



iridium SatDOCK 9555
with built in GPS
Installation & User Manual



Suitable for the Iridium 9555
Portable Satellite Telephone

iridium SatDOCK 9555 Installation and User Manual

Product name: SatDOCK 9555

Manual revision: 01

Part Number: USRMAN005501

Release date: August 2010

BEAM Communications Pty Ltd
8 Anzed Court, Mulgrave,
Victoria, 3170, AUSTRALIA

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User Information



**Please record your serial number here for
future reference:**

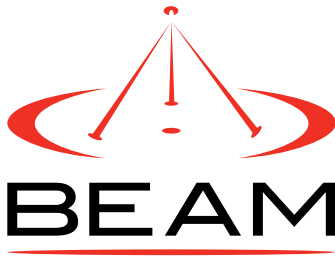
Model: 9555SDG

Serial no.:

This number can be copied from the white label on the
SatDOCK 9555

Eg. SG500001

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 specialized communications equipment for the Iridium 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.

BEAM Communications Pty Ltd
8 Anzed Court, Mulgrave,
Victoria, 3170, AUSTRALIA

Web: www.beamcommunications.com
Info: info@beamcommunications.com
Support: support@beamcommunications.com
Tel: +61 3 8588 4500
Fax: +61 3 9560 9055

Conventions in this Manual

Warnings, cautions and notes appear throughout this manual and are represented by following conventions.



WARNING / CAUTION:

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



NOTE / IMPORTANT / TIP:

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



INTERFERENCE:

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



RECORD:

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

Terminology

TERM	DESCRIPTION
SDMS	SatDOCK 9555 Management System - MS Windows Install
GPS	Global Positioning System
HF	Hands-free
DPL	Digital Peripheral Line
SMS	Short Message Service
SBD	Short Burst Data
Mobile Originating	Describes a call initiated by the SatDOCK 9555
Mobile Terminating	Describes an incoming call being answered by the SatDOCK 9555
9555	The Iridium 9555 Satellite Telephone
®	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
AT	AT tention command
SMA	SubMiniature version A co-axial RF connection

Package Contents

Check that your SatDOCK 9555 package contains:

- 1 x SatDOCK 9555 Docking Cradle
- 1 x Microphone
- 1 x Speaker
- 1 x DC Power Cable / Lead
- 1 x RAM Bracket
- 3 x M4 Screw Set
- User Manual
- Quick Start Guide

Optional Accessories

The following optional accessories are available for your SatDOCK 9555

- *Beam Privacy Handset Kit (RST755)*
- *Antenna / Cables*
- *Emergency Push Button / Cable (RST410)*
- *Bluetooth® Audio Headset (RST725)*
- *Intelligent Handset (RST970)*

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

Additional Information

For the latest in supporting software and documentation for SatDOCK 9555 please visit

www.beamcommunications.com/support/satdock9555

DATA

To use data on the SatDOCK 9555 the specific Beam USB driver must be downloaded from the above link and installed on the PC connecting to the SatDOCK 9555.

ALERT/TRACKING

To configure the alert / tracking functionality on your SatDOCK 9555, you must first install the SatDOCK 9555 Management System (SDMS) software, which also includes the specific Beam USB drivers.

OTHER RESOURCES AVAILABLE ONLINE

- Advanced Configuration – inbuilt to SDMS
- Quick Start Guide & Manual
- Iridium Direct Internet
- Antenna Installation Guide
- AT Command Set
- 9555 Upgrade if required

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Safety Information



IMPORTANT!

Please read the following information carefully before installing and using the Beam SatDOCK 9555. 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 SatDOCK 9555 is a low power docking station for the 9555 handset. When ON, it will charge the 9555 handset whilst docked in the SatDOCK 9555.

Refer to the appropriate section of this *SatDOCK 9555 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.

**WARNING:****POTENTIALLY EXPLOSIVE
ATMOSPHERES**

- Turn your phone OFF and DO NOT remove your battery or remove the 9555 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/propane 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 – Iridium Transceiver 9555

Your 9555 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 Iridium 9555 Phone Manual for additional Information)

- ◇ The Iridium 9555 handset has an in-built Iridium transceiver which is designed to be used with an external antenna. This antenna transmits RF energy. **The Iridium antenna (fitted via an extension coaxial cable to the cradle) must be located more than > 0.3 meters (1 foot) from human body (person) when in operation.**
- ◇ International agencies have set standards and recommendations for the protection of public exposure to RF electromagnetic energy.
 - ◆ *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*

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.

- ◇ Do not operate your satellite telephone when a person is within 1 foot (30 centimeters) of the antenna. A person or object within 1 foot (30 centimeters) of the 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.

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 exceeds 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.

For 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.

About this equipment

SatDOCK 9555 KEY FEATURES

SatDOCK 9555 CRADLE

- Securely holds 9555 handset
- Robust design and construction
- Charges 9555 handset ready for use
- Integrated antenna connection
- Integrated USB connectivity

HANDSFREE MODE

- In-built echo cancelling
- Full duplex technology
- Superior voice quality

TRACKING/GPS

- Tracking & alert monitoring capable
- Periodic position reports or remotely polled
- In-built GPS engine
- Interfaces to Beam's LeoTRAK-Online
- Compatible with other tracking applications

PANIC/ALERTS

- Panic Alert button in-built to cradle
- Option of additional wired alert buttons
- Impact/rollover

INTEGRATED BLUETOOTH®

- Bluetooth® in-built in cradle
- Supports Bluetooth® voice & data accessories

IN-BUILT RINGER

- In-built ringer for enhanced ring indication

VOICE, DATA, SMS, SBD

- Supports all Iridium voice, data, SMS & SBD services

PRIVACY HANDSET

- Supports optional Beam privacy handset
- Auto sensing answer/hang-up intelligence
- Switches between handset and handsfree modes
- Supports optional Intelligent handset

INSTALLATION

- Supports 9 - 32V DC power input
- Flexible installation via universal mount, also suitable for wall mounting
- Antenna, microphone and speaker installed in a convenient location
- Allows semi-permanent installation

QUALITY

- 2 year replacement guarantee for peace of mind
- 100% factory tested
- Full certified, Iridium, RoHS, CE, IEC60945

SatDOCK 9555 is an intelligent compact docking station specifically designed for the Iridium 9555 satellite handset.

SatDOCK 9555 allows the 9555 handset to be used in a vehicle, enabling quality hands-free calls with echo cancellation and noise reduction support.

SatDOCK 9555 also has an in-built Bluetooth® module for voice and data connectivity.

Equipped with internal GPS, the SatDOCK 9555 provides an intelligent tracking and alert reporting system that can be easily configured to support periodic polling or emergency alert reporting.

Tracking / Alert Monitoring

SatDOCK 9555 has an in-built GPS module that can provide simple tracking, monitoring and alert management in various land and sea based applications within various types of vehicles, vessels or fixed site locations.

The GPS module provides pinpoint accuracy and enables tracking worldwide. The tracking function has to be configured and enabled on the SatDOCK 9555 via the SDMS. Once turned on, tracking and alert messages can be sent to a phone number, e-mail address, LeoTrak-Online or any other tracking application via SMS or Short Burst Data (SBD) if configured on the 9555 handset.

Tracking messages can be sent from the SatDOCK 9555 in the following ways;

1. Periodic position reporting, which is preset during configuration of the SatDOCK 9555
2. A current location position can be sent at any time by pressing the Track button on the front of the SatDOCK 9555

The Alert mode can be activated on the SatDOCK 9555 in the following ways;

1. Use the two button press (known as the Alert button) on the front of the cradle
2. Use an external alert button/emergency push button connected to the alert loop
3. Use the internal accelerometer for impact and roll-over sensing.

