IsatDock Docking Station
BETA USER GUIDE

DRIVE & LITE

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1. Overview

There are four main variants of the IsatDOCK docking stations:

1. IsatDock LITE
   The IsatDock LITE docking station provides a high quality mechanism for docking the Inmarst IsatPhone Pro handset. The dock is targeted for an in-vehicle application that connects to an external vehicle-mount antenna The IsatDock LITE allows the option of using an optional privacy mode handset mounted alongside the unit.

2. IsatDock DRIVE
   The dock is design specifically for an in-vehicle handsfree application, connecting to an external vehicle-mount antenna The IsatDock DRIVE allows for the use of an optional privacy mode handset mounted alongside the unit or an external speaker and microphone. The IsatDock DRIVE incorporates inbuilt GPS tracking and the following additional external interfaces: an alert loop, radio muting, and horn alerts.

3. IsatDock PRO
   The IsatDock PRO allows the flexibility of using a privacy mode handset mounted to the unit or an RJ11/POTS handset connected directly to the rear. The user is also able to operate in a hands free mode with a microphone and speaker combination build into the dock. The installation options of the IsatDock PRO enable the user to mount the IsatDock PRO in either a vertical or horizontal position.

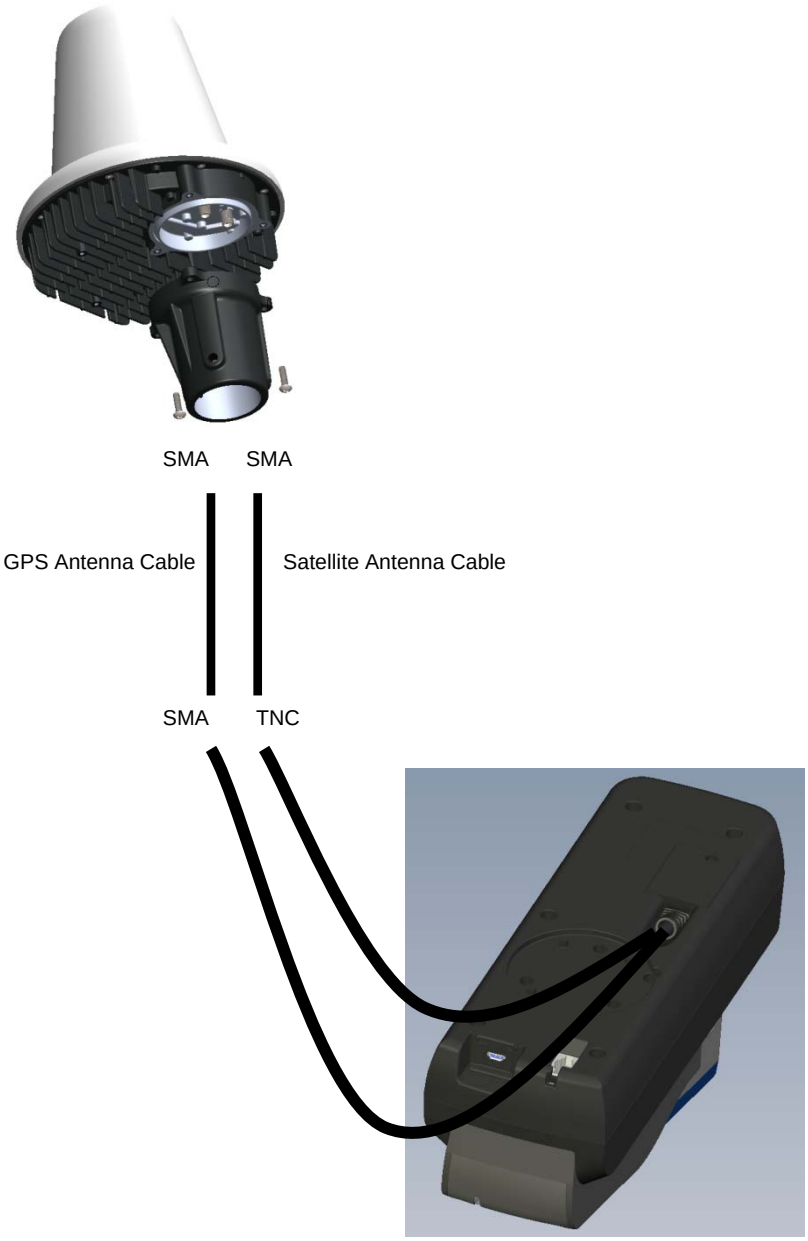
4. IsatDock MARINE
   The IsatDock MARINE docking station allows the flexibility of using a privacy mode handset mounted to the unit or an RJ11/POTS handset connected directly to the unit. The terminal itself is designed with IP rating for use in harsh environments. The IsatDock DRIVE incorporates inbuilt GPS tracking and an alert loop function.

