**

**Soft keys**

**Multi key**
This allows you immediately run through and go into all various menus by rotate and press.

**Soft keys**
The display unit incorporates 4 soft keys, just below the display, corresponding to the most-used functions in a specific operation using the multi key. You instantly see the options you have, without losing the sight of the radar picture.

**Languages**
This JMA-2300MK2 radar series supports the English, Japanese, Chinese, Korean, Spanish, Portuguese, French, and Norwegian.

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**JMA-2300MK2 series – configuration**

**What’s standard?**
- Display
- Scanner (4 or 6kW)
- Power cable (2m)
- Scanner cable
  - Length 4kW: 15m, 6kW: 20m
- Sun cover
- Spare parts
- Manuals

**What’s optional?**
- Rectifier NBD-865
- 4kW scanner cable
- 6kW scanner cable
- Ext. monitor cable
- GPS compass

**What's available?**
1. Available to be used 5/10/15/20m at DC12V power input.
2. Available direct connection with optional JRC GPS sensors.

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**System diagram**

- Display unit: NCD-2237
- Power Supply: DC12/24V
- GPS sensor (Optional) +
  - JLR-4341 (DGPS)
  - JLR-4342 (SGPS)
- External NAVAID (Heading, AIS, etc.)
- Radar scanner
- RD-225 (4kW)
- RD-226 (6kW)
- Multi key
- Sun cover
- Ext. monitor cable CFQ-5762
- Ext. monitor cable CFQ-5469
- JLR-20/21/30/31
- Main unit: NBD-865
- Rectifier NBD-865
- Cables: CFQ-5764-05/10/15/20/30m (4kW)
- Cables: CFQ-5766-05/10/15/30m (6kW)
- Cable connector at both ends
- Cable connector at both ends
- Power Supply: DC12/24V
- Display unit: NCD-2237
- Power Supply: DC12/24V
- GPS sensor (Optional) +
  - JLR-4341 (DGPS)
  - JLR-4342 (SGPS)
System-on-Chip
JRC engineers custom designed the System-on-Chip (SoC) inside the new JMA-2300MK2 series to be an extremely powerful tool. With such a small chip, weighing less than a sugar cube, performance remains at our high standards. At the same time, the SoC technology makes the compact radar very power efficient.

AIS and MARPA+
The new radar has the ability to display 50 AIS symbols, and 10 MARPA+ tracking targets as standard. The high quality of the display provides outstanding target definition and discrimination. The second generation MARPA+ continues JRC’s successful MARPA+ technology first found in the previous JMA-2300MK2 series. Our engineers continued developing and improving the technology, until now, with MARPA+, manual or automatic target tracking is even more reliable.

DirecTrak
Based on JRC’s patented technology found in the bigger radars, the new JMA-2300MK2 integrates Semi-Constaview. This allows fast processing of targets, showing true trails in Head-Up mode, without interference of fixed targets, such as land or mass.

Semi-Constaview
The JMA-2300MK2 continues the success of its predecessor, utilizing the latest digital signal processing for excellent target identification and detection in a compact design including all-new designed scanners.

Features
The JMA-2300MK2 continues the success of its predecessor, utilizing the latest digital signal processing for excellent target identification and detection in a compact design including all-new designed scanners.

Simple operation
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Soft keys
The display unit incorporates 4 soft keys just below the display, corresponding to the most used functions or a specific operation using the multi key. You instantly see the options you have, without losing the sight of the radar picture.

Languages
This JMA-2300MK2 radar series supports the English, Japanese, Chinese, Korean, Spanish, Portuguese, French and Norwegian.

JMA-2300MK2 series – configuration

What’s standard?
- Display
- Scanner (4 or 6kW)
- Power cable (2 m)
- Scanner cable
- Length 4kW: 15 m, 6kW: 20 m
- Sun cover
- Spare parts
- Manuals

What’s optional?
- Rectifier NBD-865
- 4kW scanner cable
- 6kW scanner cable
- Ext. monitor cable
- GPS compass

System diagram
Radar scanner:
JLR-4340 GPS sensor
JLR-4341 DGPS
External NAVAID
Heading, AIS, etc.
Power Supply: DC12V
Display unit: NCD-2237
Filter for short pulse
Ext. monitor

Cable type: CFQ-5746-05/10/15/30
Cable connector at both ends
1 Available to be use 5/10/15/20m at DC12V power input.
2 Available direct connection with optional JRC GPS sensors.

