

Satellite Terminal

Installation Manual
Revision 3.1

Technical Support: support@addvalue.com.sg

Whilst the information in this User Manual has been prepared by Addvalue Innovation Pte Ltd ("Addvalue") in good faith, and all reasonable efforts have been made to ensure its accuracy, Addvalue makes no warranty or representation as to the accuracy, completeness, or fitness for purpose or use of the information. Addvalue shall not be liable for any loss or damage of any kind, including indirect or consequential loss, arising from use of the information and all warranties and conditions, whether express or implied by statute, common law or otherwise, are hereby excluded to the extent permitted by the law of Singapore. Addvalue, the Addvalue Enabled logo, Wideye, Wideye logo, IFleetONE, iFleetONE logo are either trademarks or registered trademarks of Addvalue Technologies Ltd and/or its affiliates in Singapore and/or other countries. Inmarsat, the Inmarsat logo registered trademarks of Inmarsat Global Limited in the United Kingdom and/or other countries, and are used by Addvalue Innovation Pte Ltd under license.

List of Contents

CERTIFICATION	1
SAFETY INSTRUCTIONS	4
IMPORTANT INFORMATION TO INSTALLERS AND USERS	6
INMARSAT FLEET ONE COVERAGE	8
SYSTEM CONFIGURATION	9
USER EQUIPMENT LISTS	10
iFleetONE USER EQUIPMENT	11
1.1 Introduction	11
1.2 Above Deck Equipment	11
1.3 Below Deck Equipment	12
1.4 Optional Primary Handset with Cradle	12
Installation of iFleetONE Terminal	13
1.5 Installation of ADU	13
1.5.1 Overview	13
1.5.2 Radiation Hazard	13
1.5.3 Interference	14
1.5.4 Obstruction	16
1.5.5 Antenna Mast	17
1.5.6 Installing the Antenna Unit	18
1.6 Installation of the BDU	19
1.7 Installation of the Optional Primary Handset	22
CONNECTIONS	23
1.8 BDU's Output Connections	24
1.8.1 GPS Output Connector	24
1.8.2 GPIO Port	25
1.8.3 Grounding Stud	26

GETTING STARTED ON THE SYSTEM	27
1.9 Installing the SIM card	27
1.10 Powering up the system	28
1.10.1 Switching on the BDU	28
1.11 Settings on Web Console	30
1.11.1 Activating on Web Console	30
1.11.2 Activating a PDP Context	32
1.11.3 Deactivating a PDP Context	32
GLOSSARY	33
APPENDIX A OUTLINE DRAWINGS	34
A-1 ADU - Outline Dimensions and Weight	34
A-2 ADU - Hole Pattern (Cut-out Holes)	35
A-3 BDU - Outline Dimensions and Weight	36
A-4 Optional Primary Handset - Outline Dimensions	37
APPENDIX B GPIO PORT	38
B-1 Data Connection Switch	38

CERTIFICATION



FEDERAL COMMUNICATION COMMISSION NOTICE

FCC Identifier: QO4-WEFLONEVTWO

USE CONDITIONS

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.

NOTE

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 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.

IMPORTANT NOTE: EXPOSURE TO RADIO FREQUENCY RADIATION

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. The antenna used for this transmitter must be installed to provide a separation distance of at least 1m from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC CAUTION:

Any changes or modifications not expressly approved by the manufacturer could void the user's authority, which is granted by FCC, to operate this iFleetONE Maritime Satellite Terminal.

Industry Canada Statement:

IC: 5023B-WEFLONEVTWO

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- 1) l'appareil ne doit pas produire de brouillage;
- 2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CE RED Declaration of Conformity

Addvalue Innovation Pte Ltd
Company Registration No: 199604379C
8 Tai Seng Link, Level 5 (Wing 2), Singapore 534158
Tel: +65 6509 5700 Fax: +65 6509 5701
www.addvaluetech.com



RED Declaration of Conformity

We,

Company : Addvalue Innovation Pte Ltd
Address : 8 Tai Seng Link, Level 5 (WING 2), Singapore 534158
Phone Number : +65 6509 5718
Fax Number : +65 6509 5701

Declare under our sole responsibility that the product:

Product : Maritime Communication System, iFleetOne
Brand Name : Wideye
Type or Model : Fleet One V2
Hardware version : 1
Firmware version : R00.1.0.162
Others : Antenna Unit: iFleetOne ADU - Maritime FleetBroadband Inmarsat Class 14 Radom Antenna
Main unit: iFleetOne WIFI monopole antenna model: Monopole Antenna, 2dBi.
Software and hardware of this product is not allowed to be changed or modified by end-user.

is in conformity with the following standards and/or technical specifications (References to standards/specifications must be listed with their identification number and version and, where applicable, date of issue)

Health & Safety (Article 3.1(a)) : EN 60950-1:2006/A2:2013
EN 62311:2008
EMC (Article 3.1(b)) : ETSI EN 301 489-1 V2.1.1: 2016
Draft ETSI EN 301 489-19 V2.1.0: 2017
ETSI EN 301 489-17 V3.1.1: 2017
ETSI EN 301 489-20 V1.2.1: 2002
EN 61000-3-2 :2014
EN 61000-3-3 :2013
EN 60945 :2002
Radio Spectrum (Article 3.2) : EN 301 444 V2.1.2: 2017
EN 300 328 V2.1.1: 2016
EN 303 413 V1.1.1: 2017
Other (Article 3.3) : NA

We hereby declare that the above-named product is in conformity to all the essential requirements of Directive 2014/53/EU with the involvement of the following Notified Body under Annex III Module B of the Directive for Article 3.2 only:

Timco Engineering, Inc. 849 N.W. State Road 45 Newberry, Florida 32669 United States

Identification Mark: **1177** Type Examination Certificate No: **TCF-1604SC17**

The technical documentation relevant to the above equipment will be held at:
Company (or name of EU representative) : Addvalue Innovation Pte Ltd
Address (or address of EU representative): Singapore

Date: 29 August 2017

Name of Authorised Person: Garcia Day Villo
Job Title: Manager, Reliability Engineering

Place of Issue: Singapore
(e.g. City/town, and Country)

Note (not forming part of this declaration): The information required to identify all applicable Union acts should be available in a single EU declaration of conformity. In order to reduce the administrative burden on economic operators, that single EU declaration of conformity may be a dossier made up of relevant individual declarations of conformity. Please see Recital 42 and Article 18 of the RED.

Mobile Earth Stations (MES) 1668 – 1670 MHz is under restricted usage under ECC Decision ECC/DEC/(04)09 for EU Countries. User/Operator shall check with local Radio Spectrum regulator for necessary operating license and restriction usage and protection of Local Radio service.

AT	BE	BG	CZ	DK	EE	FR	DE	IS	IE	IT
EL	ES	CY	LV	LI	LT	LU	HU	MT	NL	NO
PL	PT	RO	SI	SK	TR	FI	SE	CH	UK	HR




SAFETY INSTRUCTIONS



For safety and protection, read the manual before attempting to use the iFleetONE User Equipment (UE).

The following general safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this user guide violates safety standards of intended use of the UE.

Addvalue Innovation Pte Ltd assumes no liability for the customer's failure to comply with these requirements.

Hazard Symbols

<p>Hot Surfaces</p> 	<p>Avoid touching those areas of the UE that are marked with this symbol otherwise it may result in injury.</p>
<p>Antenna Radiation Warning and Distance to other Radiation Equipment</p> 	<p>For safety reasons, all personnel must keep at least 1 meter from the antenna.</p>
<p>Power Supply</p> 	<p>Turn off the power at the mains switchboard before beginning of the installation.</p> <p>Confirm the power voltage is compatible with voltage rating of the equipment. It is highly recommended to use 12V - 24VDC, 12.5A - 6.25A power supply, provided that it is available on the vessel.</p> <p>If there is no suitable DC power line provided by the vessel, an external AC/DC power supply (input range of 100~240V AC, 50~60Hz) with an output of +24VDC, 6.25A can be used.</p> <p>Note: The requirements of the AC/DC power supply should take care of high surge current of 25A at 24V DC for 1ms.</p>

<p>Grounding, cables and connections</p> 	<p>The chassis of the equipment must be connected to an electrical ground. This will minimise electric shock and mutual interference. In short, the UE must be grounded to the vessel.</p>
<p>Service</p> 	<p>Do not attempt to access to the interior of the equipment. Only qualified personnel authorized by its manufacturer may perform service. Failure to comply with this rule will result in the warranty void.</p> <p>Under certain conditions, dangerous voltages may exist even with the power cable removed. To avoid injuries, always disconnect power before accessing the equipment.</p>

Equipment Ventilation

To ensure adequate cooling of the terminal, 5 centimetres of unobstructed space must be maintained around all sides of the unit except the bottom side. The operational temperature range of the transceiver is: -25°C to +55°C.

Fire Precautions

The equipment shall not be operated in the presence of flammable gases or fumes as well as any explosive atmosphere. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

Obtaining Licensing For Inmarsat Transceivers

Under rights given under ITU Radio Regulations, local telecommunications administrations establish and enforce national rules and regulations governing types of emissions, power levels, and other parameters that affect the purity of signal, which may be radiated in the various frequency bands of the radio spectrum.

To legally operate Inmarsat equipment, it is necessary to obtain permission from the local telecommunications regulatory authorities of the country you are operating from. Using your equipment in any country without permission causes you to run the risk of confiscation of the equipment by the local authorities. The normal procedure to bring such equipment into another country is to apply for a license before travel. If a license has not been obtained before travel, the equipment may be put in to storage by local authorities until such time that a license is obtained.

