



THE SCIENCE OF SURVIVAL

AISLink™ CB2



AIS Class B Transceiver with SOTDMA
USER MANUAL



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1. GENERAL

1.1 Exposure to RF Electromagnetic Energy

This product complies with EN62311:2008 (EU) and RSS-102 (Canada).

This product has been evaluated for compliance with the FCC RF exposure limits given in CFR 47 part 1.307(b) at a distance greater than 2" (25cm) from the antenna.

1.2 Warnings

This product is designed to assist navigation and should not be used in the place of appropriate navigational judgement. AIS should be used as a complement to navigation and should not be used to replace installed equipment such as RADAR or ECDIS.

- ! **AIS devices can only monitor other AIS equipped vessels. It is the responsibility of the vessels crew and skipper to always be aware of surrounding vessels that may not be fitted with AIS equipment.**
- ! **The CB2 must always be used in conjunction with the supplied GPS antenna. Use of an alternative GPS antenna may impair the functionality of the system.**
- ! **This product contains no user-serviceable parts. All maintenance work should be carried out by trained persons authorized by ACR Electronics.**
- ! **Do not install in a flammable atmosphere (engine room, near to fuel tanks) or in a location subject to excessive solar heat (direct sunlight, beneath a windshield).**
- ! **The CB2 is a maritime radio transmitter and is subject to radio licensing laws. Contact the relevant authority in your country for local license requirements.**
- ! **False information transmitted can result in risk to other vessels as well as your own. It is the user's responsibility to ensure that vessel sensors are configured and calibrated correctly and that all AIS information transmitted is accurate and up to date. It is a criminal offence in some countries to transmit falsified data.**
- ! **USA Users only: It is a violation of the rules of the FCC to input an MMSI that has not been properly assigned to the end user, or to otherwise input any inaccurate data into this device. The entry of static data into this device shall be performed by the vendor of the device or by an appropriately qualified person in the business of installing marine communications equipment on board vessels. Instructions on how to accurately enter and confirm static data in the device can be found in Section 3 of this user manual.**



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1.3 CB2 Overview

The Automatic Identification System (AIS) was designed as an aid to collision-avoidance in the marine industry and is a significant development in navigational safety. It is now widely used at sea to provide vessels with a live accurate picture of marine traffic in the surrounding area.

The fully compliant CB2 is a Class B type AIS Transponder from ACR Electronics. Your vessel information such as position, speed, and course is ascertained automatically and continuously using an internal multi-GNSS receiver and transmitted to all other AIS equipped vessels at a maximum rate of every two seconds.

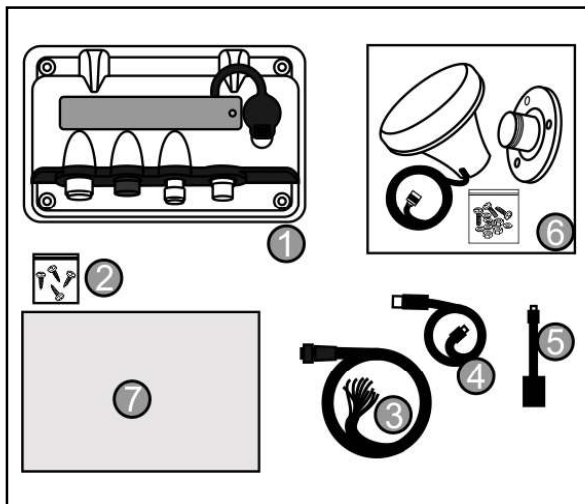
Other vessel information such as vessel name, call sign, type and dimensions as well as the MMSI are also transmitted. This information can be uploaded to the CB2 easily by several methods described in Section 3 of this guide. Once this information has been uploaded, it remains stored in the unit's non-volatile memory even if powered down.

The CB2 also receives and interprets AIS messages from other AIS equipped vessels within range, which can then be relayed effortlessly to other navigation devices such as chart plotters, laptops or mobiles using the CB2's NMEA0183, NMEA2000, USB or Wi-Fi outputs.

A multi-colour LED indicator light on the CB2 signals the on-going operational status of the unit. This additional safety feature provides you the confidence of knowing that the CB2 has continuous AIS transmission and optimal performance.

1.4 CB2 Contents

1	CB2
2	Screw Kit
3	Power/Data cable
4	USB to Micro USB Cable
5	USB On-The-Go cable
6	GPS Antenna (Inc. fixing kit)
7	User Manual