Once activated, alert messages will be sent to the preset destination continuously until the alert is disabled either remotely or locally on the SatDOCK 9555 unit.

LeoTRAK-Online Global Tracking Portal

LeoTRAK-Online is Beam's own global web based alert monitoring and tracking application, which enables you to track, trace and monitor your asset anywhere on earth for a small monthly fee through a simple-to-use web portal.

For more information about LeoTRAK-Online and associated charges please visit www.leotrakonline.com

Equipment Overview:



Installation Guidelines

This guide outlines the process for installing the Beam SatDOCK 9555 in conjunction with an Iridium 9555 portable handset.

This kit must not be used with any other device other than the Iridium 9555 handset.

- ◇ Only qualified personnel should install communication equipment. If necessary, contact the vehicle manufacturer for air bag information specific to the vehicle.
- ◇ Ensure that the units are protected from dirt and moisture.
- ◇ Select an area to mount components that do not interfere with driver or passengers seating or leg space.
- ◇ Ensure that each mounting surface is strong enough to support the component being mounted to prevent the component from loosening over time.
- ◇ Mount all components securely to prevent shifting that could cause injury or could interfere with safe vehicle operation. Always use the supplied mounting hardware.
- ◇ Leave space around the units to allow cooling and ensure there are adequate clearance for cables.
- ◇ Ensure the units can be easily removed.

Routing Cables (for vehicle installations)

If your vehicle is equipped with wiring troughs in the doorsills, use them to simplify cable installation and to provide maximum protection for the cables.

If wiring troughs are not available, route cables according to these guidelines:

- ◇ Route cables so they are protected from pinching, sharp edges, and crushing



WARNING:

Air bags inflate with great force. DO NOT place objects, including communication equipment, in the area over the air bag or in the air bag deployment area. If the communication equipment is improperly installed and the air bag inflates, serious injury could result.

-
- ◇ Where possible, avoid routing cables above the catalytic converter
 - ◇ Use grommets wherever a cable must pass through a hole in a metal panel

- ◇ In a vehicle equipped with electronically controlled anti-skid brakes, route all cables on the opposite side of the vehicle from the braking modulator box to minimize possible interference from the phone.
- ◇ Keep all in-line connectors accessible.
- ◇ The suggested path for routing cables in vehicles without wiring troughs is alongside the drive shaft tunnel, under the carpet.

Guidelines for Electrical Connections

The system is designed to operate in negative ground 9 to 32 Volt DC electrical systems only. **IF** using the DC cable lead:

- ◇ The best power connection point for the positive primary power leads 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(s) 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.

At 13.6 volts, the SatDOCK 9555 cradle draws a maximum of 1 amp current. Please ensure that the vehicle's battery and alternator have sufficient current capacity to deliver at least 1 amp more than the maximum current that may be required by the vehicle and its other accessories.



WARNING:

Do not connect the SatDOCK 9555 interface power cable to power the unit until the full installation is completed.

Installation Procedure

Installing the SatDOCK 9555 Cradle

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

1. Mount the SatDOCK 9555 cradle
2. Install the external Iridium and/or GPS antenna (ordered as extra option)
3. Connect the speaker and microphone to the SatDOCK 9555 cradle
4. Install the external alert button (optional)
5. Connect the privacy handset (ordered as extra option)
6. Connect the Intelligent handset (ordered as extra option)
7. Connect the DC power cable to the SatDOCK 9555
8. Configure Bluetooth® (optional)
9. Configure Tracking / Alert (optional)



When selecting a location for the SatDOCK 9555 cradle, consider these guidelines:

- ◇ Ensure that each mounting surface is strong enough to support the cradle.
- ◇ Allow enough room so that you can easily insert the 9555 handset into and remove it from the cradle.
- ◇ Ensure that the SatDOCK 9555 is within cable distance of power and antenna connections
- ◇ Position the handset and cables so that it does not interfere with vehicle operation or with driver or passenger seating or leg space.
- ◇ Ensure sufficient room is allowed for the antenna and interface cables to be routed from the rear of the SatDOCK 9555.

Cradle Mounting

The SatDOCK 9555 is supplied with a universal RAM® mount bracket that enables mounting to any flat surface (vertical or horizontal) within a vehicle, attached on a wall or on a table as required.

1. Attach one pivot base to the rear of the SatDOCK 9555 using the M4 screws supplied.

Pivot base bolted on



2. Secure the second pivot base to the location you have selected for mounting the SatDOCK 9555.



Pivot Base



RAM Mount

3. Use the interconnecting stem of the RAM® mount to secure the SatDOCK 9555 to the pivot base and tighten into the desired location firmly using the wing nut on the stem.



Finished result

Iridium Antenna Connection



The antenna connections exit from the rear of the SatDOCK 9555 cradle, via the antenna loom as shown in the picture.

Install the Iridium antenna in the appropriate location (with clear sky view) and then connect it to the TNC female connector on the antenna cable coming from the rear of the SatDOCK 9555.



WARNING:

DO NOT pull with force on the cables from the rear of the SatDOCK 9555. Please install strain relief clamping for the antenna cables where required.

Correct installation of the antenna system is a vital part of the SatDOCK 9555 system, to ensure reliable functionality, and drop-free calls.

Use only quality low-loss antenna cabling, and ensure that the cable(s) and connectors to the antenna provide no more than 3dB attenuation (at frequency of 1.6GHz)



NOTE:

Refer to the section "Assuring Quality of Iridium Service" for more information on antenna placement and installation

GPS Antenna Connection (Optional)



The GPS connection is optional if the tracking function is not required. If connected, and tracking is enabled, position or location information will be shown on your tracking messages and alert messages.

The GPS connection supports an active GPS antenna compatible with powering from a 3.3V source.

Install the GPS antenna in the appropriate location and then connect it to the SMA female connector on the antenna cable coming from the rear of the SatDOCK 9555.

**NOTE:**

The antenna should only be connected and disconnected to the GPS receiver when the SatDOCK 9555 is not powered. Connecting the antenna after power-up can result in prolonged acquisition time.

External Speaker and Microphone

The SatDOCK cradle comes with an external speaker and microphone for hands-free operation.

1. Mount the speaker in the appropriate location and ensure the lead is sufficient to reach the cradle.
2. Mount the microphone about 30cm away from where you normally speak and ensure the lead is sufficient to reach the cradle. By default, the audio is always on the handsfree speaker and microphone unless a privacy handset, a Intelligent handset or a Bluetooth® audio device is enabled.

**External Alert Button (optional)**

SatDOCK 9555 provides an additional cable pair from its rear cable loom, known as the standard Beam alarm loop. This provides a Normally CLOSED wire loop, which can be used to connect to any passive type of button, or relay, or reed switch in which the action breaks the loop (OPEN) to activate the alarm state.

Connect the **BROWN** and **GREEN** wires either directly to the button, or it can be extended for longer runs (up to 45 meters). This alarm loop can support multiple alarm buttons / switches – wired in **SERIES**, whereby any one of these buttons will **OPEN** (activate) the loop when pressed.

To properly register the alarm state, the loop needs to be **OPEN** for at least 2 seconds – (ie. holding down the button for 2 seconds activates the alarm).

Privacy Handset (Optional – Extra Order)

The SatDOCK 9555 provides a 4-pole 3.5mm audio socket on the rear cable loom, for connection to the Beam privacy handset. This provides a local handset function, conveniently mounted next to the SatDOCK 9555 cradle.

1. The Privacy Handset Kit (purchased/ordered separately) contains a mounting bracket, space plate, and fasteners.
2. Mount the handset cup to the mounting plate.



