

VBell™ Video VoIP Intercom installation and configuration manual



Chapter 1: INTRODUCTION

1.1 INTRODUCTION

Congratulations on purchasing the VBell™ Video SIP VoIP Intercom. This Intercom is a Smart Home intercom, which includes a high definition camera, as well as a two-way communication sound system, using Voice over IP (VoIP) video-audio transfer technology. This device can be accessed through your smart phone or tablet from any location around the world, and provides a simple way to protect and secure your home.

What is VoIP? (Voice over Internet Protocol) which, simply stated, means using the Internet to make and receive telephone calls. How exactly does it work? What are the advantages? All the computers connected to the Internet understand how to send and receive data packets; thankfully, they all agree to work in exactly the same way using exactly the same system, which is known as the Internet Protocol or IP. (One of the key parts of the IP that you may be familiar with is that every computer can be "addressed" by quoting a unique number, known as its IP address, which is a bit like the computer equivalent of a telephone number or building address. Currently most computers have IP addresses made from four pairs of two digits separated by points, such as 12.34.56.78.

There are three different kinds of VoIP but we will explain only one applicable for VBell™ Intercom - is entirely computer based; Skype™ is the best-known example. When you use Skype to call someone, it sets up a more or less direct connection (known as a peer-to-peer or P2P) connection with someone else's computer, across the Internet. You send and receive text messages, voice data, or webcam chat over this direct link. Apart from the initial logging on process, there is no intermediate computer managing the communication between the sender and receiver, which makes Skype relatively secure compared to other forms of telephone communication.

That's exactly how VBell™ operates.

The biggest plus point of VoIP is call cost, which is typically either free or much less than making traditional calls over the PSTN. (That's a huge plus point for customers, but a huge drawback for the big telephone companies, who've been forced to regear their businesses to meet the threat from Internet telephony.) VoIP is easy and often immediate to set up, and generally requires no long-term contract (although you do need to set up an account of some kind to create a phone number or user name where people can call you). You can usually send any kind of data over VoIP, from text and images of your computer desktop to voice and webcam chat. Another big plus is that VoIP liberates you from a fixed, physical location; With VBell™ App you can talk and receive calls and see your visitors from your Intercom basically anywhere in the world via secure P2P connection.

What is SIP? The Session Initiation Protocol (SIP) is a communications protocol for signalling, for the purpose of controlling multimedia communication sessions. The most common applications of SIP are in Internet telephony for voice and video calls, private IP telephone systems, as well as instant messaging over Internet Protocol (IP) networks.

The protocol defines the messages that are sent between endpoints, which govern establishment, termination and other essential elements of a call. SIP can be used for creating, modifying and terminating sessions consisting of one or several media streams. SIP is designed to be independent (although not agnostic) of the underlying transport layer, and can be used with UDP, TCP, and SCTP; it can also be secured using TLS over the latter two. It is a text-based protocol, incorporating many elements of the Hypertext Transfer Protocol (HTTP) and the Simple Mail Transfer Protocol (SMTP).

By itself, SIP only provides signalling; it is used in conjunction with other protocols that specify the media format and protocol to be used to subsequently communicate the media. Although SIP can carry arbitrary data, SIP is typically used to carry a Session Description Protocol (SDP) message specifying the codec and the use of either the Real-time Transport Protocol (RTP) or Secure Real-time Transport Protocol (SRTP) for media communication.

Using all these technologies plus affordable price giving VBell™ Video VoIP Intercom huge advantage against standard intercom systems you can see on the market now.