1.1. LITE/DRIVE – Key Features

Figure 1 - IsatDock

LITE/DRIVE

2. Antenna connection



3. Functionality

3.1. Docking Procedure

The following docking procedure is common across each of the docking station types

PREPARATION:

Figure 2 – Door Openings

To place the IsatPro Phone into the docking unit, both the 'doors' on the external antenna connectors and the USB/Audio connectors need to opened.

The antenna 'door' must be placed at 90 degrees to the antenna connector cavity and run parallel to the top edge of the phone

The 'door' in the base of the phone should be in the fully opened position.

DOCKING:

To dock the handset, align the IsatPhone 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.

Figure 3 – Phone alignment

REMOVAL:
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.

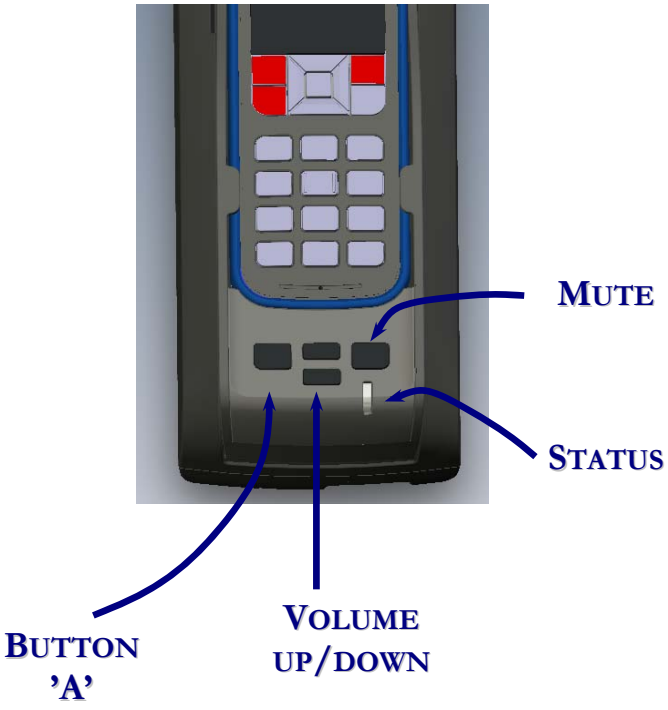
3.2. DRIVE – Panel Interfaces

In the base of the DRIVE docking station there is a port for both the Data Interface and the Privacy handset.

Figure 4 – Panel Mounted Electrical Interfaces

INTERFACE	DESCRIPTION	CONNECTOR
Data Interface	Data port to the IsatPhone Pro or programming interface to enable upgrading of the Docking station firmware and features.	MicroUSB Type B Std Mount` SMT
Privacy Handset	Handset with inbuilt speaker and microphone, specifically designed for the IsatDock	RJ91 (4P4C) modular jack

3.3. Additional Buttons and LED's



The docking station includes additional buttons to access the functions of the dock.

MUTE	Will mute uplink audio. Flashes RED when mute is active.
VOLUME UP	Increase volume

VOLUME DOWN	Decrease volume
BUTTON “A”	IsatDock Lite – Ring Cycle through the different ringtones of the Lite IsatDock Drive – Track Will send a tracking SMS upon being pressed when tracking is configured

STATUS LED

Colour	**Flashing**		**Can place call**
Red	Yes	Not registered and limited signal	No
Red	Solid	Registered and limited signal	No
Yellow	Yes	Not registered and Low/Average signal	No
Yellow	No	Registered and low/average signal	Yes
Green	Yes	Not registered and Good signal	No
Green	No	Registered and Good signal	Yes

3.4. Adjusting LED Brightness

Pressing the UP and DOWN buttons together will put the docking station into LED brightness adjustment mode. Once in this mode the LED's will flash. Press UP or DOWN to increase or decrease the LED brightness to a comfortable level, depending on your environment. This mode will automatically timeout after 5 seconds of button inactivity.