IMPORTANT INFORMATION TO INSTALLERS AND USERS

General

It is important that the user of this equipment read and observe all safety requirements and operate the terminal according to the descriptions published in this manual.

Failure to comply may result in risk of injury or equipment failure and voids the validity of the warranty provided by the equipment manufacturer.

The terminal consists of 2 units; the BDU and the ADU. They must be used as provided by the manufacturer or authorized dealer. Do not substitute any one part of the system which is not provided by the manufacturer or authorized dealer. Should servicing or replacement be required, always contact the distributor or manufacturer for instructions and assistance.

Any modifications or attempts to open the devices by non-authorized personnel will void the warranty.

Contents in this manual are subjected to change without notice and may contain errors or inaccuracies. The manual is periodically revised and updated. To obtain the latest version, please enquire about it from the product manufacturer or distributor.

RF Specifications

Operating Frequencies:

Transmit: 1626.5 MHz - 1660.5 MHz and 1668 MHz – 1675 MHz

Receive: 1518 MHz – 1559 MHz

Transmit EIRP: 15.1 dBW

Copyright

© Copyright 2021 Addvalue Innovation Pte Ltd.

All rights reserved. This publication and its contents are proprietary to Addvalue Innovation Pte Ltd. No part of this publication may be reproduced in any form or by any means without the written permission of Addvalue Innovation Pte Ltd.

Warranty

Addvalue Innovation Pte Ltd. has made every effort to ensure the correctness and completeness of the material in this document. Addvalue Innovation Pte Ltd shall not be liable for errors contained herein. The information in this document is subject to change without notice. Addvalue Innovation Pte Ltd. makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Trademarks

All trademarks, marks, names, or product names referenced in this publication are the property of their respective owners, and Addvalue Innovation Pte Ltd neither endorses nor otherwise sponsors any such products or services referred to herein.

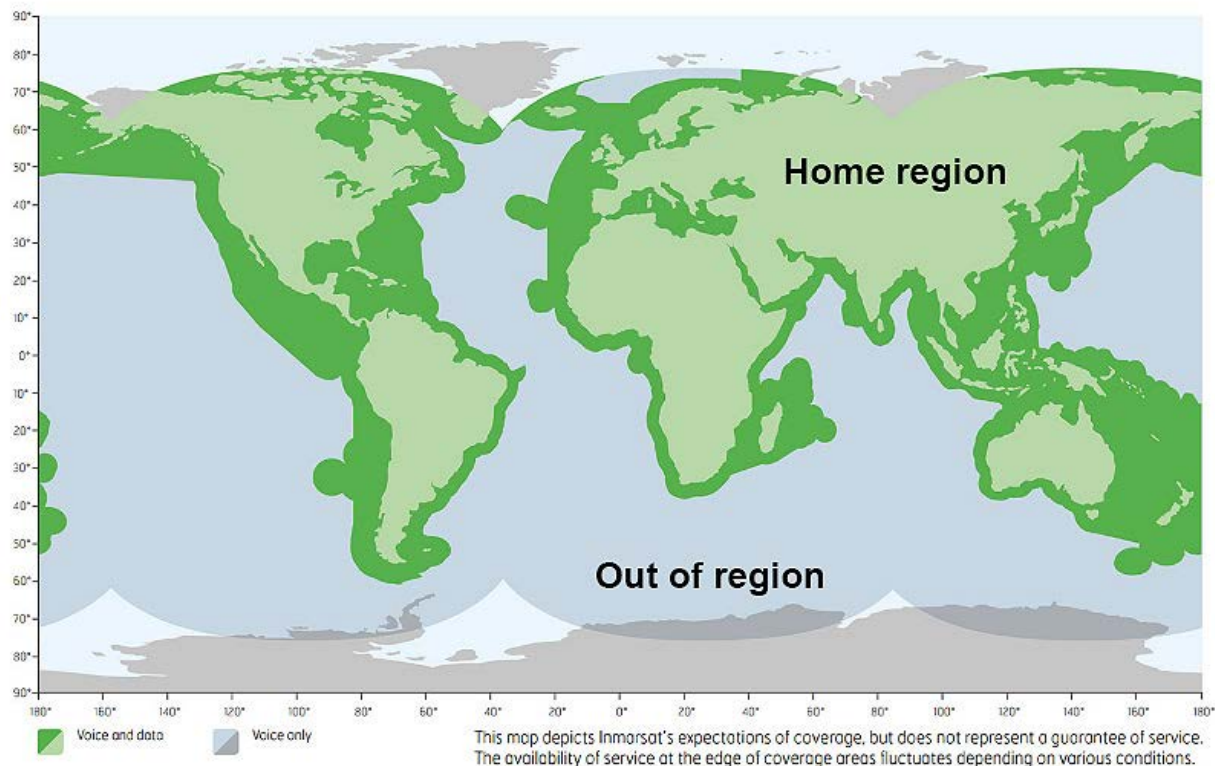
Microsoft, Windows, Windows NT, Windows 2000, Windows XP and Windows 7 are registered trademarks of Microsoft Corporation in the U.S.A. and/or other countries.

All other company and product names may be the registered trademarks or trademarks of their respective owners.

INMARSAT FLEET ONE COVERAGE

Fleet One is Inmarsat's global service and its specific tariff is only available in those green areas of the coverage map (see below).

Fleet One Coastal coverage and rate regions

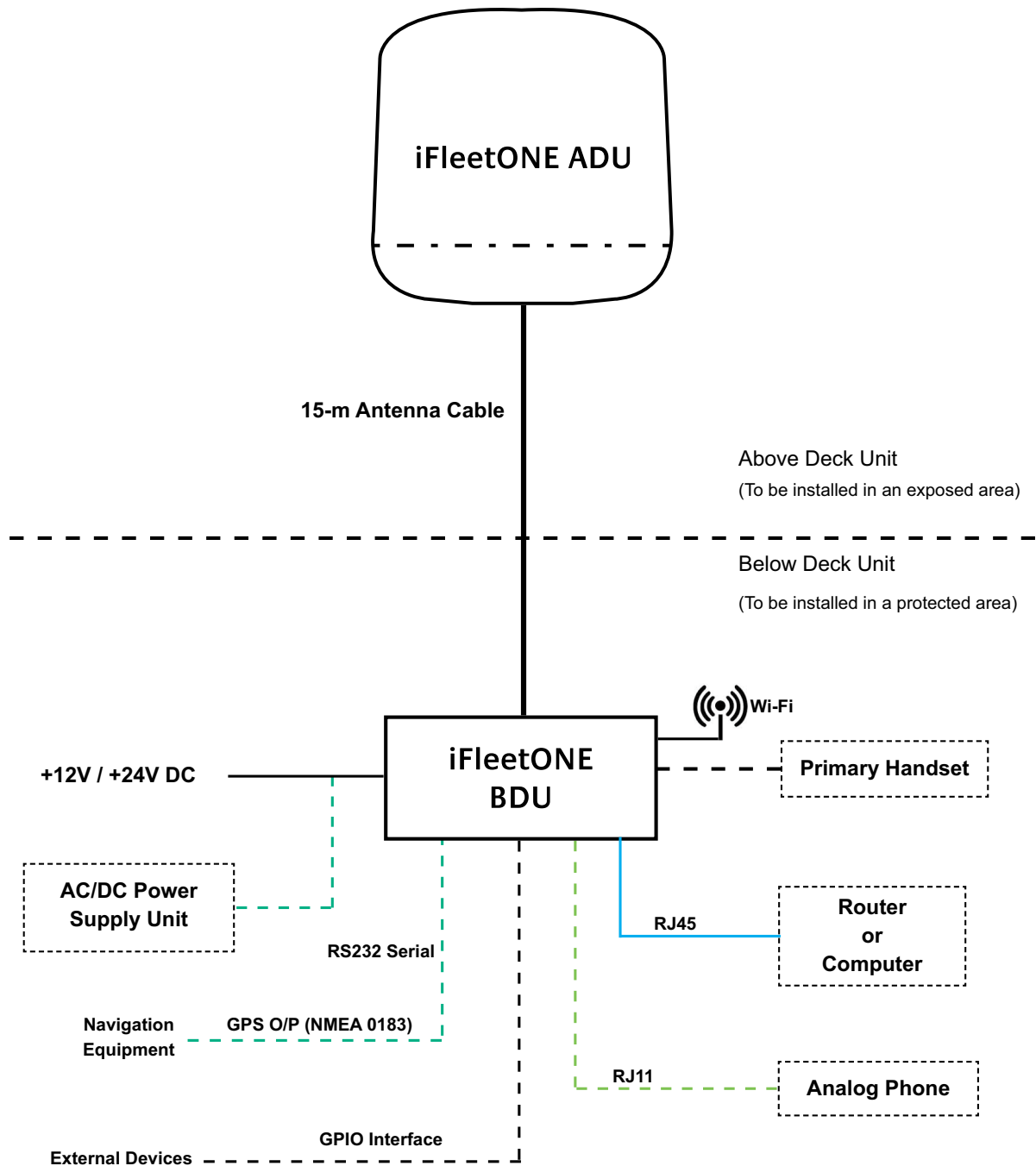


For updated information on coverage, refer to Inmarsat.

The green areas represent the voice and data services and they are known as the “**Home Region**” area. The area outside the home region area is known as “**Out of Region**” which supports only voice service (including 505 emergency call). Roaming outside the Out of Region area will have an impact on the airtime price. A buyer is advised to consult Inmarsat Airtime Providers for specific information regards to airtime prices and specific coverage.