3. Mount the spacer plate and the mounting bracket to the rear of the SatDOCK 9555, by using the longer screws provided with the kit. The original RAM® arm-bracket plate is also re-installed behind these plates.



4. Plug the Privacy Handset 4-pole connector into the rear cable loom. (Please use suitable electrical tape and/ or strain relief clamps where required to ensure reliable connection)



Privacy Handset mode is enabled when the handset is removed from the cup. Please ensure to re-dock the Privacy Handset when not in use.

Intelligent Handset

The intelligent handset provides the user with a dial pad and LCD display. The Intelligent handset allows the user to make calls or send/receive SMS without having access to the 9555 handset.

The Intelligent handset can be installed up to 50 meters away from the SatDOCK cradle. Standard CAT5e cable can be used to extend the connection.

The intelligent handset is enabled when it is removed from the cup. However, if both the intelligent and privacy handsets are enabled, the privacy handset always has the higher priority.

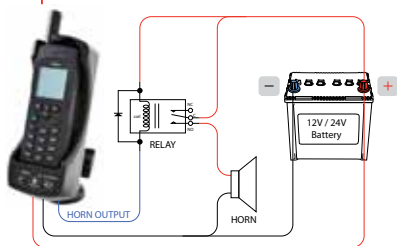


Horn Output



The SatDOCK provides a **BLUE** wire output on the rear cable loom for controlling an external ringer such as a vehicle horn.

The horn output is an open-collector output capable of sinking up to 120mA current. It CANNOT be connected to the vehicle horn directly and an automotive grade relay must be used to control the horn as shown below.



By default, it only works when the key ignition is OFF and the SatDOCK is still ON (by default, the SatDOCK will stay on for 20 minutes after the key ignition is turned OFF). This is to avoid the horn buzzing on an incoming call while the vehicle is being driven.

If the horn output needs to be ON all the time when the key ignition is OFF, the SatDOCK can be configured to ignore the key ignition input via the SDMS.

If the horn output needs to be ON when the key ignition is ON, the SatDOCK can also be configured to do that via the SDMS

Preliminary Testing

Prepare the Iridium 9555 Handset

1. Ensure that the 9555 Handset is running with the required compatible firmware which can be located at:

www.beamcommunications.com/support/satdock9555

2. Remove the rubber plug / bung / grommet from the rear of the 9555 Handset, to reveal the antenna socket hole.



WARNING:

Ensure that the external antenna grommet at the rear of the 9555 handset is removed prior to inserting the handset into the SatDOCK 9555 cradle.



Connect Power

Once all the components are installed, apply power to the SatDOCK 9555 via the 4-way Microfit® connector using the DC power cable.

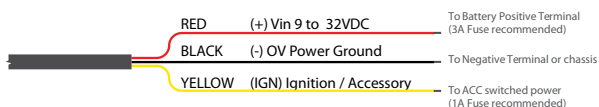


The DC power cable has three wires, **RED**, **BLACK** and **YELLOW**. The **RED** and **BLACK** wires are used for the power connection while the **YELLOW** wire can be connected to a vehicle's accessories, ignition or other similar circuits to control the ON/OFF status of the SatDOCK 9555 in synchronization with a vehicles operation. By default, the SatDOCK 9555 will stay on for 20 minutes after this input is switched off and if a call is in progress while this occurs, the SatDOCK 9555 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 SatDOCK 9555.

1. Connect the 4-way Microfit connector on the DC power cable to the 4-way power connector on the rear cable loom of the SatDOCK 9555.
2. Route the other end of the DC power cable to the connection point. DO NOT apply power until the following steps are completed.

3. Connect the **BLACK** wire to the negative terminal of the battery (10A fuse recommended) or the vehicle chassis (if negatively grounded chassis).
4. Connect the **RED** wire to the positive terminal of the battery. It is recommended to add a 3A fuse between them.



5. 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 SatDOCK 9555 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.

Wiring for a Marine Application

When installed in a marine application using the DC power cable, the **YELLOW** wire can be wired to a suitable panel switch which will allow the SatDOCK 9555 to be turned off when not in use.

SatDOCK 9555 Usage

Docking & undocking your 9555 handset

To dock the 9555 handset, place the base of the 9555 handset into the seat of the SatDOCK 9555 ensuring that the pins on the bottom of the 9555 handset line up with that on the seat of the SatDOCK 9555 cradle.



Push the **“EJECT”** button located on top of the cradle and press the phone in firmly at the same time. Gently pull on the handset to confirm that it is docked correctly and won't come loose.



Removing the 9555

When removing the 9555 handset from the SatDOCK 9555 cradle, reverse the above steps, ensuring you firmly press the **“EJECT”** button on top of the SatDOCK 9555 cradle. The phone will then pop forward into your hand and can then be removed from the cradle. (The **“EJECT”** button requires firm force to release the phone)



Bluetooth® Configuration (Optional)

SatDOCK 9555 has an in-built Bluetooth® module for voice and data connectivity.



NOTE:

Any time there is reference to the Bluetooth® button or the Bluetooth® LED it is referring to the button shown below which is the same button on the front of the SatDOCK 9555.



Bluetooth® Headset Configuration

To configure/pair to a Bluetooth® headset (audio) device:

1. Power up the SatDOCK 9555 cradle.
2. Press and hold the Bluetooth® button on the cradle for 5 seconds, until the cradle sounds a double (2) beep. The Bluetooth® LED will then flash **BLUE** and **ORANGE**.
3. Hold the headset (device) button(s) to enter the pairing mode (please refer to the headset user manual).
4. Once the devices are successfully paired, the Bluetooth® LED on the cradle will change to **BLUE** (half intensity).
5. Bluetooth® can be turned **ON** with a **single press**, and **OFF** by pressing and holding the Bluetooth® button for 2 seconds on the cradle. The cradle will sound a single (1) beep when turning off. Once paired, the SatDOCK 9555 will automatically connect to this device every time the SatDOCK 9555 powers up.

You may repeat this process to pair more than one headset (up to 17 total devices including data connections) – ensure only one device is switched on during subsequent pairing configuration.

Tracking & Alert Configuration (optional)

Tracking & Alert requires the installation of a GPS antenna, and setup of the tracking and/or alerting messages.

Please refer to the SDMS software to enable and configure Tracking & Alert.



NOTE:

If the Beam alarm loop is going to be used with an external button, remember to enable this external loop in the SDMS settings. Once enabled, the loop will be armed and activated with an open-loop condition.

To avoid false triggering, be sure to have the normally closed button wired into the alert loop, before applying power.

Operation of the SatDOCK 9555

Starting Up

1. Retract the antenna on the 9555 handset.
2. Place the 9555 handset into the SatDOCK 9555 as per instructions "Docking & Undocking" on page 25.
3. If using the **YELLOW** accessory input wire, switch the vehicle ignition to ACC or ON position, The SatDOCK 9555 will automatically power up followed by a single beep. The 9555 handset will then start to initialise followed by a double (2) beep.
4. Wait for the 9555 handset to register on the Iridium network.
5. You are now ready to make and receive calls.



NOTE:

The 9555 handset can be removed whilst powered, however the handset will turn off automatically.

*If it is removed **during** a call, the 9555 will attempt to remain in call as long as antenna is extended and in sky view. The call may drop out during this transition, and the phone may turn off.*

**NOTE:**

*If the 9555 handset fails to connect with the cradle, the cradle will power cycle the 9555 twice when it is docked and after that, it will power down the 9555 and put it into a one-minute charge mode with the Ring/Mute LED flashing **RED** and **GREEN**.*

After the one minute, the cradle will try again to connect with the 9555. If it still fails, the cradle will follow the above sequence however for a 10-minute duration.

