



**UNIFIED GLOBAL**  
S O L U T I O N S



## HOSTED VOIP PHONES INSTALL

Install Technician Guide

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**INTRODUCTION**

The following manual contains instructions and diagrams for VOIP phones install

**SUPPLIES AND TOOLS****INSTALL CONTACTS:**

Test and Turn up Hotline: 972-674-8340

**SUPPLIES NEEDED:**

- |                               |  |
|-------------------------------|--|
| ✓ 6 pin RJ11 ends             | ✓ patch cables/supplies to make cables |
| ✓ bridge clips                | ✓ Dry wall screws/anchors              |
| ✓ RJ45 Jacks                  | ✓ Concrete screws (Wall mount phones)  |
| ✓ RJ 45 keystone jacks        | ✓ Zip ties, Velcro wrap                |
| ✓ 500ft CAT5E CABLE           | ✓ Wall plates and surface mount boxes  |
| ✓ Telephone splice connectors |  |

**TOOLS NEEDED:**

- |  |                                      |
|--|--------------------------------------|
| ✓ Electrician scissors                 | ✓ Multimeter                         |
| ✓ Cable Stripper                       | ✓ Cable pulling rods                 |
| ✓ 110/66 Punch down tool               | ✓ Fiche Tape                         |
| ✓ RJ45/RJ11 Crimper                    | ✓ 16ft chain or tool for inwall drop |
| ✓ Butt set                             | ✓ Box knife                          |
| ✓ Network/cable tester                 | ✓ Drill                              |
| ✓ Laptop with Ethernet port            | ✓ Level                              |
| ✓ Cable Toner                          | ✓ Stud finder                        |
| ✓ Telco banjo or way to breakout pairs | ✓ Headphones                         |

**IMPORTANT NOTES:**

- ✓ Must be on time, the customer is expecting you at the date/time of this work order.
- ✓ Call FST HOTLINE to check in when you arrive.
- ✓ Expect to receive regular check in calls for update from assigned engineer. You are expected to stay in contact for instruction and status communications.
- ✓ Inventory all equipment before beginning installation and report any missing/damaged equipment.
- ✓ If you determine that extra challenges may increase scope of install, requires more resources or is beyond your capabilities, ONLY relay this information to UGS.
- ✓ Clean up after yourself.
- ✓ All installed equipment including new internet/voice circuit equipment to be install/mounted if applicable and cable managed.
- ✓ Clean up mess and debris as you go.
- ✓ Disconnect and remove old cable/DSL modems, analog voice modems and give to customer to return to ISP
- ✓ Take photos of all work done all equipment installed to submit as deliverables.

# INSTALL PROCESS

Below is the general flow for all Hosted Phone Installs. Stay in close contact with your support person to direct you through site specific procedures.