1.2 KEY FEATURES

- Two-way SIP based communication sound system
- VoIP protocol
- High definition camera with 112° wide range video lens
- Built in PoE (Power over Ethernet) (IEEE802.3af) capabilities mean that no external power supply is needed
- Built in relay output port allows you to control an external electrical door lock or alarm
- Keeps a log of missed calls and snapshot images (no additional fees for log storage)
- Free VBell™ App can be used to receive and answer calls from anywhere around the world (provided the device has internet access)
- Support RTSP Protocol
- Build-in One DI port (for Door sensor, PIR, Emergency button)
- CMOS 1280 x 720 HD Camera Sensor
- Support G711u, AAC voice codec
- Build-in Hardware AEC (Acoustic Echo Cancellation)
- Support Auto-answer
- Build-in one Call Button
- Build-in RFID Card Reader (optional)

Chapter 2: INSTALLATION

2.1 Package Contents

Your package should include:

- One VBell™ Video VoIP Intercom
- One metal wall plate
- One mounting bracket (with roof)
- One DI/DO cable (for controlling an external lock/alarm)
- One connector
- Three screws

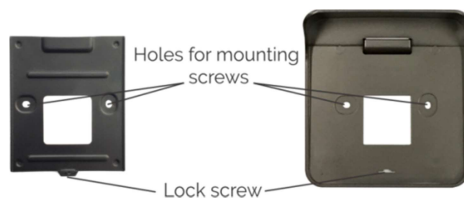
2.2 Other Necessary Equipment (not included)

Other necessary equipment (not included)

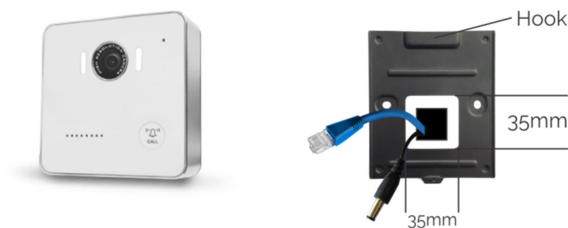
- One CAT 6 ethernet cable
- One external power supply (DC 12V 1.0A) (optional if you are using PoE)

2.3 Device Installation

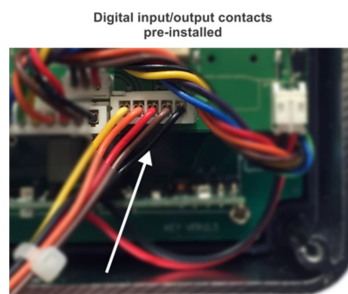
- Remove the protective stickers from the face of the device.
- Mount the VBell™ Video VoIP Intercom in your desired location using either the metal wall plate OR the plastic mounting bracket. Don't forget to install the lock screw at the bottom of the device to ensure it does not fall off the wall plate/mounting bracket.



- Connect the VBell™ Video VoIP Intercom to your router with a CAT 6 ethernet cable and connect a power supply*.



- Optional: You can also connect an electrical door lock/alarm to this device using the DI/DO cable. Detailed instructions on how to do this can be found in chapter 5 of this manual.



PIN 1 yellow: DI +
PIN 2 orange: DI -
PIN 3 red: DO (N.C. normally closed)
PIN 4 brown: DO (common)
PIN 5 black: DO (N.O. normally open)

Chapter 3: The VBell™ App

3.1 VBell™ Cloud Service

This device is provided with a free of charge cloud service for the VBell™ app which allows you to receive calls and view the camera feed from any location around the world (provided your device has internet access).