JMA-2300MK2 series – operation

Cursor key
Range
Gain, Sea, Rain

Multi key
Soft keys

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JMA-2300MK2 Radar - excellent target detection in compact design

JMA-2300MK2 series – features

Proc. built-in
Besides the display and operating keys, this compact all-in-one unit has the processor integrated, allowing for a flexible installation approach.

MARPA+, Semi-Constaview, DirecTrak function name

MARPA+, Semi-Constaview, DirecTrak

JMA-2300MK2 series – configuration

What’s standard?
- Display
- Scanner (4 or 6kW)
- Power cable (2 m)
- Scanner cable
- Length 4kW: 15 m, 6kW: 20 m
- Sun cover
- Spare parts
- Manuals

What’s optional?
- Rectifier NBD-865
- 4kW scanner cable
- 6kW scanner cable
- Ext. monitor cable
- GPS compass

System diagram
Radar scanner:
JLR-4340 GPS sensor
JLR-4341 DGPS
External NAVAID
Heading, AIS, etc.
Power Supply: DC12V
Display unit: NCD-2237
Filter for short pulse
Ext. monitor

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Cable connector at both ends
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MARPA+, Semi-Constaview, DirecTrak function name

MARPA+, Semi-Constaview, DirecTrak

JMA-2300MK2 Radar - excellent target detection in compact design
## JMA-2300MK2 series
### Dimensions

![Display unit diagram](image1)

### Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>JMA-2300MK2</th>
<th>JMA-2300MK2 series</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturer</strong></td>
<td>JRC</td>
<td>Japan Radio Co., Ltd.</td>
</tr>
<tr>
<td><strong>Model Number</strong></td>
<td>JMA-2353</td>
<td>JMA-2354</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>10-inch Mono CRT display</td>
<td>640 by 480 pixels</td>
</tr>
<tr>
<td><strong>Effective Diameter</strong></td>
<td>121mm</td>
<td></td>
</tr>
<tr>
<td><strong>Presentation Mode</strong></td>
<td>RM: North / Head / Course-up</td>
<td>TM: North / Course-up</td>
</tr>
<tr>
<td><strong>Gain Mode</strong></td>
<td>Auto / Manual</td>
<td></td>
</tr>
<tr>
<td><strong>Weather Mode</strong></td>
<td>Auto / Manual</td>
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<tr>
<td><strong>Trail Indication</strong></td>
<td>OFF, 15s, 30s, 1min, 2min, 3min, 6min, 10min, 15min, All</td>
<td></td>
</tr>
<tr>
<td><strong>Barge Icon</strong></td>
<td>Available</td>
<td></td>
</tr>
<tr>
<td><strong>MARPA+ Acquisition Mode</strong></td>
<td>Auto / Manual</td>
<td></td>
</tr>
<tr>
<td><strong>MARPA+ Targets</strong></td>
<td>10 targets</td>
<td></td>
</tr>
<tr>
<td><strong>MARPA+ Tracking</strong></td>
<td>20NM</td>
<td></td>
</tr>
<tr>
<td><strong>MARPA+ Info</strong></td>
<td>True, Bearing, Range, True course, True speed, CPA, TCPA</td>
<td></td>
</tr>
<tr>
<td><strong>Vector Mode</strong></td>
<td>True / relative, adjustable from 1 to 60 minutes</td>
<td></td>
</tr>
<tr>
<td><strong>Guard Zone</strong></td>
<td>2 zones</td>
<td></td>
</tr>
<tr>
<td><strong>Alarm Indicators</strong></td>
<td>CPA / TCPA, New Target, Lost, System Error</td>
<td></td>
</tr>
<tr>
<td><strong>AIS Targets</strong></td>
<td>50 targets</td>
<td></td>
</tr>
<tr>
<td><strong>AIS Info</strong></td>
<td>MMSI, call sign, ship’s name, COG, SOG, heading, distance, length, speed, status etc</td>
<td></td>
</tr>
<tr>
<td><strong>Input (Navaid)</strong></td>
<td>GGA, GNS, GLL, RMC, VTG, VBW, VHW, THS, HDT, HDG, DPT, DBT, MTW, ROT, RSA, VDM, VDO, ALR, MWV, VWT, VWR</td>
<td></td>
</tr>
<tr>
<td><strong>Input (Heading)</strong></td>
<td>IEC61162 (4800bps / 38400bps - THS, HDT, HDG, HDM)</td>
<td></td>
</tr>
<tr>
<td><strong>Input (Speed)</strong></td>
<td>IEC61162 (4800bps - VBW, VHW)</td>
<td></td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>RSD, OSD, TTM, TLL, TTD, GGA, RMC, GNS, GLL, VTG, THS</td>
<td></td>
</tr>
<tr>
<td><strong>Contact Out</strong></td>
<td>1 for external buzzer</td>
<td></td>
</tr>
<tr>
<td><strong>External Monitor</strong></td>
<td>Additional cables</td>
<td></td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>DC12/24V -10/+30%</td>
<td></td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>Approx.60W typ.: Approx.85W</td>
<td>Maximum: Approx.180W</td>
</tr>
<tr>
<td><strong>Ambient Conditions</strong></td>
<td>Temperature: -25° to +55° (Scanner) / -15° to +55° (Display unit)</td>
<td>Relative humidity 0% to 93% non-condensing</td>
</tr>
<tr>
<td><strong>IP Code</strong></td>
<td>IP26 (Scanner) / IPx5 (Display front panel)</td>
<td></td>
</tr>
<tr>
<td><strong>Option</strong></td>
<td>Rectifier NBD-865</td>
<td>Scanner cable CFQ-5761-xx (xx: 05/10/20/30 m)</td>
</tr>
<tr>
<td></td>
<td>RGB cable CFQ-5762</td>
<td>Connection cable for JLR-20/21/30/31 CFQ-5469</td>
</tr>
<tr>
<td></td>
<td>*1: Maximum cable length as 20m at DC12V operated.</td>
<td></td>
</tr>
</tbody>
</table>