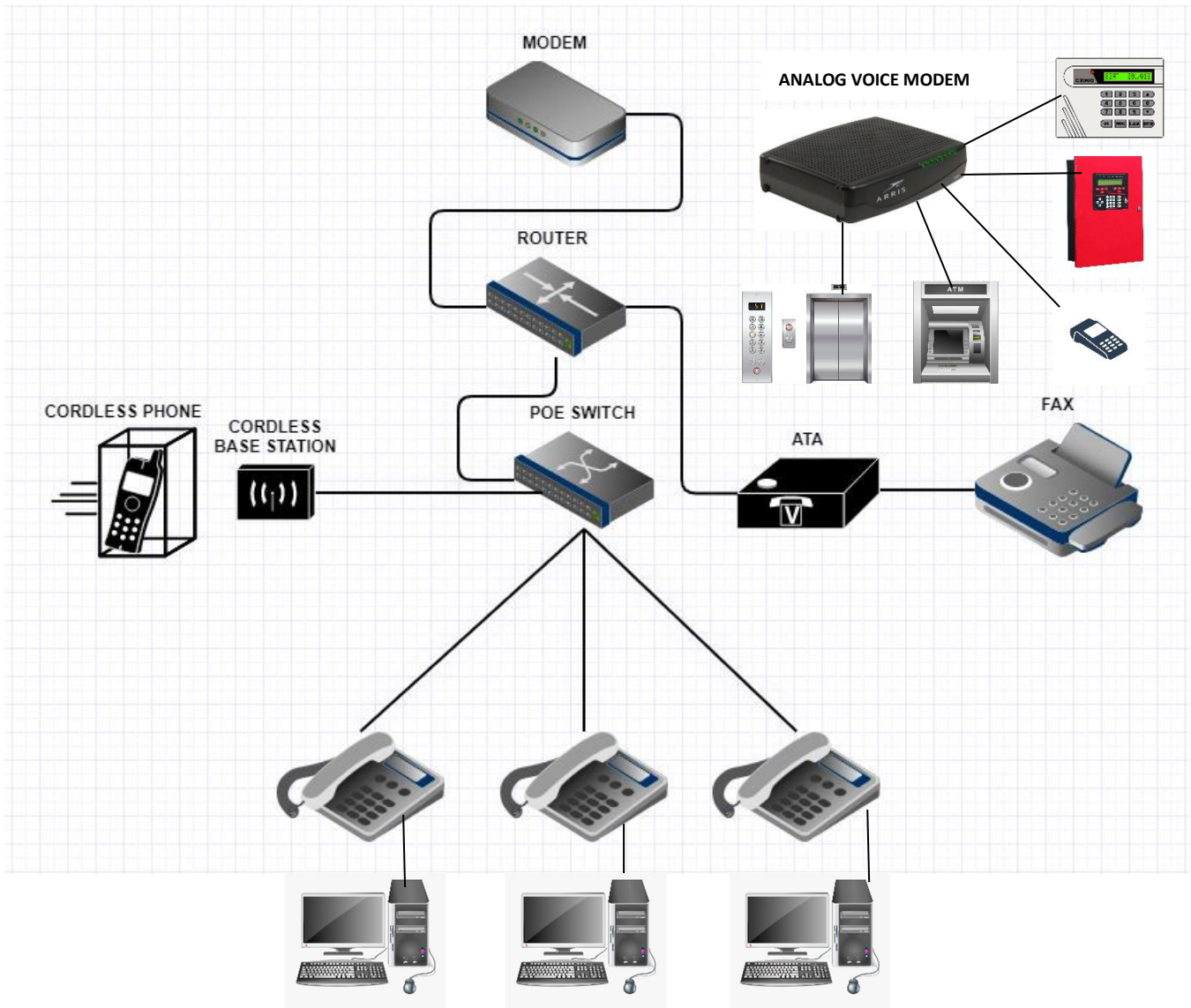
\*Follow directions by support person for any configuration or network test/scans

\*\* Deploy all phones that do not need a cable run first

### HOSTED VOIP EQUIPMENT CONECTION DIAGRAM

Objective is to install all phones onto network by either pulling new cable drops when needed or utilizing existing network connections to supply power/data to the phones and provide network access to workstations behind the phones. FAX will be the only non-telephone device migrated to DATA.

All non-telephone devices that will not work on VOIP network need to be cutover to provided analog circuit(s) and tested. ALARMS (FIRE & BURGLER), CREDIT CARD READERS, ATMS, ELEVATOR EMERGENCY PHONE/CALL BUTTON AND OTHER LEGACY DIAL UP DEVICES.



**SECTION 1: ARRIVAL**

1. Check in with support immediately before entering site.

**FST HOTLINE: 972-674-8340**



2. Enter site and Greet customer.
3. Retrieve inventory and make sure all items match **“Scope of Work”** in work order.
4. Inform support of any missing equipment or discrepancies. Support may have further information and instruction.
5. You will receive a text message with MAC address and Extension Locations for all phones: The phones **MUST** be placed at the correct locations.

