

IsatDock2 PRO




inmarsat

 **BEAM**[®]

Inmarsat Approved

User Manual

Beam IsatDock2 PRO User Manual

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About Beam Communications

Beam Communications, a wholly owned subsidiary of World Reach Limited (WRR), listed on the Australian Stock Exchange, is a world leader in design, manufacture and distribution of specialised communications equipment for the Inmarsat Satellite Network.

Beam's commitment to be at the forefront has continued to increase its share of the global satellite communications market. Its premium distribution network spans the world.

Recognized as a leading provider of satellite communication solutions, **Beam** specializes in Voice, Data, Tracking and customized solutions. **Beam** develops innovative products and services to meet market demands and niche applications.

Beam's leading edge products are deployed in a wide range of vertical markets including Maritime, Transport, Government, Defence, Mining, Construction, Forestry, Emergency Services, Relief Aid, Telemetry and Rural Telephony.

Supported by a dedicated team of professionals, **Beam** has developed solid relationships with its peers and network of distributors worldwide.



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Conventions in this Manual

These notes will appear throughout this manual and should be taken into consideration.



Warning or Caution

This symbol and associated text indicate a warning note providing information to prevent damage to equipment or personal injury.



Note/Important/Tip Header

This symbol and associated text indicate a note providing general operating information.



Interference Header

All wireless phones may get interference, which could affect performance.



Record Header

Write details of your unit for easy reference when required. Ideal when troubleshooting.

Terminology

TERM	DESCRIPTION
Falcon	Falcon Configuration Tool - MS Windows Install
SMS	Short Message Service
Mobile Originating	Describes a call initiated by the IsatDock2
Mobile Terminating	Describes an incoming call being answered by the IsatDock2
IsatPhone 2	The Inmarsat IsatPhone 2 handset
®	The ® symbol, mark and logos are owned by the respective companies of which the symbol follows. Any use of such marks by Beam Communications is under license. Other trademarks and trade names are those of their respective owners.
RF	Radio Frequencies
SMA	Sub Miniature version A co-axial RF connection
RJ11	Connector type and reference for the POTS telephone port
RJ9	4P4C connector for the privacy handset
POTS	Plain Old Telephone Service
GPS	Global Positioning System
GPS	Inmarsat's Global Satellite Phone Service
PABX	Private Analogue Branch Exchange

Package Contents

Check that your IsatDock2 PRO package contains all of the following items:

- 1 x IsatDock2 PRO Docking station
- 2 x IsatDock2 Adapters
- 1 x 110-240V AC Plug Pack
- 1 x Privacy Handset
- 1 x 10-32V DC Power Cable
- 1 x Wall Mounting plate
- User Manual & Quick Start Guide

Falcon Configuration Tool is available for download from:

www.beamcommunications.com/support/isd2pro

Other Resources Available Online

- Advanced configuration – inbuilt to Falcon
- Quick Start Guide & Manual
- Antenna Installation Guide
- IsatPhone 2 firmware upgrade if required

Optional Accessories

The following optional accessories are available for your IsatDock2 PRO

Active Antennas

- ISD710 Maritime Antenna (Active)
- ISD715 Transport Magnetic Antenna (Active)
- ISD720 Transport Bolt Antenna (Active)

Antenna Cable Kits for Active Antennas

- ISD932 6m cable kit (Active)
- ISD933 13m cable kit (Active)
- ISD934 18m cable kit (Active)
- ISD935 31m cable kit (Active)
- ISD938 40m cable kit (Active)
- ISD942 50m cable kit (Active)
- ISD943 60m cable kit (Active)
- ISD944 70m cable kit (Active)
- ISD945 80m cable kit (Active)
- ISD946 90m cable kit (Active)
- ISD947 100m cable kit (Active)

Passive Antennas

- ISD700 Directional/Fixed Antenna (Passive)

Antenna Cable Kits for Passive Antennas

- ISD936 10m cable kit (Passive)

- ISD937 20m cable kit (Passive)
- ISD939 30m cable kit (Passive)
- ISD940 40m cable kit (Passive)
- ISD941 50m cable kit (Passive)

Additional Accessory

- ISD960 IsatDock2 Adapter
- RST060 Beam GoalZERO UPS Battery Pack

See your service provider for pricing and availability of these quality Beam accessories.

Additional Information

For the latest in supporting software and documentation for IsatDock2 please contact www.beamcommunications.com/support/isd2pro



Personal Alert

The Personal Alert functionality must be configured on the IsatPhone 2 handset directly. The Personal Alert button on the IsatDock2 PRO will only operate once the IsatPhone 2 has been configured.

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Aircraft					
Vehicles Equipped with an Air Bag					

Safety Information



IMPORTANT!

Please read the following information carefully before installing and using the IsatDock2 PRO.

Failing to follow instructions may compromise the safety of the product and may result in personal injury and/or equipment damage. Please consult your supplier if you have any further questions.

The IsatDock2 PRO is a low power docking station for the IsatPhone 2 handset. When ON, it will charge the IsatPhone 2 handset whilst docked in the IsatDock2 PRO.

Refer to the appropriate section of this IsatDock2 PRO Installation & User Manual for additional safety information.

- Store the system in a cool and dry area.
- Do not submerge the system in water.
- Do not place foreign metal objects or debris in the system. If debris enters into the system, please return to factory for service.



WARNING

DO NOT open equipment. There are no user-serviceable parts inside.

If a DC power supply is to be used, its output must comply with the Safety Extra Low Voltage (SELV) requirements of IEC60950.

All connectors must only be connected to equipment ports which comply with the Safety Extra Low Voltage (SELV) requirements of IEC60950.

POTENTIALLY EXPLOSIVE ATMOSPHERES

- Turn your phone OFF and DO NOT remove your battery or remove the IsatPhone 2 handset from the cradle when you are in any area with a potentially explosive atmosphere.
 - Obey all signs and instructions.
 - Sparks from your battery in such areas could cause an explosion or fire resulting in bodily injury or even death.
-

- Areas with a potentially explosive atmosphere are often but not always clearly marked. They include, but are not limited to:
 - » fuelling areas such as gasoline stations
 - » below deck on boats;
 - » fuel or chemical transfer or storage facilities;
 - » areas where fuel odors are present (for example, if a gas/isd2propane leak occurs in a car or home);
 - » areas where the air contains chemicals or particles, such as grain, dust, or metal powders;
 - » any other area where you normally would be advised to turn off your vehicle engine.

Safety Transceiver IsatPhone 2

Your handset is a low power radio transmitter and receiver. When it is ON, it receives and also sends out radio frequency (RF) signals.

(NOTE: Refer to Inmarsat IsatPhone 2 Manual for additional information)

- The Inmarsat IsatPhone 2 handset has an in-built transceiver which is designed to be used with an external antenna. This antenna transmits RF energy. The Beam antenna (fitted via an extension coaxial cable to the cradle) must be located more than 55cm from the human body (person) when in operation.
 - International agencies have set standards and recommendations for the protection of public exposure to RF electromagnetic energy. These standards are based on extensive scientific review by scientists, engineers, and physicians from universities, government health agencies, and industry groups. They review the available body of research to develop ANSI standard. These ANSI standards are reviewed regularly for research development.
- » International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1996
 - » Verband Deutscher Elektrotechniker (VDE) DIN-0848
 - » United States Federal Commission, Radio Frequency Exposure Guidelines (1996)
 - » National Radiological Protection Board of the United Kingdom, GS 11, 1988
 - » American National Standards Institute (ANSI) IEEE. C95. 1-1992
- Do not operate your satellite system when a person is within 55cm of the external antenna. A person or object within 55cm of the external antenna could impair call quality and may cause the phone to operate at a higher power level than necessary and expose that person to RF energy in excess of that established by the FCC RF Exposure Guidelines.
 - As a precaution, please maintain the maximum body distance possible from the antenna during call transmission.



WARNING

ROAD SAFETY COMES FIRST!