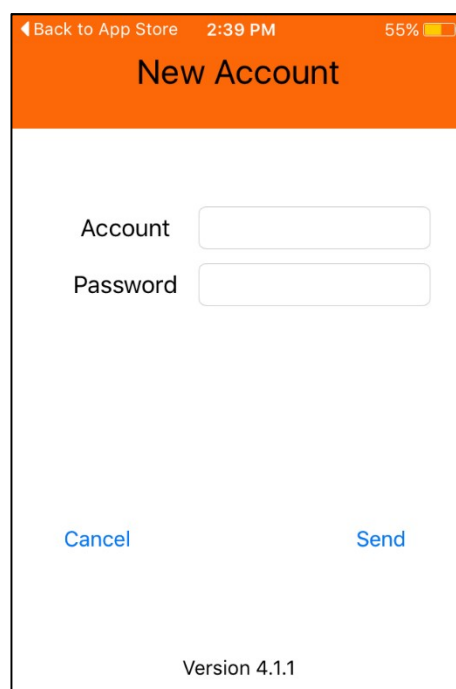
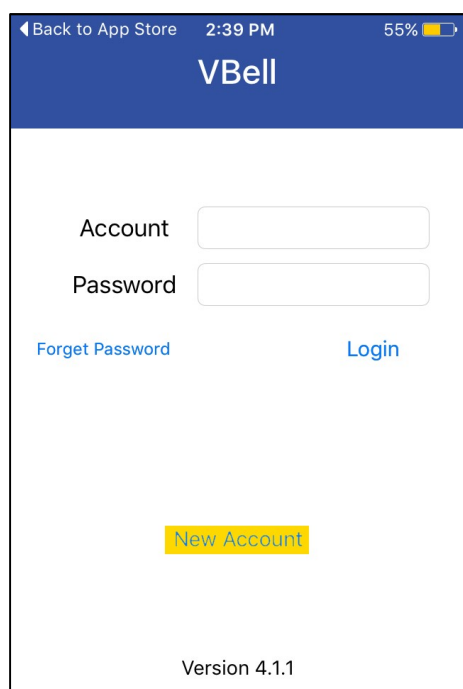
Your **VBell™ Video VoIP Intercom** will access this cloud service automatically when it is plugged in.

3.2 Installing the VBell™ App

To operate your **VBell™ Video VoIP Intercom** you will be required to download and install the VBell™ app on your smartphone/tablet. The VBell™ app is free of charge and available for both Android™ and Apple™ devices.

3.3 Creating a VBell™ Account

When you open the VBell™ app you will be directed to a login screen. At the bottom of this screen you will see a “New Account” button. Click this button and input an Account name (username) and password for your account then click “Send”.



After creating a VBell™ account you will be able to login using your chosen Account name and password. Upon logging in you will see a tutorial page that will highlight the key features of the app.



3.4 Connecting to your VBell™ Video VoIP Intercom

To connect to your VBell™ Video VoIP Intercom you will first have to register it with your VBell™ account.

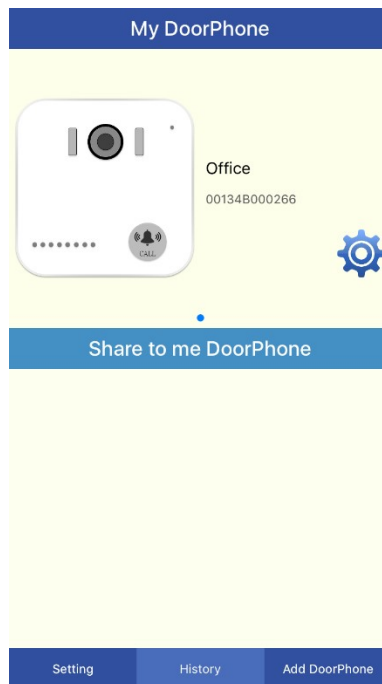
Click the “Add DoorPhone” button at the bottom right hand of your Account menu.

You will be asked to provide an Activation code. This code is specific to your device and can be found on the front page of the Quick Installation manual provided with the VBell™ Video VoIP Intercom. The Activation code can either be entered manually or by scanning the QR code with your smartphone/tablet.



Note: If you have lost your Quick Installation Guide you can contact your place of purchase. You will need to provide them with the MAC number which can be found on the underside of your **VBell™ Video VoIP Intercom**.

Once you have successfully registered your **VBell™ Video VoIP Intercom** with the VBell™ app you will be able to access it in your Account menu under “My DoorPhone”.

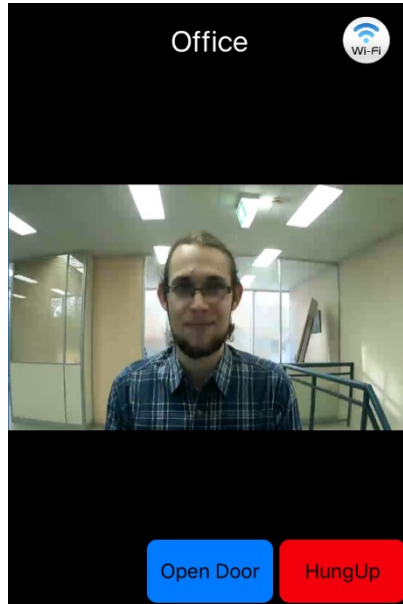


3.5 Using the VBell™ App with your VBell™ Video VoIP Intercom

You can initiate a call to your VBell™ Video VoIP Intercom by clicking on the image of your Intercom in the My DoorPhone section of your Account menu. When a call is initiated you will be able to view the intercom's camera as well as hear and speak to any visitors at your door.