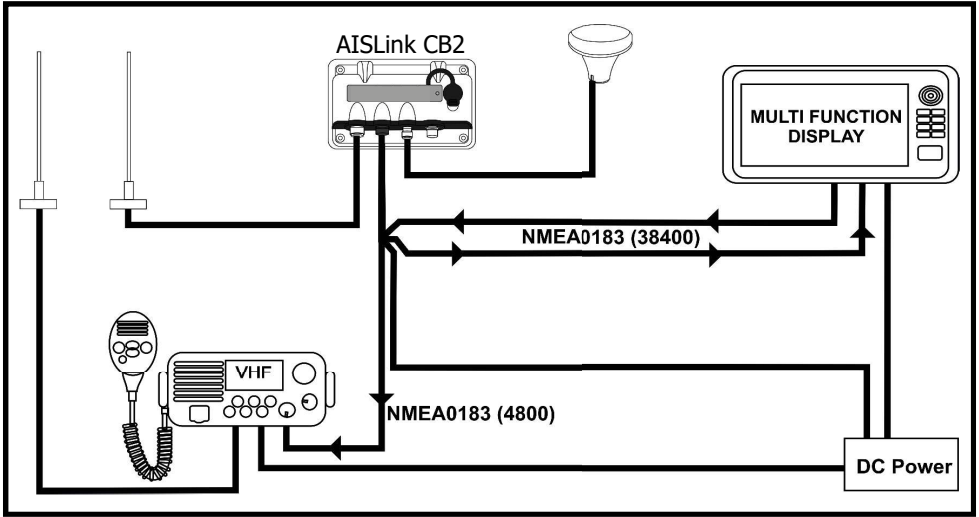




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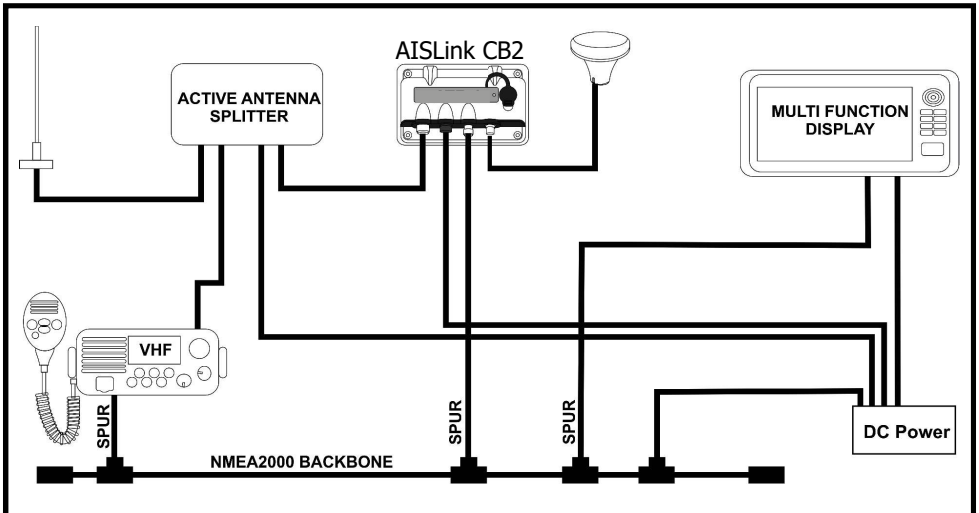
1.5 Example Systems

1.5.1 Example System Using NMEA0183



1.5.2 Example System Using NMEA2000

The CB2 NMEA2000 LEN = 1

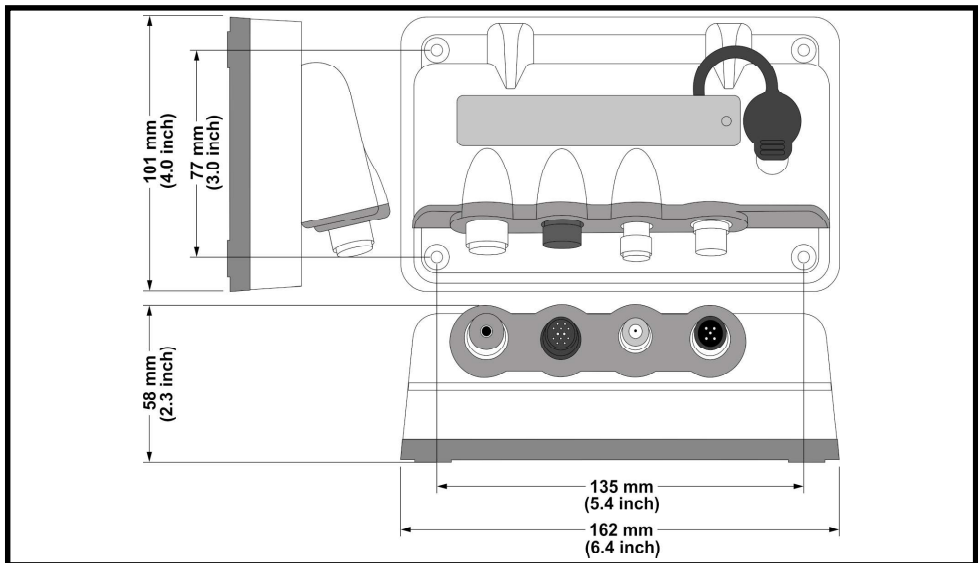


2. INSTALLATION

2.1 Mounting

2.1.1 Transceiver mounting

Determine the mounting location for the CB2 ensuring that there are suitable access routes for all the required cables and attach securely to a flat surface using the four fixing screws provided. The unit should be easily accessible to allow for disconnection from the power source. The power/data cable plug is the disconnect device, unplugging this will isolate the CB2 from both poles of the power source. It is also recommended that the unit can be accessed later to view the indicator LED and operate the Mode button.





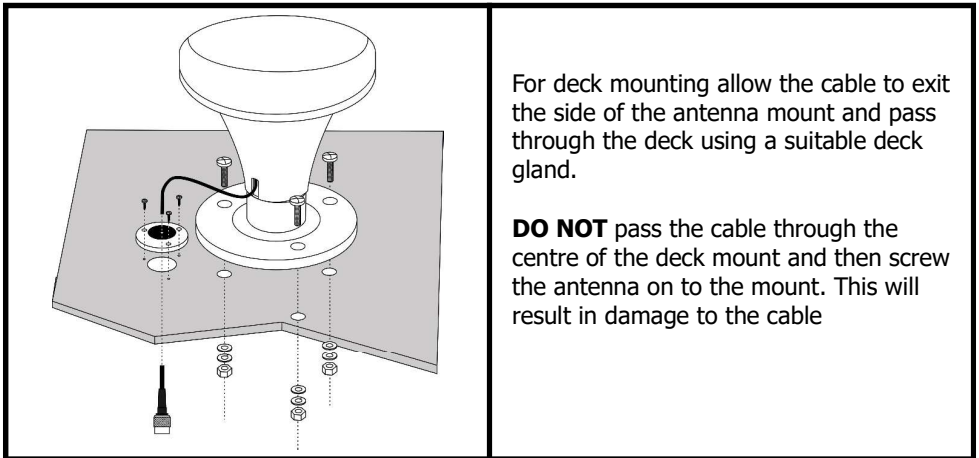
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2.1.2 GPS (GNSS) Antenna Mounting

The GPS Antenna should be installed with a clear and unobstructed view of the sky, it should NOT be positioned or mounted on a mast that can cause the antenna to swing and potentially reduce the accuracy of the GPS position and it should NOT be positioned in the direct path of a radar transmitter.