Do not use a hand-held cellular terminal, satellite phone or mobile when driving a vehicle, unless it is securely mounted in a holder for speaker phone operation. Before making a call with a handheld terminal, satellite phone or mobile, park the vehicle stationary. Please obey local road laws for hands-free speakerphone operation. Speakerphones (hands-free) must be installed by qualified personnel. Faulty installation or operation can constitute a safety hazard.



IMPORTANT

Cellular & Satellite terminals or mobiles operate using radio signals and communication networks. Because of this, the connection cannot be guaranteed at all times or under all conditions. Therefore, you should never rely solely upon any wireless device for essential communications, for example emergency calls.

IsatDock2 FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital devices, 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 instruction manual, 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.

This device has been designed to operate with antennas ISD710, ISD715, ISD720 and having a maximum gain of 6dBi dB. Antennas having a gain greater than 6dBi dB are strictly prohibited for use with this device.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication



WARNING

Changes or modifications not expressly approved by Beam Communications could void the product warranty.

Electronic Devices

Most modern electronic equipment is shielded from RF signals. However, certain equipment may not be shielded against the RF signals from your wireless phone.

Pacemakers

The Health Industry Manufacturers Association recommends that a minimum separation of six inches (6") be maintained between a wireless phone's antenna and a pacemaker to avoid potential interference with the pacemaker.

These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research.

Persons with pacemakers:

- *Should ALWAYS keep the phone more than six inches from their pacemaker when phone is turned ON.*
- *Should turn the phone OFF immediately if you have any reason to suspect interference is taking place.*

Other Medical Devices

If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from external RF energy. Your physician may be able to assist you in obtaining this information.

Turn your phone OFF in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Vehicles

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle. Performance of electronically controlled brake and/or guidance systems can, under certain unique conditions, be subject to interference by mobile radio operation. Although the transceiver meets all requirements regarding RF emissions, you should mount the transceiver as far as possible from the guidance system and/or braking modulator box (usually located in the trunk) to minimize any interference.

Posted Facilities

Turn your phone OFF in any facility where posted notices require such as hospitals and on-board aircraft.

Aircraft

Airline regulations prohibit using your phone while in the air. Consult the local Aviation Authority for guidelines on use of the equipment on board an aircraft.

Vehicles Equipped with an Air Bag

An air bag inflates with great force. Do NOT place objects, including both installed and portable wireless equipment, in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

IsatDock2 PRO Key Features

IsatDock2 PRO is an intelligent docking station specifically designed for the Inmarsat IsatPhone 2 satellite handset.

IsatDock2 PRO allows the IsatPhone 2 handset to be used in a wide variety of applications. It enables you to use an intelligent RJ11/POTS connection with a standard corded, cordless or DECT handset. Alternatively, it can also be interfaced with a PBX system.

IsatDock2 PRO has an in-built speakerphone for convenient handsfree operation.

DESIGN

- All-in-one design
- High quality ABS Plastic
- Enhanced phone/docking mechanism
- Robust USB & Audio Connection
- Accessible control buttons
- Dedicated Personal Alert button on dock
- Auto sensing off hook privacy handset
- Single action insertion
- Single button release
- In-built speakerphone for handsfree
- Wall or desk mounting bracket
- Cable routing LEFT/TOP/BOTTOM
- Integrated antenna connection (GPS/GSPS)

- Easy access to Assistance & Track button on IsatPhone 2
- Best suited for land/fixed site applications

BUTTONS ON DOCK

- Personal Alert button
- In-call mute
- Ringer volume UP/DOWN
- In-call volume UP/DOWN
- Speakerphone button

INTELLIGENT POTS/RJ11 INTERFACE

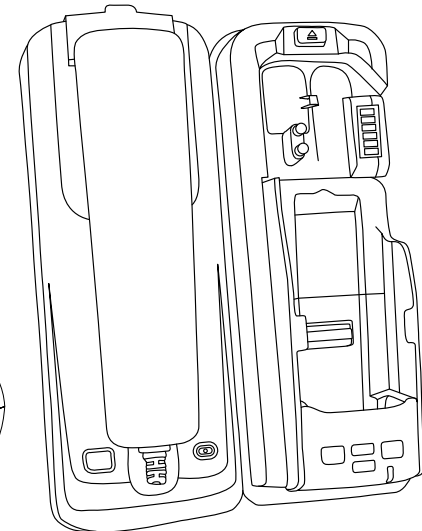
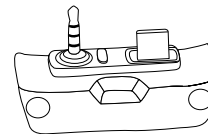
- Supports up to 600m of RJ11
- Dial, ring & busy tones
- Integrates to PBX
- Supports standard corded & cordless phones
- Auto-dial & speed dials available

POWER

- 10-32V DC input
- 110-240V AC plug pack, included

OTHER FEATURES

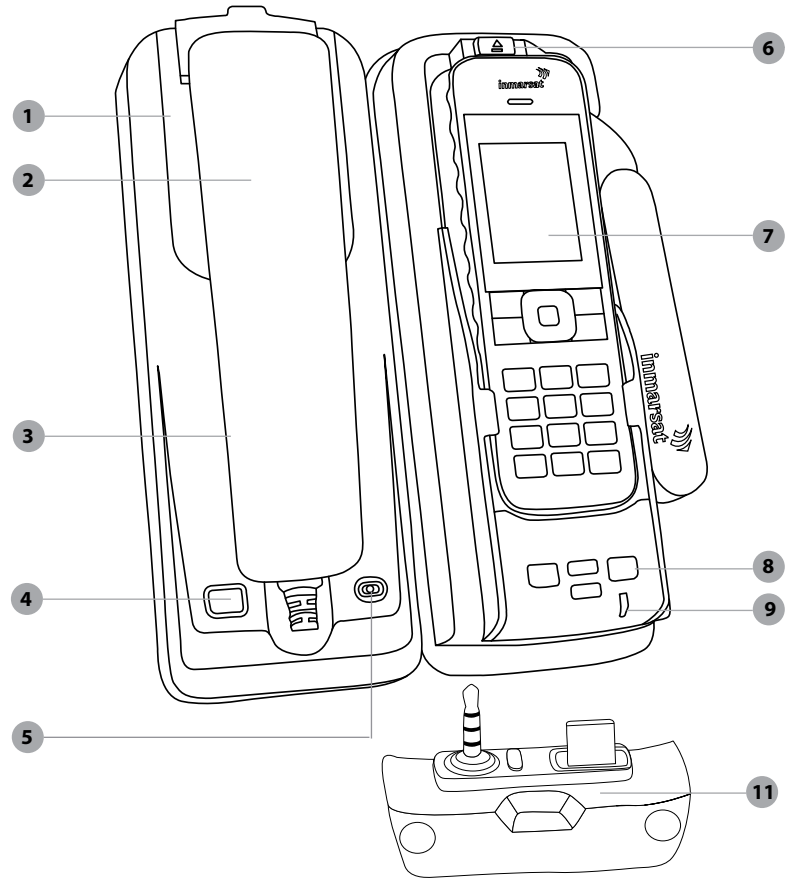
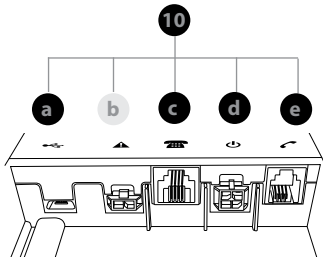
- Charges IsatPhone 2
- RJ11/POTS interface
- PABX integration
- Supports Assistance Alert & Tracking via IsatPhone 2
- 2 year repair/replacement warranty
- Active privacy handset
- In-built handsfree speakerphone
- Adjustable in-built ringer
- Mute facility
- Status LED with adjustable brightness
- USB data access
- Includes IsatDock2 adapters (2x)



Equipment Overview

IsatDock2 PRO

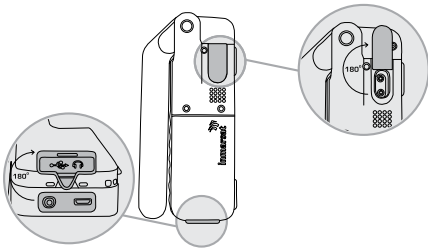
1. Mounting Cup (spring or springless cup options)
2. Privacy Handset
3. Speaker (under handset)
4. Speakerphone Button
5. Microphone
6. IsatPhone 2 Eject Button
7. IsatPhone 2 (not included)
8. Function Buttons
9. Status Indication Light
10. Back Panel Connectors
 - a. USB Data Interface
 - b. Beam Alert loop connection - not in use
 - c. RJ11/POTS interface
 - d. DC power and accessory input
 - e. RJ9 Privacy handset
11. IsatDock2 Adapter



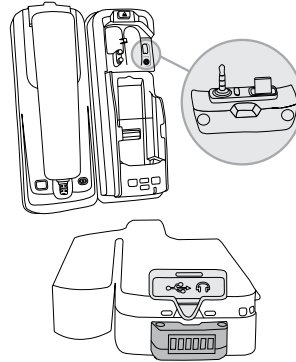
Docking & undocking the IsatPhone 2 handset

To place the IsatPhone 2 into the docking unit, both the 'covers' on the external antenna connectors and the USB/Audio connectors need to be opened.