Only Inmarsat Fleet One SIM card can be used with an iFleetONE terminal.

SYSTEM CONFIGURATION



Solid line refers to the basic configuration

USER EQUIPMENT LISTS

iFleetONE Complete Standard Package

Description	Order Code
Wideye iFleetONE BDU	FLV2-9TB00-01
Wideye iFleetONE ADU with 15-meter Antenna Cable	FLV2-0AN00-02

FleetONE Optional Accessories

Description	Order Code
Wideye iFleetONE Primary Handset	SLF1-0PH00-01
Power Supply 240W AC/DC DIN Rail 24V DC/10A	SKP150/ADPS
Antenna Coaxial Cable N(M) to N(M) (25m)	FX50-0CA25-01
Antenna Coaxial Cable N(M) to N(M) (35m)	FX50-0CA35-01
Antenna Coaxial Cable N(M) to N(M) (50m)	FX50-0CA50-01
Pole Mounting Kit for C14-2 Antenna	FLV2-0MK00-01

iFleetONE USER EQUIPMENT

1.1 Introduction

The iFleetONE UE consists of two units;

- Below Deck Equipment (BDU) which is a communication unit
- Above Deck Equipment (ADU) which is an antenna unit

The wired Primary Handset with cradle is an optional accessory.

1.2 Above Deck Equipment

The ADU is a mechanically stabilized maritime antenna unit which is self-tracking.



The radome covers the antenna unit, which is comprised of

- Antenna Module
- RF and GPS Module
- Rotary Joint
- Antenna Pedestal

The antenna module includes a low noise amplifier (LNA), high power amplifier (HPA), and tracking receiver circuitry. All the signals and power pass through a single coaxial antenna cable, which connects the ADU to the BDU.

1.3 Below Deck Equipment

The BDU is the main unit of the iFleetONE UE. It has several interface ports and handles all communication links between the ADU, optional Primary Handset and the local communication devices such as analog telephone, computer, network equipment, navigation equipment etc.



The BDU requires +12V or +24V DC power supply input. It supplies power to the ADU via a single RF / coaxial antenna cable.

1.4 Optional Primary Handset with Cradle

The wired Primary Handset has a colour liquid crystal display (LCD) and keypad for making and receiving normal voice calls and sending SMS, similar to any mobile phone. The handset is provided with a cradle.

Additionally, it can serve as a remote access device for user to access various configuration parameters supported by the BDU.



The Primary Handset's connector is plugged into the BDU's primary handset port. It is powered directly from the BDU.

Installation of iFleetONE Terminal

1.5 Installation of ADU

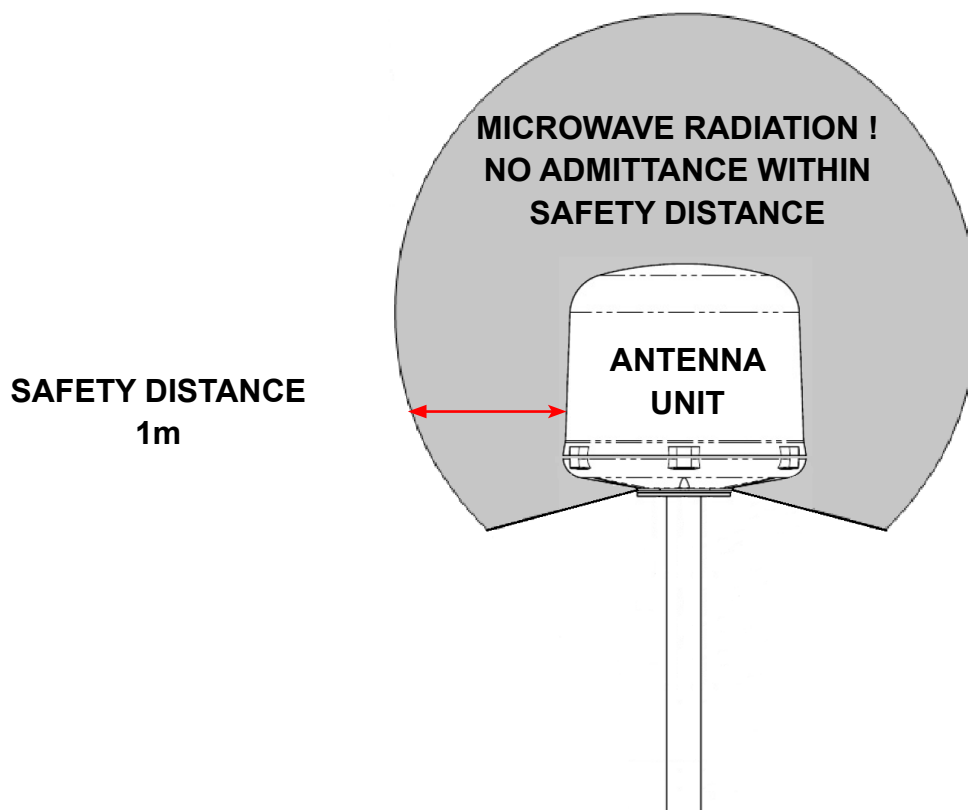
1.5.1 Overview

In general, any obstructing objects like a mast near the antenna unit can block reception or transmission from the satellite's line of sight. In addition, RF radiation emitting from the antenna will affect the human body. When selecting a mounting location, it is important to ensure that the antenna unit shall be free of severe vibration and shock and heat and smoke from the funnel. More guidelines will be detailed in the next sections.

1.5.2 Radiation Hazard

Radio waves can pose a hazard to the human body. Safe distances are subject to country and ship construction regulations. There is no standard formula to calculate the safe distance. The below guidelines are to be noted.

iFleetONE ADU



WARNING: Keep away from the antenna radome at the mentioned safe distance when it is transmitting. Microwave radiation can be harmful to human body, particularly the eyes.

1.5.3 Interference

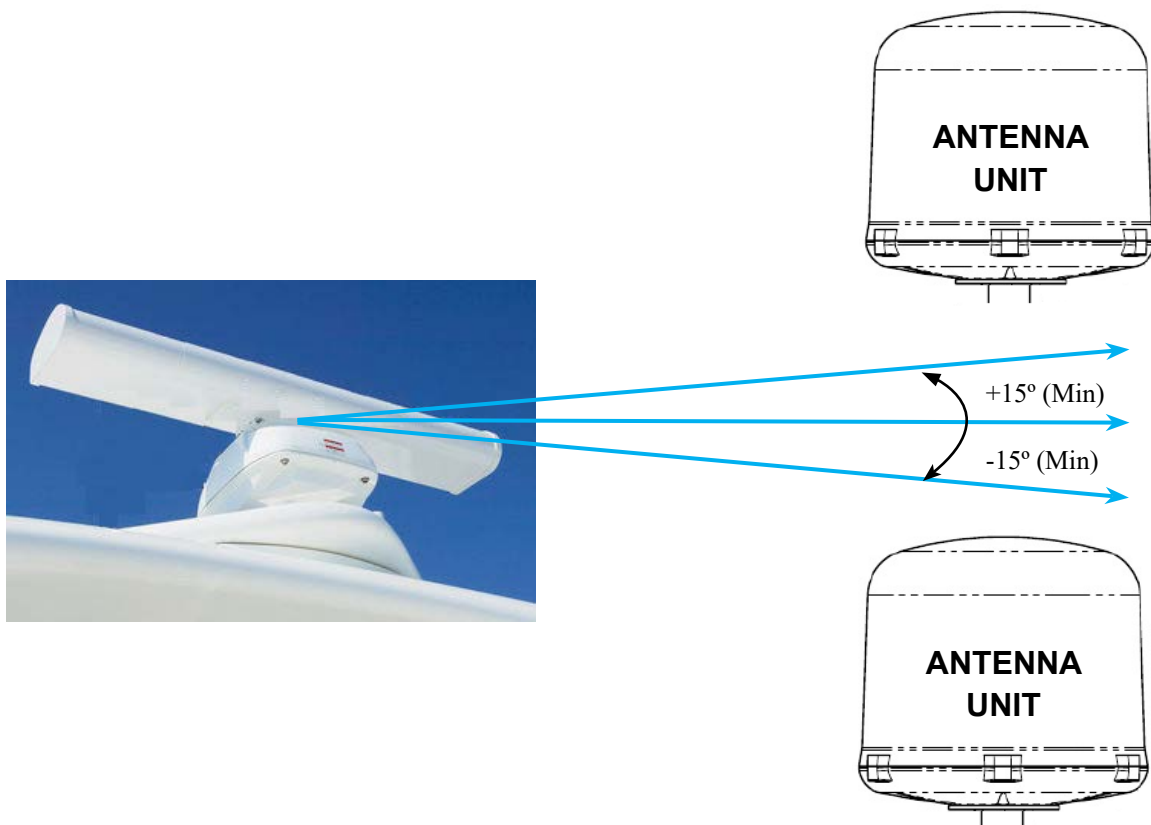
The antenna unit must be mounted as far as possible away from the HF antennas, communication/navigations, VSAT systems and any high power radio transmitter (including other Inmarsat-based systems).

Radar

It is difficult to provide the exact minimum distance between a radar and the antenna unit due to different type of radars in terms of power, radiation pattern and operating frequency band.

The antenna unit is recommended to be at least $\pm 15^\circ$ from the radar's vertical beam.

The minimum radar distance indicates the minimum distance between the closest point of the radar and the closest surface of the antenna radome. This distance is determined by the radar, transmit frequency and the power.



