DESIGNED AND MANUFACTURED IN ENGLAND

INSTALLATION AND USER INSTRUCTIONS

NAVTEX BT-3

NASA MARINE INSTRUMENTS

NASA MARINE Ltd.
BOULTON ROAD
STEVENAGE
HERTS SG1 4QG
ENGLAND
(01438) 354033

RoHS ✔
2002/95/EC

CE

BLUETOOTH NAVTEX DESCRIPTION

The NASA Marine Bluetooth navtex is a dual frequency navtex receiver able to decode and store navtex messages for viewing on a Bluetooth enabled phone or tablet. The unit is designed to be run continuously and have the stored messages downloaded as and when required by the user. A android app lets the user search through all the stored messages or to program the device to display only wanted message types from selected stations. The internal memory stores more than four hundred typical navtex messages with new messages overwriting the oldest. The receiver is supplied with a standard E-vector antenna or, an H-vector antenna for more challenging conditions. The antenna can be mounted on a rail, away from sources of electrical interference, and is connected to the receiver using the 7-metre cable provided.

A fused power cable is also supplied to connect the receiver to a permanent 12 Volt power source.

INSTALLING THE HARDWARE AND ANTENNA

The bluetooth navtex receiver is not watertight so must be mounted in a position which is dry at all times. Select a position, within bluetooth range, and fix the unit to a suitable surface using the mounting flanges. Mount the antenna in a convenient position outside the cabin, then connect it to the receiver. Best results are obtained by keeping the antenna as far from sources of electrical interference as possible.
Connect the power cable to the 12-volt supply. The red wire goes to positive and the wire with the black stripe to negative.

INTERNAL CLOCK.

The receiver incorporates a real-time clock which is powered by the boat's 12-volt supply. This supply must be continuous as even a brief interruption will stop the clock. Clock function will be restored and reset to the correct time (UTC) during the next connection to a phone or tablet. The clock is used to facilitate timed channel switching and to time stamp the messages on receipt.

INSTALLING THE ANDROID APP. ON PHONE OR TABLET

An android app, titled "BTLE navtex" is freely available to download from google play store:
https://play.google.com/store/apps/details?id=uk.co.willrite.bluenavtex2

USING THE ANDROID APP.

Select the "BTLE NAVTEX" app. then select "SCAN". The default name of the app., "BTnavtex" should then be selected. The "CONNECT" led on the receiver will illuminate to indicate that connection has been established. Press "ALL MESSAGES" to display all the message headers in the memory. To view a message just tap on the relevant header and the full message will be displayed.

Press "MY MESSAGES" to display the list of messages headers you have defined in "FILTERS" Press "SELECT AN OPTION" then select "DISPLAY DEVICE SETTINGS". The following operational parameters will be displayed:-
"BTnavtex" (The user name which can be customised.)

"TIME IS NOW xx:xx" (Shows time in UTC.)

"A/B SWITCHING IS OFF" (This indicates if automatic timed channel switching is selected.)

"SWITCH TO XXX at XX:XX UTC" (These four lines show the times that automatic channel switching is programmed to occur.)

"UNIT IS RECEIVING ON 518Khz" (this indicates the channel currently selected. Channel "A" is 518Khz which is the international English language channel. Channel "B" is 490Khz which is the national language channel.)

"REPEAT HEADER IDS ARE VISABLE" (When selected this shows all copies of the same message sent at different times. This can be useful if the latest copy has been corrupted.)

"FIRMWARE VERSION" (This indicates the software version installed in the receiver.)

Pressing "SELECT AN OPTION" the following options are available: -
"SET MY FILTERS" Enter the station and message codes you want to receive then, whenever you select "MY MESSAGES", only those selected messages types will be displayed.

"LOCK CHANNEL A/B" Sets the channel to A (518Khz) or B (490Khz)

"CHANNEL TIMERS" Sets the times at which channel switching occurs. This allows the unit to switch to different channels at pre-set times of day.

"TIMED CHANNEL SWITCHING ON/OFF" This enables/disables the automatic channel switching.

"SECURITY AND CUSTOMISATION" This allows you to personalise the name shown in the bluetooth scan and to set a security pin code.

"CLEAR MESSAGES ON DEVICE" This permanently clears all but the last twenty messages from the memory.

"HIDE/SHOW REPEAT MESSAGES" This allows you to view the latest selected message or all copies of that message currently held in memory.

"DISPLAY DEVICE SETTINGS" Shows all current user settings.

"DISCONNECT" This closes the android app.

SETTING THE DEVICE NAME.

Select "SECURITY AND CUSTOMISATION" and enter the name you wish to appear on the bluetooth list. The name must be eight characters long and can be made up of any combination of numbers and letters. Press "SUBMIT", close the app and turn off the power to the receiver for a few seconds. When power is restored the device will then restart, advertising its presence with the new device name.