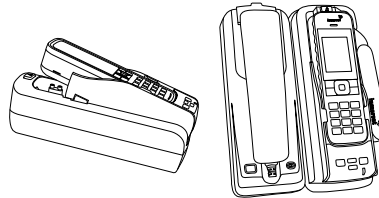
1. The antenna 'cover' must be placed at 180 degrees to the antenna connector cavity and run parallel to the side of the phone, push down into open position.
2. The 'cover' in the base of the phone should be rotated 180 degrees to be in the open position.



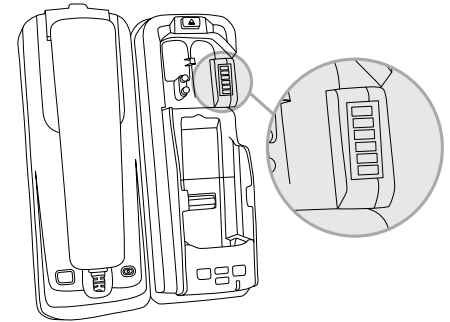
3. Detach the USB/Audio adapter from the dock and insert by hand in the base of the IsatPhone 2.



4. To dock the handset, open the antenna slightly, align the IsatPhone 2 with the phone tray and slide the handset down until it seats flush to the bottom of the tray. Swing the phone down into the cradle by applying pressure to the top of the handset. An audible 'click' is heard when the phone is in the docked position.



5. To remove the handset from the cradle, press the EJECT button at the top of the docking station. The dock will swing out and the handset can be removed.
6. Place the adapter back in its dedicated slot, when the phone is not in the docking unit.



IMPORTANT:

Before docking the IsatPhone 2 to the docking station, check that the USB/Audio adapter has been connected to the IsatPhone 2.

Installation Guidelines

This guide outlines the process for installing the IsatDock2 PRO in conjunction with an Inmarsat IsatPhone 2 handset.

This kit must not be used with any other device other than the Inmarsat IsatPhone 2 handset.

- Only trained personnel should install communication equipment.
- Ensure that the unit is protected from dirt and moisture.
- Select an area to mount components where there is no interference with other objects.
- A strong mounting surface should be chosen to ensure the terminal doesn't loosen over time.
- Mount all components securely for safe day to day operation. Always use the supplied mounting hardware.
- Leave space around the unit to allow airflow and ensure there is adequate clearance for cables.
- Ensure the units can be easily accessible for servicing.
- Ensure the mounting position accounts for the antenna of the docked IsatPhone 2 that protrudes beyond the side of the dock (~17mm)

Routing Cables

- Route cables so they are protected from pinching, sharp edges, and crushing.
- Use grommets wherever a cable must pass through a hole in a metal panel
- Keep all in-line connectors accessible.
- For an extra clean installation, a hole may be driven through the surface directly behind the docking station.

Guidelines for Electrical Connections

The system is designed to operate in negative ground 10 to 32 Volt DC electrical systems only. If using the DC cable lead:

- The best power connection point for the positive primary power lead is the positive terminal of the vehicle battery. Often, direct connection to the battery is inconvenient, and you may find it easier to connect the positive leads to the starter solenoid. Always select a point as close as possible to the battery.
- Connect the negative primary power leads to a good ground point on the vehicle chassis or at the battery. If you must attach the negative primary power lead directly to the negative pole of the battery, you may optionally insert a 10-amp fuse (not included) into the ground

(0V) line. Failure to insert a fuse can cause equipment to overheat if a wiring fault exists.

- Many parts of a vehicle can produce electrical noise that interferes with the electrical radio system operation. The ignition system is the most common source of electrical noise interference. Before you begin installation, ensure that the ignition wiring and connections to the vehicle battery are in good working condition.

- Verify that low resistance connections are present between the battery negative terminal, the vehicle chassis, and the engine block. All wire connections should be clean and tight.
- For vehicle installation, install provided fuses into the +BATT and ignition sense (accessory) wires.



WARNING

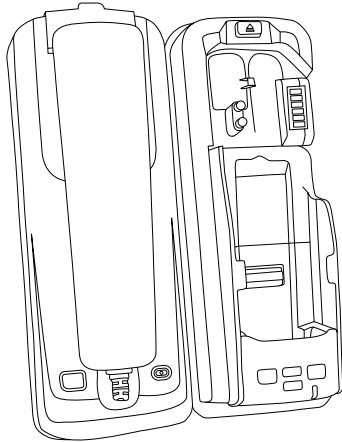
Do not connect the IsatDock2 interface power cable to power the unit until the full installation is completed.

Installation Procedure

Installing the IsatDock2 PRO Cradle

Install the components in the following order. More detailed instructions can be found in the sections following.

1. Install the external Beam antenna
2. A) Wall Mounting Orientation
B) Desk Mounting Orientation
3. Connect the privacy handset & cup
4. Access to rear connector bay
5. Connect POTS/RJ11 Interface
6. USB Port Connection
7. Connect power cable
8. Cable routing



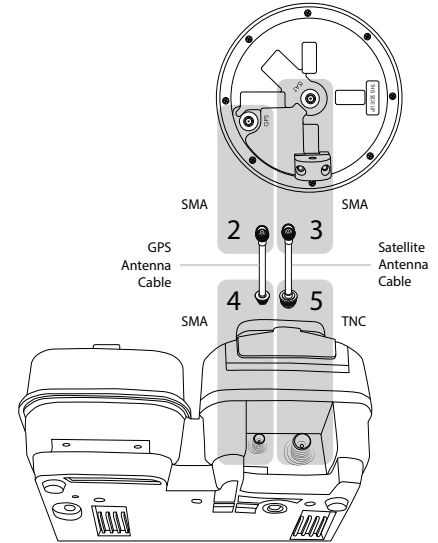
1) Beam Antenna Connection

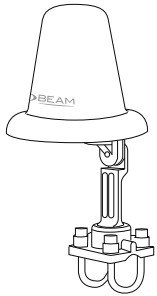
To connect the IsatDock2 PRO to the GSPS Beam Antenna, requires the use of certified satellite and GPS antenna cables. These cables are purpose built cables as approved by Beam to manage the power requirements for the antenna system.

1. Refer to the antennas installation guide for antenna mounting and location requirements.
2. Connect the antenna cable labelled "GPS" to the SMA antenna connector labelled "GPS".
3. Connect the antenna cable labelled "Inmarsat" to the SMA antenna connector labelled "ISAT".
4. Connect the GPS-SMA (F) cable end to the IsatDock2's SMA connector.
5. Connect the TNC (Female) antenna cable end to the IsatDock2's satellite connector.

Antenna Connection Diagram

Antenna connection image with Fixed/Directional Antenna (Passive)





ISD700
Directional/Fixed Antenna
(Passive) with Bracket



Transport Antenna
(Active)



ISD715
Magnetic
Mounting



ISD720
Bolt
Mounting



NOTE

Refer to the ISD700 Directional/Fixed Antenna (Passive), ISD715 Transport Magnetic Antenna (Active) and ISD720 Transport Bolt Antenna (Active) Installation Guides for more information on antenna placement and installation. These Installation guides can be found on our website.