The GPS antenna can be mounted either on a flat horizontal surface or on a suitable pole mount (not supplied).

- If you intend to surface mount the antenna, ensure you have access to the underside of the mounting surface.
- If you intend to pole-mount the antenna, the mount requires a 1 inch 14 TPI thread.



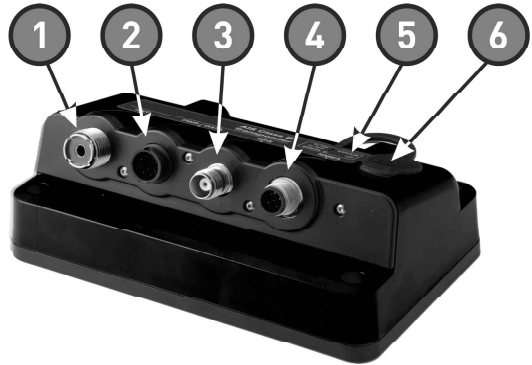
After fixing the GPS antenna to an appropriate location, route the 10m cable to your AIS transceiver unit, adding extension cable as necessary.

- ! **DO NOT cut the GPS Antenna cable. Neatly coil and tie any excess cable**

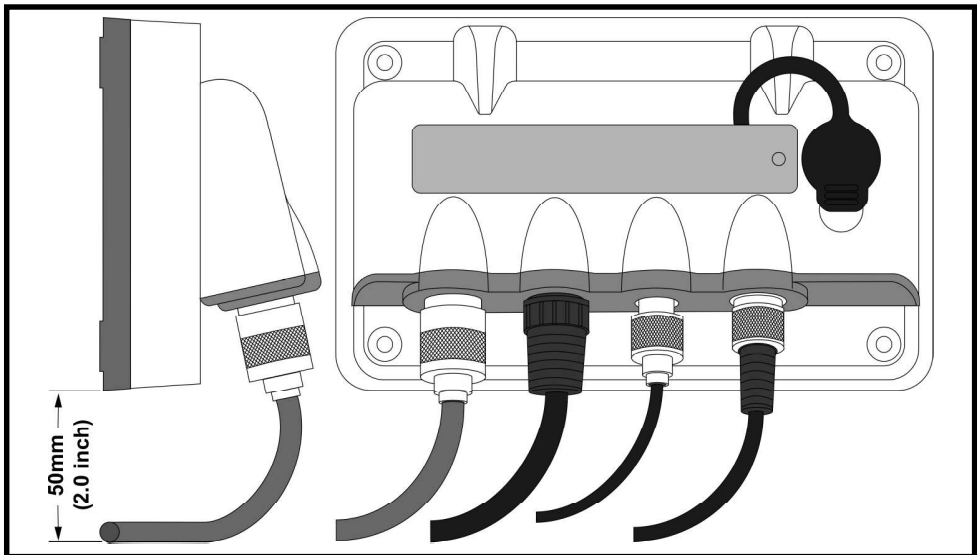
Connect the cable to the GPS connector on the CB2.

2.2 Connections

Item	Connector
1	VHF (SO239)
2	Power/Data
3	GPS Antenna (TNC)
4	NMEA2000
5	LED Indicator Button
6	USB (Micro-B)



To avoid damage to the cables, ensure at least 50mm (2.0 inches) is available below the Transceiver to allow the cables to turn.





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2.2.1 RF Connectors

The VHF antenna should be connected to the SO239 socket.

If the vessel is equipped with a single VHF antenna that is required to be shared between the CB2 and a VHF Radio Transceiver it is necessary to use an active antenna splitter. Attempting to connect two transmitting devices to a single antenna without a splitter will cause severe damage to either or both devices. Install a third party splitter in accordance with the instructions provided with that unit connecting the CB2 "ANT" connector to the AIS Input connector on the splitter.

A typical active splitter installation connection is shown in the NMEA2000 example on page 6 of this manual.

! When a splitter is installed and the VHF Radio is transmitting, the CB2 is unable to make use of the SOTDMA system and reporting rates may be longer than those specified for normal operation. For optimum operation a dedicated VHF antenna is recommended.

The GPS antenna should be connected to the TNC connector.

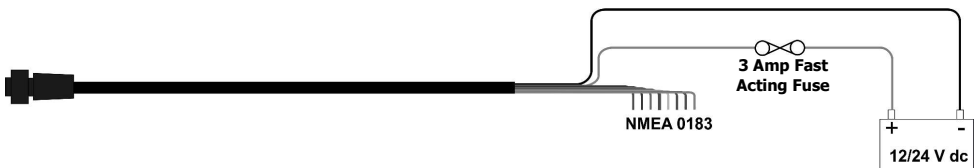
2.2.2 Power and data connectors

The power and data connections are on the 10-core flying lead supplied.

Connect the power cables to the vessels supply via a suitable fast acting fuse.