**Scope of Work**

- Ex: *Install 11 VoIP Desk Phone*  
*Install 2 Fax ATAs*  
*Install 2 WiFi Routers*

6. Open any cordless phones and place them in the chargers as many will arrive with a low battery.



```
# Sorted by MAC Address
# Site Domain: StowAlliance
22:23:A5 x108 - Pastor Phil
B7:5D:BA x104 - Childrens Ministry
B7:66:99 x105 - Raymond
B7:66:B4 x107 - Jeanne
D6:58:37 x103 - Pastor Chris
D6:58:3C x106 - Pastor Jim
DB:0E:0A x101 - Marlynn
E5:04:B5 x100 - Preschool
EC:70:63 x102 - Leslie

# Sorted by Extension
# Site Domain: StowAlliance
x100 E5:04:B5 - Preschool
x101 DB:0E:0A - Marlynn
x102 EC:70:63 - Leslie
x103 D6:58:37 - Pastor Chris
x104 B7:5D:BA - Childrens Ministry
x105 B7:66:99 - Raymond
```

7. Locate Network/ISP where Modem/Routers/Switches are. Upload Before Photos
8. Begin walkthrough with the customer for all phone placements and all possible analog devices (Credit card machines, alarms etc.) If device communicated by telephone line use butt set to ID the number it uses. Support will instruct on destination for its connection. Upload Before Photos.
9. Identify all phone locations that can be connected either to an available spare network or jack or Daisy Chained between a PC connected to the network. (These phones will be connected first) Upload Before Photos
10. Note any phones that will need to be cabled and relay this to your support person.

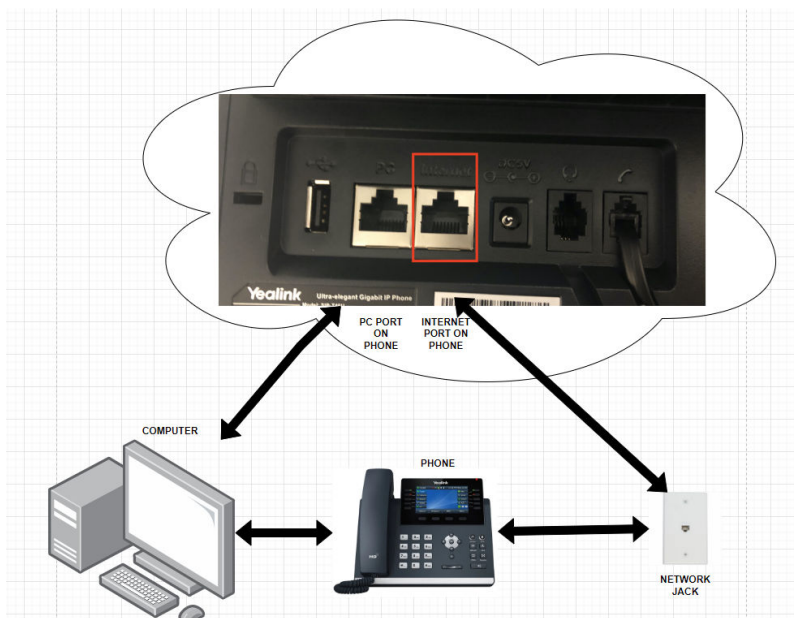
## SECTION 2: PHONE DEPLOYMENT

Follow any instruction given you by the support person. This may be to start some network scanning from remote session on your laptop.

Connect first phone in correct location if possible. Default to using the power adaptors sent for each phone at a location that will NOT need a cable run. Most often can daisy chain the phone between a computer. Call support number given to start a long duration call of minimum of 16 minutes. Leave the phone off the hook and continue deployment.

### DAISY CHAIN PHONE TO COMPUTER

1. Locate the network port on the computer near where the phone will be installed. This may be coming from a nearby network jack.
2. Disconnect the network cable and connect to the INTERNET port of the phone
3. Use a patch cable to connect the PC PORT of the phone to the PC Network port.



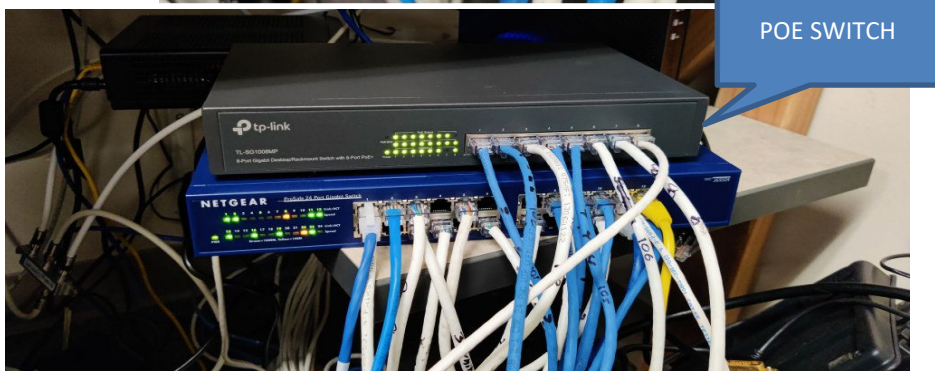
- As each phone is online make a call to yourself to confirm 2-way audio
- Keep installing phones that don't need a cable run. Test and photograph each from 6ft away to show the phone and its surroundings.