Please visit: www.beamcommunications.com

Only Beam approved antenna cables should be used with all docking stations and antennas.



WARNING

DO NOT pull with force on the cables from the rear of the IsatDock2 PRO. Please install strain relief clamping for the antenna cables where required. Correct installation of the antenna system is a vital part of the IsatDock2 PRO system, to ensure reliable functionality, and drop-free calls.

WARNING

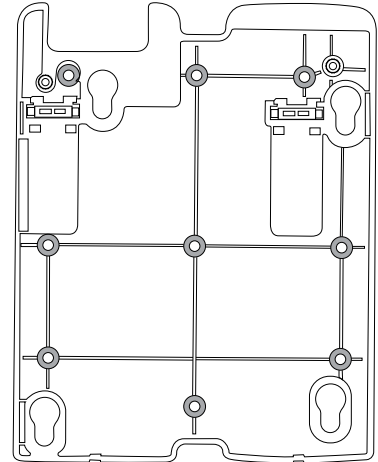
Changes or modifications not expressly approved by Beam Communications could void the product warranty.

WARNING

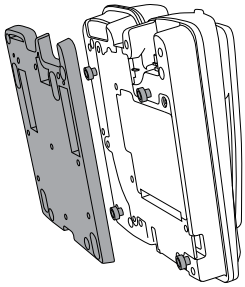
To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 55cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

2a) Wall Mounting Orientation

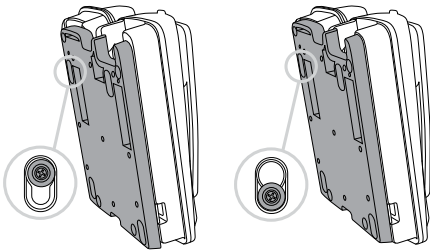
There are nine screw holes available for mounting the bracket to a wall. It is recommended that a minimum of 2 screws are used to ensure the docking station is mounted securely.



There are four keyhole shaped slots in the mounting bracket that mate with feet on the rear of the docking station. To attach the bracket, the larger end of the keyhole will pass over the feet. The dock is then slid down to lock the feet into the narrow section of the keyhole.



a Fit the docks feet in the large holes of the bracket



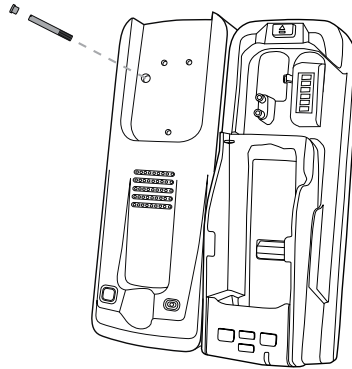
b Slide the dock down **c** Final lock position

Once the dock has been locked onto the mounting bracket on the wall, the security bolt is then slid into place locking the dock to the wall.

The Security Bolt

Security bolt ensures the PRO docking unit is firmly fixed to the wall and prevents the docking station from sliding back up freeing the dock. The security bolt is 4mm in diameter and has a slot for a flat blade screwdriver.

The bolt under the privacy handset mounting cup must be fitted prior to the cup being screwed into place. The bolt is then covered with a plug. The security bolt passes through the docking station and needs to be in place to create a seal against the o-rings at the rear of the Dock and maintain the waterproof rating.



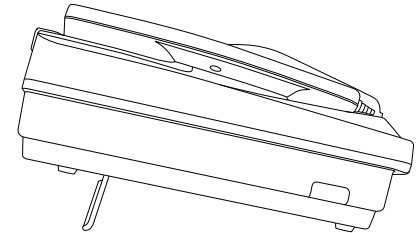
2b) Desk Mounting Orientation

The IsatDock2 PRO supports a desk mount configuration. Depending on the users requirements the docking station supports both a flat and raised orientation on the desk.

To configure the IsatDock2 for a desk installation:

1. Fit the mounting bracket to the back of the IsatDock2 as shown in section (2a) wall mounting directions.
2. Flip the feet out if required and locate the IsatDock on the desk.

When desk mounting, the security bolts are not required to be fitted.



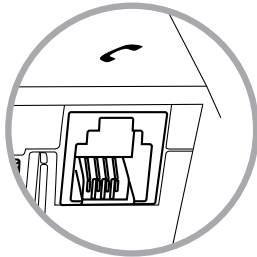
3) Privacy Handset & Mounting Cup

The Privacy Handset is conveniently mounted on to the IsatDock2 PRO enclosure, providing a local handset function.

The Privacy Handset connects to the docking station via a RJ9 connector. The privacy handset is connected beneath the rear panel of the IsatDock2. Once connected, the cable is run back through the foam and placed in the 'S' channel through the base of the phone.

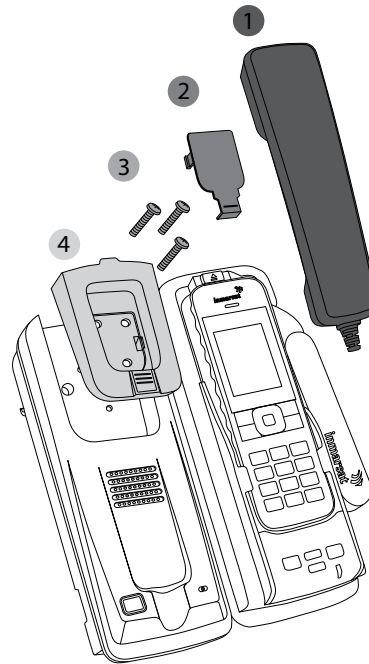
RJ9 connection

See section 4 on page 19



Changing Cups

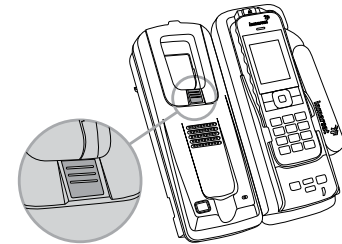
1. Unhook the privacy handset from cup.
2. Remove cup cover to expose screws.
3. Unscrew 3 screws with a phillips screwdriver.
4. Detach the cup and replace with the spring or springless cup.



There are two options for the privacy handset mounting cup depending upon the environment or condition where the docking unit is mounted. (1) springless cup for stationary use vertical or horizontal position. (2) spring cup for rough conditions.

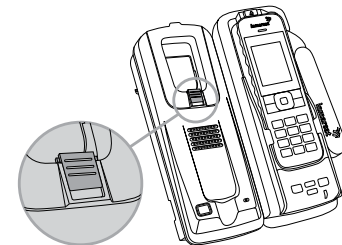
(1) Springless Cup for Normal light-use Desk mounted cradle position.

The 'springless' cup is fitted to the docking station with the mounting clip in a 'flush' position.



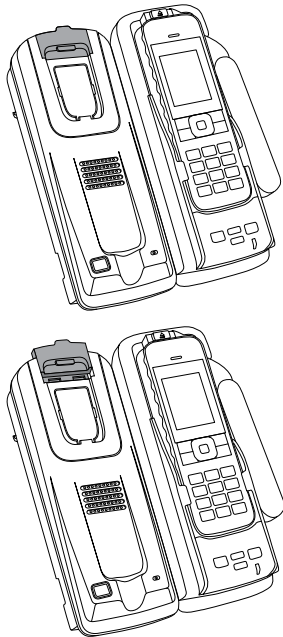
Wall mounted cradle position.

The mounting clip can be slid out and reversed, producing a protruding point that the Privacy handset rests upon. For a wall mounted docking station this retains the privacy handset and the springless cup has enough height to allow the handset to rise up off the clip and out of the mounting cup.