If you need to extend the length of the power cable, ensure you observe the following:

- The power cable for each unit in your system should be run as a separate, single length of 2-wire cable from the unit to the vessel's battery or distribution panel.
- For power cable extensions, it is recommended that a minimum wire gauge of 16 AWG (1.31 mm²). For cable runs longer than 15 meters, you may need to consider a thicker wire gauge (e.g. 14 AWG (2.08 mm²), or 12 AWG (3.31 mm²)).





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Default NMEA Port Settings

Power	RED	DC Power	+ve	12 - 24V dc
	BLACK	DC Power	-ve	0V dc
Port 1 Fast NMEA	BROWN	38400	+ve	In
	BLUE	38400	-ve	In
	WHITE	38400	+ve	Out
	GREEN	38400	-ve	Out
Port 2 Slow NMEA	YELLOW	4800	+ve	In
	GREY	4800	-ve	In
	ORANGE	4800	+ve	Out
	PINK	4800	-ve	Out

The CB2 includes 2 bidirectional NMEA 0183 ports.

The baud rate for each port can be configured via the set-up application. Both ports can be multiplexed to enable GPS data provided to one port to be combined with AIS data and output on the other port.

Typically port 1 is connected to an MFD and configured for 38,400 baud rate, the baud rate required for AIS data transfer. Port 2 is connected to a Heading sensor or other NMEA 0183 device and configured for 4,800 baud rate.

Details of the NMEA0183 sentences accepted and transmitted by each channel are to be found in Section 7.1. NMEA0183 Data Sentences Supported.



3. CONFIGURATION

The CB2 needs to be correctly programmed with the following vessel data before use:

- Vessel Maritime Mobile Service Identity (MMSI) number
- Vessel name
- Vessel call sign
- Vessel dimensions and AIS GPS antenna location
- Vessel type

An MMSI number comprises 9 digits, and all 9 digits of a valid number must be entered to be accepted during setup. All other fields (i.e. vessel type, name etc.) are optional.

If your vessel already has an MMSI number (used for a VHF DSC radio) then the same MMSI number must be used to program the transceiver.

If a valid MMSI number is not entered, the CB2 will enter Silent Mode and will not transmit although it will still operate as a receiver.

- ! **Important: In the United States of America, the MMSI and Static Data must be entered only by a qualified dealer or other appropriately qualified installer of marine communications equipment on board vessels. The user is NOT authorized to do this. In Europe and other parts of the world outside of the United States of America, the MMSI and Static Data can be set up by the user.**

Configuration can be completed via 3 platforms:

- Android App (downloadable from Play Store) using WiFi or USB stick
- iOS App (downloadable from App Store) using WiFi
- Web Configuration App using USB stick

All user guides can be downloaded direct from the ACR.



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3.1 Using WiFi

! An Internet connection is required

From the Google Play Store or the Apple App Store search for ACR AIS Config.

Install the ACR AIS Config App on your mobile device.

To set-up a WiFi connection with your mobile device (initial connection only):

Turn off the power to the CB2.

Press and hold the LED button and turn on the power. Keep the button held for 6 seconds until the LED turns Red following Amber flashes. Release the button and the LED should remain Amber, blinking off every 2 seconds to indicate the CB2 is in Wi-Fi connection mode.

Open the App on your mobile device and press Search to look for available devices (this may take a few moments). Once the search has completed, select the CB2 to pair with your mobile device (for iOS only, this is automatic using Android).

Use the Android or iOS app to upload the vessel information to your paired CB2.

3.2 Using a USB Device

Your vessel information can be transferred from your Android phone or computer/laptop to the CB2 using a USB stick and the provided on the go cable.

! Ensure the CB2 is powered off before inserting the USB stick.

Once inserted, power on the unit. The CB2 will upload the information from the USB stick automatically. This may take a few moments. Once the LED stops flashing and a steady Green or Green/Amber flashing* light can be seen, the information is stored.

Press and hold the LED button for 10 seconds, the LED will start to flash Red/Amber and on release will alternate Green and Amber to allow the USB stick to be safely removed without corruption. The LED will revert to normal operation once the USB stick is removed.

You can use the Android App (see above) or the web-based software to upload vessel information onto the USB Stick. The web-based software is available at www.acrartex.com/ais_config .