A call can also be initiated by your visitor by pressing the "CALL" button on the intercom. When a call is initiated in this manner the VBell™ app will send a push notification on your smart phone/tablet to alert you of the call.

Upon accepting the call, you will be able to view and communicate with your visitor. You will also be able to remotely operate an electrical door lock or alarm that you have connected to the intercom.

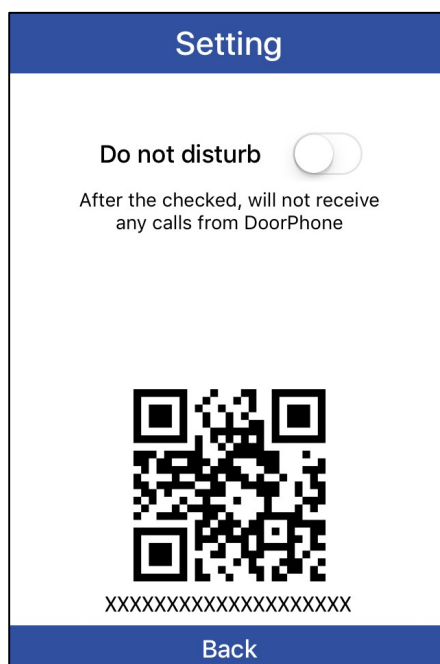


Note: For detailed information on connecting a door lock/alarm to your VBell™ intercom refer to chapter 5 of this guide.

3.5.1 Do Not Disturb Mode

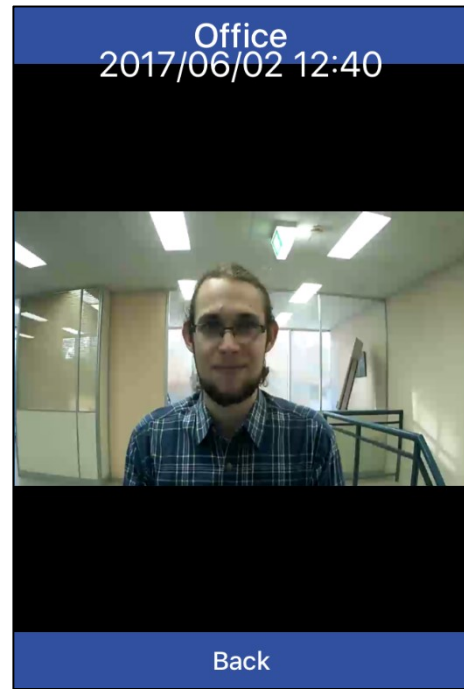
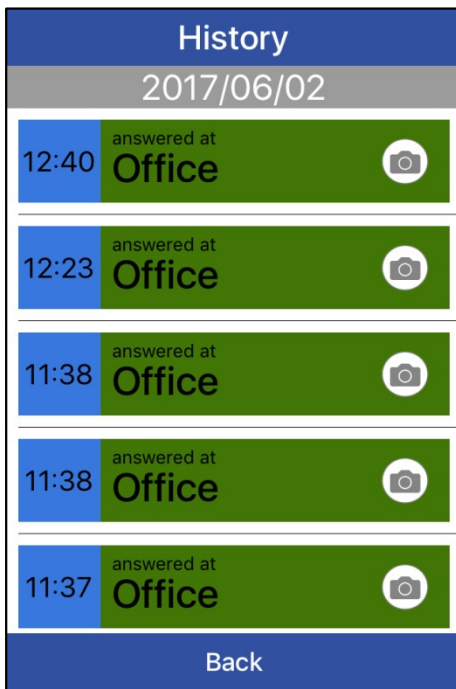
To prevent the VBell™ app from notifying you of incoming calls you can activate the Do Not Disturb Mode.