SETTING THE PIN NUMBER.

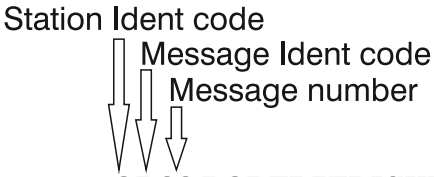
The PIN number protects your device settings from being changed by a third party. First select "SECURITY AND CUSTOMISATION" and enter your four-character code. You can use any combination of numbers and letters. Press "SUBMIT" then, within fifteen seconds, with the tip of a pencil press the "LOAD DATA" key on the receiver to accept the new PIN. If the key is not pressed within fifteen seconds the new PIN will be ignored. You can use any number of different phones or tablets to download navtex messages but only devices programmed with the correct PIN can be used to change operational settings. If you forget the PIN number you can enter a new code, which will overwrite the old number, only when the "LOAD DATA" key is pressed.

THE NAVTEX MESSAGE.

All navtex messages begin with a 4-character code. The first letter is the station ident letter, the next letter is the message ident letter followed by a message reference number. At the end of the message the navtex prints the error count which is the total number of corrupted bits received in the data stream. As the navtex performs error correction most of these errors do not result in corrupted characters, however if high counts are received from local stations the installation should be examined.

NAVTEX is information broadcast as radio signals by coastal navigation authorities world-wide. The signals can travel long distances under favourable circumstances, and so stations within hundreds of miles of each other in each region of the world transmit at different times of the day. Doing so prevents their transmissions interfering, and producing unintelligible signals at the receiver. Each transmitting station has an identifying letter (known as the “station ident”), which is allocated by the authorities to ensure that no nearby station in each region of the world shares the same letter.
Nav area 1 station codes are listed below, station codes for other nav areas are available via the internet from various sources such as Wikipedia. It is also available from the Admiralty List of Radio Signals (ALRS).

MESSAGE Type Ident	Description of message type
A	Navigation warnings covering the station's area
B	Gale Warnings
C	Ice Reports
D	Search and Rescue information (Distress messages)
E	Weather Forecasts
F	Pilot messages
G	AIS srvice messages (Non navigational aid)
H	LORAN-C information
I	Currently not used
J	GNSS messages
K	Other electronic navigational aid system message
L	Rig lists, submarine and gunnery information
V	Rig movements
Z	No messages on hands.



OB38 PORTPATRICKRADIO GALE WARNING 14 SEPT 1840GMT LUNDY FASTNET GALE NOW CEASED International (0)

The message above shows a message OB38, the O is the Station code, (portpatrick) the B the message code (Gale warning) and 38 the message number.

NAVTEX Transmissions

The 518KHz navtex transmissions are all in English language. The 490Khz national services are generally used for local language transmissions.

NAVAREA 1 STATION LIST

ID	Frequency	Country	Lat	Long	Range	Operational
E	518 kHz Niton	United Kingdom	50°35.18'N	001°15.28'W	270 NM	Operational
K	518 kHz Niton	United Kingdom	50°35.18'N	001°15.28'W	270 NM	Operational
G	518 kHz Cullercoats	United Kingdom	55°04.48'N	001°27.78'W	270 NM	Operational
O	518 kHz Portpatrick	United Kingdom	54°50.65'N	005°07.47'W	270 NM	Operational
Q	518 kHz Malin Head	Ireland	55°21.80'N	007°20.39'W	400 NM	Operational
W	518 kHz Valentia	Ireland	51°56.00'N	010°21.00'W	400 NM	Operational
T	518 kHz Oostende	Belgium	51°11.00'N	002°48.00'E	150 NM	Operational
V	518 kHz Oostende	Belgium	51°11.00'N	002°48.00'E	150 NM	Operational
P	518 kHz Den Helder	Netherlands	52°55.08'N	004°44.30'E	250 NM	Operational
H	518 kHz Bjuröklubb	Sweden	64°27.71'N	021°35.47'E	300 NM	Operational
I	518 kHz Grimeton	Sweden	57°06.32'N	012°23.36'E	300 NM	Operational
J	518 kHz Gislövshammer	Sweden	55°29.38'N	014°18.87'E	300 NM	Operational
L	518 kHz Rogaland	Norway	58°38.92'N	005°36.58'E	450 NM	Operational
M	518 kHz Jeløya	Norway	59°26.03'N	010°35.38'E	200 NM	Operational
N	518 kHz Ørlandet	Norway	63°39.70'N	009°32.80'E	450 NM	Operational
R	518 kHz Sauðanes	Iceland	66°11.17'N	018°57.12'W	450 NM	Operational
S	518 kHz Pinneberg	Germany	53°40.50'N	009°48.50'E	250 NM	Operational
U	518 kHz Tallinn	Estonia	59°27.84'N	024°21.42'E	250 NM	Operational
X	518 kHz Grindavik	Iceland	63°49.99'N	022°27.04'W	450 NM	Operational
I	490 kHz Niton	United Kingdom	50°35.18'N	001°15.28'W	270 NM	Operational
U	490 kHz Cullercoats	United Kingdom	55°04.48'N	001°27.78'W	270 NM	Operational
C	490 kHz Portpatrick	United Kingdom	54°50.65'N	005°07.47'W	270 NM	Operational
A	490 kHz Malin Head	Ireland	55°21.80'N	007°20.39'W	400 NM	Operational
B	490 kHz Oostende	Belgium	51°11.00'N	002°48.00'E	150 NM	Operational
L	490 kHz Pinneberg	Germany	53°40.50'N	009°48.50'E	250 NM	Operational
E	490 kHz Sauðanes	Iceland	66°11.17'N	018°57.12'W	450 NM	Operational
K	490 kHz Grindavik	Iceland	63°49.99'N	022°27.04'W	450 NM	Operational