* Dependant on whether LRM is turned on

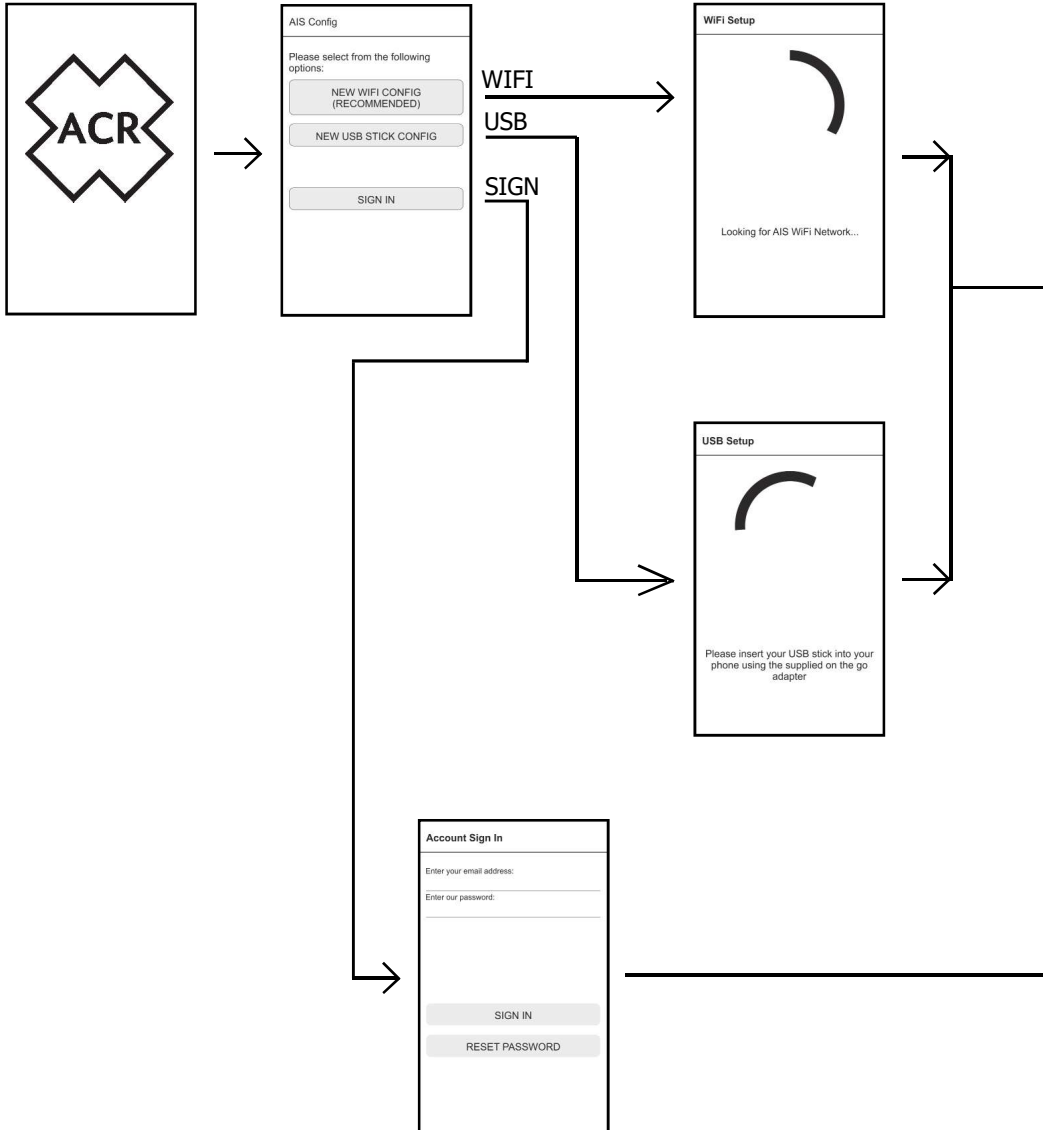


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3.3 Using the Set-up App (Android and iOS)

Open the ACR Electronics App on your mobile device.

NOTE: An Internet connection is required throughout a WiFi set-up procedure. Create a USB stick file if there is no Internet signal available.





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Carefully enter as many of the details requested by the App as possible. The MMSI number is a mandatory field but all other fields are optional. The App can be used at any time to change information OTHER than the MMSI number.

To change a programmed MMSI number it is necessary to contact ACR Electronics to unlock the CB2.

Please note that the App may vary slightly from the images shown here depending on the device it is operating on

MMSI Details

Your Device Details
 Model Number:
 CIB2
 Serial Number:
 XXXXXXXX

Please enter your Vessel Details:

MMSI:
 XXXXXXXX

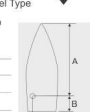
Confirm MMSI:

Vessel Details

Please enter your Vessel Details:

Vessel Name:
 Call Sign:

Vessel Type:
 Select Vessel Type

GPS Antenna Position Dimensions:


A:
 B:
 C:
 D:

BACK NEXT

Advanced Settings

Silent Mode: OFF ON

Long Range Mode: OFF ON

NMEA 0183 Settings

Port 1 Output: Everything GPS Only

Port 1 Speed: 4800 38400

Port 2 Output: Everything GPS Only

Port 2 Speed: 4800 38400

BACK NEXT

Connect to existing network?

Would you like to connect your device to an existing WiFi Network? For example you may have a WiFi Network on your vessel. If you want to directly connect a phone or tablet app to your device select SKIP.

YES SKIP

Connect to existing network?

Please enter the WiFi Network name you wish to connect the AIS device to, and enter the password if the network requires it.

SSID:
 network name

WiFi Password:
 password


Summary

Please check that the below information is correct *****WARNING***** Once the MMSI is set it cannot be changed without contacting Ocean Signal for authorisation

MMSI:
 XXXXXXXX
 Vessel Name:
 MYACR
 Call Sign:
 ARTTX
 Vessel Type:
 17 Vessel - Pleasure Craft
 GPS Antenna Position: (m)
 A: 0.0
 B: 0.5
 C: 0.5
 D: 2.1
 SSID:
 ACRCB2
 Pass Phrase:
 ACTARTTEX

BACK NEXT

Programming device



Programming device

Setup Complete

Create an ACR account to get an extra year warranty and make configuring your products easier in the future

First Name	Enter First Name
Last Name	Enter Last Name
Country	Select
Vessel Type	Select
Boat Use	Select
Email Address	Enter Email Address
Confirm Email Address	Enter Email Address
Password	Enter Password
Confirm Password	Enter Password

I agree to create an ACR account to be contacted occasionally in the future in relation to my products

SKIP CREATE

The creation of an account will increase the warranty period to 3 years. The details entered into the account will also allow ACR Electronics to contact you with any software updates or other important information regarding your AIS.

ACR Electronics will not pass on your details to any third parties for marketing purposes.

Setup File Created

File written successfully, please unplug your USB stick now and insert it into the USB port of the AIS device.

Create an ACR account to get an extra year warranty and make configuring your products easier in the future!