This can be done in the Settings page which can be accessed by pressing the "Setting" button on the bottom left of your Account menu.



3.5.2 Call History

You can view a log of past calls in the History page of the VBell™ app. The log includes a time stamp and an image of the caller which can be accessed by pressing the camera icon next to the call details.



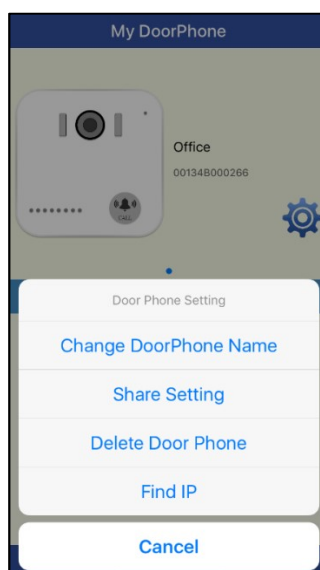
Note: The call history is limited to the 30 most recent calls.

3.5.3 VBell™ Video VoIP Intercom Options Menu

You can access your VBell™ Video VoIP Intercom's option menu by clicking the image of a gear in the My DoorPhone section of your Account menu.

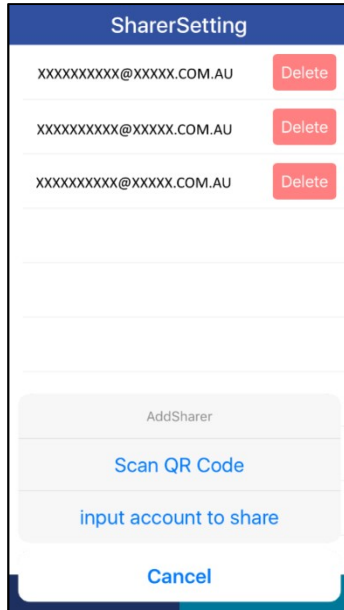
In the options menu, you will be able to;

- Rename your intercom
- Authorise access to the intercom for another user (Share setting)
- Delete your intercom
- Check your intercom's IP address (Find IP)



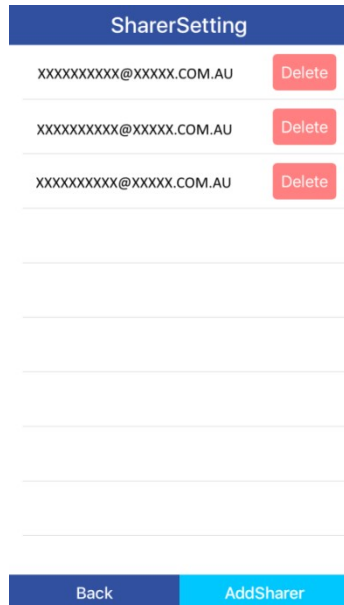
3.5.4 Sharing Access to your VBell™ Video VoIP Intercom

To enable another user access to your VBell™ Video VoIP Intercom head to the “Share Setting” menu and click “Add Sharer”.



You will be asked to input their Account name (username). Alternatively, you can scan the QR code located in the other users “Setting” screen.

Once you have authorised another user to access you VBell Video VoIP Intercom they will be able to receive and initiate calls with the intercom. They will not, however, be able to share the intercom with any other users and the original user can remove their authorisation at any time by pressing the “Delete” button next to the users Account name in the “Sharer Setting” menu.

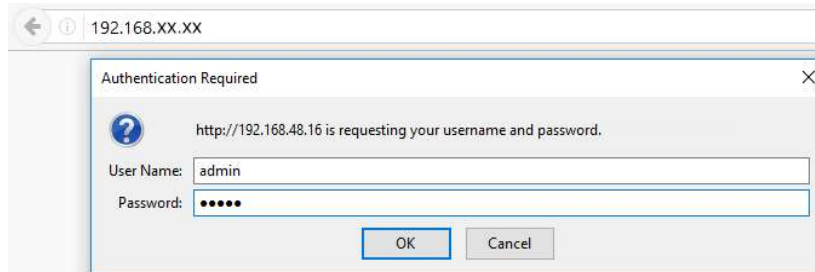


Intercom’s that have been shared with you will show up under the “Share DoorPhone” section of the Account menu.

