

# DSC2 THE MODULAR GMDSS COMMUNICATION SYSTEM



*ICS Electronics Ltd have a world-wide reputation for the design and manufacture of GMDSS equipment including DSC systems: Supplying coast stations, commercial ships and navies throughout the world.*

*Ease of use is the most prominent feature of our equipment. This is reflected in all elements of DSC2 operation.*

*The DSC2 system fully meets the IMO GMDSS requirements for DSC & NBDP when connected transceivers and computers.*

*The GMDSS coast station infrastructure is now in place in many countries.*

*A breakthrough in ease of use and flexibility*



*All merchant vessels over 300 grt must fit International Maritime Organisation (IMO) approved Global Maritime Distress & Safety System (GMDSS) communication systems by February 1st 1999. Digital Selective Calling (DSC) and Narrow Band Direct Printing (NBDP) based systems operating within the GMDSS structure automate all distress and most of the routine communication tasks.*

Under GMDSS, the officer of the watch becomes the day to day user of the communications equipment. As radio communications is only one of many tasks, it should not become a burden or a danger to the primary task of navigating.

This means that equipment must be easy to use. It must assist the officer of the watch in making any distress situation known to the world in a fast and efficient way. And last but not least, the system must also help to prevent incorrect use which may lead to sending false distress alerts.

ICS has made a major leap forward in ease of use for marine radio equipment: a Control Panel with dedicated buttons and a large LCD with touch screen allows control of this modular GMDSS system through tree style menus.

Now virtually anyone can use VHF, MF and HF equipment for DSC and NBDP and be guided through every step.

## **TRAINING**

The DSC2 is ideal for operator training schools. Its simplicity of operation means that teaching can be faster and more meaningful.

## **DSC**

Much DSC equipment is far too complicated to use, as it was designed for the era when a radio officer was available.

This complexity accounts for the high level of false distress alerts being presently experienced by Rescue Co-ordination Centres and leads to a general reluctance to use terrestrial radio for routine communications.

ICS offers a uniquely flexible family of type approved modules with which to build anything from a small A1/A2 combination up to a complete ship-borne GMDSS console for Sea Area A3/A4.

## **RADIO TELEX**

Narrow Band Direct Printing (NBDP), or Radio Telex remains a reliable, easy to use and cheap alternative to Inmarsat C communications.

Operation through normal coast stations and the Swedish Maritex system, covering all Sea Areas, is supported by the DSC2 system.

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## CONTROL PANEL

The Control Panel provides the user interface for the DSC2 system. In configurations with more than one Control Panel, any can be used to control the entire system. The Control Panel has only five operator elements : four 'hardware' buttons and a backlit, transmissive touchscreen LCD.

The LCD screen is large enough to show an incoming DSC message of any complexity and complete selection menus for many functions. Only information and control 'buttons', needed for a given operation, are presented to the operator, who is guided through every operation and is even prompted if he attempts to do anything which is against operational rules.

Once a call has been set up, it is activated by pressing the 'ENTER' hardware button.

The 'DISTRESS' button has a cover and at least two separate operations are required to send a



distress call. A countdown is provided, during which a call can be aborted.

The Control Panel has Build In Test Equipment (BITE) functions, audible and visual alarms and a facility to activate a remote alarm.



## EQUIPMENT RACK

Modules can be package in a compact, bulk head mounted on 19" rack equipment cabinet which can be located remotely from the control panels and radio transceivers.

## NETWORK

All modules in the system, including the Control Panel, are interconnected by an industrial grade network, using shielded, twisted pair cables. It uses proven technology and is designed for use in adverse industrial environments with high electrical noise levels.

When fault tolerant systems are needed, the network can be divided by a Router. A network fault which occurs on one side of the Router cannot affect operations on the other side of the Router. A Router forms a completely transparent network connection, enabling Control Panels unlimited network access to both sides.