3.5. Keylock

A barrel type lock is situated in the top of the dock. When locked, the eject button cannot be depressed and the latch holding the top of the handset in position cannot be disengaged from the IsatPhone Pro. Once locked, the access to the security bolt beneath the handset is also denied thus ensuring the PRO/MARINE docking stations cannot be removed from their mounting bracket.

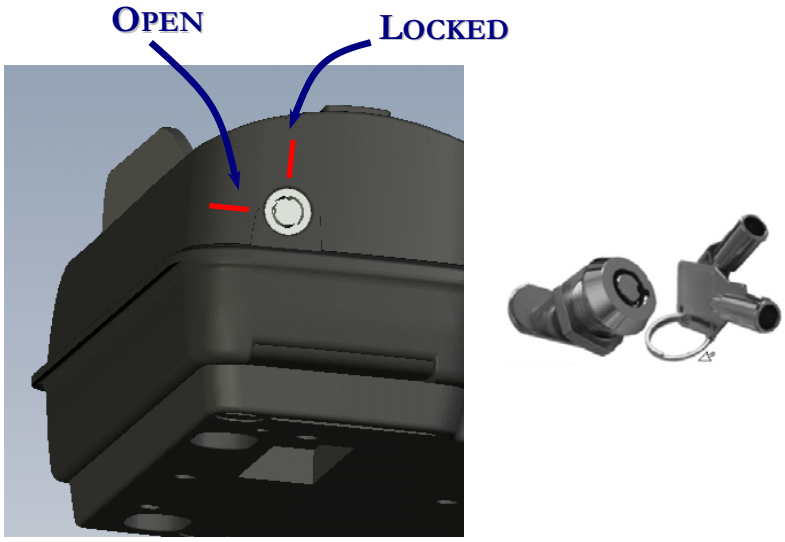


Figure 5 – Keylock position

4. Installation

4.1. Privacy Handset

The privacy handset is an accessory that allows users to make private calls. The privacy handset is used in conjunction with a mounting cup, that detects when the handset is ON or OFF hook.
The Privacy Handset should reside in the privacy handset cup when not in use.

In harsh environments, the Privacy handset is actively retained in the mounting cup. This is achieved by using the 'sprung' 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.

The privacy handset can be mounted to either the left or right

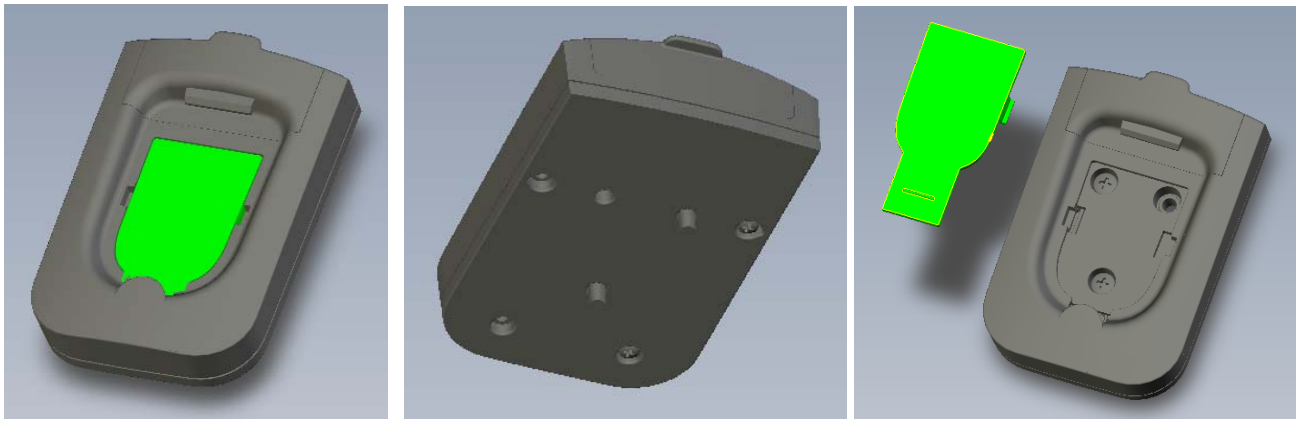
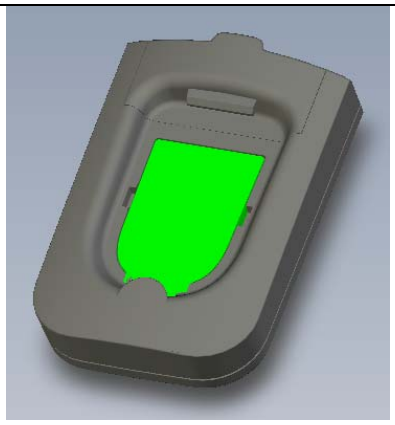