One common cause for connection failure is a flat 9555 battery which prevents the 9555 from being turned on in the cradle. The one-minute and ten-minute charge cycle will 'resurrect' the battery and once the 9555 is connected with the cradle, charging will resume on the 9555.

If the 9555 handset is removed from the cradle during the charging process, then reinserted, the startup process will restart from the beginning.

*Please be patient during this startup sequence. Ringer / Mute LED will flash **RED** and **GREEN** during above charging process.*

Charging the Iridium 9555 Handset

The SatDOCK 9555 provides charging power to the 9555 handset via its base connector. Therefore, DO NOT plug another power supply into the 9555 side power port whilst it is docked in the cradle.

The 9555 battery is a lithium-ion cell which has a safety temperature range whilst charging. This range is from 0 to 40 degrees Celsius (32 to 104 degrees Fahrenheit).

Due to the increased heating effects on the 9555 handset whilst it is docked and being charged, it is ideal for the ambient temperature to be approximately 10 degrees below the 40 degreeC upper limit for the handset to charge the battery whilst docked. If the battery temperature exceeds this limit, then the 9555 may cease charging until the temperature is reduced. In some cases, the charging process may oscillate ON and OFF at the temperature limit. This could damage the Li-ion battery.

To avoid the charging oscillation, the SatDOCK 9555 employs a pulse powering mechanism to charge the 9555. Basically, charging power will be provided to the 9555 for a pre-defined duration (default 40 minutes) and then removed for another pre-defined duration (default 20 minutes). By turning off the charging for some time, it allows the 9555 battery to cool down and during the OFF period, if the temperature drops below a pre-defined level (default 28 degreeC), the SatDOCK 9555 will immediately turn on the charging power before the OFF timer expires. The charging ON, OFF and temperature level are configurable via the SDMS.

Placing Voice Calls

Hands-Free Phone Call – Mobile Originating

1. Dial the number (using the full country codes) on the 9555 handset keypad whilst docked, or the Intelligent handset keypad (if connected). Press the **GREEN** key (or OK on Intelligent handset) to start the connection.
2. Beeps should be heard from the speaker to indicate a call is in progress. A message will display on the 9555 handset to indicate the call is progressing.

Options:

- A. During the call, you may transfer the call to the optional privacy handset by taking the privacy handset out of its cup. This automatically directs the call audio to the privacy handset. The Ring/Mute LED on the cradle will start flashing **ORANGE** to indicate the privacy handset is being used. To return the call back to hands-free mode, place the privacy handset back in its cup.
- B. During the call, you may transfer the call to the optional Intelligent handset by taking the Intelligent handset out of its cup. This automatically directs the call audio to the Intelligent handset. The Ring/Mute LED on the cradle will start flashing **ORANGE** to indicate the Intelligent handset is being used. To return the call back to hands-free mode, place the Intelligent handset back in its cup.



NOTE:

Country codes are not required if "Call Processing" is enabled in the SDMS

Hands-Free Phone Call – Mobile Terminating

Now make a call from your landline phone or mobile phone to the 9555 handset. You need to know the phone number of the SIM card used in the 9555 handset.

1. The SatDOCK 9555 internal ringer or the external speaker will ring according to the ringer setting.
2. Answer the call by pressing the **GREEN** key on the 9555 handset or the OK key on Intelligent handset (if connected).

Once the call is in progress, options A and B from "Hands-free Phone Call – Mobile Originating" section are also applicable.

**NOTE:**

The SatDOCK 9555 internal ringer will also sound during an incoming call. This can be changed by a single press



of the Ringer button, whilst out of call. (Please refer to the section "Ringer Selection" for more details.)

Bluetooth® Phone Call - Mobile Originating

A Bluetooth® call can be started by using the 9555 keypad.

1. Ensure that the Bluetooth® audio headset is connected with the SatDOCK 9555, i.e. the Bluetooth® LED is turned on in **BLUE** - half intensity.
2. Dial the phone number (using the full country code) on the 9555 keypad or press the Call button on the Bluetooth® headset which will then dial the last called number. A call progress message will appear on the 9555 display and the audio is automatically routed to the Bluetooth® headset. During the call, the Bluetooth® LED will flash slowly in **BLUE**.
3. Press the **RED** key on the 9555 handset to terminate the call.

Options:

- A. During a call, you may transfer the audio to the optional privacy or Intelligent handset by removing it out of its cup. This automatically directs the call audio to the privacy/intelligent handset. To return the call back to the Bluetooth® headset, put the privacy/Intelligent handset back in its cup.

Bluetooth® Phone Call – Mobile Terminating

1. Ensure that the Bluetooth® audio headset is connected with the SatDOCK 9555, i.e. the Bluetooth® LED is turned on in **BLUE** - half intensity.
2. Answer the incoming call by either one of the bellow:
 - ◆ Pressing the Bluetooth® headset answer button
 - ◆ Pressing the **GREEN** key on the 9555 keypad.
3. To end the call by either one of the bellow:
 - ◆ Pressing the Bluetooth® headset answer button
 - ◆ Pressing the **RED** key on the 9555 keypad.

Once the call is in progress, Option A from "A Bluetooth® Phone Call – Mobile Originating" is also applicable.

Privacy Handset Use



NOTE:

Any time there is reference to the Ringer/Mute button or the Ringer/Mute LED it is referring to the button shown below which is the same button on the front of the SatDOCK 9555.



Privacy handset Phone Call - Mobile Originating

1. Remove the privacy handset from its cup
2. Dial the phone number (using the full country code) on the 9555 keypad whilst docked. Press the **GREEN** button
3. A beep sound should be heard from the handset and a message is displayed on the 9555 to indicate a call is in progress.
4. Once the call is connected, the Ring/Mute LED will flash in **ORANGE** to indicate the privacy handset is in use.
5. Press the **RED** key on the 9555 handset to terminate the call.

Privacy Handset Phone Call - Mobile Terminating

1. Answer the incoming call by un-cupping the privacy handset from its cup.
2. Press the **RED** button on the DPL handset to terminate the call.

Intelligent Handset Phone Call - Mobile Originating

1. Remove the Intelligent handset from its cup.
2. Dial the phone number (using the full country code) on the keypad. Press the OK **GREEN** key.
3. A beep sound should be heard from the handset to indicate a call is in progress and the following message will be displayed on the 9555 handset.
DPL Call in Progress
4. Once the call is connected, the Ring/Mute LED will flash in **ORANGE** to indicate the Intelligent handset is in use.
5. Press the **RED** key on the 9555 handset or the C **{RED}** key on the Intelligent handset to terminate the call.

Options:

- A. During call, the call audio will be transferred to the hands-free speaker and microphone if the Intelligent handset is returned to its cup. The Ring/Mute LED will be turned off. To return the audio to the Intelligent handset, simply remove it from its cup.

- B. During call, you may transfer the call to the optional Bluetooth® audio headset (if connected) by a single short press of the Bluetooth® button on the cradle. This automatically directs the call audio to the Bluetooth® device. The Bluetooth LED will start slow-flashing in **BLUE** to indicate the Bluetooth device is in use. To return the audio back to the hands-free mode, perform another single short press of the Bluetooth button on the cradle. The Bluetooth LED will turn solid **BLUE**.

Intelligent Handset Phone Call - Mobile Terminating

1. Answer the incoming call by un-cupping the Intelligent handset from its cup.
2. Press the C **{RED}** button on the Intelligent handset to terminate the call.

Once the call is in progress, the same options described above are available.

Mute & Earpiece-Jack Mode



NOTE:

Mute function only operates DURING a call. Once the call is ended, Mute mode is exited.