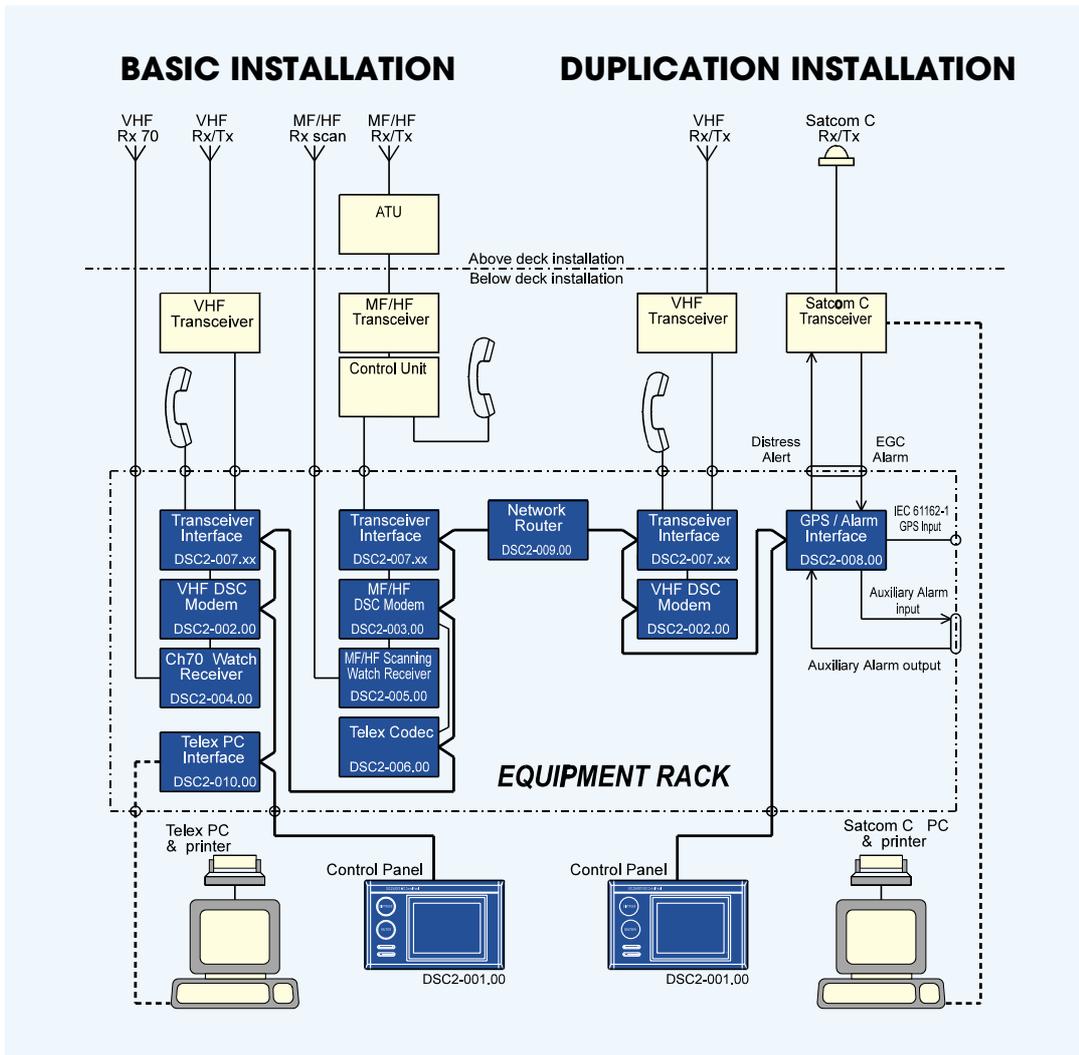
## FUNCTIONAL MODULES

All GMDSS functions for DSC and NBDP are covered by individual modules. They can be interconnected through the network in any order. LED's are indicating status and power. Built In Test Equipment routines provide the Control Panel status log with more detailed information. Transceiver Interfaces have been developed for a number of marine transceivers. Non standard interfaces can be designed on request. Currently available modules:

- ▶ Control Panel
- ▶ VHF Ch70 Watch Receiver
- ▶ VHF DSC Modem
- ▶ MF/HF Scanning Watch Receiver
- ▶ MF/HF DSC Modem
- ▶ MF/HF Telex Codec & Telex PC Interface
- ▶ Transceiver Interface
- ▶ GPS/Alarm Interface
- ▶ Network Router
- ▶ Network Printer
- ▶ Serial Printer
- ▶ NMEA Interface



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Typical Area A3 (A4) System

## THE COMPANY

ICS Electronics Ltd was founded in 1982 and specialises in marine data communications.

ICS's NAVTEX, Radio Telex and DSC systems are in use on vessels throughout the world and in coast stations in many countries.

Winners of several UK government research and development awards, ICS Electronics Ltd is an OEM supplier to some of the world's best known names in marine communication.