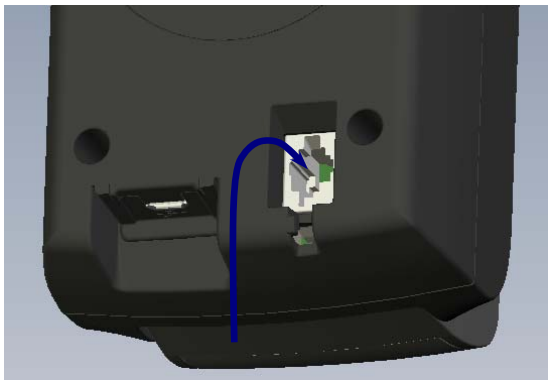
Figure 6 – Privacy Handset mounting cup

4.2. Mounting the privacy handset bracket to the IsatDock

Step	Example	Instruction
1		Place the spacer in the mounting cavity at the back of the IsatDock
2		Ensure it is orientated correctly so that the brass screw holes are visible
3		Place the mounting arm and RAM mounting pivot over the holes and insert and tighten the bolts.
4		Place the privacy handset cup over the mounting arm, insert bolts and tighten on locking nuts.

5		The mounting arm and privacy handset is now attached to the IsatDock.
6		Insert the privacy handset cup cover to complete the assembly

The Privacy Handset connects to the docking station via a RJ9 connector.



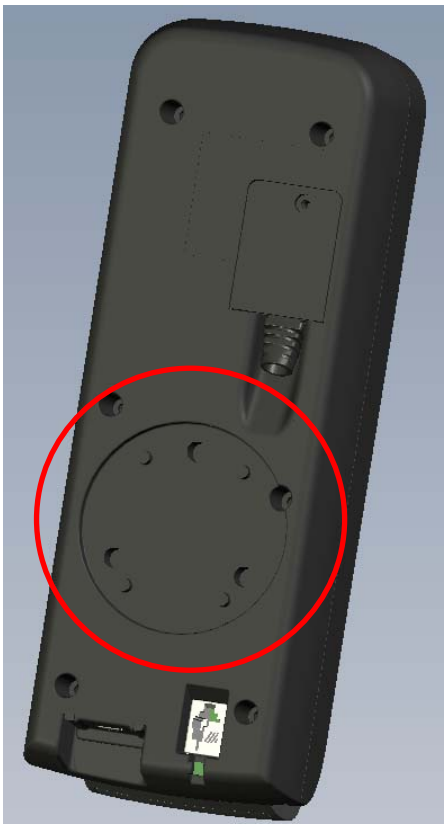
LITE / DRIVE

Figure 7 – Privacy Handset connection point

4.3. LITE/DRIVE – RAM Mount

The interface for mounting the IsatDock LITE/DRIVE is a ball-joint style arm fixed between two mounting plates. (shown below). This provides a compact, robust and flexible mounting arrangement that attaches the dock on either a horizontal, inclined, or vertical surface

The rear plastic housing of the dock is recessed in the shape of the mount, with M4 brass nutserts molded into the plastic.



5.

Electrical Interfaces

5.1. DRIVE – Main Loom

When the IsatDock DRIVE is attached to the RAM mount, the main interface loom exits from the rear of the plastics as shown in Figure 8. Tabled below are each of the connections found at the end of this loom.