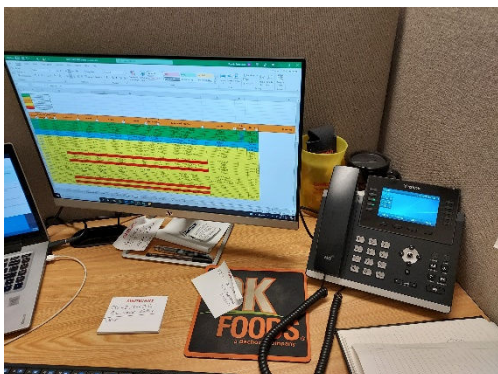
**SECTION 3: POE SWITCHES**

**INFORM CUSTOMER OF BREIF OUTAGE AND SWAP PORTS/SWITCH QUICKLY  
WITH THIS METHOD A TONER IS MOST OFTEN NOT NEEDED**

1. ID each jack being used for phones and migrate to POE switch(s)
  - a. **WRITE DOWN ALL INACTIVE PORTS**, disconnect user data cable and locate port that became inactive then migrate cable.



2. As you migrate each cable return to the user/phone location with the correct phone and box to connect the patch cable in the **INTERNET** port of the phone and then connect the user’s computer into the **PC** port of the phone.
3. **As each phone is online make a call to yourself to confirm 2-way audio**
  - a. **DO NOT DISCONNECT OLD PHONE’S AT THIS TIME WITHPOUT PERMISSION**
  - b. **SET PHONE SIDE BY SIDE OR OUT OF THE WAY AS NEEDED**





**SECTION 4: CABLE DROPS & CABLE RETERMINATING**

1. Do not run any cables until all phones that do not need a cable run/retermination are deployed first.

Update **FST HOTLINE: 972-674-8340** with status of each drop.

1. Complete termination/clean up and phone connection as much as possible as pulls are completed. Make outbound call to test every phone.
  2. 30 minutes – 1 hour per cable
  3. **As each phone is online make a call to yourself to confirm 2-way audio**
2. Full site cabling - Pull all cable home runs to network location.
  1. Drop head end cables to network equipment together. Complete any wall fiche or surface mounting needed.
  2. Complete termination/clean up and phone connection as much as possible as pulls are completed.
  3. **As each phone is online make a call to yourself to confirm 2-way audio**
  - Occasionally existing cabling to PBX phones can be pulled and reterminated with RJ45 Jacks/Mod ends to avoid additional cable runs. Investigate for 4 pair CAT5 cable on each end when possible.
  - Phones that are wall mounted most likely may need a cable run or reterminate to connect to a POE switch at the network

Be prepared to pull cable for all devices in the scope. 500 ft cable minimum, RJ45 jacks/mod plugs, RJ11 ends for analog devices and tools for pulling and fishing cable including 6-8ft ladder. Tools to terminate and test.