The DSC2 system was recently chosen by the UK Ministry of Defence for fitting to all Royal Navy and other military support vessels.

It has also been selected for the DSC System in all UK HM Coastguard Coastal stations.

## TYPE APPROVAL STANDARDS

The DSC2 system fully meets the IMO GMDSS requirements for DSC & NBDP when connected to approved transceivers and computers.

The requirements are contained in following:

- ▶ ITU-R M.493
- ▶ ITU-R M.541
- ▶ ITU-R M.625
- ▶ ITU-R M.825-1
- ▶ ETS 300 338
- ▶ ETS 300 373
- ▶ ETS 300 162
- ▶ ETS 300 067
- ▶ EN 60945, IEC945
- ▶ The European EMC directive

The DSC2 system is approved for use within the global Maritex automatic radio telex system.

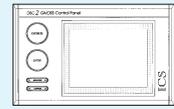
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## Module Description

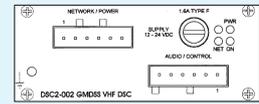
### DSC2-001 Control Panel

Used to control the operation of the DSC system. The use of multiple control panels is supported. Graphics LCD with touch screen. Independent keys for "DISTRESS", "ENTER" and LCD "BRIGHTNESS" and "CONTRAST".



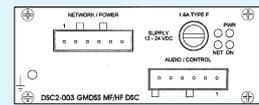
### DSC2-002 VHF DSC Modem

Decodes DSC data received from the VHF Ch70 Watchkeeping Receiver. Encodes and decodes DSC data to be transmitted from and received by the VHF transceiver.



### DSC2-003 MF/HF DSC Modem

Controls the scanning watchkeeping receiver and decodes the received DSC data. Encodes and decodes DSC messages to be transmitted by and received from the MF/HF transceiver. Controls the switching between DSC and Radio Telex operation.



### DSC2-004 VHF Ch70 Watchkeeping Receiver

Receives the DSC data on VHF Ch70 and outputs this data for processing by the DSC2-002 VHF DSC Modem.



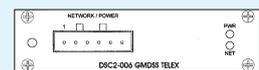
### DSC2-005 MF/HF Scanning Watchkeeping Receiver

Receives the DSC data on up to six MF/HF DSC channels and outputs this data for processing by the DSC2-003 MF/HF Modem.



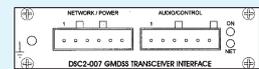
### DSC2-006 MF/HF Telex Codec

Encodes and decodes telex messages to be transmitted by and received from the MF/HF transceiver. Capable of automatic Radio Telex including Maritex.



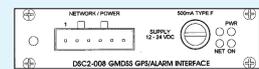
### DSC2-007 Transceiver Interface - General

Translates the standard network transceiver commands into the specific communication interface protocol required by the transceiver. Provides intelligent switching of the audio and control signals if required.



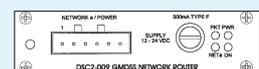
### DSC2-008 GPS/Alarm Interface Module

Translates NMEA 0183 GPS information and broadcasts position and time over the network. Provides two configurable isolated alarm inputs and outputs.



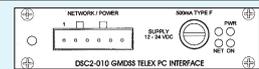
### DSC2-009 Network Router

Partitions network into sections. Provides transparent connection between the sections during normal operation and isolates sections when a fault occurs.



### DSC2-010 MF/HF Telex PC Interface

Translates Telex commands and data to and from the PC into network format.

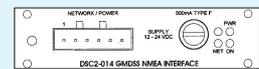


### DSC2-011 Serial Printer

40 columns thermal character printer with EIA-232 serial interface.

### DSC2-014 NMEA Interface

Translates relevant network commands into standard and proprietary NMEA sentences



## Power Requirements & Dimensions

MODULE	Width	Height	Depth	Voltage range	Temperature Range
DSC2-001	250mm	160mm	60mm	10.8 – 31.2 Vdc	-15°C to + 55°C
DSC2-002, 003, 005	109mm	48mm	235mm	10.8 – 31.2 Vdc	-15°C to + 55°C
DSC2-004, 006, 014	109mm	33mm	235mm	10.8 – 31.2 Vdc	-15°C to + 55°C
DSC2-007, 008, 009, 010	109mm	33mm	235mm	10.8 – 31.2 Vdc	-15°C to + 55°C

ICS Electronics has a policy of continuous product improvement and reserve the right to vary in detail from the specifications contained in this brochure.

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