Figure 8 – IsatDock DRIVE main loom

INTERFACE	DESCRIPTION	CONNECTOR
DC Input	DC input to the dock	Micro-Fit3.0 Dual Row 4Way inline plug
Accessory	Detects when the vehicle ignition in on	
GPS Antenna	Connection point for the external GPS antenna.	SMA (F) inline connector
GSPS Antenna	Connection point for the external GSPS antenna.	TNC (F) inline connector
Alert Loop	Two wire normally closed (NC) alarm alert loop, for connecting to remotely located Duress Button(s)	24AWG wire ends
Horn	Dock output to a system input or relay drive which can power the vehicle horn	24AWG wire end
Radio Mute	Output to interface to an existing entertainment system.	24AWG wire end
Ext Speaker	Output to an external speaker	Micro-Fit3.0 single Row 2Way inline plug
Ext Microphone	Input from an external microphone	Micro-Fit3.0 Dual Row 2Way inline plug

5.2. Powering from the “DC power cable / lead”

The DC power cable / lead can be used where AC power is unavailable. This can be connected to a 9 to 32V DC power source (such as a vehicle battery).

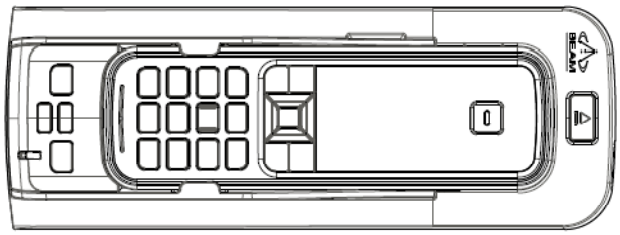
1. Route the power cable from the IsatDock cradle to the connection point, DO NOT apply power until complete.
2. Connect the **BLACK** Ground wire to negative battery / vehicle chassis (if negatively grounded chassis).
3. Connect the **RED** +VIN wire to the vehicle + Battery via a 3A fuse.
4. Connect the **YELLOW** Accessory wire to the vehicle accessory power, via a 1A fuse. (This may be connected to Vehicle Ignition voltage if Accessory power is unavailable). The Accessory (or ON/Off Sense) enables the IsatDock to automatically power on and off as the vehicle key is enabled. If this function is not required, this **YELLOW** Accessory wire MUST be also connected to the +VIN (RED wire).

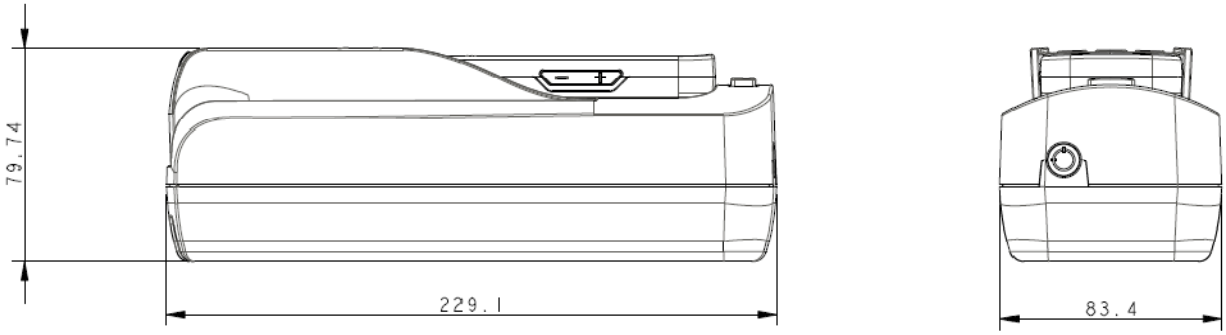
ACC - On/Off Feature (DC cable lead)

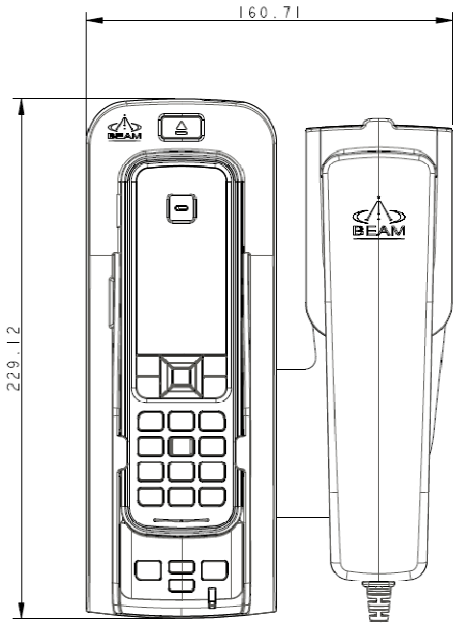
The DC Power lead allows users to control the on/off status of the IsatDock. This input **(YELLOW wire of the DC cable lead)** can be connected to a vehicle’s accessories, ignition or other similar circuits to allow the user to control the on/off status of the IsatDock in synchronization with a vehicles operation. If this function is not required, this YELLOW wire MUST be connected to the +VIN (RED wire). By default the IsatDock will stay on for 20 minutes after being switched off by Accessories. If Accessories is switched off during a call, the IsatDock will stay on for 20 minutes after the termination of the call.