The table below gives the recommended minimum distance d between X- and S-band radars and the antenna. Antenna damage is normally avoided by ensuring the separation distance is met or exceeded.

Antenna location at the minimum distance from Radar (S-Band)		
Radar Power	Min distance (d) at $\pm 15^\circ$ vertical separation	min distance (d) at $\pm 60^\circ$ vertical separation
0 - 12 kW	0.5 m	0.3 m
30 kW	1.0 m	0.5 m
50 kW	2.0 m	1.0 m

Antenna location at the minimum distance from Radar (X-Band)		
Radar Power	Min distance (d) at $\pm 15^\circ$ vertical separation	min distance (d) at $\pm 60^\circ$ vertical separation
0 - 12 kW	0.9 m	0.5 m
30 kW	2.4 m	1.2 m
50 kW	4.0 m	2.0 m

Transmitting Equipment < 1GHz

HF and VHF transmitters can also interfere with the performance of the antenna and also damage the antenna if placed too close. The table below gives guidelines for the minimum distance between the antenna and HF and VHF transmitters.

Antenna location at the minimum distance from HF / VHF		
Type	Power	Distance
HF < 60MHz	100 W	1.0 m
HF < 60 MHz	500 W	2.5 m
VHF > 60 MHz	25 W	1.5 m

VSAT System

For optimum performance the distance between the antenna and VSAT antennas should be at least 3 meters.

GPS Antenna

As the antenna transmits power close to the GPS receive band, the **minimum distance to GPS antennas is typically 5 meters.**

Other L-Band Systems

Typical L-Band satellite communication equipment should be able to operate in close proximity without loss of performance. Importantly such equipment typically includes GPS antennas, and that it can be **necessary to use the typical minimum separation distance of typically 5 meters.**

1.5.4 Obstruction

When locating the antenna, it is very important to ensure that there is a clear line-of-sight to the satellite for all the satellite elevation angles in the region in which the vessel will operate.

The antenna moves in azimuth 360° and in roll and pitch down to -15° to ensure constant tracking even in heavy seas. Any obstructions within this arc can cause performance degradation of the signal quality. The amount of degradation depends on the size of the obstruction and distance from the antenna. The table below is a guide on the object size, at a given distance from the antenna that gives limited degradation.

Object Distance	Object Size
3 m	16 cm
6 m	32 cm
10 m	52 cm
15 m	79 cm

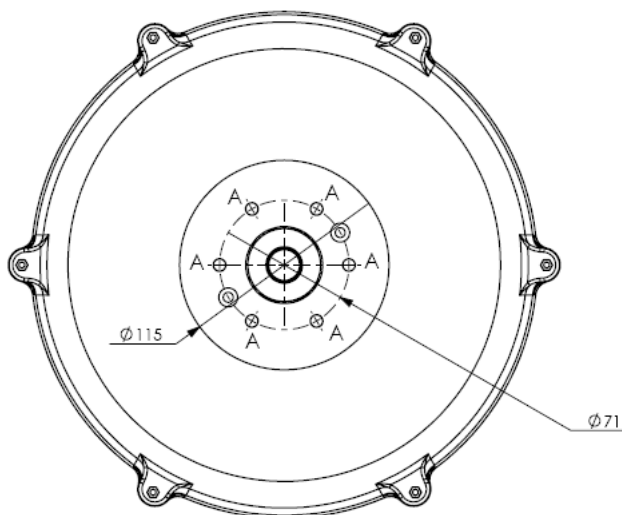
1.5.5 Antenna Mast

The physical size of an antenna mast must be able to support the weight and size of the antenna unit. Additionally, the antenna mast must be able to withstand on-board vibrations and wind speed (up to 100 knots) on the antenna radome. An example of the antenna mounted in a suitable mast is illustrated as below



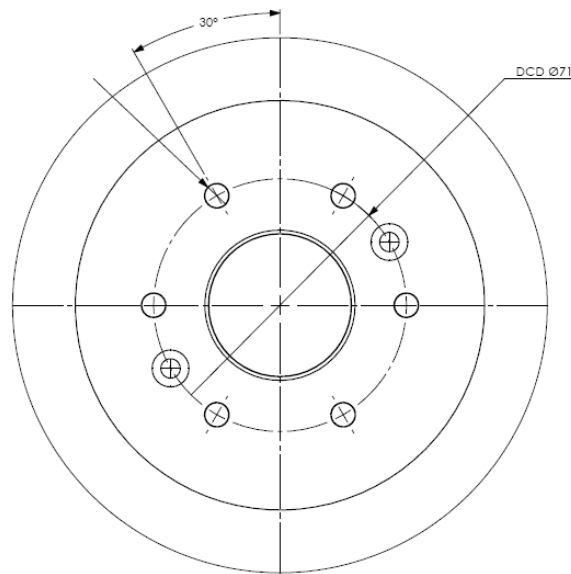
Recommendations of the antenna mast include:

- The mast should provide the internal hole for the installation of the antenna / coaxial cable
- The flange (known as the top plate) of the mast shall meet the dimensions of the ADU's mounting base where there are 6 fixing holes.
- A rubber gasket is required to be inserted between the ADU mounting base and the flange to prevent water ingress into the antenna.



A : Use M6x20 Hex Head Screw bolts (6x) into the threaded holes of ADU Mounting Base for mounting the ADU.

Clearance holes for M6
(Recommended > Ø 6.5mm)



Cut-hole Dimension for mounting bolts

In the case of the existing mast's flange on the vessel or ship does not fit the ADU's mounting base's holes, a custom-made mechanical adaptation flange should be designed and fabricated so that the flange acts as an interface between the existing mast and the ADU.



Custom-made mechanical adaptation flange

1.5.6 Installing the Antenna Unit

The antenna unit should be carefully unpacked and checked for any damage. The procedure for the installation of the antenna unit is as follows:

- Attach the coaxial cable to the RF connector on the antenna unit's base.
- Position the antenna unit at the mounting location.

- Check the connection of the coaxial cable and wrap it with self-amalgamating tape for water-proofing.
- Place the rubber gasket on the mounting flange and align the bolt holes.
- Put the antenna unit on the rubber gasket and use 6 sets of M6 x 20 Hex head bolts (made of A4 stainless steel) with flat washers into the threaded holes of the antenna unit's mounting base via the mounting flange holes.
- Tighten the bolts to the antenna unit in order to secure it to the mounting flange.

Alternatively the antenna can be mounted on a pole. The physical dimensions of the pole shall be preferably 2 meters in height with a diameter of Ø35 to Ø50mm. An optional pole mount kit is available for the installation of the antenna unit on to a pole.

1.6 Installation of the BDU

Unpack the BDU box. The following items should be checked as to whether they are present:

- BDU
- 1 x Ethernet Cable
- 1 x DC Power Cable
- 1 x Inmarsat 505 laminated card
- 1 x Wi-Fi Antenna
- Hardcopy Quick Start Guide
- QR Code card
- Cable Support Kit

The following important notes are to be followed for the selection of a location before installing the BDU:

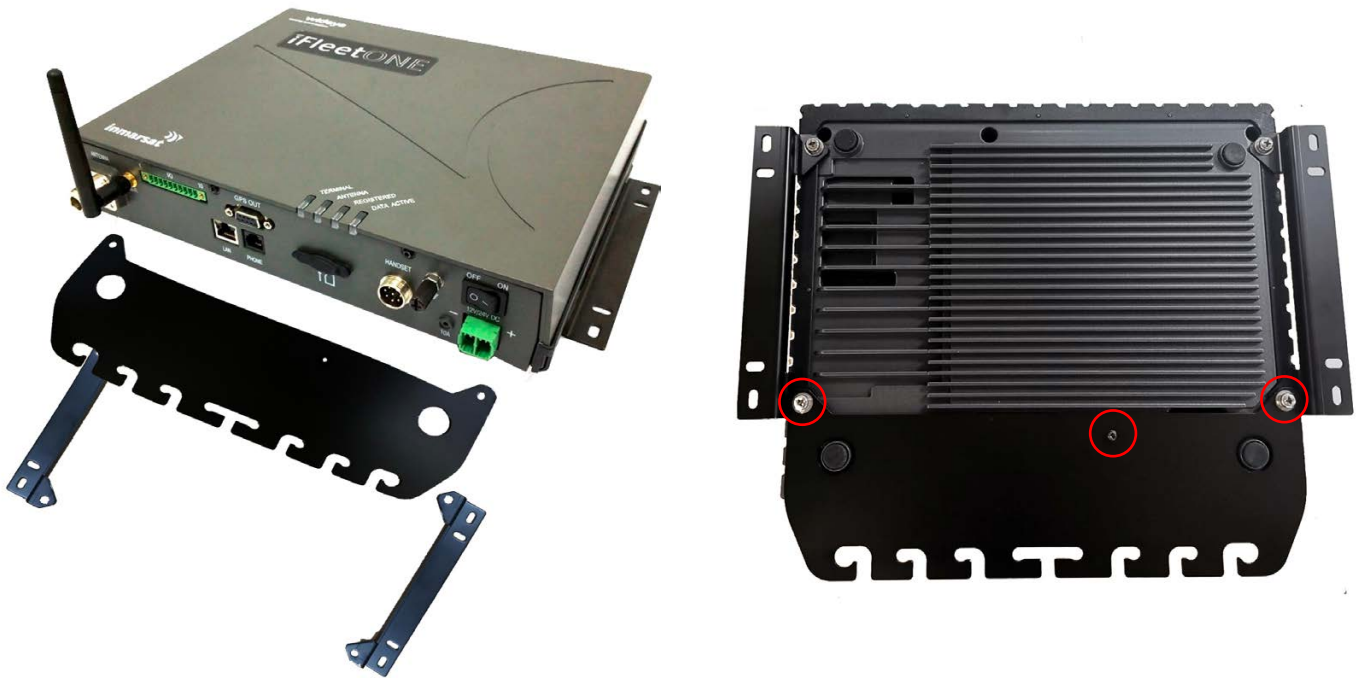
- The unit is not waterproof and it must be kept away from any water splashes.
- The ambient temperature and humidity in the selected location must meet the requirements given in the unit's specification.