If the Mute button is pressed when NOT in call, it will step through the Ringer Volume modes.

Mute functionality

The mute function of the SatDOCK 9555 allows the user to mute either the Intelligent handset, Bluetooth®, or privacy handset audio to the 9555 handset whilst docked in the SatDOCK 9555.

1. During a call, Press the Mute button on the face of the SatDOCK 9555, a **RED** LED will illuminate the Mute button to confirm that the SatDOCK 9555 is muted.
2. To exit the mute mode, press the mute button once.

Ringer Selection

The SatDOCK 9555 has an internal ringer that sounds during an incoming call. Ring can also be directed to the external speaker. The ring modes can be changed by a press of the Ringer button, when OUT of call. A preview of the sound will be heard, and the setting is stored. Continue pressing to switch between the 5 choices.

- ◆ *Single beep at beginning of incoming call (internal ringer only)*
- ◆ *Repeating two-tone cadence, either internal or through the speaker.*
- ◆ *Repeating three-tone cadence, either internal or through the speaker.*

Earpiece-Jack Mode

The SatDOCK 9555 allows a user to utilise a 2.5mm earpiece plugged into the right side of the 9555 handset.

1. **During** a call, to enable Earpiece-Jack Mode, **press and hold** the Mute button for **1.5 seconds**.

The LED on the mute button will start flashing **ORANGE** to indicate that the SatDOCK 9555 is in Earpiece-Jack mode.

2. To exit the Earpiece-Jack Mode, press the Mute button once.



NOTE 1:

The 2.5mm jack can remain plugged into the 9555 handset whilst in normal or Earpiece-Jack mode.

NOTE 2:

The Earpiece-Jack function only operates DURING a call. Once the call is ended, the 9555 will exit the Earpiece Jack mode.

If the Ringer button is pressed when NOT in call, it will step through the Ringer Volume modes.

Tracking & Alert Operations



NOTE:

Any time there is reference to the Track button or the Track LED it is referring to the button shown below which is the same button on the front of the SatDOCK 9555.



Enable Tracking & Alert

The Tracking & Alert function is not enabled by default and it has to be configured and enabled using the SDMS software via the mini-USB connection to the SatDOCK 9555.

Various configuration options are available to the user in the SDMS. The message delivery method is also set using the SDMS. Please refer to the SDMS User Guide for more details on how to configure and enable the Tracking & Alert function on the SatDOCK 9555.

Send Tracking Position

In order to send a tracking message, the following condition must be fulfilled.

1. The GPS receiver has acquired enough satellite signals and navigational data to calculate a positional solution (fix).
2. The 9555 handset is registered with the Iridium network.
3. Tracking is configured and enabled via the SDMS

The Track LED will stay off if the Tracking function is disabled. It will turn solid **GREEN** if all of the above conditions are satisfied. Otherwise, it will flash in **GREEN** if the Tracking function is enabled but no GPS fix and/or Iridium registration.

To manually send a tracking message of the current location

1. Apply a single press to the Track button. A beep will sound (if configured in the SDMS).

Activate Alert Mode

Alert mode can be activated by one of the following two methods:

1. Press and hold both the Track and Ring/Mute buttons together for 2 seconds. A single beep will sound (if configured in the SDMS).
2. If enabled by the SDMS, press and hold the external panic button (optionally wired into the Alert Loop wires).

Once triggered into the Alert mode, the Track LED turns **RED**. The message then attempts to be sent.

The Track LED will flash in **RED** when the alert message is sent. (Rate: 1.5sec off, 1.5sec on, etc)

The Track LED will flash in **ORANGE** when the alert message is acknowledged by a remote host.
(Rate: 1sec off, 4sec on, etc)

Clearing an Alert


To clear the alert mode press and hold the Track button for seven seconds. A single beep will sound, and the LED will show re-armed state (**GREEN**).







NOTE:

Tracking and/or Alert Modes MUST be configured in the SDMS before use. These two functions are disabled by default.


SatDOCK 9555 Front Panel


LOCATION	BUTTON MODE	ACTION	LED/SOUND
	Single Press (No beep sounds)	<p>Out of Call: Toggle through the ring tone and ring tone output device (internal ringer or external speaker and horn if enabled)</p> <p>Call Ringing: Answer the call</p> <p>During Call (HF, Privacy/Intelligent handset or Bluetooth): Mute the microphone (uplink). Unmute the microphone.</p> <p>During Call (Earpiece Jack): 9555 audio is reverted back to HF, Privacy/Intelligent handset or Bluetooth.</p>	<p>Hear ring tone change.</p> <p>Call is established.</p> <p>LED turns RED LED turns OFF</p>
	Single Press (until 1 beep sounds)	<p>During Call (HS, Privacy/Intelligent handset or Bluetooth): 9555 is reverted to earpiece jack mode which enables the side jack of the 9555 and disable all other audio devices.</p> <p>Out of Call: Turn on the auto-answer mode Turn off the auto-answer mode</p>	<p>LED goes OFF if the privacy/Intelligent handset is not in use</p> <p>LED flashes in ORANGE</p> <p>LED turns solid GREEN and two-tone beep LED goes OFF and single beep</p>


LOCATION	BUTTON MODE	ACTION	LED/SOUND
	Single Press (No beep sound)	<p>When Bluetooth is OFF: Bluetooth is turned ON</p> <p>BT Device Used in Call: Transfer the call to the HF mode or privacy/Intelligent handset if activated.</p> <p>BT Device Connected but Not Used in Call: Transfer the audio to the BT device.</p> <p>When Bluetooth is ON: Bluetooth is turned OFF:</p> <p>When Bluetooth is ON: Bluetooth is set to discovery mode searching for BT devices to be paired.</p>	<p>LED Starts fast-flashing in BLUE when searching BT device and turns solid BLUE when connected with the BT device.</p> <p>LED changes from slow-flashing in BLUE to Solid BLUE.</p> <p>LED changes from solid BLUE to slow-flashing BLUE.</p> <p>LED goes OFF</p> <p>LED starts fast-flashing in ORANGE and BLUE when searching BT devices and turns solid BLUE when paired and connected.</p> <p>LED goes OFF</p>
	Single Press (until 1 beep sounds) (≈1.5 seconds)		
	Single Press (until 2 beeps sound) (≈5 seconds)		
	Single Press (until 3 beeps sound) (≈10 seconds)		

LOCATION	BUTTON MODE	ACTION	LED/SOUND
	Single Press (1 second)	In Tracking Mode: Send a tracking message to the preconfigured destination	One beep will sound if enabled in SDMS
	Single Press (7 seconds)	In Alert/Emergency Mode: Clear the alert/emergency mode and return to the Tracking mode.	LED changes from RED (solid or flashing) to solid GREEN if GPS fix ready and 9555 registered with Iridium network. Otherwise, LED flashing in GREEN . One beep will sound if enabled in SDMS.
 + 	Single Press (2 Seconds)	In Tracking Mode: Activate the Alert/Emergency mode.	Track LED changes from GREEN (solid or flashing) to solid RED when the alert is triggered. A beep will sound if enabled in SDMS Track LED will then flash in RED when the alert message is sent Track LED will finally flash in ORANGE when the alert is acknowledged.