First Name	Enter First Name
Last Name	Enter Last Name
Country	Select
Vessel Type	Select
Boat Use	Select
Email Address	Enter Email Address
Confirm Email Address	Enter Email Address
Password	Enter Password
Confirm Password	Enter Password

I agree to create an ACR account to be contacted occasionally in the future in relation to my products or information that I may be asked

SKIP CREATE

Account Created

Your account has been successfully created. You will receive an email confirming the account details.

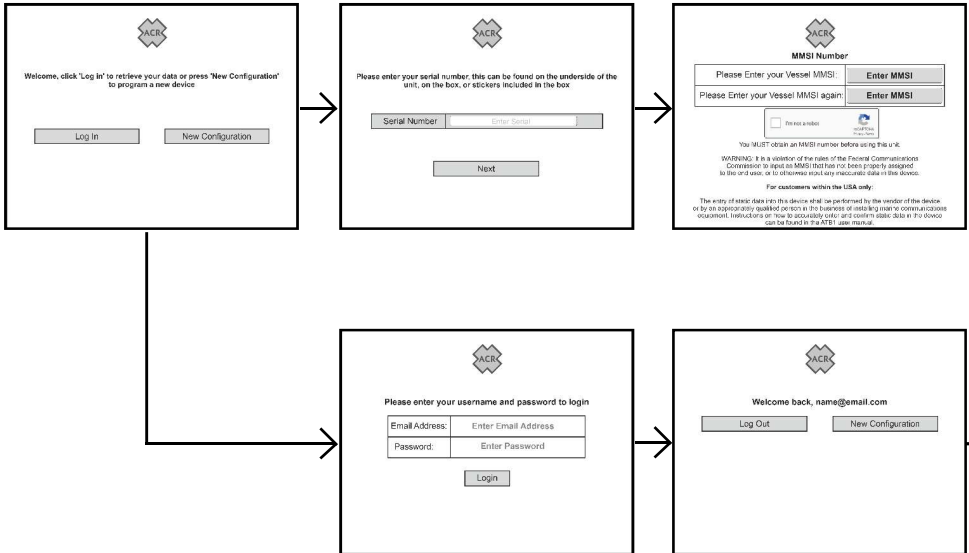
FINISH



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3.4 Using the On-line Web Based Software

Recommended Browsers: MS Edge, Firefox, Google Chrome, Safari.



Carefully enter as many of the details requested by the App as possible. The MMSI number is a mandatory field but all other fields are optional. The App can be used at any time to change information OTHER than the MMSI number.

To change a programmed MMSI number it is necessary to contact ACR Electronics to unlock the CB2.

Please note that the images may vary slightly from the images shown here depending on the device it is being viewed on.



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MMSI Number

Please Enter your Vessel MMSI:

Please Enter your Vessel MMSI again:

You MUST obtain an MMSI number before using this unit.
WARNING: It is a violation of the rules of the Federal Communications Commission to input an MMSI that has not been properly assigned. To the end user, this information must be obtained from the device.
For customers within the USA only:
The entry of static data into this device shall be performed by the vendor of the device. It is the vendor's responsibility to verify the accuracy of the information entered into the device. The accuracy of the information entered into the device shall be confirmed by the vendor. The accuracy of the information entered into the device shall be confirmed by the vendor. The accuracy of the information entered into the device shall be confirmed by the vendor.

Now please enter your additional vessel details:

Vessel Name:

Call Sign:

Vessel Type:

GPS Antenna Location (x, y):

Advanced Settings

Silent Mode:

Long Range Mode:

Port 1 Sentence Output: Everything GPS Sentences Only

Port 1 Speed: 4800 38400

Port 2 Sentence Output: Everything GPS Sentences Only

Port 2 Speed: 4800 38400

WiFi

Would you like to connect your AIS unit to your existing Vessel's WiFi Network? If so please enter the network details below, or press skip to move to the next stage

Please Enter your network SSID:

Please Enter your network password:

Please review the settings below and press "Generate Config" to download your config file.

MMSI:	XXXXXXX
Vessel Name:	ACR0802
Call Sign:	ACR0802
Vessel Type:	Passenger Craft
GPS Antenna Location:	A: 15.5 B: 1.5 C: 5.5 D: 3.5
Long Range Mode:	Off
Silent Mode:	Off
Port 1 Output:	Everything
Port 1 Speed:	38400
Port 2 Output:	GPS Only
Port 2 Speed:	4800
WiFi SSID:	ACR0802
Network Password:	12345678

Please wait while a config file is generated.

Create an ACR account to gain an extra year warranty and make configuring your products easier in the future!

First Name:	<input type="text" value="Enter First Name"/>
Last Name:	<input type="text" value="Enter Last Name"/>
Country:	<input type="button" value="Select"/>
Vessel Type:	<input type="button" value="Select"/>
Boat Use:	<input type="button" value="Select"/>
Email Address:	<input type="text" value="Enter Email Address"/>
Confirm Email Address:	<input type="text" value="Enter Email Address"/>
Password:	<input type="text" value="Enter Password"/>
Confirm Password:	<input type="text" value="Enter Password"/>

I give consent to ACR to be contacted occasionally to be notified of new products or information that I might find useful.

Please wait while we contact our servers

Your config file has been created, click below to download it to your computer, then copy it to a USB stick formatted to FAT32. Plug it into your AIS unit and the config will be written to the device.

The generated file will be saved in the Downloads folder and should be copied onto an empty USB stick that has been formatted to FAT32

The creation of an account will increase the warranty period to 3 years. The details entered into the account will also allow ACR Electronics to contact you with any software updates or other important information regarding your AIS.

ACR Electronics will not pass on your details to any third parties for marketing purposes.



