

# Radar

## Manta 1700, 2000, 2300

### Sophistication, versatility and unrivalled performance

**Manta radar is designed to meet the demands of today's maritime industry. Through the use of the very latest in radar technology, Manta delivers radar performance in the most challenging operational situations.**

**Manta radar offers a wide range of highly sophisticated and flexible operating modes, which provide extremely accurate navigational information when and where it's needed.**

**Manta Radar's advanced technology ensures greater bridge performance and improved navigational accuracy, increasing both operating efficiency and safety levels – under the harshest operating conditions.**

### Features and Benefits

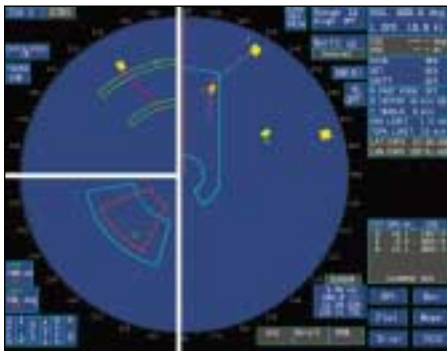
- Flat Panel TFT Display: Less weight, less volume, sharper picture, easy to mount
- Complies with all ITU Emissions Regulations
- Console sections to form primary Navigation and Ship Management Workstations
- 6 x 6 Interswitch: More flexible interswitching
- Internal map storage: No need for Navcard
- Map backup to PC: Maps may be stored ashore
- Reduced installation cabling: Reduced installation costs
- CAN Bus transmitter control: Increased system functionality
- 1/8 nm (0.125nm) range scale: Increased short range performance
- Azimuth Stretch facility: Small targets seen more easily
- AIS compatible: AIS radar is configurable with Qty of AIS targets for not obstructing the view in close range
- VDR Interface: Ready to connect to VDR
- Curved heading line: Visual turn monitoring aid
- 50 Target ARPA Tracking
- Footprint Acquisition Zone: Enhanced target acquisition
- Inclusive/Exclusive Acquisition Zones: More flexible, tailored target acquisition
- Tape Measure: Point to point on screen measurement
- Target Tote facility: Indicates the 6 most dangerous targets
- Full 11 Colour Display: Information distinguished more easily
- 2 x EBL: Two bearings measured simultaneously
- 2 x VRM: Two ranges measured simultaneously
- Maps with 16 Coloured Symbols: Permits more sophisticated maps
- 4 x Colour Coded Parallel Index Lines: Easier parallel indexing
- Ergopod Remote Control: Increased operational flexibility
- Control of Track Pilot from Curved Heading Line



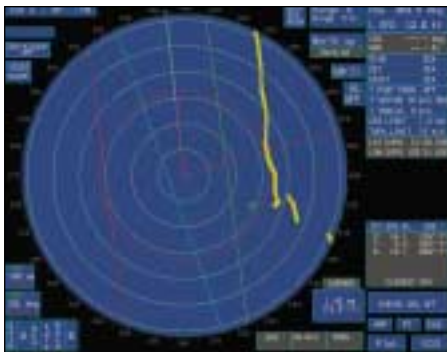
# Manta 1700, 2000, 2300



Plotting



AC Modes



Measurements



AIS

## Innovative technology

The Manta radar is driven by Kelvin Hughes' latest generation computer system. This advanced computer supersedes all other systems in its power, accuracy, versatility and flexibility.

Manta radar's powerful computer is capable of tracking up to 50 targets at any one time, an essential feature in busy shipping lanes.

The Manta system is ready to connect to VDR and is AIS compatible. It offers a complete range of features including an Integral Training Simulator, designed to allow navigators joining the vessel an opportunity to familiarise themselves with this highly sophisticated, easy-to-operate system.

The Manta display is available in a number of configurations that include ARPA, ATA and EPA. These can be connected to various X and S band, up and down mast transceivers, and 24rpm and 40rpm antennas.

## Easy Viewing Displays

The Manta 1700, 2000, 2300 features a high-visibility colour screen.

These displays deliver easy-to-view radar pictures and a comprehensive range of selectable functions, warnings and target information.

Desk and pedestal mounted displays are available.

## Plotting

The ARPA allows up to 50 targets (20 in the ATA display) to be plotted on-screen. Target information including bearing, range, course, speed, BCR, BCT, TCPA, CPA and latitude and longitude is displayed. Selected data on up to six targets may be displayed in a Tote window.

## Acquisition Modes

Targets can be automatically acquired by three means:

- 1 Guard zones: Two zones are available, one pre-set in range, the other variable – both are variable in bearing. Targets are acquired as they transit the zone.
- 2 Footprint Acquisition Zone (FAZ): A fully variable, self-designated area around the vessel that will acquire all targets within the area.
- 3 Zone Acquisition: Fourteen inclusion or exclusion sectors are available.

## AIS Compatible

Up to 50 relevant AIS targets can be selected in menu.

## Advanced control

The patented tracker ball and push button control, common to all Kelvin Hughes displays, is utilised on the Manta radar.

This easy to use control unit makes for fast, accurate and flexible operation, negating the use of complicated keyboard-based systems.