Q & A

THE RECEIVER APPEARS DEAD - DATA LED NOT ILLUMINATED
Check power to receiver. Check 12-volt supply and polarity is correct. Check fuse.

THE PHONE/TABLET APP CANNOT CONNECT TO THE RECEIVER
Check power to receiver. Check the DATA LED is illuminated.

RECEIVER IS IN STANDBY BUT RECEIVES NO MESSAGES
No messages have been transmitted since the unit was turned on.
The receiver is not in range of any Navtex stations.
Check the antenna cable for damage, inspect any joints and remake if defective.
Turn off any piece of equipment that may cause interference.
Shore power supplies can sometimes conduct interference onto the boat so disconnect boat from shore power.
Turn off charger, particularly if it is of the inverter type.

MESSAGE ENDS ABRUPTLY WITH THE WORDS “BAD SIGNAL”
A second navtex transmitter has started up before the message has ended. This can occur when a transmitter
overruns its own time slot.

MESSAGE ENDS WITH THE WORDS “LOST SIGNAL”
The signal has faded below an acceptable level for too long to be of value

NOTES

This device Contains Transmitter Module FCC ID: T9JRN4020
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.
The RN4020 module has been tested to R&TTE Directive 1999/5/EC Essential Requirements for Health and Safety (Article (3.1(a)), Electromagnetic Compatibility (EMC) (Article 3.1(b)), and Radio (Article 3.2) and are summarized in Table 3-1:
European Compliance Testing.
A Notified Body Opinion has also been issued. All test reports are available on the Rn4020 product web page at http://www.microchip.com.

IMPORTANT READ THIS BEFORE UNPACKING INSTRUMENT

Prior to unpacking this instrument read and fully understand the installation instructions. Only proceed with the installation if you are competent to do so. Nasa Marine Ltd. will not accept any responsibility for injury or damage caused by, during or as a result of the installation of this product. Any piece of equipment can fail due to a number of causes. Do not install this equipment if it is the only source of information and its failure could result in injury or death. Instead return the instrument to your retailer for full credit. Remember this equipment is an aid to navigation and not a substitute for proper seamanship. This instrument is used at your own risk, use it prudently and check its operation from time to time against other data. Inspect the installation from time to time and seek advice if any part thereof is not fully seaworthy.

LIMITED WARRANTY

Nasa Marine Ltd. warrants this instrument to be substantially free of defects in both materials and workmanship for a period of one year from the date of purchase. Nasa Marine Ltd. will at its discretion repair or replace any components which fail in normal use within the warranty period. Such repairs or replacements will be made at no charge to the customer for parts and labour. The customer is however responsible for transport costs. This warranty excludes failures resulting from abuse, misuse, accident or unauthorised modifications or repairs. In no event shall Nasa Marine Ltd. be liable for incidental, special, indirect or consequential damages, whether resulting from the use, misuse, the inability to correctly use the instrument or from defects in the instrument. If any of the above terms are unacceptable to you then return the instrument unopened and unused to your retailer for full credit.

Name _____

Address _____

_____

Dealer Name _____

Address _____

_____

Date of Purchase _____

Proof of purchase may be required for warranty claims.

Nasa Marine Ltd.
Boulton Road, Stevenage, Herts SG1 4QG England

EU Declaration of Conformity

This declaration is issued under the sole responsibility of NASA Marine Ltd. This product is in conformity with the relevant Union harmonisation Legislation. Harmonised standards applied:
EU directive **2014/53/EU** (Radio Equipment Directive)
EU directive 2014/30/EU EN60945:2002
The original Declaration of Conformity certificate can be requested at info@nasamarine.com
THIS PRODUCT IS INTENDED FOR USE ONLY ON NON SOLAS VESSELS

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