*Specifications may be subject to change without notice.*

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**JRC-NSK format (JLR-20/21/30/31)**

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**10-inch mono display**

- New System-on-Chip technology
- Semi-Constaview digital signal processing
- AIS and MARPA+ as standard
- Newly designed multi-speed scanners
- Color RGB video output

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*For further information, contact:*

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Japanese Branches: Osaka, Tokyo, Singapore, Shanghai, New York

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*Images and diagrams used are for reference only.*
JMA-2300MK2 series
– dimensions

Display unit

Scanner unit

JMA-2300MK2 series
– specifications

<table>
<thead>
<tr>
<th>JMA-2300MK2 series</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Marine Radar</td>
</tr>
<tr>
<td>Model</td>
<td>JMA-2353, JMA-2354</td>
</tr>
<tr>
<td>Display</td>
<td>Raster scan PPI</td>
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<tr>
<td>Scanners</td>
<td>NKE-2043, NKE-2063</td>
</tr>
<tr>
<td>Transmitting freq.</td>
<td>X-band (9410±30MHz)</td>
</tr>
<tr>
<td>Transmitting power</td>
<td>4kW, 6kW</td>
</tr>
<tr>
<td>Scanner type</td>
<td>Radome open</td>
</tr>
<tr>
<td>Antenna length</td>
<td>2ft, 3.9ft</td>
</tr>
<tr>
<td>Rotation speed</td>
<td>16-48rpm, 16-27rpm</td>
</tr>
<tr>
<td>Beam width</td>
<td>H:4°, V:25°, H:2°, V:30°</td>
</tr>
<tr>
<td>Pulse width/rept freq.</td>
<td>0.08μs/4000Hz, 0.08μs/2250Hz, 0.13μs/1700Hz, 0.25μs/1700Hz, 0.5μs/1200Hz, 0.8μs/750Hz, 1.0μs/650Hz</td>
</tr>
<tr>
<td>Maximum range</td>
<td>48NM, 72NM</td>
</tr>
<tr>
<td>Range scale</td>
<td>0.125, 0.25, 0.5, 0.75, 1.5, 3, 6, 12, 24, 48 NM, 0.125, 0.25, 0.5, 0.75, 1.5, 3, 6, 12, 24, 48, 72 NM</td>
</tr>
<tr>
<td>Display unit</td>
<td>NCD-2237</td>
</tr>
<tr>
<td>Axial resolution</td>
<td>Less than 30m</td>
</tr>
<tr>
<td>Minimum detection range</td>
<td>Less than 40m</td>
</tr>
<tr>
<td>Bearing accuracy</td>
<td>Less than ±1°</td>
</tr>
<tr>
<td>Display</td>
<td>10-inch Mono CRT display (640 by 480 pixels)</td>
</tr>
<tr>
<td>Effective diameter</td>
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<tr>
<td>Presentation mode</td>
<td>RM: North / Head / Course-up, TM: North / Course-up</td>