LED Reference

	GREEN	RED	ORANGE
ON	Auto-answer Enabled	Outgoing audio is muted	N/A
FLASHING	N/A	9555 Frame Sync not ready	Privacy/DPL handset in use or 9555 in earpiece mode during calls.
ALTERNATING	Charging mode due to the communications failure with a docked 9555		N/A

	BLUE	ORANGE
ON	Connected with a paired BT device. Ready to accept incoming calls or switch to an active call.	N/A
FLASHING FAST	Searching for a paired BT device	N/A
FLASHING SLOW (1.5s ON and 1.5s OFF)	BT device is being used in a call	N/A
ALTERNATING	Bluetooth in Discovery mode	

	GREEN	RED	ORANGE
ON	Alert enabled, GPS fix and Iridium signal okay	Alert triggered	N/A
FLASHING	No GPS fix or no Iridium signal	Alert message sent	Alert is acknowledged
BLINK	GPS Monitor ON and good GPS fix received	GPS Monitor ON and bad GPS fix received	N/A

Data Communications

The SatDOCK 9555 provides the convenience of accessing Iridium data services via the mini-USB connector located on the bottom of the cradle while the 9555 handset is docked. You should consult your service provider for full details on the availability of this service with your account.

Data communication with the 9555 handset provides the following:

- ◇ Ability to issue AT commands directly to the 9555
- ◇ Undertake Circuit Switched Data (CSD), Short Burst Data (SBD) and Short Message Service (SMS) communication when services are provisioned.
- ◇ Access the internet via Iridium Direct Internet 2 or through a Dial-Up connection



TIP:

Learn more about Data Services available at:
www.beamcommunications.com

Using the USB Data Port

The Iridium 9555 handset provides a mini-USB port on its side that allows connection to a PC or laptop for data communication purpose. For more information on using the 9555 handset's USB port, please refer to the 9555 handset user manual.

When the 9555 handset is docked in the SatDOCK 9555 cradle, its USB data function is available through the mini-USB connector, on the bottom of the SatDOCK 9555, as shown below.



NOTE:

When the 9555 is docked in the SatDOCK 9555 cradle **DO NOT** use the USB port on the side of the 9555.

Please use the provided USB port on the underside bottom of the cradle to ensure correct SatDOCK 9555 synchronization and operation.



To connect a PC/laptop to the SatDOCK 9555 bottom mini-USB port, you will require a mini-USB-B to USB-A data cable. This cable is included in your original 9555 package.

USB Driver Installation

The SatDOCK 9555 USB data port requires an interface driver to be installed on the user's computer prior to undertaking data communication. This driver supports the following operating systems:

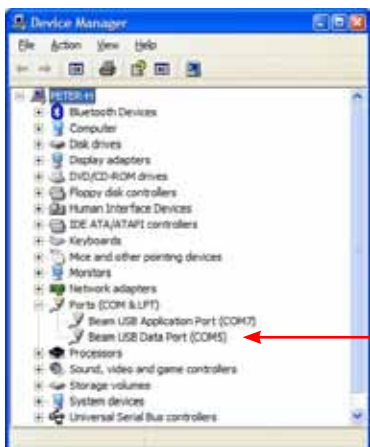
Windows XP (SP3 or above) & Windows Vista

You can download the Windows driver for the SatDOCK 9555 from

<http://www.beamcommunications.com/support/satdock9555>

Please note that Iridium only supplies Direct Internet 2 software for the Microsoft Windows-based operating system.

After the driver is successfully installed, two new serial ports should appear in the Ports (COM & LPT) section of the Windows Device Manager as shown below.



Please use the USB Data port for data communication. The USB Application port is used for SatDOCK 9555 configuration via the SDMS.

AT Commands

When utilizing the USB data communication port, the SatDOCK 9555 cannot activate AT commands that could interrupt the SatDOCK 9555's synchronization with the 9555 handset. Therefore, the SatDOCK 9555 will block or limit AT commands that could cause any adverse effects to the functional operation of the cradle. Please refer to the Iridium "ISU AT Command Reference" document for more details on the AT commands supported by Iridium.

www.beamcommunications.com/support

The document is located under common resources then "Iridium AT command guide." And can be downloaded for your convenience.

The following AT commands are affected:

AT COMMAND	CRADLE DEFAULT STATUS	LIMITATION
AT+IPR	6,0	Auto-baud is permanently disabled with the default baud rate set to 19200.
ATEn	1	Echo is on permanently enabled
ATVn	0	Numerical responses only
AT&Cn	0	DCD is forced on at all times
ATQ1	1	ISU responses are not sent to the DTE
AT&F0	-	Blocked
AT&W1	-	Blocked
AT&Yn	-	Blocked

Setting the Baud Rate

If you wish to access the serial port at a different baud rate please issue the following AT command:

AT+IPR = <rate> [,<autobaud>]

Example:

AT+IPR=5,0

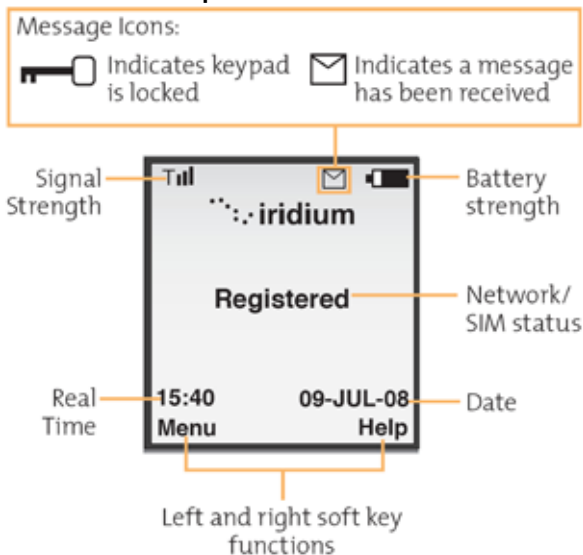
This will set the baud rate to 9600 bps with autobaud disabled and will take effect immediately.

Iridium 9555 Display Definitions

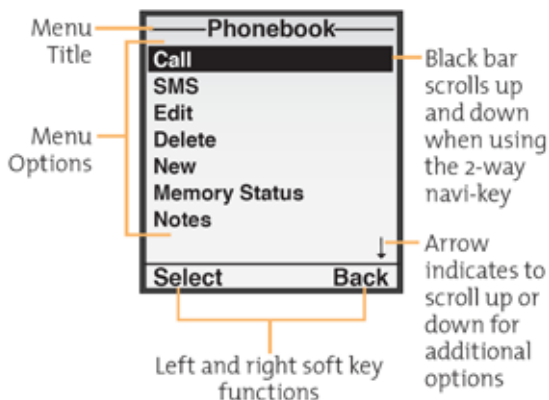
Display Status indicators and Icons

The following icons will appear in your 9555 handset display to provide you with various information about the phone's activity.

Main Screen Components



Menu Components



Power-On Messages

Once your phone is powered on, you may see:

	MESSAGE DESCRIPTION
Searching...	Your phone is attempting to establish communications with the satellite network.
Registering...	Your phone is registering with the network. When the process is complete, you will see Registered.
Check Signal	Your phone is unable to establish registration with the satellite network. Move to a location with a clear unobstructed view of the sky.
Invalid Account	Contact your service provider.
Enter Phone Unlock Code	Your phone was locked after the last use. Enter your four-digit unlock code and press OK to proceed.
Enter PIN	Enter the four- to eight-digit SIM card PIN code provided by your service provider and press OK to proceed.
Insert Card	Power off your phone, make sure your SIM card is inserted completely, and then power your phone on again.
Check Card	The SIM card is damaged or inserted the wrong way.
Blocked	If the SIM card PIN code is incorrectly entered three times in a row, your phone becomes blocked. Use **05* to proceed to enter the PUK code. Contact your service provider for further details.
! Blocked	If the SIM card PIN2 code is incorrectly entered three times in a row, some features (e.g. Fixed dialling) become blocked. Contact your service provider for further details.
Bad Card See Supplier	Your SIM card has been damaged or incorrectly issued. Contact your Service Provider for information.
Busy Try Later OR Please Try Later	The phone is unable to access the network. Try again in a few minutes.
Restricted Area	The phone is unable to access the network. Move to an area where calls are allowed.
Redial?	Press OK to redial the number automatically.