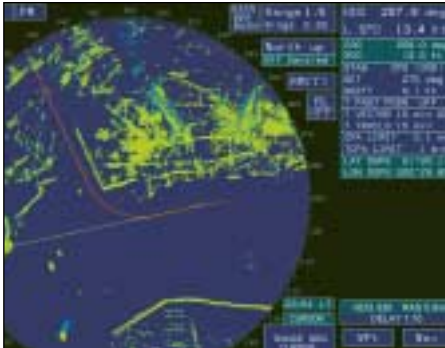
AFB in MANTA Console



Desktop Pod



AFB (stand alone)



Curved Heading Line

## Measurements

On-screen measurements can be done with 2 EBLs (EBLs and VRMs may be operated independently or together), tape measure (point to point) and cursor.

## Curved Heading Line

The Curved Heading Line is designed to predict the ship's future track and is featured as standard on MANTA displays.

## Standby and Installation Screens

Full on-screen installation, setting to work and test procedures reduce the need for internal access.

## 6 x 6 Interswitching

Allows up to 6 transceivers to be interswitched with up to 6 displays and radar image to be transferred to ECDIS from RIU.

## Mapping Facilities

The displays are capable of producing on-screen maps. The maps may be constructed from 4 line types and 16 IMO symbols in a wide range of colour variations.

15,000 points can be stored in internal memory.

## Interfaces

Bi-directional, individually assigned serial interfaces are standard. Manta radar is ready to connect to VDR and is AIS compatible.

## Transmitters and Receivers

A comprehensive range of up and down mast Transmitters and Receivers with CAN Bus transmitter control is available with S and X band antennas.

## ERGO Pod

Where applicable left and/or right ERGO pods can be fitted to the arms of the operator's chair. This can take the place of or be used in conjunction with the trackerball fitted to the display. The ERGO pod has additional buttons for direct control of Range and Sea Clutter.

## Display Variants

The MANTA comes in 9 display variants – 3 desktop, 3 console and 3 flush mounted, plus 3 RX/TX versions.

## MANTA Flush Panel

The Flush Panels are suitable for installation in fast ferry, shipyard-provided consoles and similar requirements.

## Type approval

The Manta radar features the very latest high-visibility, 11 colour screens, which meet IMO recommendations and MED type approvals. They also comply with all ITU Emissions Regulations.



X and S Band Transmitters and Receivers



ERGOPod



Standby and Installation Screens



Mapping



Split Processor



MANTA Flush Panel

# Manta 1700, 2000, 2300 radar

### Manta Desktop Displays

**1700**

**2000**

**2300**

### Manta Console Displays

**1700**

**2000**

**2300**

### Manta Flush Displays

**1700**

**2000**

**2300**

### Antennas (Dimensions shown are turning circles.)

2.0m X Band 14kg

2.5m X Band 20kg

3.1m S Band (High Speed Only) 50kg

4.0m S Band 65kg

### Turning Mechanisms

Mk V X Band 23kg

Mk IV X Band 40kg

Mk VI S Band 100kg

### Upmast Transceivers (Built in)

Mk V X Band 10kW

Mk IV X Band 25kW

Mk VI S Band 30kW

### Power Supply Unit (PSU)

High Speed X Band 7kg

### Transmitter Interface Unit (TIU)

X Band Mk V Turning Mechanism to RIU 7kg

### Soft Start Unit (Standard)

### Downmast Transceivers

Mk VII X Band 25kW 30kg

Mk VII S Band 30kW 35kg

### Remote Control Ergo Pod

40kg

### Desktop Pod

187

172

### AFB

1kg

### Radar Processor Unit (RPU)

10kg

### Radar Interswitch Unit (RIU)

6 Way Unit 5.5kg

## KELVIN HUGHES

## total marine navigation solutions

**UK (Head Office): Kelvin Hughes Limited**  
 New North Road, Hainault, Ilford, Essex IG6 2UR  
 T: +44 20 8500 1020 F: +44 20 8500 0837

**Benelux: Kelvin Hughes (Nederland) bv**  
 Klompenmakerstraat 64, 3194 DE Hoogvliet,  
 Rotterdam, The Netherlands  
 T: +31 10 416 76 22 F: +31 10 416 72 18

**China: Kelvin Hughes Shanghai Representative Office**  
 Unit H, 15/F, Majesty Building, 138 Pu Dong Avenue,  
 Shanghai 200120, PR China  
 T: +86 21 58772105 F: +86 21 58785944

**Far East: Kelvin Hughes (Singapore) Pte Ltd**  
 8 Pandan Avenue, 2nd Floor, Singapore 609384  
 T: +65 6545 9880 F: +65 6545 8892

**Scandinavia: A/S Kelvin Hughes**  
 Marselis Boulevard 175, DK-8000 Århus C, Denmark  
 T: +45 86 11 28 88 F: +45 86 11 27 26  
 Midtunheia 22, N-5050 Nesttun, Bergen, Norway  
 T: +47 55 10 53 05 F: +47 55 10 48 78

[www.kelvinhughes.com](http://www.kelvinhughes.com)

**smiths**  
 A part of Smiths Marine Systems

### Local Agents



This publication is not intended to form the basis of a contract, nor does it take the place of the specification to which reference should be made for further information. Kelvin Hughes Limited reserve the right to vary any specification in detail.