Ambient Temperature	-25°C to +55°C
Relative Humidity	Up to 95% at +40°C.

- The unit shall be kept away from direct sunlight.

- The unit shall be placed as far as possible away from any high vibration and shock areas (for example, motor, engine and generator).
- The unit shall be kept away from other electronic equipment.
- The unit must follow the recommended compass safe distance of 1 meter to prevent any interference to a magnetic compass.
- For maintenance, the unit's location has sufficient space at its sides and rear.

The BDU comes with a cable support item, which is included in the box. The cable support item is to secure the cables from the BDU.



To mount the cable support onto the BDU,

- Remove the 3 screws (in red circles) of the front mounting bracket
- Mount the cable support item on the bottom of the BDU.
- Replace and tighten the same 3 screws to secure the cable support item.

The BDU can be installed on a desktop, bulkhead, top ceiling or under captain's console. The procedure of the installing the BDU is simple as follow:

- Place the BDU on the desired installation area.
- Look for the holes of the BDU's mounting brackets.



- Using the holes of mounting brackets and four suitable M4x12mm self-tapping or machined screws so that the BDU is secured to the selected surface.

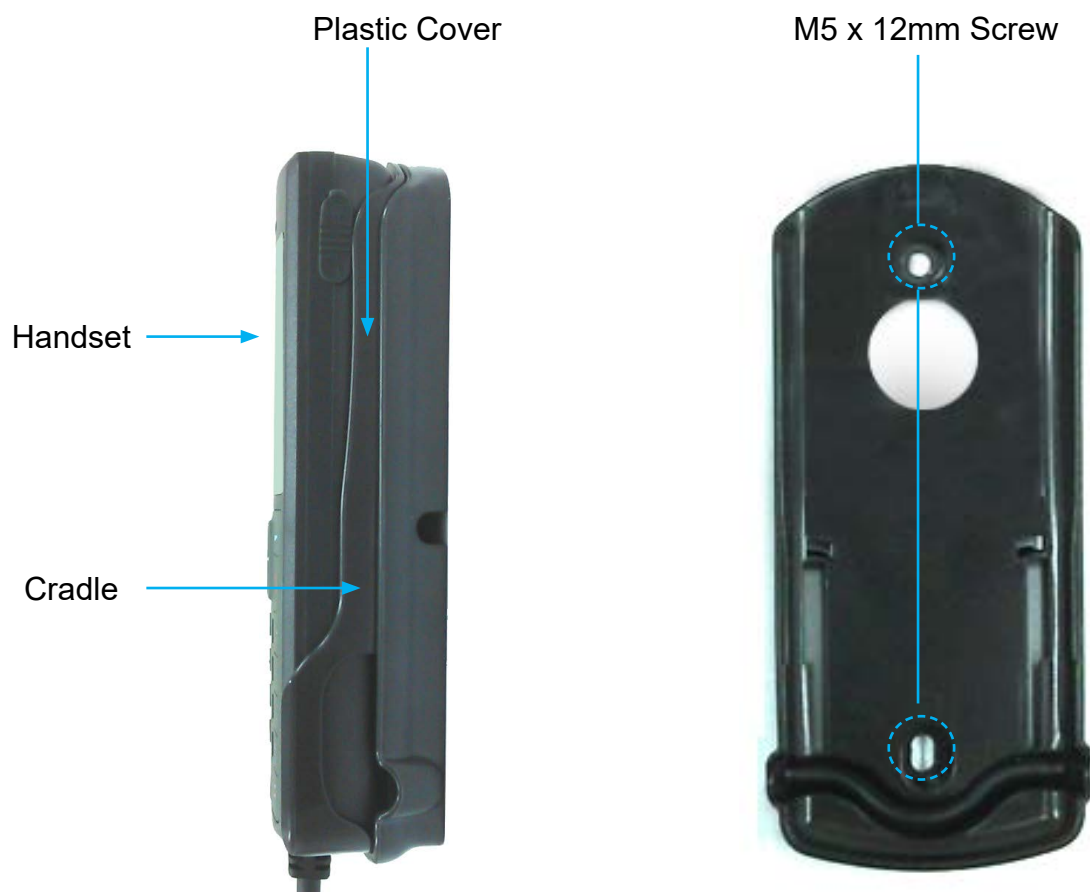
1.7 Installation of the Optional Primary Handset

The primary handset is provided with a cradle. It can be mounted on a desktop, bulkhead, top ceiling or under captain's console similar to the BDU.

Separate the primary handset from its cradle so that the cradle can be fixed with the M5 x 12mm self-tapping screws.

The procedure for installing the cradle is as follows:

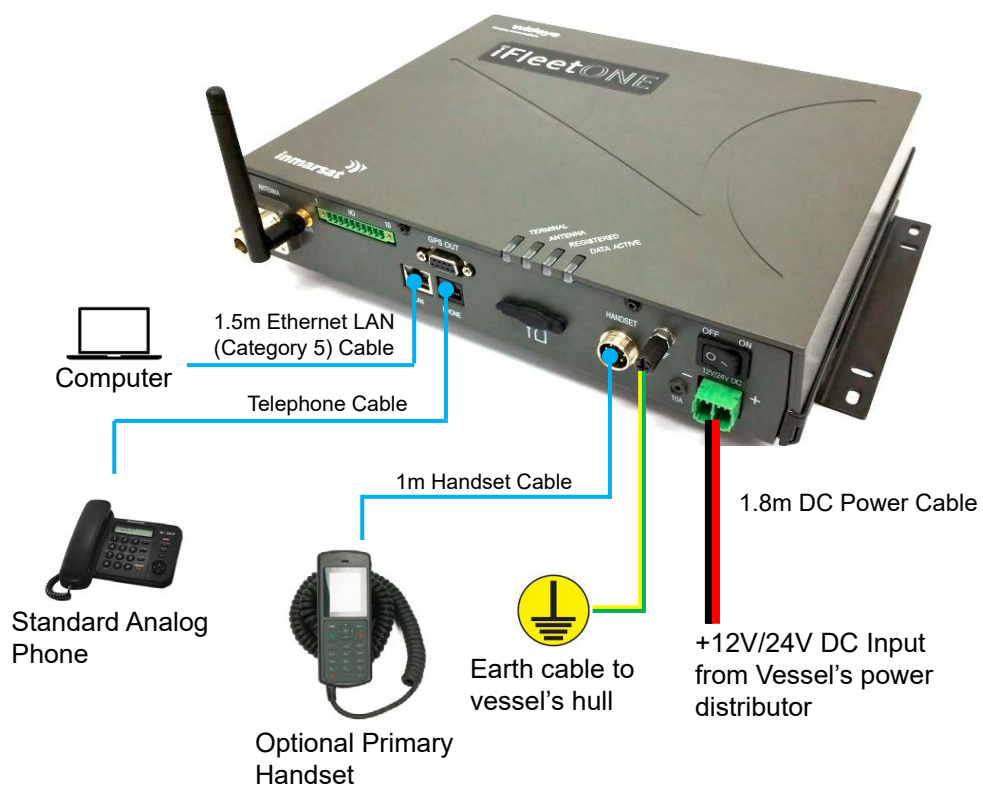
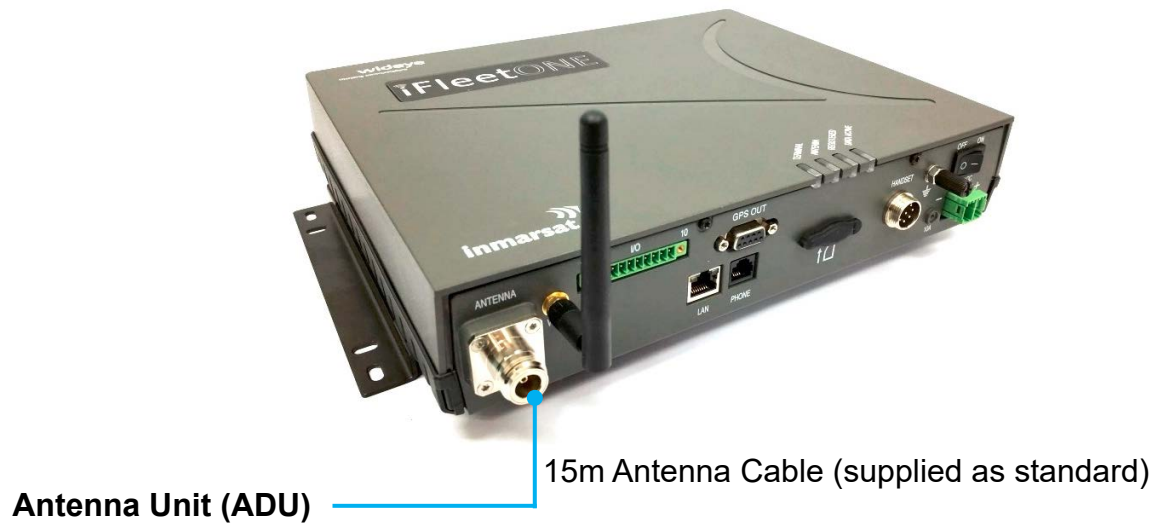
- Separate the handset from the cradle and remove the plastic cover of the cradle.
- Position the cradle on the mounting area.
- Fix the cradle with M5 x 12mm self-tapping screws.
- Reattach the plastic cover onto the cradle.
- Secure the handset to the cradle.