Chapter 4: Accessing your VBell™ Video VoIP Intercom's Configuration Portal

You can access the full configuration settings for your **VBell™ Video VoIP Intercom** by typing its local IP address in the address bar of your web browser. Your VBell™ Intercom's IP can be found by using the "Find IP" function on your VBell™ app or by looking it up on your router's interface.

The default User ID and Password are the same: **admin**



The web configuration portal consists of a menu bar on the left side of the screen with four categories:

- Status
- Service
- Device
- System

4.1 Status

In the "Status" category, you will be able to find you **VBell™ Video VoIP Intercom's** device info and service status.



4.1.1 Device Info

Here you will be able to find your products hardware and firmware versions.

To ensure you are running on the latest firmware make sure to check

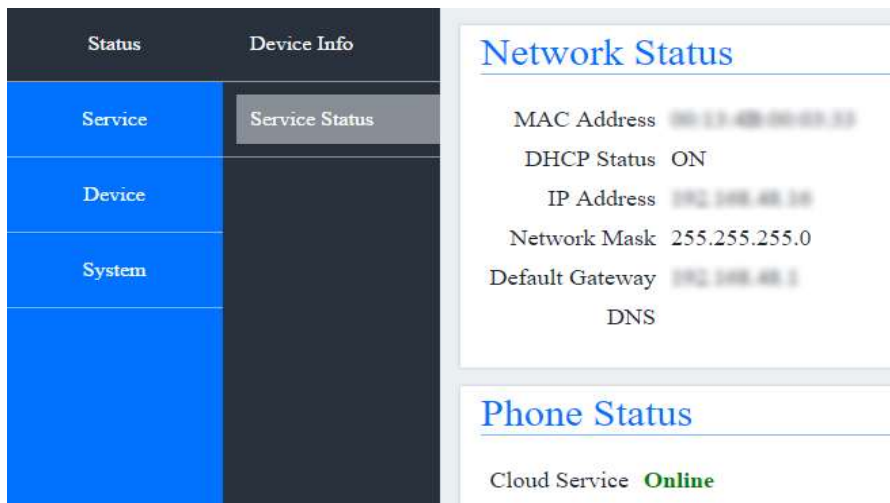
<http://220.135.186.178/dp104/firmware/download.html> and download the latest version.



Detailed instructions on upgrading your VBell™ Intercom's firmware version can be found in [section 4.X.X](#) of this manual.

4.1.2 Service Status

In this section, you will be able to find your VBell™ Intercom's network and phone status.



4.2 Service

In this category, you will find the VBell™ Video VoIP Intercom's SIP settings, login settings, RTSP settings and video and call settings.

4.2.1 SIP settings

In this section you can setup your SIP configuration settings. If you have no SIP server at your premises VBell™ offer you to use free VBell™Cloud service (by default).

Cloud Service and Registration

- Cloud Service** For APP Cloud Service VBell incio
- Registration Enabled**

SIP Information

Display Name	<input type="text" value="VBell"/>
Username	<input type="text" value="19"/>
Auth Username	<input type="text" value="19"/>
Password	<input type="password" value="..."/>

Please input only 0-9, a-z, A-Z and avoid special words

SIP Information

Display Name	<input type="text" value="VBell"/>
Username	<input type="text" value="19"/>
Auth Username	<input type="text" value="19"/>
Password	<input type="password" value="..."/>

Please input only 0-9, a-z, A-Z and avoid special words

SIP Registrar

Registrar Address	<input type="text" value="XXX.XXX.XXX.XXX"/>
Registrar Port	<input type="text" value="5060"/>
Registration Expires	<input type="text" value="300"/> s
Dial Button	<input type="text" value="9@XXX.XXX.XXX.XXX"/>

For example: 2001@192.168.0.254:5060

Advanced Settings v

Outbound Proxy	<input type="text"/>
SIP Transport	<input type="text" value="UDP"/>
SIP Local Port	<input type="text" value="5060"/>
IP Address Filter Enabled	<input type="checkbox"/> <input type="text" value="54.215.11.15"/> <input type="button" value="-"/> <input type="button" value="+"/>
Starting RTP Port	<input type="text" value="10100"/>

4.2.2 Calls

Here, you can set up the ring time and call duration limit for calls initiated by the **VBell™ Video VoIP Intercom's** "CALL" button. You can also turn on and off the ring tone.

<h3>Outgoing Calls</h3>	
Ring Time Limit	<input type="text" value="10"/> s
Call Duration Limit	<input type="text" value="180"/> s
<h3>Door unlock key by DTMF code</h3>	
<input type="text"/>	
<h3>Play ring bell tone</h3>	
<input checked="" type="radio"/> On <input type="radio"/> Off	

4.2.3 Video

In this section, you can set the **VBell™ Video VoIP Intercom** camera's video framerate, image resolution and video quality.

Video Parameters

Video Framerate

Video Codec--H264

Video Resolution

Video Quality

Video Codec--MJPG

Video Resolution

Video Quality

4.2.4 RTSP Server

The Real Time Streaming Protocol (RTSP) server allows you to watch a live video feed from your **VBell™ Video VoIP Intercom** once you have connected it to your RTSP server.

RTSP Server

The system needs to be reboot after modify the following data:

RTSP Server Enabled

MJPEG URL

MJPEG Audio Type

H264 URL

H264 Audio Type

Save

Reboot

4.2.5 Web Server

Here, you can change your web configuration portal's User ID (account) and password. Do not forget to click modify to save your changes.

Web Server

Account

Password

Please input only 0-9, a-z, A-Z and avoid special words

HTTP Port

Modify

4.3 Device

In this category, you will find your VBell™ Video VoIP Intercom's volume settings, live camera feed and settings

4.3.1 Volume Control

In this section, you can adjust the devices speaker and microphone volume. It is recommended that you keep AEC (Acoustic Echo Cancellation) enabled to maintain a clear sound.

Volume Control

Speaker Volume 3

Microphone Volume 2

AEC Enabled

Save

4.3.2 Camera

Here you can find a live camera feed as well as camera configuration settings.

Camera



Brightness

Contrast

Camera LED Auto Disable

The system needs to be reboot after modify the following data:

Fliker 50 Hz 60 Hz

Night Mode

4.3.3 Relay

The relay timer allows you to change how long the output from the DI/DO relay is active for.

Relay Timer

Relay Timer: s

4.4 System

4.4.1 Network

The network settings can be found under System>Network. VBell™ Video VoIP Intercom supports Ethernet and PPPoE. Please check your existing LAN settings and adjust if required.

Security precautions: Your local LAN router must be equipped with MAC filtering to secure your network. It's recommended that you enable this option before commissioning your systems connected to the local LAN.

Network

Wired

The system needs to be reboot after modify the following data:

Network Type Ethernet PPPoE

Boot Protocol DHCP Static

The system needs to be reboot after modify the following data:

DDNS - [Go No-IP Registration](#)

Server

Username

Password

Hostname

4.4.2 Date & Time

Your VBell™ Video VoIP Intercom automatically configures the date and time however if you need to change this information you can do it here.

Date & Time

Current Time 2017/06/05 16:46:44

Date

Time : :

Time-zone

NTP Server

Use NTP Server

NTP Server Address

4.4.3 Maintenance

In this section, you can upload and install the latest available firmware for your VBell™ Video VoIP Intercom.

Download the latest firmware here: <http://220.135.186.178/dp104/firmware/download.html>

Maintenance

Firmware

Firmware Version: 1.3.1611011

Please keep power connection during configuration upload or backup process.

Upload Configuration

4.4.4 Reset to defaults

Option A: Please remember all your entered setting for your VBell™ Video VoIP Intercom will be back to defaults if you decided to use this function.

Status	Network	<h3>Reset to default setting</h3> <p><i>*This operation will reboot after reset</i></p> <input type="button" value="Reset Default"/>
Service	Date&Time	
Device	Maintenance	
System	Reset	

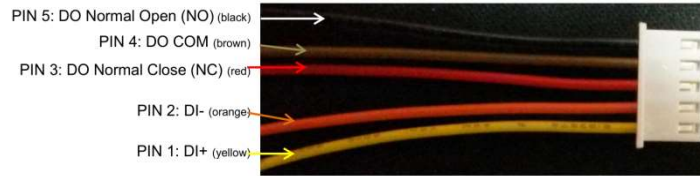
Option B: When you power up device hold 'Call' button for 40 sec until front LED light will flash and continue to hold until tone will sound. Then release button and wait about 5 min for device to reset.

4.4.5 Reboot

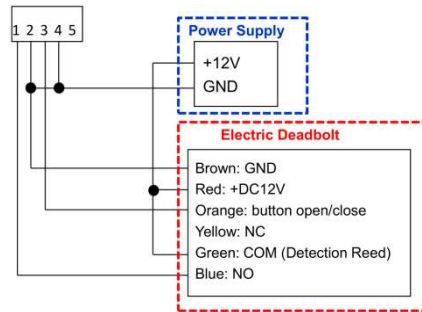
You can reboot your VBell™ using this function. It will be necessary to reboot the device if you have made significant changes to its settings such as changing network settings.

Chapter 5: Connecting a Door Lock/Alarm to your VBell™ Video VoIP Intercom

VBell™ Intercom allows you to connect and control external devices like electrical door lock/alarm via the DI/DO cable. DI/DO cable is pre-installed. DO (digital output) contacts and DI (digital input) contacts marked in different colours:

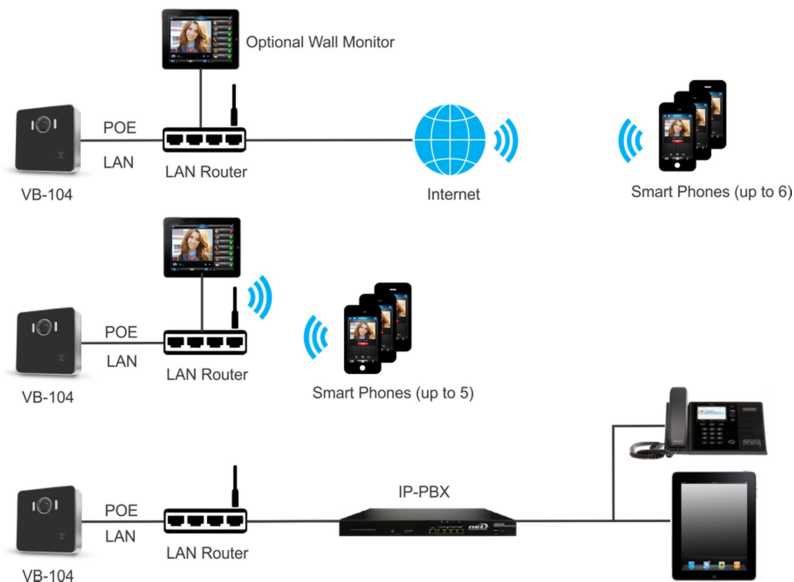


Please refer to your door lock wiring diagram before you connect it to VBell™ Intercom. Typical but not common diagram presented below:



Chapter 6: System configuration diagrams

System Connection Diagrams



All Pictures shown are for illustration purpose only. Actual product may vary due to product enhancement.

WHOLESALE INQUIRIES

VBell™ is distributed in Australia and New Zealand by Digital Home Systems Pty Ltd Email: office@dhsys.com.au
Web: www.digitalhomesystems.com.au Phone: 1300+ZWAVE (1300 099 283) or +61 (3) 94 800 400

RETAIL SALE INQUIRIES

Full list of authorised VBell™ retailers and installers: <https://digitalhomesystems.com.au/where-to-buy>

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