

Digital Selective Calling Controller for VHF-Radiotelephones DEBEG 3817/3817 R

With the digital selective calling system new methods are introduced world-wide in maritime radio communication. Because of its long experience and its excellent know-how, also with selective calling systems, STN ATLAS Elektronik GmbH has been doing "spade-work" and has developed this system.

The digital selective calling system allows the automatic set-up of telephone communications. The hitherto required manual exchange belongs to the past. This results in a considerable increase of the utilization coefficient of the radio channels.

In a modified version the digital selective calling system is already successfully used for the automatic set-up of radiotelex communications.

Increased safety – limiting damages and saving lives

A DSC distress call will – via the coast station – rapidly reach the search and rescue centre. As the message contains information about the calling ship, its position – manually entered or automatically supplied by a navigation equipment – and the type of distress, that can be reliably decoded, the search and rescue centre can immediately undertake all necessary steps.

The IMO decided the introduction of the DSC system in the global maritime distress and safety system GMDSS.

Faster connections

The DSC call to the coastal radio station may already comprise the telephone number of the wanted shore subscriber. The automatic exchange of DSC messages allows for the allocation of a free radio channel and simultaneously the telephone subscriber can be dialled directly. Waiting time is shortened considerably and the utilization of the radio channels is improved.



Simplified communication

With the digital selective calling system ship-to-ship communication can be realized immediately and without delay as the radio channels on the ships are continuously monitored and the DSC message already comprises information about the desired type of communication and the radio channel to be used.

Future marine radio equipment will select the channel frequencies automatically.

DSC System

For the digital selective call system a binary code is applied. The elements "0" and "1" of this code are converted into two audio frequencies.

Modern software technology and high-capacity computer circuitry is applied for the generation of the audio frequencies and the processing of code and information.

To compose DSC messages a total of 128 characters is available. All characters consist of 10 binary codes which are arranged in such a way that any transmission errors are already detected in the decoder. To increase

the transmission reliability each character is sent twice. The message is completed by a test character. In this triple way it is secured that even on channels with heavy interference only these messages are evaluated that have been identified as faultless.

In addition to its reliability, the transmission speed is a further excellent advantage of the DSC system.

Advantages:

- Developed for the maritime radio communication of the future
- Immediate alerting of the search and rescue centres
- Automation of the maritime radio service
- Automatic ship-to-shore telephone exchange
- Direct calling of a ship by radio station
- Direct ship-to-ship communication
- High reliability by modern processor technology



Technical Data

General

Built according to CCIR Recommendations 493 and 541, IMO performance standards and ETSI specifications

Distress messages with automatic insertion of position

Selective call

Group call

Area call

"All ships" call

Ship to shore direct dialling

Position request

Polling call

Preprogramming of 10 calls

Storage of the last 5 outgoing calls

Storage of the last 20 received distress calls

Storage of the last 20 received routine calls

Programmable memory for 25 addresses (MMSI)

Programmable memory for 25 telephone subscriber numbers

Display

Illuminated alphanumeric LCD-display, 2 lines with 20 characters each. Brilliance is dimmed automatically depending on intensity of light or manually.

Controls

10 numerical keys and 6 keys for SOS, CALL, RESET, NEXT, ENTER, CLEAR. All keys are backilluminated

Input/Output

Modulation from and to external radio telephone

Transmitter keying

Power supply

External alarms for distress and routine calls

Remote SOS key

Navigational receiver

Frequency control of transceiver types: DEBEG, SAILOR and according to NMEA 0183 Ver 2.0

Modulation from external DSC watch receiver or optional antenna-input for channel 70 receiver

Handset of radio telephone

Printer (40/80 characters/line)

Modulation

1700 Hz \pm 400 Hz
B = "0" = 2100 Hz \pm 10 Hz
Y = "1" = 1300 Hz \pm 10 Hz
1200 Baud \pm 30 ppm

Output level 0.24 to 2.4 V_{rms} = -10 dBm to +10 dBm,
at 600 ohm,
adjustable or for microphone input:
10 to 100 mV_{rms} = -37 dBm to -17 dBm

Input level 0.24 to 2.4 V_{rms} = -10 dBm to +10 dBm,
600 ohm, self-adjusting

Power supply 10 to 32 V DC

Consumption max. 0.5 A

Size 207 mm width
237 mm width with swivelmount
73 mm height
98 mm height with swivelmount
238 mm depth
 \pm 14 degree tilting range

Weight approx. 2.6 kg

Option

A channel 70 receiver module can be integrated into the DEBEG 3817. This built-in watch-receiver complies with the relevant national and international standards.

Technical data:

Receiving frequency	156,525 MHz
Input sensitivity	< 1 μ V
Intermodulation response	> 70 dB
Blocking immunity	> 90 dB
AF output level	0.775 V _{rms} at 600 μ
AF harmonic distortion	< 2.5 %

The DEBEG 3817 R contains already the channel 70 receiver

Ihr STN ATLAS Händler:

Seefunkschule Dipl.-Ing. Koblmiller
Vorstadt 3, A-2483 Ebreichsdorf
Tel. u. Fax: +43 (0)2254/76215
Email: seefunk@eunet.at
<http://members.eunet.at/seefunk>