4. OPERATION

Once configured the CB2 will start to operate automatically once the power supply is switched on. The LED will flash Red for a short period while a GPS fix is acquired, after which the LED will remain constant Green flickering slightly every time an AIS signal is received. Alternative operating modes can be selected by pressing the LED button. The operating mode is indicated by the LED as shown in the table in section 4.2.

4.1 Operating Modes

4.1.1 Silent Mode

The CB2 can be prevented from transmitting the vessels position information allowing it to be used as an AIS receiver only.

To activate Silent Mode press and hold the LED button for 2 seconds until the LED starts flashing Amber/Green. At this point release the button and the LED will flash Red for 5 seconds indicating the unit is entering Silent Mode. Once in Silent Mode the LED will remain continuous Amber to indicate the CB2 is operating in Silent Mode.

To deactivate Silent Mode and start transmitting press and hold the LED button for 2 seconds until the LED starts flashing Amber/Green. At this point release the button and the LED will flash Red for 5 seconds indicating the unit is exiting Silent Mode. Once in normal mode the LED remains continuous Green indicating the CB2 is transmitting data.

4.1.2 Long Range Messaging (LRM) Mode

To ensure the best operation when in offshore waters and out of VHF range from land based AIS stations, the CB2 can be used in Long Range Messaging Mode to make optimum use of the satellite based AIS receivers.

To activate LRM Mode press and hold the LED button for 5 seconds until the LED shows continuous Amber following 3 seconds of flashing Amber/Green. At this point release the button and the LED will flash Red for 5 seconds indicating the CB2 is entering LRM mode. Once in LRM mode the LED will flash Green/Amber to indicate the CB2 is operating in LRM mode.

To deactivate LRM mode and return to normal operation press and hold the LED button for 5 seconds until the LED shows continuous Amber following 3 seconds of flashing Amber/Green. At this point release the button and the LED will flash Red for 5 seconds indicating the CB2 is exiting LRM mode. Once in normal mode the LED remains continuous Green indicating the CB2 is transmitting in normal mode.



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4.2 LED Indicator Sequences

LED Sequence	Reason	Description
Flashing Green	Start-up	Unit is starting and obtaining a GPS fix.
Steady Green	Operating	Unit is operating and is ready to receive/transmit. Brief interruptions occur as AIS targets are received
Steady Amber	Silent Mode	Brief interruptions occur as AIS targets are received
Green / Amber alternating	LRM Mode	Unit is operating in Long Range Message Mode. Brief interruptions occur as AIS targets are received
Steady Red	Error – Transmit stopped	Use the WiFi App to see details of the fault or check error messages on a connected Multi-Function Display.
Flashing Red	Error – Transmit continued	These errors may be temporary due to external influence. If the error indication continues for more than 60 minutes check error messages on a connected Multi-Function Display
Amber with off pulse every 2s	Wi-Fi Set-up mode	The unit is in Wi-Fi pairing mode and is visible to other devices
Green / Red blink every 1s	External data lost	External data (ie. Heading) that has previously been received by the CB2 has been lost



4.3 Connecting with Wifi

To connect a mobile device or PC with AIS capable navigation software to the CB2 via WiFi is dependent on the original set-up of the unit.

4.3.1 With the default WiFi settings

If no specific settings were entered for WiFi during the initial set-up using the Web based App the CB2 will not be visible as a WiFi Access Point. To connect a WiFi device it will be necessary to power up the CB2 while holding the LED button for 6 seconds as describes in section 3.1 on page 13. Following successful connection with a mobile App the CB2 will be visible with the SSID: ACR_AISxxxxxxx where xxxxxxxx is the serial number.

4.3.2 With Access Mode set-up

If a SSID and password has been entered and Access Mode selected via the Web based or Mobile App then the CB2 will be visible to other devices with that SSID. Connect your device to the CB2 using the previously entered password.

Once the device is connected open the third party software application and use the settings within that program to connect to IP address 192.168.4.1 port 24000.

When connected GPS information and AIS target information will be available within that application.

4.3.3 With Infrastructure Mode set-up

If the unit has been set-up originally in Infrastructure Mode with the SSID and password of an on-board network the CB2 will connect automatically to that network on power up. The CB2 will be allocated an IP address by the network router. Before you can connect another device running AIS capable navigation software it will be necessary to access the router configuration and determine this IP address. The CB2 will show in the router as "Espressif". Once the IP address has been determined open the third party software application and use the settings within that program to connect to the appropriate IP address port 24000.

When connected GPS information and AIS target information will be available within that application.

- ! **When restarted it is possible that a router will allocate a different IP address. For consistent connections use the router configuration software to set a fixed IP address for the CB2.**



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5. GLOSSARY OF TERMS AND ABBREVIATIONS

AIS	Automatic Identification System	m	Metre
AWG	American Wire Gauge	MFD	Multi-Function Display
DSC	Digital Selective Calling	mm	Millimetres
ECDIS	Electronic Chart Display and Information System	MMSI	Maritime Mobile Service Identity
EU	European Union	PGN	Parameter Group Number
GNSS	Global Navigation Satellite System	RADAR	Radio Detection And Ranging
GPS	Global Positioning Satellite	RF	Radio Frequency
LED	Light Emitting Diode	USB	Universal Serial Bus
LEN	Load Equivalency Number	Vdc	Volts direct current
LRM	Long Range Messaging	VHF	Very High Frequency

6. DISPOSAL

Disposal of the CB2 at the end of life should be done in accordance with local or national disposal of waste electronic equipment in force at the time.