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<td>Gain</td>
<td>Auto / manual</td>
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<tr>
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<td>OFF, 15s, 30s, 1min, 2min, 3min, 6min, 10min, 15min, All</td>
</tr>
<tr>
<td>Off center</td>
<td>Within 66% of PPI radius</td>
</tr>
<tr>
<td>Barge icon</td>
<td>Available</td>
</tr>
<tr>
<td>MARPA+ acquisition mode</td>
<td>Auto / Manual</td>
</tr>
<tr>
<td>MARPA+ targets</td>
<td>10 targets</td>
</tr>
<tr>
<td>MARPA+ tracking</td>
<td>20NM</td>
</tr>
<tr>
<td>MARPA+ info</td>
<td>True, Bearing, Range, True course, True speed, CPA, TCPA</td>
</tr>
<tr>
<td>Vector mode and length</td>
<td>True/relative vector, adjustable from 1 to 60 minutes</td>
</tr>
<tr>
<td>Guard zone</td>
<td>2 zones</td>
</tr>
<tr>
<td>Alarms</td>
<td>CPA/TCPA, New Target, Lost, System Error</td>
</tr>
<tr>
<td>AIS targets</td>
<td>50 targets</td>
</tr>
<tr>
<td>AIS info</td>
<td>MMSI, call sign, ship's name, COG, SOG, etc.</td>
</tr>
<tr>
<td>Input (navaid)</td>
<td>GGA, GNS, GLL, RMC, VTG, DBT, DPT, MTW, VDM, VDO, ALR, MWV, VWT, VWR</td>
</tr>
<tr>
<td>Input (heading)</td>
<td>IEC61162 (4800bps/38400bps - THS, HDT, HDG, HDM)</td>
</tr>
<tr>
<td>JRC-NSK format</td>
<td>(JLR-20/21/30/31)</td>
</tr>
<tr>
<td>Input (speed)</td>
<td>IEC61162 (4800bps - VBW, VHW)</td>
</tr>
<tr>
<td>Output</td>
<td>RSD, OSD, TTM, TLL, TTD, GGA, RMC, GNS, GLL, VTG, THS, HDT</td>
</tr>
<tr>
<td>Contact out</td>
<td>1 for external buzzer</td>
</tr>
<tr>
<td>Ext. monitor</td>
<td>Additional cables</td>
</tr>
<tr>
<td>Power supply</td>
<td>DC12/24V -10/+30%</td>
</tr>
<tr>
<td>Power consumption</td>
<td>Approx60W typ., Approx85W maximum</td>
</tr>
<tr>
<td>Ambient conditions</td>
<td>Temperature: -25° to +55° (Scanner) / -15° to +55° (Display unit), Relative humidity 0% to 93% non-condensing, IP code: IP26 (Scanner) / IPx5 (Display front panel)</td>
</tr>
</tbody>
</table>

* Specifications may be subject to change without notice.

For further information, contact:

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JMA-2300MK2 Radar

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New System-on-Chip technology
Semi-Constaview digital signal processing
AIS and MARPA+ as standard
Newly designed multi-speed scanners
Color RGB video output

-- The JMA-2300MK2 radar offers excellent target detection in a compact design --