The primary handset is placed on the cradle and its cable connector is plugged securely to the BDU's handset circular port.

CONNECTIONS

Below is the interconnection diagram of the iFleetONE Terminal with the cables.

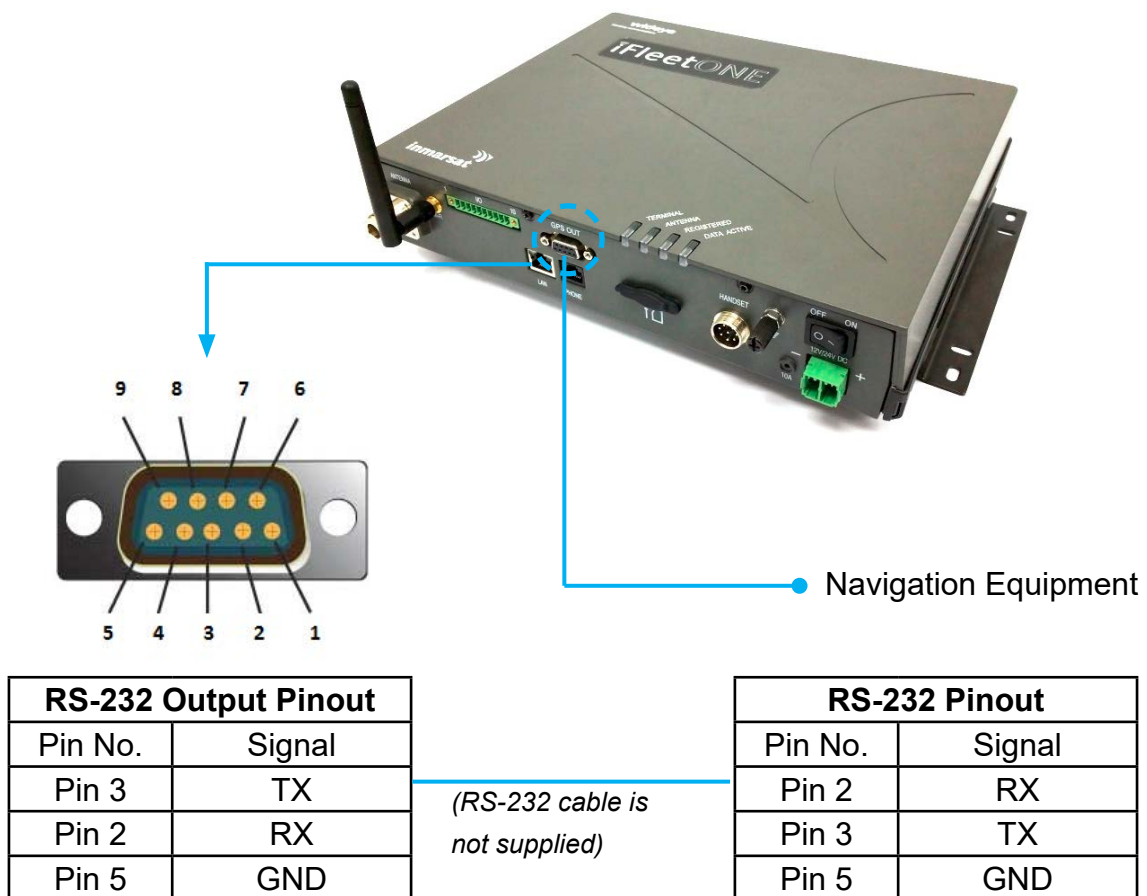


1.8 BDU's Output Connections

Additional information for the output ports - GPS and GPIO.

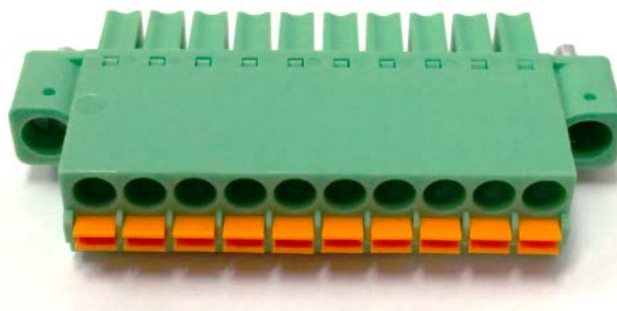
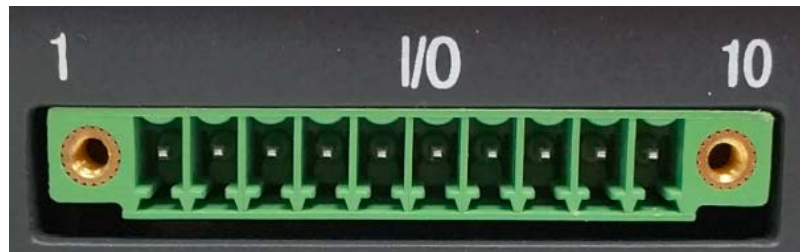
1.8.1 GPS Output Connector

The BDU has a GPS output (RS-232 serial) connector for outputting the GPS data in NMEA0183 format.



1.8.2 GPIO Port

The BDU has a dedicated 10-pin Phoenix connector to provide a GPIO (General Purpose Input/Output) interface to the external devices.



I/O Connector Pinout

Note: A matching connector is included in the box.

GPIO Port Pinout

GPIO Port Pin	Signal Name	Description of Signal
1	6V	To supply 6V DC source.
2	TX_OFF	To disable the antenna unit's transmitter.
3	PDP_ON/OFF	To enable/disable the data connection.
4	BUZZER	To enable external ringer / buzzer for an incoming call.
5	GND	To provide grounding for the whole system.
6	REMOTE_ON/OFF_SW	For the connection to a Remote ON/OFF switch away from the BDU.
7	REMOTE_ON/OFF_LED	Power Indicator.
8	Reserved	Not in use.
9	Reserved	Not in use.
10	GND	To provide grounding for the whole system.

All wires for the GPIO connector shall use AWG 24 unscreened cable.

For the data connection switch, refer to Appendix B - GPIO Port

1.8.3 Grounding Stud

The BDU has a grounding stud with a locking screw for the earth cable (with its colors of green and yellow) with its lug. It is recommended to include spring washers to secure the lug to the grounding stud.



Grounding Stud

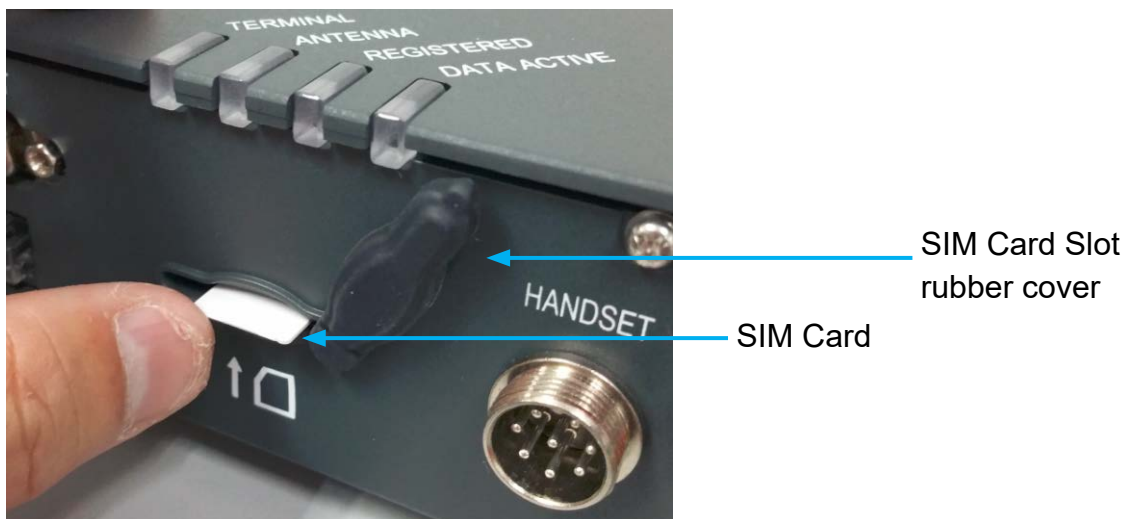
The other end of the earth cable must have good electrical contact to the vessel's hull with the removal of paint, dirt, grease and metal oxide at the connection point to the hull.

GETTING STARTED ON THE SYSTEM

1.9 Installing the SIM card

The system requires a Fleet One service SIM card to access the Inmarsat network and it is provided by your Airtime Service Provider. Insert the SIM card into the BDU as follows:

- Lift and rotate the SIM card slot's protective cover.
- Position the SIM card with its gold-contacts facing down. (There is a symbol of SIM Card with its arrow on the front panel. It will ensure the correct orientation of the SIM Card when it is being inserted.)
- Push the SIM card gently into the slot until it is locked in place.
- Close the SIM card protective cover.



1.10 Powering up the system

1.10.1 Switching on the BDU

Use the ON/OFF switch on the BDU's front panel. It normally takes about 1.5 to 3 minutes for the whole terminal to be powered up and to register with the satellite network.