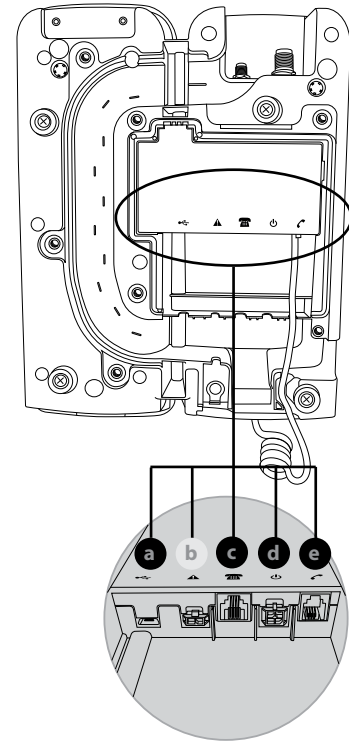
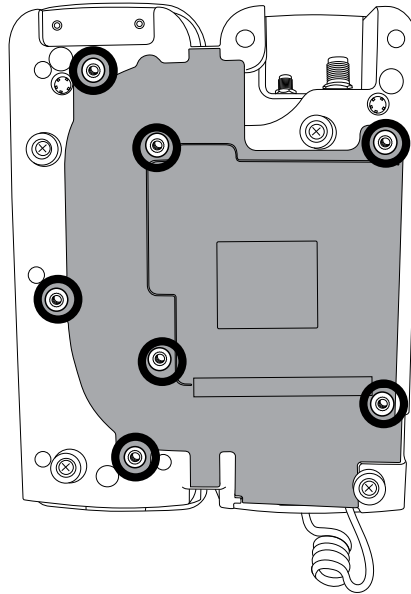
(2) Spring Cup - Heavy duty use cup

In harsh environments, the Privacy handset is actively retained in the mounting cup. This is achieved by using the 'spring' mounting cup. To remove the handset from the cup, the phone is lifted up against the pressure of the spring until it clears the lower mounting pip and can be removed from the docking station.



4) Access to Rear Connector Bay

For the IsatDock2 PRO, the external cable interfaces are at the rear of the docking station. The cover panel creates the IP rating for the electrical interface and retains the cables in their respective channels. The cover panel is fixed in place by 7 screws.



- a. USB Data Interface
- b. Beam Alert loop connection - NOT IN USE
- c. RJ11/POTS interface
- d. DC power and accessory input
- e. RJ9 Privacy handset

5) Connect RJ11/POTS Interface

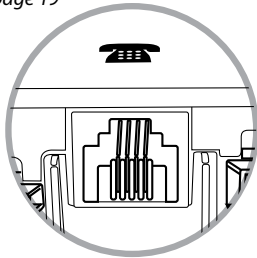
Any standard analogue POTS Telephone (POTS = **Plain Old Telephone Service**) is supported by the IsatDock2 PRO. It supplies power to the analogue phone as well as ring, dial and busy tones.

Route the telephone cabling (up to 600m) from the analogue phone.

Mount the analogue phone if required, and plug the RJ11 cable into the IsatDock2 PRO RJ11 port.

RJ11 port

See section 4 on page 19

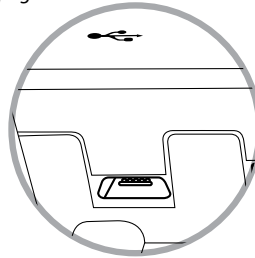


6) USB Port Connection

IsatDock2 PRO has a micro USB Data Port for programming interface to enable upgrading of the Docking station firmware.

USB Data Port

See section 4 on page 19

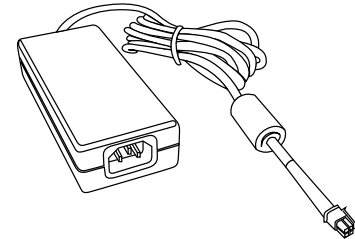


7) Connecting Power to the Dock

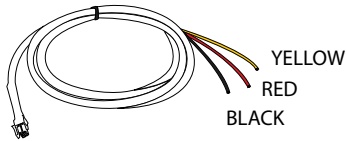
The Dock can be powered from the supplied AC Plug pack, or connect to an external 10-32V DC power supply.

ISD951 AC Plug Pack Installation

For installation using ISD951 110-240 AC plug pack, connect the 4-way Microfit connector from the plug pack to the 4-way power connector on the rear of the IsatDock2 PRO. In this configuration the ignition/accessory status is always ON.

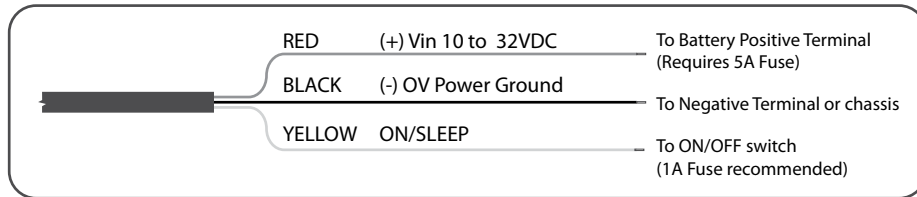


DC Power Source Installation



The DC power cable has three wires, RED, BLACK and YELLOW. The RED and BLACK wires are used for the power connection while the YELLOW wire can be connected to a vessels accessories, ignition or other similar circuits to control the ON/OFF status of the IsatDock2 PRO in synchronization with a vessels operation. By default, the IsatDock2 PRO will stay on for 20 minutes after this input (YELLOW wire) is switched off. If a call is in progress while this occurs, the IsatDock2 PRO will stay on for 20 minutes after the call is terminated. Please follow the steps below to connect the DC power cable to the vehicle battery power and the IsatDock2 PRO.

1. Route the wire end of the DC power cable to the connection point.
2. Connect the BLACK wire to the negative terminal of the battery (10A fuse recommended) or the vehicle chassis (if negatively grounded chassis).
3. Connect the RED wire to the positive terminal of the battery. It is recommended to add the 5A fuse (supplied) between them.
4. Connect the YELLOW wire to the vehicle accessory power. If the accessory power is unavailable, this may be connected to a vehicle ignition voltage. It is recommended to add a 1A fuse between them. The accessory wire enables the IsatDock2 PRO to turn on and off as the vehicle key is enabled or disabled. If this function is not required, the YELLOW wire MUST be connected to the RED wire.
5. Connect the 4-way Microfit connector on the DC power cable to the 4-way power connector on the rear cable loom of the IsatDock2 PRO.



8) Cable Routing

The IsatDock2 PROvides three different cable routing options when installing the docking station.

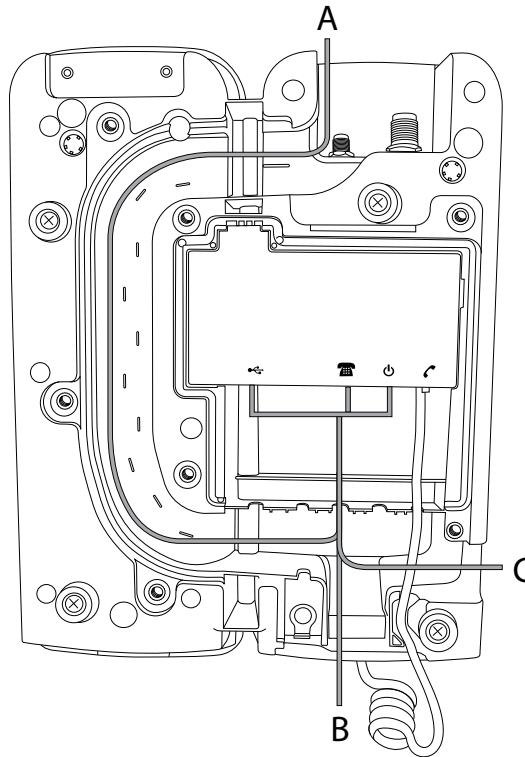
Cables may exit via path 'A' that travels around to the top of the dock allowing for the interface cables to be run with the external antenna connections.

Path 'B' directs cables out the base of the dock while path 'C' results in cables exiting to the side.