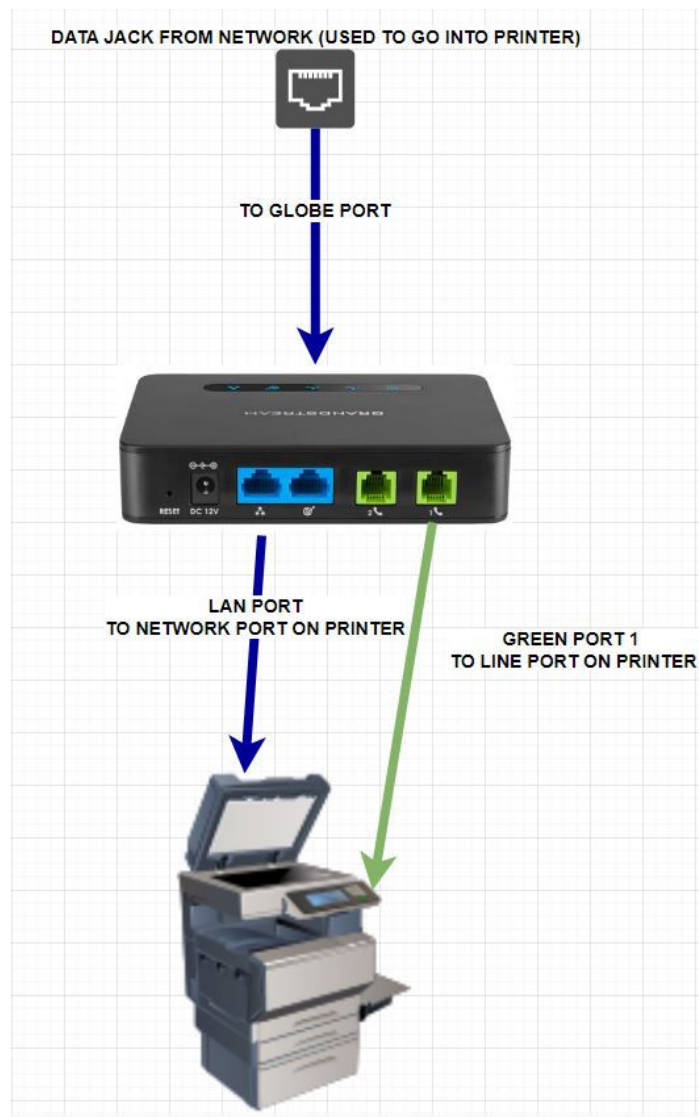
**SECTION 5: FAX ATA**

**ATA AS STAND-ALONE FAX ADAPTOR**

ATA can be used directly at most Muti Function Fax Printers that are on the network:

- Use the network jack that the printer is connected to as an uplink to the GLOBE port of the ATA.
- Use the LAN port on the end of the ATA to daisy chain the network printer.
- Once ATA is confirmed online and numbers ported, connect the FAX machine LINE port to the phone port 1 of ATA. (Can unplug from wall/jack or other connection that is going to previous dial tone and move into the ATA.)

**DO NOT CONNECT THE ATA TO THE PHONE LINE WALL JACK**



## SECTION 6: ANALOG PHONE DEVICES

Devices that will need a dedicated analog line will need cutover to the analog voice modem that was tested during arrival. Support may have Phone numbers that are being left behind for these devices to be connected to. Follow their direction.

1. Determine analog phone devices.
  - Alarm (fire & burger) (may have a primary & secondary #)
  - Credit card machines
  - Elevator phone/emergency call button
  - ATM
  - Postage machine i.e., Pitney Bowes
  - Lottery Machine
  - Other dial up devices such as 56k modems are used on legacy devices.
2. Locate the dial tone source for any of these Devices.
3. Disconnect and move/make new connection into designated phone line.
  - Primary and secondary Fire alarm should have its own #
  - Security and or credit card can be connected in line from RJ31X jack or internal circuit seizer pins.



## SECTION 7: PORTING

Once all new phones are installed and the customer is ready; the activation team at **FST HOTLINE: 972-674-8340** will start the porting process. Ongoing phone calls may be interrupted at this time. Within 5-15 minutes the phone numbers that are being ported to VOIP will begin to ring into the new phones.

### During porting:

#### 1. Complete connections to the FAX machine.

- If ATA is installed at the fax machine using the LAN port and Network jack of the printer, then make sure network jack for the fax machine is plugged into the **WAN port (GLOBE) and the LAN port is connected to the FAX machine**. Then move the phone cable from the jack the fax machine was previously using and connect to port 1 of the ATA.
- If installed the ATA at a phone board/66 block complete moving and terminating the pair leading to the fax printer into PORT 1 of the ATA
- Take photo of installed ATA and fax printer

#### 2. Complete any connections for analog phone devices. For any previously shared lines that are being abandoned; the connections can just be moved into the new analog modem.