Wait for the three LED indicators ("TERMINAL", "ANTENNA" and "REGISTERED") to turn green.



LED Name	Status	Meaning
TERMINAL	Steady Amber	Terminal (BDU) is powering up.
	Steady Green	Terminal (BDU) has powered up successfully.
	Steady Red	Terminal (BDU) has detected a failure state.
	Off	Terminal (BDU) is in OFF state.
ANTENNA	Steady Amber	ADU is powering up.
	Blinking Amber	ADU is calibrating.
	Blinking Green	System is performing satellite search.
	Steady Green	System has locked on to the satellite.
	Steady Red	ADU has detected a failure state.
	No light (Off)	ADU is in OFF state.
REGISTERED	Steady Amber	Attempting network registration
	Blinking Amber	Ready for Voice only.
	Blinking Green	Ready for Data only.
	Steady Green	Ready for all (Voice and Data).
	Steady Red	Network failure / Registration error.
	No light (Off)	No network service.
DATA ACTIVE	Steady Amber	Activating data connection.
	Steady Green	Data connection is ready.
	Steady Red	Data activation failure
	No light (Off)	No data connection.

1.11 Settings on Web Console

1.11.1 Activating on Web Console

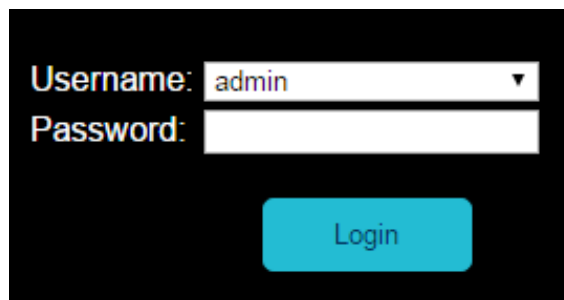
Open the web browser (for example: Internet Explorer, Google Chrome or Firefox.)



c. Type **http://192.168.1.35** in the Address field.

d. Username and Password will be prompted.

Default Username : admin
Password : 1234

A screenshot of a web console login interface. It features a black background with white text. The 'Username:' label is followed by a white input field containing the text 'admin'. The 'Password:' label is followed by an empty white input field. Below the input fields is a blue rectangular button with the word 'Login' in white text.

Note: *User will be prompt to enter a new password when the terminal is used for the first time*

e. Click “**Login**” button after entering the Username and Password.

The Web Console will appear. The terminal will proceed automatically to “**Checking PIN status**” followed by “**Antenna Pointing**” and then registering to the network (upon power on).

≡Home

Home

Status:

Registered to network	Yes
Data connection active	No

Activate Data Connection

Signal:

65 dB

GPS:

Last acquired:	Fri Mar 25 2016, 22:50:36 UTC+0800
Lat:	40° 31' 58.72" N
Long:	3° 39' 21.41" W
Type:	3D (NEW)

Temperature: Normal

Registered to Network but no active data connection exists. You are now able to make phone calls and send SMSs. Please activate a data connection before doing any data transfer.

Data

Phone

SMS

Settings

Logout

WARNING: If the signal strength is low (< 50 dB), check any obstruction of the antenna unit or the condition of antenna cable.

Upon successful registration, with the BDU's LED indicators (“**TERMINAL**”, “**ANTENNA**” and “**REGSITERED**”) in green, the terminal will be ready for normal operation.

© 2021 Addvalue Innovation Pte Ltd. All rights reserved.

31

1.11.2 Activating a PDP Context

To activate the PDP context for browsing the internet (or other IP connectivity), click “**Activate Data Connection**”. The BDU LED indicator (“**DATA ACTIVE**”) will turn green.

Home

Status:

Registered to network	Yes
Data connection active	No

Activate Data Connection

Activate Data Connection

In progress...

1.11.3 Deactivating a PDP Context

To deactivate the PDP context for browsing the internet (or other IP connectivity), click “**Deactivate Data Connection**”. The BDU LED indicator (“**DATA ACTIVE**”) will turn off.

Home

Status:

Registered to network	Yes
Data connection active	

Deactivate Data Connection

Deactivate Data Connection

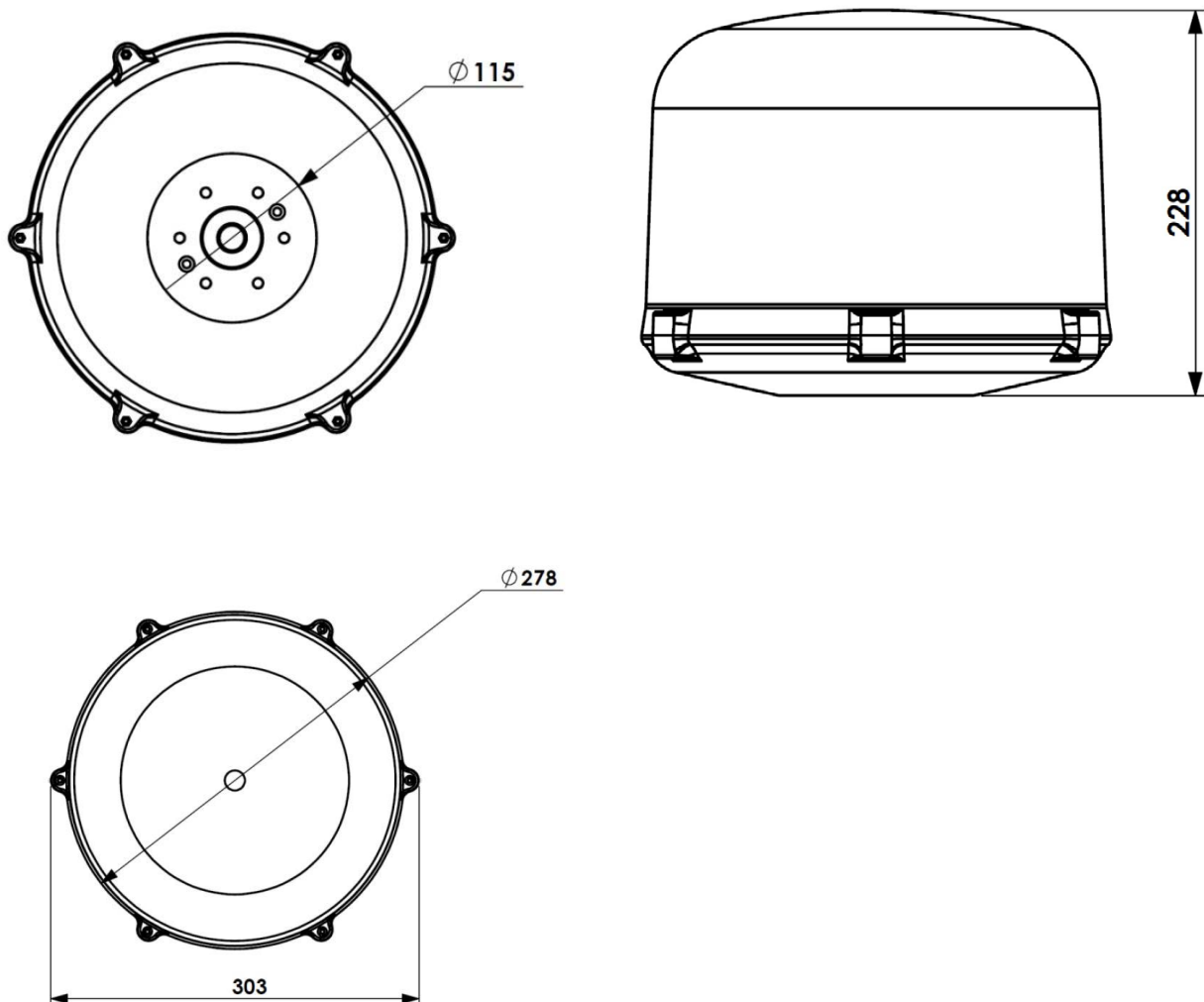
In progress...

GLOSSARY

AC	Alternating Current
ADU	Above Decks Unit
APN	Access Point Name
BDU	Below Decks Unit
DC	Direct Current
FTP	File Transfer Protocol
GPS	Global Position System
GPIO	General Purpose Input / Output
IP Data	Internet Protocol Data
NAT	Network Address Translation
PAT	Port Address Translation
PDP	Packet Data Protocol
SIM	Subscriber Identity Module
UE	User Equipment
VSAT	Very Small Aperture Terminal