A = TOP cable route

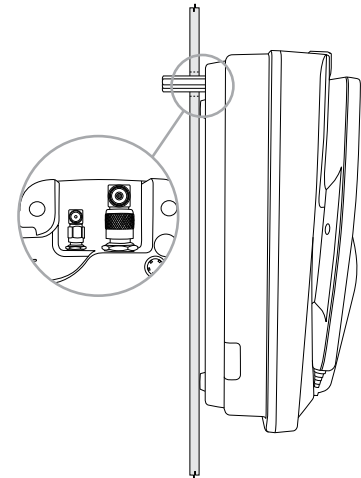
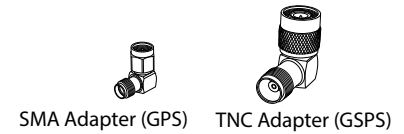
B = BOTTOM cable route

C = LHS cable route



Optional through-wall

Right angled adapters are optionally fitted to the external antenna connectors to allow routing of cables through a wall. A "clean" installation free of any visible cabling can be achieved with the use of right angled connectors and by running the interface cables along path A.



IsatDock2 PRO Usage

Operation of the IsatPhone 2

Prepare the Inmarsat IsatPhone 2

Ensure that the IsatPhone 2 Handset has the latest compatible firmware installed. For more information visit:

www.beamcommunications.com/support/isd2pro

Starting Up

1. Retract the antenna on the IsatPhone 2 handset and place in slightly open position.
2. Place the IsatPhone 2 as per instructions “Docking & Undocking” on page 14.
3. Turn vehicle ignition on. The IsatPhone 2 will automatically power and the handset will then start to initialise followed by a 3 tone rising beep when a successful connection has been made between the docking station and the IsatPhone 2.
4. Wait for the IsatPhone 2 handset to register on the Inmarsat network. The STATUS LED on the docking station will turn green when a successful registration has taken place.
5. You are now ready to make and receive calls.



NOTE:

1. *If the IsatPhone 2 is removed from the dock during a call, the call will drop out during this transition*
2. *One common cause for connection failure is a flat IsatPhone 2 battery which prevents the IsatPhone 2 from turning ON. In these instances the docking station will attempt to charge the IsatPhone 2 handset while it is switched OFF, until enough charge is present for the IsatPhone 2 to turn ON. This charging period can take up to 20 minutes depending on how flat the battery.*

Pro handset

The IsatDock2 PRO provides charging power to the IsatPhone 2 handset via its USB connector.

The IsatPhone 2 battery is a lithium-ion cell which has a safety temperature range whilst charging. This range is from 0 to 45 degrees Celsius (32 to 113 degrees Fahrenheit).

Due to the increased heating effects on the IsatPhone 2 handset whilst it is docked and being charged, it is ideal for the ambient temperature to be at least 18 degrees below the 45°C upper limit for the handset to charge the battery whilst docked. If the battery temperature exceeds this limit, then the IsatPhone 2 may cease charging until the

temperature is reduced.

Placing Voice Calls

Bluetooth® calls via IsatPhone 2

The IsatDock2 PRO allows for Bluetooth audio calls to be placed via the IsatPhone 2 handset while docked. Consult the IsatPhone 2 manual for further information on pairing and Bluetooth discovery setup.

Speakerphone Phone Call Use Mobile Originating

1. By default the IsatDock2 PRO will start all calls in speakerphone mode when dialing on the keypad without RJ11 or privacy handset off hook.
2. Dial using the full Inmarsat dialing sequence eg. 00 country code and telephone number on the IsatPhone 2 keypad whilst docked. Press the GREEN button to start the connection.
3. A message will display on the IsatPhone 2 handset to indicate the call is progressing.
4. Once the call is connected, the STATUS LED will flash to indicate a call is in progress.
5. Press the RED key on the IsatPhone 2 handset or press the speakerphone button to terminate the call.

Options:

- A. During a call, you may use the optional privacy handset by taking the privacy handset out of its cup. This automatically directs the call audio to the privacy handset.
- B. To return the call back to “speakerphone” mode, press the speakerphone button and return the privacy handset to its cup.

Mobile Terminating

1. Answer the incoming call by pressing the Speakerphone button or the GREEN key on the IsatPhone 2 handset.
2. Once the call is in progress, the same options are available as described in “Speakerphone Phone Call – Mobile Originating”
3. Press the RED key on the IsatPhone 2 handset or press the speakerphone button to terminate the call.

RJ11 POTS Phone Use**Mobile Originating**

1. Lift the RJ11/POTS phone handset “OFFHOOK” and listen for the dial tone. The mute LED will flash yellow to indicate the RJ11/POTS is in use.
2. Dial (using the full country codes) on the RJ11 telephone keypad.
3. A message will display on the IsatPhone 2

handset to indicate the call is progressing.

4. Once the call is connected, the STATUS LED will flash to indicate a call is in progress.
5. Place the RJ11/POTS phone handset “ON HOOK” to terminate the call.

Mobile Terminating

1. The RJ11/POTS phone will sound its ringer.
2. Lift the RJ11/POTS phone handset “OFFHOOK” to answer the call.

Privacy Handset Use**Mobile Originating**

1. Remove the privacy handset from its cup
2. Dial the phone number (using the full country code) on the IsatPhone 2 keypad whilst docked. Press the GREEN button to start the connection.
3. A message is displayed on the IsatPhone 2 to indicate a call is in progress.
4. Once the call is connected, the STATUS LED will flash to indicate a call is in progress.
5. Press the RED key on the IsatPhone 2 handset or return the privacy handset to its cup to terminate the call.

Options:

- A. During a call, you may switch to “speakerphone” mode by pressing the speakerphone button on the IsatDock2. Return the privacy handset

to its cup.

- B. To return the call back to the privacy handset, remove the privacy handset from its cup.

Mobile Terminating

1. Answer the incoming call by un-cupping the privacy handset from its cup.
2. Press the RED key on the IsatPhone 2 handset or return the privacy handset to its cup to terminate the call.

Mute Mode**Mute functionality**

The mute function of the IsatDock2 PRO allows the user to mute the uplink microphone audio on the privacy handset and/or internal speakerphone microphone.

1. During a call, Press the Mute button on the face of the IsatDock2 PRO, a RED LED will illuminate the Mute button to confirm that the IsatDock2 PRO is muted.
2. To exit the mute mode, press the mute button once.

USB Driver Installation

The IsatDock2 PRO USB data port requires an interface driver to be installed on the user’s computer prior to undertaking data communication.

Personal Alert, Assistance Alert and Tracking Configuration (optional)

Personal Alert & Assistance Alert Operations

Please refer to the Inmarsat IsatPhone 2 User Manual to configure the Personal Alert and Assistance button operation and destinations.

Initiate an Instant notification

When the Personal Alert button of the IsatDock2 PRO is pressed, the IsatPhone 2 handset will trigger and send a GPS position and short message via SMS or email according to your handset's settings.

Refer to IsatPhone 2 User Manual for further information.

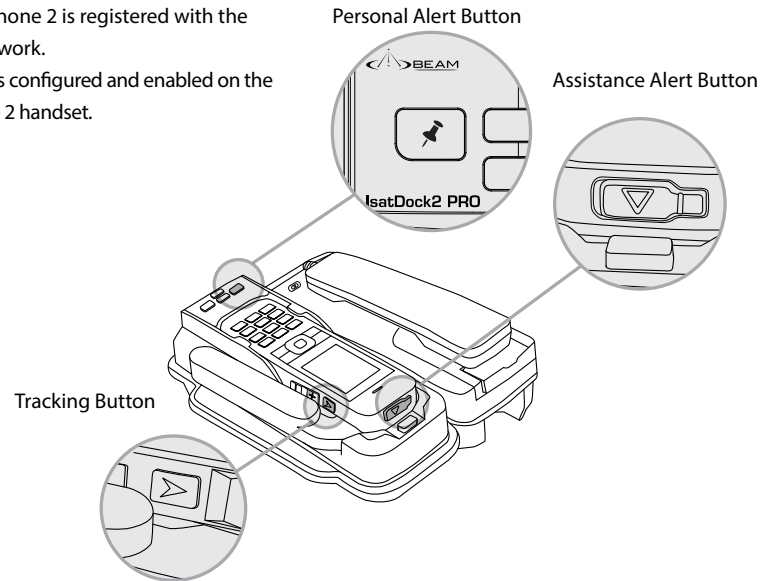
Assistance Alert

IsatDock2 can be configured to trigger the Assistance Alert by pressing the Assistance button on the top of the handset when docked. Assistance Alert must be configured to Handsfree Call > OFF in the IsatPhone 2 Settings, to ensure correct handsfree operation when docked.