Assuring Quality of Iridium Service

Iridium is committed to providing subscribers around the world with consistent, reliable, quality voice and data access all day, every day. The Iridium satellite system is monitored for call performance from numerous locations 24 hours a day, 7 days a week in order to achieve this.

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

- ◇ Obstructions
- ◇ Cabling
- ◇ RF Interference

Obstructions

The antenna must be able to “see” the entire sky from approximately 8 degrees above the horizon. 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. Having a completely open view of the sky plays a very important role in maximising performance, as the Iridium satellites cross the sky from North horizon to South horizon during a connected call.

All surrounding obstructions must be lower than the top of a fist extended at arms length and the bottom of the fist placed on the horizon. Iridium 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. If you have or plan to install an external antenna, it is very important that the cables used meet the Iridium guidelines established for proper performance.

For optimal performance, we recommend using the shortest length of cable and the fewest number of connectors possible.

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 Iridium phone 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 Iridium unit.

Mitigation of RF Interference

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

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

Specification Summary

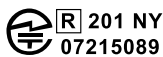
Electrical & Environmental Specifications

POWER SPECIFICATIONS	
Rated Input	9-32V DC, 2A max
AC Power Pack	90-250V AC 50-60Hz, Output 12V 45W
Average Power Consumption	Current @ 12V Power Watts
Standby	70mA 0.84W
Transmit + Charging	0.7A 8.4W
Sleep Mode	3mA 35mW
INTERFACES	
External Speaker and Microphone	One horizontal 2-pin Microfit connector on the cable loom for speaker and one vertical 2-pin Microfit connector for microphone.
Privacy Handset (Line In/Out)	4-pole 3.5mm audio jack at the bottom of the SatDOCK cradle.
Data Port (USB)	USB Mini-B 5-pin female (USB Slave). USB 2.0 compliant, CDC Serial profile.
Alarm (Alert) Loop 1 input, 1 output)	Alarm Mode: "Normally-Closed" Loop IN to OUT Up to 45m cable run / multiple buttons.
Power Cable	4-way Microfit socket. +Vin, 0V (GND), and ACC (On/Off Sense). 9-32VDC tolerant. ACC sense: High(1) > +7Vdc Low (0) 0V < +5Vdc
Horn Output	GREEN wire on the cable loom. Open collector output can be interfaced to 12 or 24VDC with up to 120mA current sink capability.
BLUETOOTH® MODULE (INTERNAL)	
System	Bluetooth® @ 2.0v+EDR (Enhanced Data Rates), 802.11 coexistence.
Profiles	HFP - Hands-Free Profile v.1.5 HFP-AG - Hands-Free Audio Gateway Profile v.1.5 & SPP - Serial Port Profile
Power	Default = Class 2 (< 10 metres). 2.4GHz - 2.4835GHz Unlicensed ISM Band
Antenna	Integrated chip antenna
Regulatory	Bluetooth® identifier: B03005. CE 89/336/EEC - #EC/2006/20013C. FCC part 15 class B: SatDOCK contains Transmitter Module FCC ID: QOQWT11. Canada: Cert# 5123A-BGTWT11E Japan:07215089/AA/00
Legal	The Bluetooth® word, mark and logos are owned by the Bluetooth® SIG, Inc. and any use of such marks by Beam Communications is under license. Other trademarks and trade names are those of their respective owners.

GPS MODULE (INTERNAL)	
Receiver Type	14 tracking channels, 51 Acquiring, L1 frequency (1575.42MHz)
Update rate	1Hz
Accuracy	Position 2.5mCEP, Velocity 0.1m/s, Timing 300ns
Acquisition TTFF	Cold 29sec, Hot 1sec
Sensitivity	-161 dBm
Operational Limits	Altitude 18000m, Velocity 515m/s
Dynamics	4G
Active Antenna Recommendation	Minimum gain 15 - 20dB (to compensate signal loss in RF cable) Maximum noise figure 1.5 dB Maximum gain 50 dB
Antenna Supply	3.3V DC
Antenna Connector	SMA Female – 50ohms
ENVIRONMENTAL	
Operate Temp. Range	SatDOCK -20°C to +70°C 9555 Handset -10°C to +55°C
Charging Temp. Range#	0°C to 40°C
Operating Humidity Range	< 85% RH non-condensing
Storage Temperature	-30C to +70C
Weight	Cradle 0.32kg (0.7 lbs) Packed 1.3kg (2.86 lbs)
Atmospheric Protection	Conformal Coating to Circuit Board Assy
EMC Compliance	CE, IEC60945:2002 (Section 9 & 10) 2004/104/EC - Automotive EMC directive
RoHS	Full compliant RoHS Directive EU 2002/95/ EC (All 6 substances)
WEEE	For EU countries, this product must be collected separately from household waste, as defined in each region. This product must not be discarded together with household waste.
Flame Retardant	UL94.0
Safety - SELV	IEC/EN/AS/NZ 60950-1

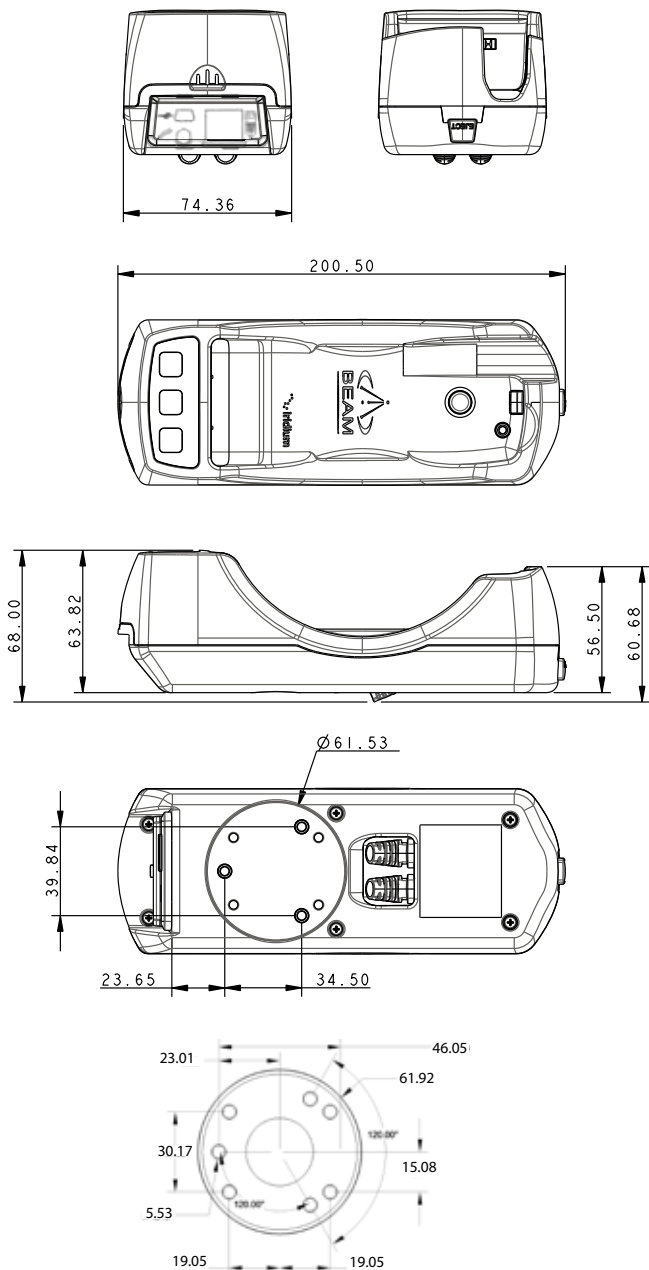
* When 9555 Battery is fully charged

Derived from the charging temperature range of the Iridium 9555 handset battery.