In the EU the CB2 should be disposed of in accordance with the Waste Electrical and Electronic Equipment Directive (2012/19/EU). Waste Electronic equipment is not allowed to be disposed of with normal household waste.



7. INTERFACE PROTOCOLS

7.1 NMEA0183 Data Sentences Supported

Port name	Data Speed Baud Rate	Transmit sentences	Receive sentences
Channel 1	Default 34800	ABM, ACA, ACK, ACS, ALR, BBM, EPV, HBT, NAK, SSD, TRL, TXT, VDM, VDO, VER, VSD, DTM*, GBS, GGA*, GLL, GNS, GSV*, GSA*, RMC*, VTG*, POSG	HDG, HDT, THS, ABM, ACA, AIQ, AIR, BBM, EPV, SPW, SSD, VSD, POSG
Channel 2	Default 4800 *GPS only	ABM, ACA, ACK, ACS, ALR, BBM, EPV, HBT, NAK, SSD, TRL, TXT, VDM, VDO, VER, VSD, DTM*, GBS, GGA*, GLL, GNS, GSV*, GSA*, RMC*, VTG*, POSG	HDG, HDT, THS, ABM, ACA, AIQ, AIR, BBM, EPV, SPW, SSD, VSD, POSG

* When set to GPS only via the App, only the marked sentences are transmitted. When a port is set to 4800 it will automatically set the output to GPS only. Valid NMEA0183 sentences received on one port are retransmitted on the other.

7.2 NMEA2000 PGNs Supported

PGN	Title
59392	ISO Acknowledgement
60160	ISO Transport Protocol, Data Transfer
60416	ISO Transport Protocol, Connection Management
60928	ISO Address claim
126208	Request group function
126464	PGN List – Transmit PGN's group function
126992	System Time
126993	Heartbeat
126996	Product information
126998	Configuration Information
129025	Position rapid update
129026	COG SOG rapid update
129029	GNSS position data
129033	Local Time Offset



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PGN	Title
129038	AIS Class A position report
129039	AIS Class B position report
129040	AIS Class B extended position report
129041	AIS Aids to Navigation (AtoN) report
129539	GNSS DOP's
129540	GNSS sat's in /view
129545	GNSS RAIM Output
129792	AIS DGNSS broadcast binary message
129793	AIS UTC and date report
129794	AIS Class A static and voyage related data
129795	AIS addressed binary message
129796	AIS acknowledge
129797	AIS binary broadcast message
129798	AIS SAR Aircraft Position
129800	AIS UTC/Date Inquiry
129801	AIS addressed safety related broadcast message
129802	AIS safety related broadcast message
129803	AIS interrogation
129804	AIS assignment mode command
129805	AIS data link management message
129807	AIS group assignment
129809	AIS Class B 'CS' static data report part A
129810	AIS Class B 'CS' static data report part B

7.3 WiFi Output

During normal operation all data being received on either NMEA183 port will be output via the WiFi signal and be available to any device connected. Multiple WiFi devices may be connected to display this data.

Note: If both NMEA0183 ports are set to 4800 or GPS only then GPS data only will be available on the WiFi output.



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8. SPECIFICATIONS

AIS transmission

Transmit Power (EIRP) 5/1Watt
 Frequency Range 156.025 – 162.025MHz
 Modulation AIS GMSK: BT 0.4

Receiver

Sensitivity -107dBm for 20% packet error rate
 Frequency Range AIS RX1 and RX2 156.025 – 162.025MHz
 Frequency Range DSC 156.525MHz

WiFi

Sensitivity 20dBm (typical)
 Frequency Range 2400.0 – 2483.5MHz

General

Dimensions 101 x 162 x 58mm
 4.0" x 6.4" x 2.3"
 Temperature range -15°C to +55°C
 5°F to 131°F
 Compass Safe Distance (CB2 and GPS Antenna) 1m
 Waterproof IPx7 (1 metre for 30 minutes)
 Equipment category (CB2) Protected
 Equipment category (GPS Antenna) Exposed
 Supply Voltage Range DC 10.8V - 31.2V
 GPS Receiver High Sensitivity
 GPS Channels 99 acquisition/33 tracking
 Serial Port Interfaces NMEA0183 (2 Rx, 2 Tx), NMEA2000 (DeviceNet), USB¹

Compliance

Standards IEC62287-2, IEC60945

¹ For maintenance/configuration
 Essential ratings information can be found on a label attached to the back of the product

9. SPARES AND ACCESSORIES

Part Number	Description
ACR-9624	GPS Antenna (with 10m cable)
ACR-9625	CB2 Power Data Cable
ACR-9626	USB On the Go Adapter Cable
ACR-9627	USB A to USB micro cable
ACR-9628	USB Connector Protective Cover



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10. APPROVALS

10.1 European Declaration of Conformity

Hereby, ACR Electronics Inc. declares that the radio equipment type CB2 is in compliance with Directive 2014/53/EU.



10.2 Country of Intended Use (EU requirement)

The CB2 can be operated in the maritime environment only in littoral countries of the European Union.

Austria	✓	Germany	✓	Poland	✓
Belgium	✓	Greece	✓	Portugal	✓
Bulgaria	✓	Hungary	✓	Romania	✓
Cyprus	✓	Ireland	✓	Slovakia	✓
Croatia	✓	Italy	✓	Slovenia	✓
Czechia	✓	Latvia	✓	Spain	✓
Denmark	✓	Lithuania	✓	Sweden	✓
Estonia	✓	Luxembourg	✓	United Kingdom	✓
Finland	✓	Malta	✓		
France	✓	Netherlands	✓		

10.3 Canada

This AIS class B digital apparatus complies with Canadian ICES-003.

10.4 United States of America

Please check acartex for full list of current approval information