IsatPhone 2 Tracking Functionality

The Tracking Button turns the periodic tracking functionality of the Isatphone 2 ON and OFF. In order to send a tracking message, the following conditions must be fulfilled for a docked handset.

1. The GPS receiver of the IsatPhone 2, has acquired enough satellite signals and navigational data to calculate a positional solution (fix).
2. The IsatPhone 2 is registered with the GSPS network.
3. Tracking is configured and enabled on the isatPhone 2 handset.



IsatDock2 PRO Front Panel

Location	Button Mode	Action	LED/Sound
	Singe press (1 second)	Send a Personal Alert message to IsatPhone 2's pre-configured destination.*	A beep will sound to indicate that a Personal Alert button was pressed. #
	Mute (1 second)	In a Call: Mute the microphone (uplink) on the privacy handset	LED turns RED - Muted LED turns OFF - Not muted LED flashing Yellow - RJ11/POTS in use
 OR 	UP/DOWN	In a Call: Increase/decrease volume on the internal hardware or privacy handset.	Audio will sound louder/quieter in privacy handset with each press.
		Out of Call: Increase/decrease volume of incoming ring tone on the internal hardware speaker.	A beep will sound indicating the increased/decreased ring tone volume .
 + 	Brightness dual button simultaneous press (1 second)	Out of Call: Enter LED brightness change mode. Press UP and DOWN arrows to vary intensity. Mode will automatically exit after 5 seconds after the last button press.	All LED's will change to WHITE and a double beep will sound when entering brightness change mode. A short single beep will sound when exiting change mode.
	Speakerphone press ON/OFF	In a Call: Terminate call if speakerphone mode is active Activate speakerphone mode if Privacy Handset mode is active.	LED turns GREEN - Speakerphone mode active LED turns OFF - Speakerphone mode not active
		Out of Call: Answer inbound call in speakerphone mode	

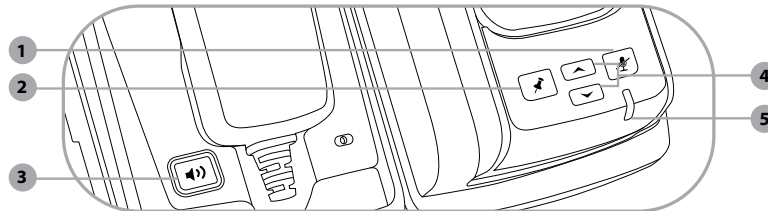
* This action is optional, only when the Personal Alert Mode for your IsatPhone 2 is configured.

A beep will only sound if audible alerts are enabled in the Falcon.

IsatDock2 PRO Buttons/LED lights

MUTE	GREEN	RED	YELLOW	WHITE/OFF
ILLUMINATED	N/A	Outgoing audio is muted	N/A	Outgoing audio is not muted
FLASHING	N/A	N/A	POTS/RJ11 in use	N/A
LED STATUS	GREEN	RED	YELLOW	WHITE/OFF
ILLUMINATED	Handset registered and able to make a call	Handset not registered/ no signal and cannot make or receive calls	N/A	N/A
FLASHING	Call in Progress	N/A	N/A	N/A
ALTERNATING	N/A	Error detected in communicating with IsatPhone 2 handset. Flashing Red/Blue	N/A	N/A
SPEAKER	GREEN	RED	YELLOW	WHITE/OFF
ILLUMINATED	Speakerphone Mode active	N/A	N/A	Speakerphone Mode inactive

1. Mute
2. Personal Alert button
3. Speakerphone Button
4. UP & DOWN
5. Status LED



Assuring Quality of Service

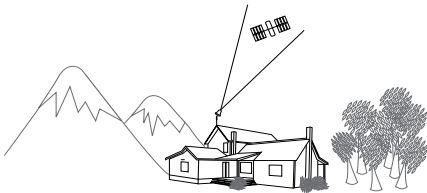
There are conditions that can compromise the quality of the service you may receive. These include:

- Obstructions
- Cabling
- RF Interference

Obstructions

Nearby tall buildings or similar structures, heavily leafed trees and mountains can all degrade performance as they block the signal between the antenna and the satellites.

Inmarsat performance is immune from natural environments such as clouds, fog, rain, snow, wind and smoke.



Cabling

Using an externally mounted antenna provides an ideal solution for many applications. It is very important that both the antenna cabling and antenna are Beam approved products. Always ensure all RF connectors are screwed together firmly and ensure there are no sharp bends in the cabling between the docking station and the antenna.

RF Interference

All wireless devices, including satellite telephones, are susceptible to RF (radio frequency) interference from other electronic devices. This problem is more evident when numerous antennas and broadcasting devices are located within close proximity to each other.

Symptoms of RF Interference

Symptoms of RF interference often resemble those that arise when an antenna is being operated with an obstructed view of the sky. Some of these symptoms include; erratic or no signal strength indication dropped calls or warbled or otherwise distorted voice. These symptoms may be intermittent or persistent, depending largely on the interference source, its distance, strength and frequency relative to the unit.

Mitigation of RF Interference

Service degradation due to RF interference can be significantly improved by:

- Increasing the distance and moving the Beam antenna off axis from the source of the interference, and
- Using an external band pass filter and an external antenna.



WARNING

Failure to use Beam approved antenna cables will result in degraded performance and may damage the Docking Station. This will void the product warranty.

Specification Summary

Electrical & Environmental Specifications - IsatDock2 PRO

Average Power Consumption Current @ 12v	Average	Watts
Power w/o IsatPhone 2	130mA	1.6W
Standby + Charging	360mA	4.3W
Transmit + Charging	875mA	10.5W
Sleep Mode	5mA	60mW
Peak Current	3.5A	42W
Physical Specifications	Metric	Imperial
Dimensions	245 x 197 x 100 (mm)	9.6 x 7.7 x 3.9 (inches)
Weight - dock	1.45kg	3.19lbs
Total Kit Weight	2.45kg	5.39lbs
Environmental Specifications		
Operating Range	-30°C to +70°C	-22°F to +158°F
Storage	-35°C to +85°C	-31°F to +185°F
Battery Charging Temp*	0°C to +45°C	+32°F to +113°F
Humidity	<= 75% RH	
Connectors / Interfaces		
POTS/RJ11	RJ11/2-wire, 5REN @ 600m, Adjustable dial, ring, busy tone configured frequency and adaptive impedance.	
Beam Antenna	TNC-Female	
GPS Antenna	SMA-Female	

10-32 V DC	4-way microFit (AC/DC adapter, or DC lead)
Privacy Handset Port	RJ9 connector
Configuration/Data*	USB Micro
Speakerphone	In-built speaker/microphone
Certifications	
Inmarsat Type Approval, FCC, CE Compliance, Electrical Safety, RoHS, Industry Canada, C-Tick, EMC Compliance	
Accessories	
ISD700	Directional/Fixed Antenna (Passive)
ISD710	Maritime Antenna (Active)
ISD715	Transport Magnetic Antenna (Active)
ISD720	Transport Bolt Antenna (Active)
ISD932	6m SMA/TNC cable kit (Active)
ISD933	13m SMA/TNC cable kit (Active)
ISD934	18m SMA/TNC cable kit (Active)
ISD935	30m SMA/TNC cable kit (Active)
ISD938	40m SMA/TNC cable kit (Active)
ISD942	50m SMA/TNC cable kit (Active)
ISD943	60m SMA/TNC cable kit (Active)
ISD944	70m SMA/TNC cable kit (Active)
ISD945	80m SMA/TNC cable kit (Active)
ISD946	90m SMA/TNC cable kit (Active)
ISD947	100m SMA/TNC cable kit (Active)
ISD936	10m SMA/TNC cable kit (Passive)