- Alarm (fire & burger) (may have a primary & secondary #)
- Credit card machines
- Elevator phone/emergency call button
- ATM
- Postage machine i.e., Pitney Bowes
- Lottery Machine
- Other dial up devices such as 56k modems that are used on legacy devices.

## SECTION 9: TESTING

- On EVERY phone make an outbound call and confirm two-way audio.
- From ONE phone dial 933 and verify the address for 911 Provisioning
- Accept an inbound call. (From your cell phone or from your support agent)
  - Transfer this call to another extension.
  - Park this call
  - Pick up this parked call on another phone.
  - Place call on hold.
  - Test DTMF:

From ONE phone call ULAW (631) 791-8378 and do a DTMF test pressing all Keys (1234567890\*#)

You'll record a message (can say whatever you want) after hitting # it'll echo the message back.

Hit option 2 after the recorded message is echoed back then 1234567890\*#

- Find setting in FAX machine to set baud rate 9600 and disable ECM (ON BROTHER MODELS THIS IS COMPATIBILITY MODE BASIC OR VOIP)
  - Confirm that FAX is received. Return FAX to 1-469-974-3621
  - Confirm with support that they received your outbound FAX.
- Confirm with site point of contact that all PCs can still surf, print and reach other network devices and peripherals.

### 3. Remove old phones and telco equipment.

- Box up the old phones into the boxes the new phones came in.
- Leave with customer in location designated by them.
- Take care not to damage any equipment as occasionally it is to be returned.
- Take photos of desks with new phones as you remove the old ones:  
Moderately wide shot showing phone location and any cabling work done.  
Do not just take closeup view of phone.
- Remove previous carrier voice gateways.

## SECTION 8: DATA CUTOVER AND MIKROTIK DEPLOYMENT

If a new internet circuit has been installed prior to the phone installation a data cutover will need completed. New internet modem and router will have been installed by the ISP (usually Spectrum) in parallel to old ISP equipment.

1. Locate new modem/router. (Completed during arrival steps)
2. Connect laptop to new modem.
3. Follow direction from support to begin a remote session.

A MikroTik router may be in inventory to install regardless of a new internet circuit or not and deployed as determined by your support agent. Please send photos of network equipment to assist with this determination.

### MikroTik QUICK START SHEET

(MUST HAVE A WINDOWS LAPTOP WITH ETHERNET PORT)

**LEAVE THE MIKROTIK ROUTER IN THE BOX UNTIL SUPPORT REQUESTS IT.**

1. Connect Laptop to Port 5 of the MikroTik
2. Connect Sites network to Port 1 of the MikroTik



- a. Navigate to [join.zoho.com](https://join.zoho.com) Enter session ID given by support.
3. Wait for support to secure a remote connection to your laptop.
4. Support will complete initial configuration steps.
5. Request the desired Wi-Fi SSID and PASSWORD from the customer.
6. Support will instruct on how the router will be used. Access point or router.
  - a. If used as an access point MT may be relocated to fit site Wi-Fi needs.
  - b. If used as main router (edge) Support will direct the next steps for a full network cutover replacing the existing router.



**SECTION 9: ANCILLARY EQUIPMENT INDEX**

Below is some equipment that may be deployed on a site-by-site case.  
SNOM: VOIP adaptor for overhead paging to new/existing paging speakers/horns  
See attached Paging equipment installation PDF.



ALGO 8180: Paging/ringing for smaller spaces. POE network device with built in speaker/microphone.



Grandstream GWN-7630 Wireless access point. (NEED PHOTO OF STICKER ON BOTTOM WITH DEFAULT PASSWORD TO CONFIGURE)



PEPLINK BR1 MINI: CELLULAR BACKUP MODEM (CONNECT TO ETH2 OF MIKROTIK)

**MAX BR1 Mini (HW3)**

Panel Appearance



**MAX BR1 Pro 5G**

Panel Appearance



LED Indicators

The statuses indicated by the front panel LEDs are as follows:

PEPWAVE BR1 PRO 5G: CELLUAR PRIMARY MODEM

\*A SIM Card will need to be put into SLOT A before powering on.