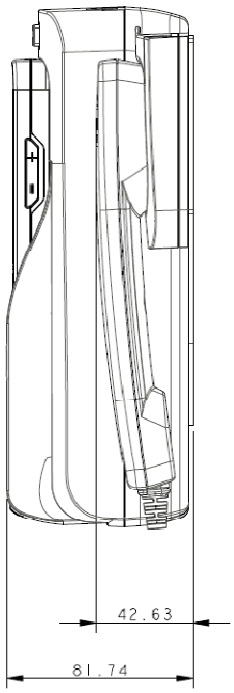
6. Physical Dimensions

6.1. LITE/DRIVE

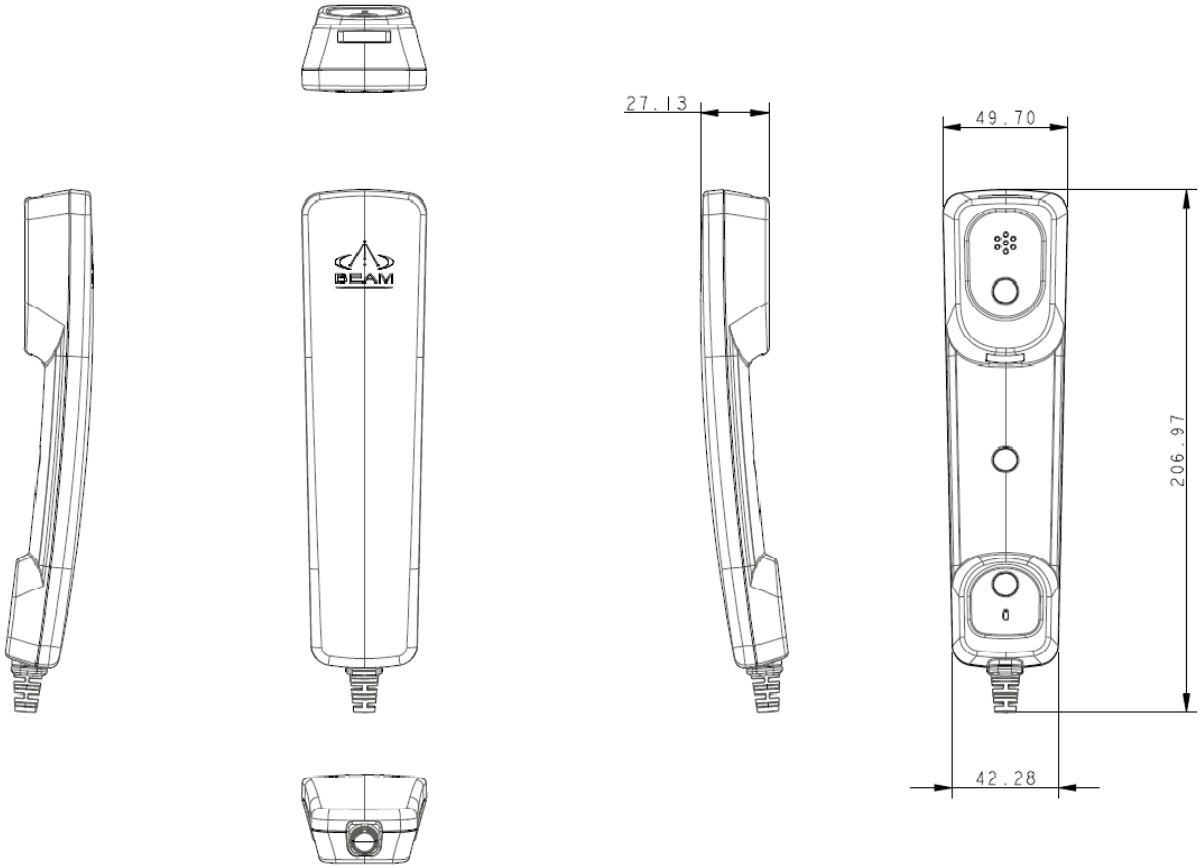





160.71
229.12
BEAM
BEAM


42.63
81.74

6.2. Privacy Handset



7. Placing a call – Inbuilt speakerphone (Drive) and Privacy handset (Lite & Drive)

1. Dock the IsatPhone into the docking station
2. Wait for the docking station to synchronize with the IsatPhone. If the IsatPhone Pro was inserted in the OFF state it can take approximately 1minute for the handset to turn ON and synchronize with the docking station.
3. Check that the status LED is solid green
4. Dial the destination number on the IsatPhone Pro's keypad and place the call
5. By default the IsatDock Drive will start all calls in speakerphone mode. If you wish to switch to using the Privacy handset you can do so by taking the privacy handset off-hook.
6. Terminate the call by returning the Privacy Handset back to ON-Hook or by pressing the red button on the IsatPhone Pro handset.

8. Adjusting Volume

NOTE: The IsatPhone Pro handset has its own volume controls for both incoming call ringing and in-call audio levels. It is recommended that you set the IsatPhone Pro to maximum volume and use the docking station to reduce the volume if required.

You can raise and lower the volume of the docking station by pressing the UP/DOWN arrows.

Not in a call – Idle state : IsatDock Drive ONLY

When in the idle state, pressing the up/down buttons will adjust the incoming call ring volume

In call

When in a call pressing the up/down buttons will adjust the call volume.

9. Configuring the Unit

The IsatDock can be configured by the IsatDock Management System. This is a Microsoft Windows application that connects to the docking station via a USB cable. This application allows users to configure settings such as:

- Audio Gain's (Drive)
- Upgrade Firmware
- Retrieve status – IMEI, Firmware Version, Serial Number, etc
- Tracking (Drive)
- Accessories timer