ISD937	20m SMA/TNC cable kit (Passive)
ISD939	30m SMA/TNC cable kit (Passive)
ISD940	40m SMA/TNC cable kit (Passive)
ISD941	50m SMA/TNC cable kit (Passive)
ISD960	IsatDock2 Adapter
RST060	Beam GoalZERO UPS Battery Pack
Kit Contents	
IsatDock2 PRO	
2x IsatDock2 Adapters	
110-240V AC Plug Pack	
Privacy Handset	
10-32V DC Power Cable	
Wall Mounting Plate	
User Manual & Quick Start Guide	

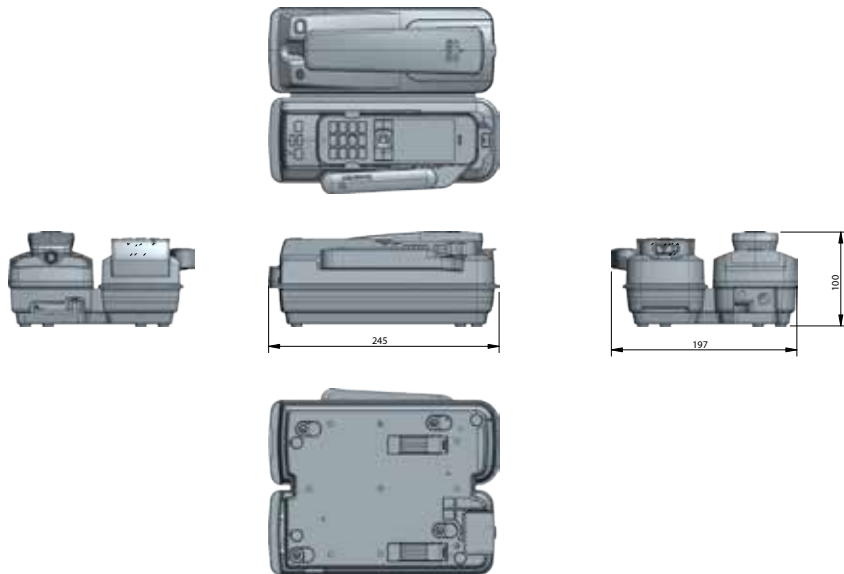


NOTE:

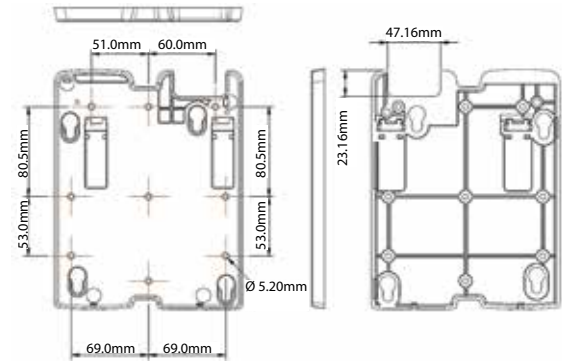
Specifications are subject to change without notice.

** It is ideal for the ambient temperature to be approximately 18 degrees below the 45°C upper limit for the handset to charge the battery whilst docked.*

(1) Physical Dimensions - ISD2 PRO Dock



(2) Physical Dimensions - Wall Bracket



Trouble Shooting

This chapter provides information to help you troubleshoot problems you may encounter while running the IsatDock2.

Q1	How do I know if my IsatPhone 2 is registered on the Inmarsat network?
A	<i>The STATUS LED of the docking station will change to GREEN when the handset is registered and able to make calls on the network. The IsatPhone 2 will also indicate "Inmarsat" in the top left corner of the screen display.</i>
Q2	The handset and docking station turn's OFF every 20 minutes?
A	<i>Ensure the Ignition/Accessories wire is connected to power. If this is not connected, or connected to ground the docking station will go into sleep mode after 20 minutes by default.</i>
Q3	No power on IsatDock2.
A	<i>Check power is connected to the interface unit. Ensure the Connector cable to the IsatDock2 is firmly fitted. Check all the connection cables to and from the IsatDock2.</i>

Q4	The signal bars are low or fluctuating and call quality is poor.
A	<i>Ensure all antenna connectors are tight. The antenna is operating in a location that it can see the satellite and there are no obstructions. Beam certified antenna cabling is being used and there are no sharp bends or cuts in the cable. If using a fixed passive antenna, ensure it is orientated correctly and pointing at the satellite.</i>
Q5	I am looking for the latest manuals and support information on the docking station ?
A	<i>Visit: www.beamcommunications.com/support/isd2pro</i>
Q6	Dropped calls
A	<i>Due to a satellite network when you are in motion the satellite signal may become obstructed (such as buildings, bridges, tunnels, larger vehicles). Check the antenna connection. Ensure the antenna cable has not been damaged. Ensure that only approved antenna cable has been used. Refer to Antenna Installation Guide on Beam website support.</i>

Q7	Party B cannot hear your voice.
A	<i>Privacy Handset must be docked in its cup when not in use. Check that MUTE is not ON (indicated by turning RED) Check the signal strength on the handset. Ensure the Handset connector at the base of the IsatPhone is not obstructed and there is no dust or foreign objects in the connector socket.</i>
Q8	The docking station appears to be turning ON/OFF and the handset is not registering.
A	<i>Ensure the power supply can provide at least 3.5A at 12volts. If power is being supplied from a battery, ensure the connections are tight and the contacts are clean.</i>

Beam Warranty Terms & Conditions

Beam Communications gives this express warranty (along with extended warranty endorsements, where applicable) in lieu of all other warranties, express or implied, including (without limitation), warranties of merchantability and fitness for a particular purpose. This constitutes our sole warranty and obligation with regard to our products as well as the Customer's sole remedy.

Beam Communications expressly disclaims all liability and responsibility for any special, indirect or consequential damages or any further loss of any kind whatsoever resulting from the use of our product(s). The Customer's sole and exclusive remedy and the limit of Beam's liability for any loss whatsoever, shall not exceed the purchase price paid by the Customer for the product to which a claim is made.

All products manufactured by Beam Communications are warranted to be free from defects in material and workmanship in accordance with and subject to the following terms and conditions:

1. This warranty is limited to the original Customer only. It cannot be transferred or assigned to third parties unless the intent to transfer to a third party is expressly indicated in a purchase order and/or warranty-processing arrangements have been agreed upon in writing by Beam.
2. Beam Communications does not warrant any installation, maintenance or service of the Products not performed by Beam, nor does it warrant the use of Products with unapproved ancillary products.
3. Beam Communications will correct any defects in material or workmanship of products manufactured by Beam which appear within twelve (12) months, from the date of shipment by Beam Communications to the Customer. Exception to a 12 months warranty are:
 - Units that they do not carry a transceiver (24 months warranty)
 - Accessories (3 months warranty)Please note that antennas and products not manufactured by Beam (like; NAL Shout Nano, Man down Kit, RST970, 9522B and 9602) also come with a 12 month warranty. Beam Communications will repair or replace, at our option, any defective product, provided that our analysis and/or inspection disclose that such defects developed under normal and proper use.
4. This warranty does not extend to goods subjected to liquid or particulate ingress, extreme humidity, misuse, neglect, accident or improper installation, or to maintenance or repair of products that have been altered or repaired by anyone except Beam Communications unless otherwise stated in writing. If a product has been tampered with (e.g. warranty seal has been removed, wrong cable has been used with an antenna), the warranty will be void.
5. The warranty is a return-to-base warranty and freight is paid by the sender.
6. A charge of USD\$195.00 including return freight will be made for testing returned product which is not defective or is found to be defective as the result of improper use, maintenance or neglect.
7. Beam Communications will not accept responsibility for any invoiced goods or services that are not covered by a Beam Communications written purchase order. Under no circumstances does Beam Communications agree to pay for labor or other related expenses associated with the troubleshooting and/or repair of our product without prior specific written authorization.
8. Information in our descriptive literature is based on product specifications that are current at the time of publication. Product specifications, designs and descriptive literature are subject to change as improvements are introduced. Although we announce changes as they occur, we cannot guarantee notification to every Customer. Beam Communications warrants delivered product to conform to the most current specifications, designs and descriptive literature.
9. This warranty policy may be expanded or limited, for particular categories of products or Customers, by information sheets published as deemed appropriate by Beam Communications. In particular, the warranty for third party Products is that of the third party and not Beams warranty.

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