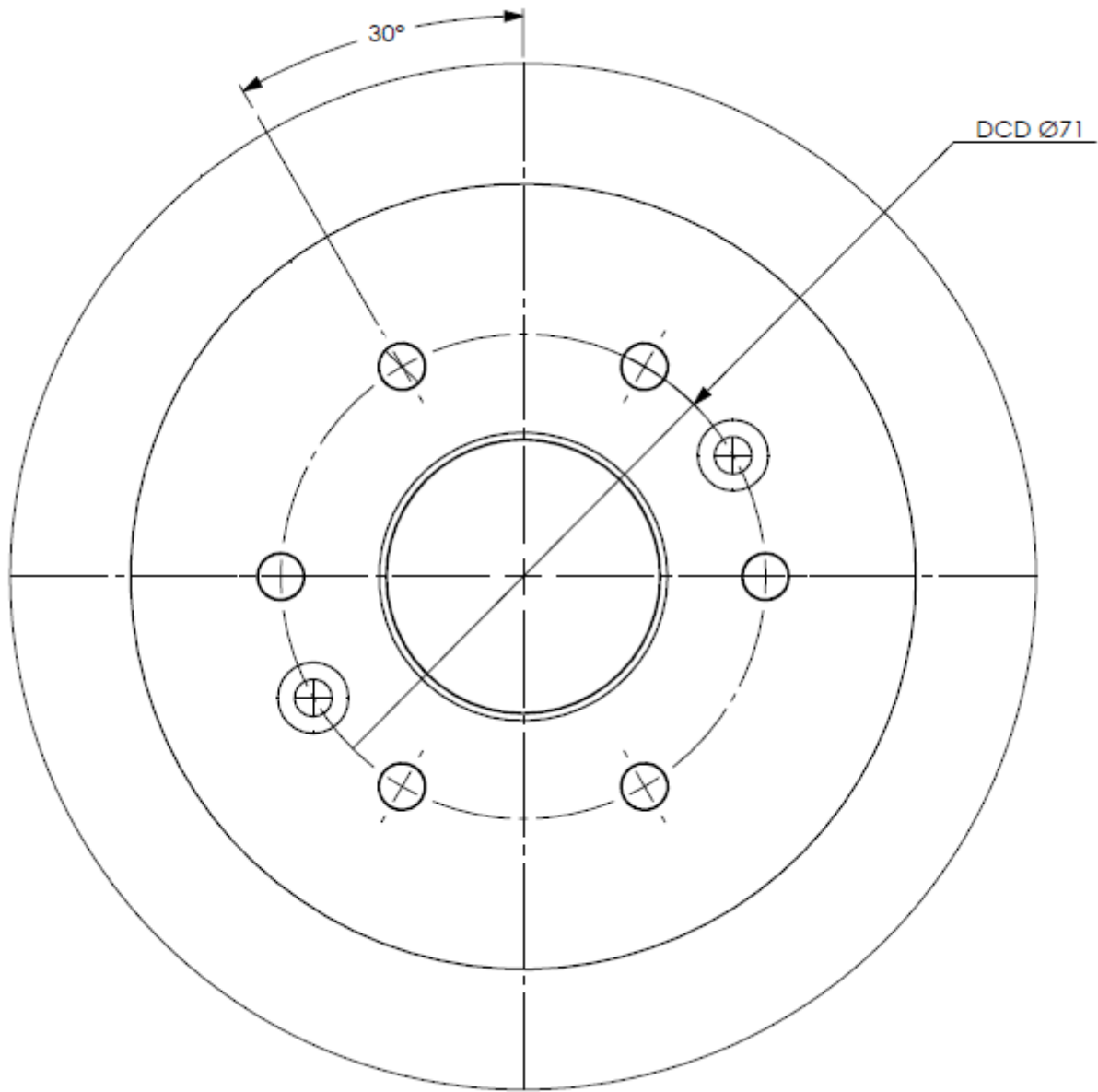
APPENDIX A OUTLINE DRAWINGS

A-1 ADU - Outline Dimensions and Weight



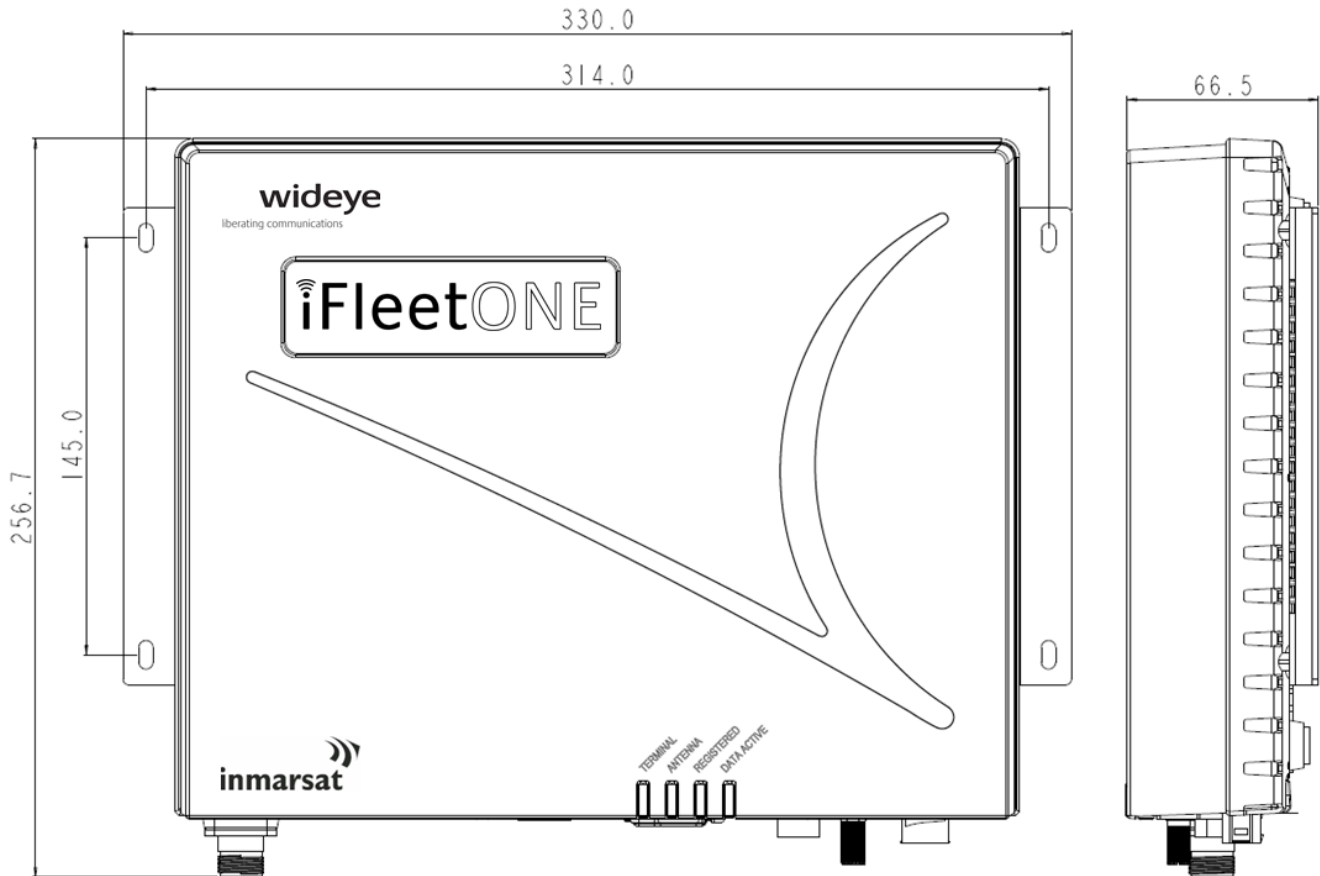
Weight : **2.8 kg.**

Dimensions are expressed in terms of mm.

A-2 ADU - Hole Pattern (Cut-out Holes)

Dimensions are expressed in terms of mm.

A-3 BDU - Outline Dimensions and Weight



Weight : 3.1kg

Dimensions are expressed in terms of mm.

A-4 Optional Primary Handset - Outline Dimensions



Weight : **430g (including cradle)**

Dimensions are expressed in terms of mm.

APPENDIX B GPIO PORT

B-1 Data Connection Switch

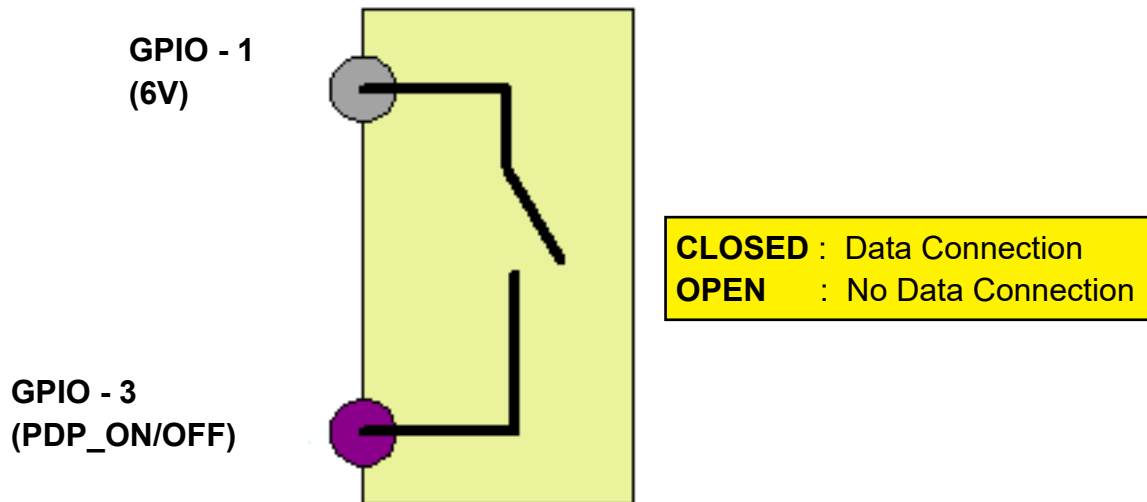
The data connection switch is used for enabling / disabling the data connection of the Wideye iFleetONE terminal.

The recommended model and part number of the data connection switch is **ACROLELECTRIC SWITCH (P/N: C1350XBAAA)**, which is a non-illuminated rocker switch.



Note: *This item is not included in the packaging list.*

The connection diagram is illustrated below:



The steps of the connection are as follow:

1. Solder AWG 24 wires between the rocker switch's terminal lugs.
2. Mount the rocker switch on the panel according to its cut-out hole dimension.
3. Connect the other end of these AWG 24 wires to the GPIO Adaptor's Pin 1 and 3 respectively.