Cradle Mounting Dimensions

SatDOCK 9555 Dimensions in millimeters



Trouble Shooting

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

Q1	The 9555 handset is docked into the SatDOCK, but the 9555 handset is not turned on and the SatDOCK doesn't seem to have power.
A	<p><i>Press the Ring/Mute button and you should hear a beep. If not, the SatDOCK is either not being powered up or is in the SLEEP mode. Make sure the 9555 is docked correctly. Refer to the section "Docking & Undocking 9555 Handset" for more details.</i></p> <p><i>Disconnect the power cable and check if there is voltage on the power cable.</i></p> <p><i>Make sure that the power cable is connected properly to the 4-way Microfit connector on the SatDOCK cable loom. It is possible to plug the power cable into the Microfit connector in the wrong way by force.</i></p> <p><i>If applicable, check the position of the vehicle ignition or accessory output. It should be in the ON position. Otherwise, the SatDOCK may be in the SLEEP mode.</i></p>
Q2	The 9555 handset is docked into the SatDOCK, but it fails to register with the Iridium network.
A	<p><i>Check the Iridium antenna connector on the cable loom is properly connected to the external antenna.</i></p> <p><i>Check the external antenna is installed properly with clear sky view. Refer to the "Assuring Quality of Iridium Service" section for more details.</i></p> <p><i>Check if there is a valid SIM card in the 9555 handset. Remove the 9555 handset from the SatDOCK and test it on its own. Make sure the 9555 is docked correctly. Refer to the section "Docking & Undocking 9555 Handset" for more details.</i></p>
Q3	The 9555 handset in the SatDOCK keeps re-booting about every 20 minutes.
A	<p><i>Please check if the 9555 handset is registered with the Iridium network. If the SatDOCK detects that the 9555 handset is not registered with the network, it will try to re-boot the 9555 handset every 20 minutes by default. Refer to the question 2 to fix the registration issue.</i></p>
Q4	The 9555 handset is docked into the SatDOCK. It keeps being turned on and off by the SatDOCK then eventually turns off and stays off. The Ring/Mute LED starts to flash in GREEN and RED.
A	<p><i>This is generally caused by a very flat 9555 battery or bad contacts between the 9555 bottom connector and the SatDOCK base connector. It indicates that the SatDOCK has trouble communicating with the 9555 handset. Please try the following methods to recovery.</i></p> <p><i>While the Ring/Mute LED is flashing in GREEN and RED, the SatDOCK is actually in the CHARGE mode charging the 9555 handset battery. If this is caused by a flat battery, the SatDOCK will automatically recover in either 1 minute or 10 minutes.</i></p> <p><i>If the battery is not flat, please remove the 9555 handset from the SatDOCK and clean its bottom connector. Also check the SatDOCK base connector and make sure there are no damaged pins on this connector. Re-dock the 9555 into the SatDOCK.</i></p>

Q5	The 9555 handset is inserted into the SatDOCK. The battery indicator on the 9555 handset does not show that the battery is being charged.
A	<p>There are a number of reasons which could stop the 9555 battery charging.</p> <p>When the 9555 handset is inserted into the SatDOCK, please wait for about 100 seconds for the charging to start.</p> <p>If the 9555 battery is full, the 9555 handset will stop the SatDOCK charging the battery.</p> <p>If the temperature of the 9555 battery has exceeded 40°C, the 9555 handset will stop the SatDOCK charging the battery. For this reason, if the ambient temperature is close to 40°C, no charging will occur due to the safety requirement for charging Lithium-Ion type battery.</p>
Q6	The 9555 handset is docked in the SatDOCK and is currently being charged. However, the charging process is not consistent and seems to keep turning ON and OFF.
A	<p>This is normal for SatDOCK. The SatDOCK uses a pulse-charging mechanism (40 minutes ON and 20 minutes OFF) to provide charging power to the 9555 handset. This mechanism allows the 9555 battery to be charged over a longer period but minimise the chance of the battery entering the over-temperature state as charging will cause the battery to heat up.</p>
Q7	The 9555 handset is docked in the SatDOCK and seems to turn off about 20 minutes after the vehicle's ignition is switched off OR the key is removed.
A	<p>This is normal for SatDOCK. If the SatDOCK needs to stay on while the ignition is off, please wire the YELLOW accessory input on the SatDOCK cable loom to a constant power source in the vehicle, e.g. 12/24VDC.</p>
Q8	A call is established using the privacy handset but the other end (party B) cannot hear my voice.
A	<p>Check if the Ring/Mute LED is illustrating RED. If so, the mute function is enabled. Press the Ring/Mute button once to disable the mute.</p> <p>If you have previously pressed the Ring/Mute button for over 1.5 seconds during the call, the SatDOCK is in the Earpiece Jack mode. To confirm, check if the Ring/Mute LED is flashing ORANGE. If so, press the Ring/Mute button again to bring the SatDOCK back to its normal operation mode.</p> <p>Check if the Bluetooth® LED is flashing BLUE at 1.5 second on and 1.5 second off rate. If so, the SatDOCK is currently connected to a previously paired Bluetooth® device. Press the Bluetooth® button on the SatDOCK until a beep sounds to turn off the Bluetooth®.</p>
Q9	If my SIM card has a pin code, do I need to manually unlock the SIM card every time I dock my 9555 handset into the SatDOCK?
A	<p>The user can save their SIM pin code into the SatDOCK via the SDMS. Once saved, the SatDOCK will automatically enter the pin code while the 9555 is inserted into the SatDOCK.</p>

For additional product support:

BEAM Communications Pty Ltd
 8 Anzed Court, Mulgrave
 Victoria, 3170, AUSTRALIA

Web: www.beamcommunications.com
 Info: info@beamcommunications.com
 Support: support@beamcommunications.com
 Tel: +61 3 8588 4500
 Fax: +61 3 9560 9055

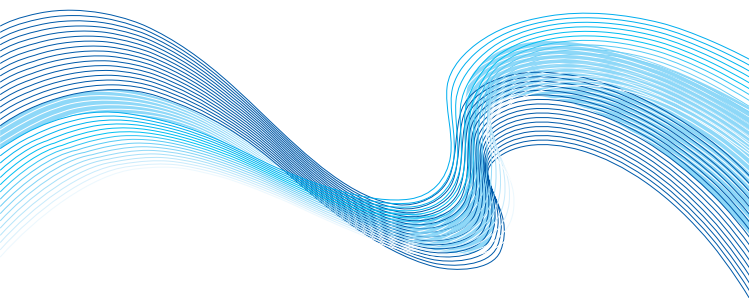
Beam Warranty Conditions

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 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 (12) months and (24) months replacement warranty for SatDOCK 9555, SatDOCK 9555, IntelliDOCK cradles ONLY, from the date of shipment by BEAM Communications to the Customer.
BEAM Communications will repair or replace, at our option, any defective product, provided that our analysis and/or inspection discloses 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.
5. The warranty is a return-to-base warranty and freight is paid by the sender.
6. A charge of USD \$150 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 labour 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. The warranty for third party Products is that of the third party and not BEAM warranty.



WEB: www.beamcommunications.com
EMAIL: info@beamcommunications.com
PHONE: +61 3 8588 4500
FAX: +61 3 9560 9055



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