10. Antenna Specifications

AMPLIFIER + INTEGRAL ANTENNA	
Equipment Type:	Maritime or Mobile
Intended Operating Environment:	[x] Commercial [x] Light Industry & Heavy Industry
Power Supply Requirement:	DC 10 - 32 Volts maximum
RF Input Power Rating:	30.0 dBm or 1.0 Watt (conducted)
RF Output Power Rating:	37.5 dBm or 5.6 Watts peak (conducted)
Duty Cycle:	N/A
Tx Operating Frequency Range:	1626.5 - 1660.5 MHz
Rx Operating Frequency Range:	1565.19– 1585.65 MHz (GPS) 1518-1559 MHz (Inmarsat)
RF Output Impedance:	50 Ohms
Channel Spacing:	N/A
Occupied Bandwidth (99%):	83.1 KHz
Modulation:	**TX Modulation:** GMSK **RX Modulation:** OQPSK
Emission Designation*:	G7W
Antenna Connector Type:	Integral
Antenna Description:	Manufacturer: Aeroantenna Technology, Inc. Type Maritime Model: AT1595-82 Type Mobile Model: AT1595-83 Frequency Range: GPS 1565.19– 1585.65 MHz, Inmarsat Receive: 1518- 1559 MHz,

	Inamarsat Transmit: 1626.5-1660.5 MHz GPS Gain: 26 dBi INMARSAT RECEIVE Amplifier: 26 dB INMARSAT TRANSMIT Amplifier: 11 dB Antenna: 6.0 dBi (for model AT1595-83) Antenna: 3.5 dBi (for model AT1595-82)
Ambient Temperature Rating:	-40 to +70 degree C

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

10.1. 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 of 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.***

Warning: ***Changes or modifications not expressly approved by <manufacturer> could void the user's authority to operate the equipment***

"This device has been designed to operate with the antennas listed below, and having a maximum gain of 6 dBi dB. Antennas having a gain greater than 6 dBi 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"

All antenna cable used with these antenna must have a dB loss of 6.5dB or greater.

⚠ WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 55 cm 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.

The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter