



Bringing Help, Hope, and Healing

Basic Disaster Communications Training & Operations Manual

KYBAPTIST.ORG/DR

2026



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DISASTER COMMUNICATIONS MINISTRY PURPOSES

- Provide the Kentucky Baptist Convention Disaster Relief Ministry (KYDR) with volunteers trained in the procedures and equipment used to perform the role of Communicator.
- Promote further training and recruitment of volunteers for the role of Communicator.
- Provide the Communicator with experience and a written reference for policy, procedure, and operations before, during, and following a disaster event.
- Provide support communications between a disaster response operating site and KYDR State Director/Office, and other partner agencies.
- Provide intra-team and inter-team on-site communication resources while conducting disaster response activities.
- Process messages for volunteers, partners, and those affected by the disaster.

HOME AND FOLLOW-UP TRAINING

Disaster communications team volunteers “**Communicators**,” are encouraged to attend First Aid and Basic CPR & AED at future regional trainings. Existing certification through a different source, such as work or other volunteer organization, will also be accepted. Proof of training should be forwarded to the KYDR Ministry Assistant for recordkeeping purposes.

In addition to training in other ministry areas, Communicators are encouraged to take the KYDR Incident Management Team (IMT) training. This will help Communicators understand the Incident Management process and/or provide the opportunity to serve dual roles as a Communicator and a member of the IMT.

INTRODUCTION TO COMMUNICATION SYSTEMS

Communicators will use a combination of technology systems to provide support communications for disaster response activities. These systems are:

- **Starlink** – space-based satellite broadband internet providing Communicators and onsite DR leadership with full access to internet-based resources such as email, video conferencing, and remote file access.
- **Zoom Phone** – VOIP network-based desk phones used by the Incident Management Team (IMT) Team during disaster operations. The system consists of 3 phones, across 2 phone numbers. The private number is for internal KYDR purposes, while the public number is shared with the community for contact purposes when coordinating work orders.
- **weBoost 5G Cell Phone Booster** – rebroadcasting distant cell phone tower data to significantly improve cell phone reception for volunteers.
- **Business Band 2-Way Radio** – allowing assigned volunteers to talk across the disaster operations site for the purposes of command and control, activity coordination, and safety.
- **Tactical Repeater** – used to significantly increase the signal strength and range of business band two-way radios.

Communicators with general technical knowledge of computers, networking, and cellular phones may be called upon to provide support in a multitude of technology related areas. Some examples may include connecting KYDR leadership’s phones, laptops, and printers to the WI-FI network.

PREPARING TO SERVE

GENERAL

Communicators can expect to be activated when local communications at the planned response site are unavailable or severely degraded or when radio communications on the site between and among the various teams are needed. A single Communicator who has completed Basic Disaster Communications may be deployed.

A critical component of pre-travel preparation is the gathering of those items needed during deployment. For Communicators willing to be a “first out” responder, pre-preparation is of great importance. Volunteers who are first out follow a simple rule: *if you do not have it with you, it likely will not be available*. Sleeping and personal hygiene accommodations will be “DR Style,” so plan and pack accordingly. The KYDR office or IMT will provide more information regarding the site as it is available.

Communicators will generally serve for a period of 7 days but may serve longer depending on their personal situation. The “first out” Communicator will be responsible for taking the necessary equipment to the disaster response site and setting it up. The “last out” Communicator will be responsible for taking down the equipment, properly storing it, and returning it to the Communications State Coordinator. The Communications State Coordinator will work with Communicators to ensure resources are available prior to deployment.

CONDUCT YOURSELF AS A SERVANT

Communicators will encounter unique challenges. This will require flexibility, patience, and availability. In these situations, you are a servant, first to the LORD, then the on-site leadership and fellow workers, then the mission.

A gentle, supportive, and loving demeanor will be needed throughout the term of operations. At no time is rude or selfish conduct appropriate, especially toward the disaster survivors.

Interaction with disaster survivors is likely. They may ask, “Why are you here?” Recognize this as an opportunity for ministry and be prepared to answer accordingly. Be a good listener. You are not a counselor, but you need to be alert to those who need counseling. If appropriate, introduce them to a nearby Chaplain. If you are out with a recovery team, respect a survivor’s property. One element of good servanthood is restoring the survivor’s property including reuniting them with lost property.

Your daily prayer life should include a petition for survivors, those who might be lost or unaccounted for, your disaster service leadership, your team, and yourself.

You are an ambassador for Jesus Christ, and your service during a disaster response gives you an excellent opportunity to show it!

KEEP IN TOUCH

Your availability to serve at a particular time and place is related to KYDRs Leadership’s ability to contact you in a timely manner. KYDR uses the VicNet app for communicating with all volunteers. It is important that you keep your profile and account information within VicNet up to date so that you receive KYDR communications in a timely manner. You can also set up preferences for receipt of KYDR communications via email and/or text within VicNet.

Choosing to receive communications in email, and/or text ensures you don't miss a notification sent out through VicNet.

Once teams are being formed, the Communications State Coordinator or a designated Blue Hat may contact you by phone to coordinate further details.

PRE-DEPLOYMENT ACTIVITIES

GENERAL

Depending on the nature of the disaster and response, the State Director will determine what communication resources will be needed. Coordination with the State Communications Coordinator will begin the process of securing resources for specific needs.

Arrangements will be made among the state leadership to ensure the necessary equipment is available to the "first out" Communicator preparing to deploy. Information will be forwarded to the Communicator in the field in a timely fashion: via cell phone or email.

REPORTING FORMATS

For some deployments KYDR will staff the IMT on the disaster response site, other times another state's volunteers will staff IMT. The Communicator's reporting format will vary depending on who is running the IMT. If KYDR is running the IMT all the Communicator's reporting will be included on the Communications tab of the Office 365 Excel Workbook used by IMT. If another state is running IMT, the Communicator will use Form 214 – Communications Activity Log (Appendix 2) to report daily activities and send a picture of the completed report to KYDR State Director, Ministry Assistant, and the Communications State Coordinator at the end of each day. Therefore, throughout this manual you will see a combined reference to "IMT Workbook/Form 214".

CELL PHONE APPLICATIONS

Communicators should download and install three cell phone applications prior to deployment. These applications or Apps will assist with antenna location and pointing and provide exact location coordinates of the disaster ministry site. All applications are free and can be downloaded from mobile phone App Stores.

- Easy QTH Locator – provides exact GPS coordinates, which may be useful for multiple applications.

App Icon



Apple App Store



Google Play Store



- Starlink by Space-X – used to identify an appropriate location for the Starlink antenna and other network maintenance functions.



- weBoost by Wilson Electronics – used to identify pointing angle of the directional antenna used with the cell phone booster system.



PORTABLE COMMUNICATIONS EQUIPMENT READINESS

The portable communications systems previously described are stored in several equipment cases and bags for immediate deployment and are maintained regularly.

PERSONAL VEHICLE READINESS

Prior to traveling into the affected area, individuals should examine the readiness of all vehicles/trailers going into the area. Items to consider include tire condition/wear, any items known to need repair, and time/distance since last regular maintenance. It is easier to get an oil change at home than on a disaster site.

Communicators are highly encouraged to top off with fuel 100 miles from the disaster ministry site, where fuel will be more readily available.

TRANSPORTING EQUIPMENT

As noted previously, an assessment is done prior to the Communicator being deployed to determine which communications equipment kits are needed on the disaster ministry site. Communicators may be deployed with all or only one or two of the communication equipment kits. Therefore, it is important to consider the size of the equipment being taken to the site when working out carpooling options. For example, if you intend to drive your vehicle and it is a small size SUV, and you are taking all the Communications equipment kits, you may only have room for one other person in your vehicle. If you intend to ride with another person, you need to inform them of the size of the equipment you will be bringing with you, in addition to your luggage and bedding. To aid you in this consideration, the size of each equipment kit is listed on the following pages.

PORTABLE EQUIPMENT SETUP AND OPERATIONS

STARLINK SATELLITE INTERNET

GENERAL

Starlink is a commercially available low earth orbit broadband satellite internet system which uses an extensive constellation of satellites to provide reliable high-speed internet to remote locations. KYDR uses the Roam plan and can therefore deploy it anywhere in the world where Starlink provides service. The system consists of a rectangular flat antenna, a tripod, interconnecting cable, Starlink router/WI-FI access point, and a TP-Link Festa router/WI-FI access point. The router/WI-FI access points have been set up and preconfigured. No further configuration should be required.

OBJECTIVE

Starlink is used to support the communication needs of the IMT. Therefore, it is the first piece of equipment set up on site.

EQUIPMENT/TOOLS NEEDED (GREY KIT)

Starlink Kit (black rolling storage box with grey streamer)

Top Layer

- Orange tripod
- Combined 128' Starlink network cable with waterproof couplers
- 4' network cable
- Emergency Exit Only signs (not shown)

NOTE: The Zoom Phone System components listed on Page 16 will also be stored in the top layer of the Starlink Kit.

Middle Layer

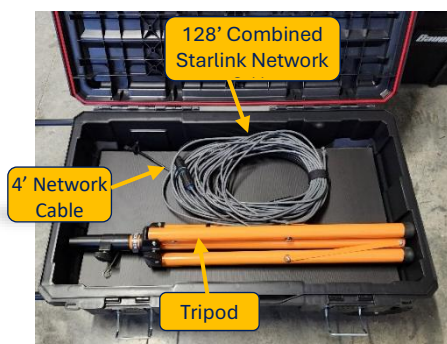
- Starlink Flat panel antenna

Bottom Layer

- Starlink pole mount pipe adapter + Starlink kickstand
- Starlink router
- Starlink Power supply unit
- Starlink AC power cable
- TP-Link Festa router/Wi-Fi access point and antennas
- TP-Link Festa power cable

Not Shown

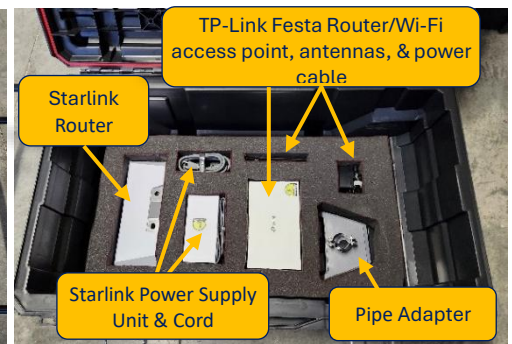
- Allen wrench
- Cable covers, yellow, 3 ea.
- 25 lb. black sandbags, 3 ea.
- 100' network cable
- Electrical tape



Top Layer



Middle Layer



Bottom Layer

Total Kit Size: The entire Starlink kit fits into the black rolling storage box which is approximately 15” High, 36” Long, and 23” Wide. **Note:** If KYDR’s IMT is running the site, the Starlink kit including the VOIP phones will be transported to the site by the IMT.

LOCATION CRITERIA

When choosing a location for setting up Starlink, the tripod with the Starlink antenna needs to be set:

- Within 50-75 feet of a door or window that can remain closed.
- Within 228 feet of where IMT is located.
- On pavement or grass.
- Pointing north with a clear view of the sky.

SETUP

1. Collect all necessary equipment and tools from the list above.
2. Select a relatively flat spot, open to the sky, clear of obstructions (trees and buildings) especially to the north. The selected spot should be within 40’ of a door that can be closed except for emergency access.
3. Open the Starlink app previously downloaded. Select PREVIEW INSTALLATION. The app will request permission to identify your location and to use your phone’s camera. (**Fig. 1**)
4. Select Yard or Outdoors and click CONTINUE when asked where you will install Starlink. (**Fig. 2**)

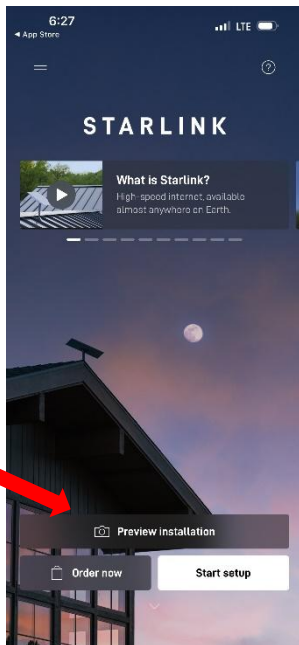


Fig. 1

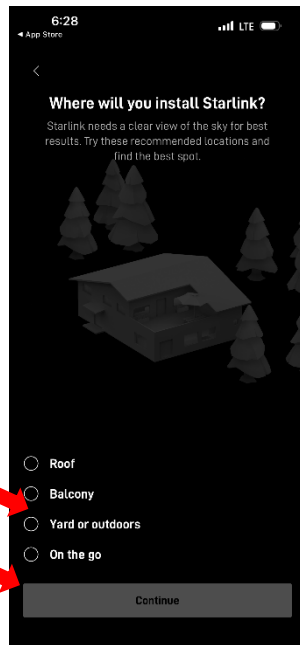


Fig. 2

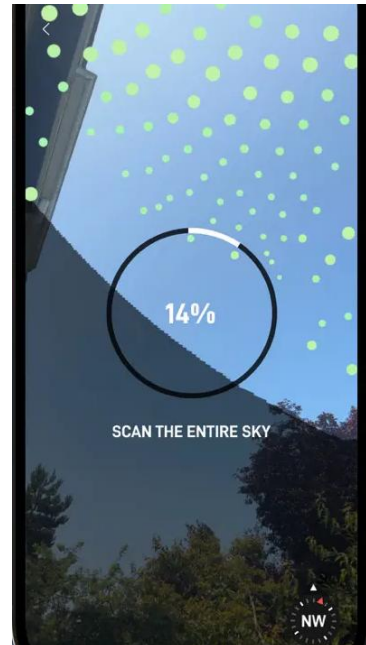


Fig. 2A

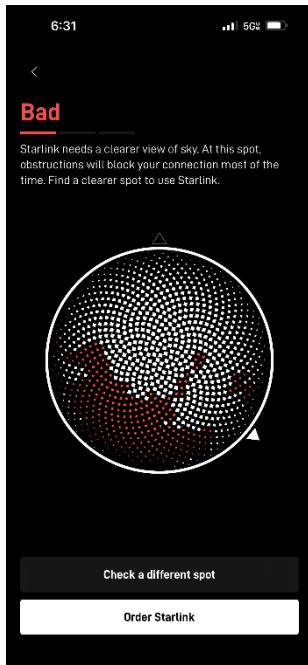


Fig 2B

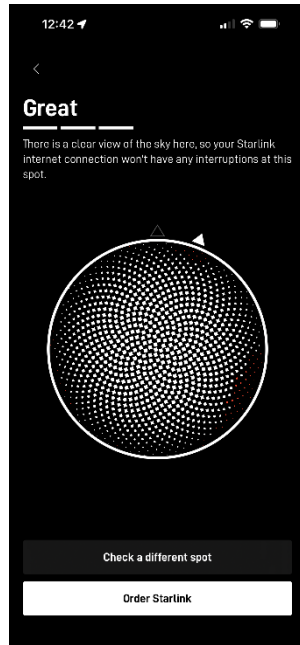


Fig. 2B



Fig. 2C

5. Read the instructions on the screen. When ready, click CONTINUE.
6. Scan the sky with the phone's camera lens pointing up until the app confirms 100% of the scan is complete. If your phone has haptic feedback turned on, you will also feel small vibrations as you "collect all of the dots" during the scan.(**Fig. 2A**)
7. When the scan is complete the app will show a large circular NEXT button at the bottom of the screen. Select the NEXT button and the app will provide feedback regarding the location with a description and a graphic. (**Fig. 2B**) If the app identifies obstructions in the area, reposition and repeat the process.
8. Once a suitable location has been identified, remove the components of the Zoom Phone System from the top layer of the black rolling storage box and leave it in the IMT office. Take the black rolling storage box with grey streamer to the identified location for the Starlink antenna and continue the process.
9. Retrieve the orange tripod located on the top layer of the black rolling storage box and set it up in the suitable location you identified with the app.
Note: For step 9 you will use the orange tripod identified in the equipment list. The small Starlink kickstand is only used when a quick temporary set up is needed.
10. Deploy the orange tripod, extending the legs completely. The pivoting struts running between the bottom of the mast and each tripod leg should be horizontal. Tighten the black plastic wing nut to secure the legs in place. (**Fig. 2C**)
11. Install three 25 lb. sandbags, one on each tripod leg, by wrapping four Velcro straps around the tripod leg. Once secured, rotate the sandbag to the outside of the tripod leg.
12. Remove the flat rectangular Starlink antenna from the middle layer of the black rolling storage box.
13. Remove the pole mount pipe adapter from the bottom layer in the black rolling storage box. Route the Starlink cable through the slot of the pole mount adapter (**Fig. 4**) and insert one

end of the combined Starlink cable into the cable port on the back of the antenna. Ensure the connector seats completely. **(Fig. 3)**

Note that the combined Starlink cable includes the following sections already coupled together with waterproof couplers:

- 50' cable from the Starlink antenna
- 3' flat cable for building entry
- 75' cable to the router inside the building

Either end the combined network cable can be attached to the Starlink antenna to accommodate different installation conditions. Since all couplers are waterproof, either end of the cable can be used outside. There is also an additional 100' of network cable without waterproof couplers that can be used inside the building if needed.



Fig. 3

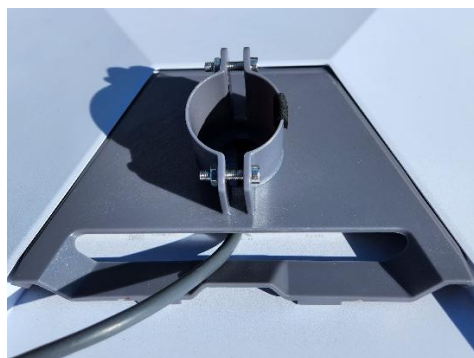


Fig. 4

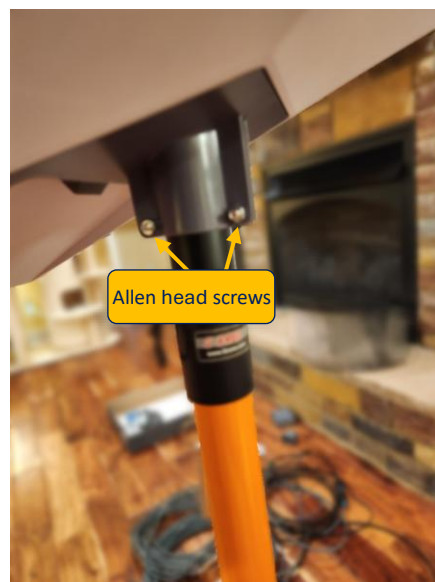


Fig. 5

14. Place the pipe adapter on the back of the Starlink antenna and slide it upward until it clicks securely into place around the network cable attachment port. **(Fig. 4)**
15. Loosen the Allen head screws on the pipe adapter using the Allen wrench and slide the pipe adapter onto the top of the tripod. Temporarily tighten the screws on the pipe adapter to secure the Starlink antenna on the tripod. **(Fig. 5)**
16. Run the combined Starlink cable down one of the tripod legs in the direction where the cable will enter the building and secure it with electrical tape to the tripod leg.
17. Use cable covers as necessary to mitigate any trip hazards on the cable at traffic areas.
18. Pass the flat portion of the combined network cable over the door previously selected for building entry. Attach an **“EMERGENCY EXIT ONLY”** sign to each side of the door. Laminated signs are in the black rolling storage box with grey streamer. **Use best judgement when making building entry with the flat cable. Although going over a door is recommended, this may not be possible in all cases. Some installations may work better with the cable passed under a door or through a window. Care should be taken to avoid damaging or cutting the flat cable regardless of how building entry is achieved.**
19. Continue to route the remaining combined network cable to the final position of the Starlink router, using cable covers and/or Gaffer’s tape (available from IMT) where necessary.

20. Remove the Starlink router, power supply unit, and AC power cable from the bottom layer of the black rolling storage box with grey streamer.
21. Insert the end of the combined Starlink cable into the left port on the back of the Starlink router (Fig. 6), and the cord from the power supply unit into the power port to the right. (Fig. 7)



Fig. 6



Fig. 7

22. Plug the AC power cable into the end of the power supply unit and then plug it into a wall outlet. Allow Starlink several minutes to boot up.
23. Connect the 4' network cable to one of the LAN Ethernet ports located under rubber cover in the center of the back of the Starlink Router. (Fig.8a)

Note: A 100' cable is also provided and may be used to run between the Starlink router and the TP-Link Festa router/access point if the two pieces are not co-located. The TP-Link Festa router/access point must be in the IMT office.

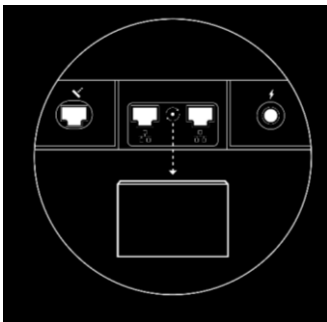


Fig. 8a



Fig. 8b



Fig. 8c

24. Connect the other end of the 4' network cable to Port 2 on the front of the TP-Link Festa router/access point. (Fig 8b)
25. Attach the three antennas to the back of the TP-Link Festa router/access point. (Fig. 8c)
26. Connect TP-Link Festa power cable to the back of the TP-Link Festa router/access point (Fig. 8c) and then plug it into a wall outlet.
27. After several minutes, connect to WI-FI SSID KYDR_(equipment number) using the password provided by the Communications State Coordinator.

KYDR Starlink Kit #1 – KYDR_00373398

KYDR Starlink Kit #2 – KYDR_00373402

28. Once the network is online, check the alignment of the antenna with the Starlink App. From the app select ALIGNMENT. If the antenna needs to be realigned, the Starlink App will

read STARLINK MISALIGNED. Readjust the antenna until it matches the directions displayed on the app. **(Fig. 9a)**

29. Once the antenna is aligned, tighten the Allen head screws on the pipe adapter to firmly secure the Starlink antenna to the orange tripod. **(Fig. 9b)**

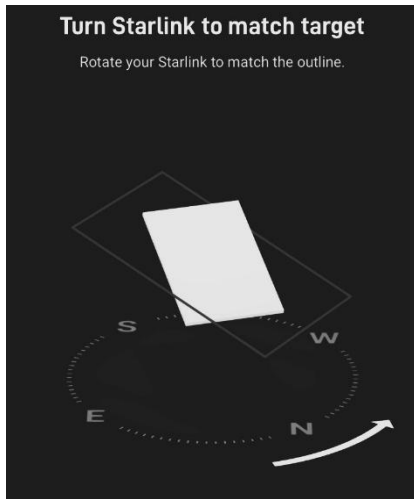


Fig. 9a



Fig. 9b

30. A Guest Wi-Fi is set to broadcast daily from 6:30 pm to 7:30 am to serve anyone that may need internet access. Bandwidth and usage time are restricted, allowing as many people as possible to access the Wi-Fi during non-IMT operating hours.

31. The Wi-Fi SSID for the guest network is KYDR_Guest and the password is H0pe&Healing (the 0 in H0pe is a zero). Volunteers will agree to a term of service document before accessing the guest network.

32. Distribute Guest Wi-Fi signs as appropriate so volunteers are aware the guest Wi-Fi is available and have instructions for accessing it.

DAILY FUNCTIONS

- Check that all equipment is secure and functioning properly.
- Confirm the antenna is in alignment using the Starlink app. If the antenna is misaligned, realign it and note it on "IMT Workbook/Form 214". ([Appendix 2](#))
- Test the WI-FI speed and note it on "IMT Workbook/Form 214". ([Appendix 2](#))
- Equipment can stay out in the rain (speed may diminish). The antenna also has a snow melt feature that can be turned on and off via the app, if needed.
- In severe weather notify IMT and follow the severe weather protocol ([page 32](#)).

RECOVERY AND STORAGE

1. Pickup and store all Guest Wi-Fi signs.
2. Disconnect the TP-Link Festa power cable from the wall socket.
3. Disconnect the TP-Link Festa power cable from the back of the TP-Link Festa router/access point. **(Fig. 9c)**

4. Disconnect the 4' network cable from Port 2 on the front of the TP-Link Festa router/access point. **(Fig. 9b)**
5. Disconnect the other end of the 4' network cable from the Starlink router and recover the port with the rubber cover. **(Fig. 9a)**
6. Disconnect the Starlink AC power cable from the wall socket.
7. Disconnect the Starlink power supply unit and the combined network cable from the bottom of the Starlink router. **(Fig. 6 & 7)**
8. Place the Starlink router, power supply unit, AC power cable, and the TP-Link Festa router/access point, 3 Wi-Fi antenna, and power cord in the foam insert on the bottom layer of the black rolling storage box with grey streamer. Set 4' Network cable aside to go on the top layer of the black rolling storage box with grey streamer. **(Fig. 10)**

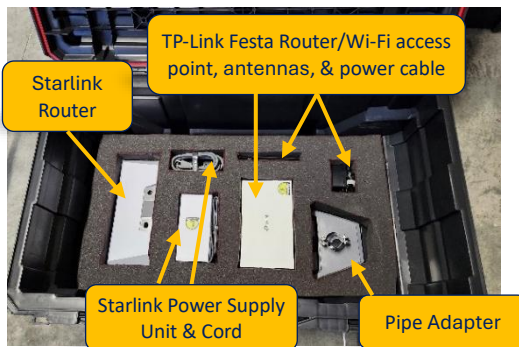


Fig. 10 – Bottom Layer

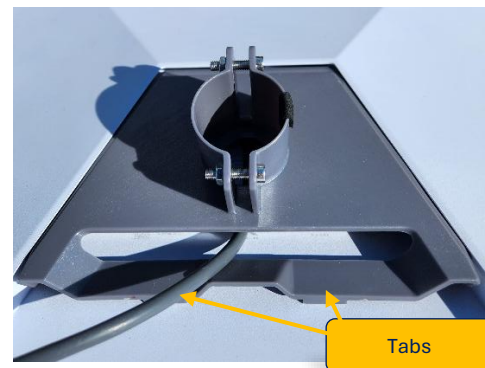


Fig 10A

9. Follow the combined network cable outside, removing the yellow cable covers and any Gaffer's tape used to mitigate trip hazards.
10. At the tripod, loosen the Allen head screws on the pipe adapter and remove the Starlink antenna from the tripod by lifting up and then toward you. **(Fig. 9)**
11. Remove the pole mount pipe adapter from the back of the Starlink antenna by sliding it down from the network cable port. NOTE: There are small tabs on the horizontal portion of the pole mount pipe adapter that fit into the back of the Starlink antenna. **(Fig. 10A)** Gently lift up on the horizontal portion to disengage the tabs before sliding the pole mount pipe adapter down. Remove the combined Starlink network cable from the port in the back of the Starlink antenna and through the slot in the pole mount adapter. Set the antenna aside in a safe location.
12. Place the pole mount pipe adapter in its slot on the bottom layer of foam in the black rolling storage box with grey streamer. **(Fig. 10)**
13. Install the middle layer of foam in the black rolling storage box and insert the Starlink antenna, flat side down.
14. Install the remaining black plastic corrugated sheet on top of the middle layer.
15. Remove the combined network cable from the tripod, coil and secure with a Velcro wrap and place it on the top layer of the black rolling storage box with grey streamer. **(Fig. 13)**
16. Remove the three sandbags from the tripod legs.
17. Collapse the tripod and place it on the top layer of the black rolling storage box with grey streamer. **(Fig. 13)**

18. Place all remaining previously collected items in the top layer of the black rolling storage box with grey streamer.

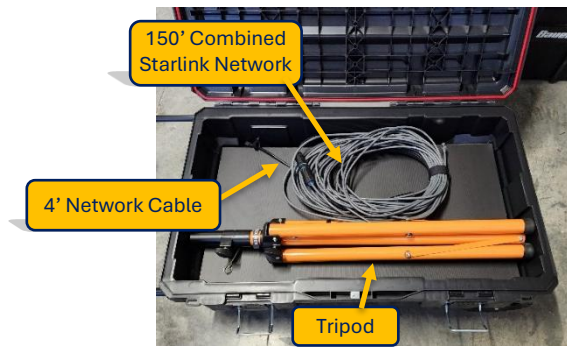


Fig. 13 – Top Layer

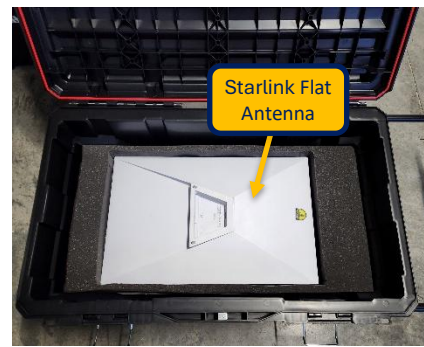


Fig. 14 – Middle Layer

19. Remove the EMERGENCY EXIT ONLY signs from each side of the entry door and place them in the black rolling storage box with grey streamer.

20. Close and latch the black rolling storage box with grey streamer. The Starlink kit is now ready to travel.

21. Review the equipment list above to ensure all items are packed and accounted for before leaving the area.

ZOOM PHONE VOICE OVER IP SYSTEM

GENERAL

Zoom Phone is a large commercial Voice Over Internet Protocol phone provider. KYDR's system consists of two kits with 3 phones in each kit. Phones are used for internal KYDR purposes as well as providing a vital link with the public in the served area during disaster operations.

OBJECTIVE

Provide reliable phone service to the IMT staff for coordinating disaster response activities. When possible, and as needed, provide phone service to those affected by the disaster and fellow volunteers to stay in contact with family members.

EQUIPMENT/TOOLS NEEDED (TOP LEVEL OF THE STARLINK KIT)

- Grandstream 2602G Kit, 3 ea.
 - Phone base
 - Kickstand bracket
 - Handset
 - Handset cord
 - Power supply
 - 3' network cable
- 50' network cable
- 25' network cable, 2 ea.



VOIP Phone Kit Components



VOIP Phone Kit stored in the top layer of the Starlink Kit

LOCATION CRITERIA

Phone system is to be located inside the IMT Office

- Within 50' of the TP-Link Festa router/access point
- Within 25' of each other
- Where 110 V electrical outlet or power strip is available at each phone position

SETUP

1. Unpack and assemble each phone kit by attaching the kickstand, handset cable, and handset. Note that 1 phone has a red handset cable. This denotes the Private line and is

placed at the Incident Commander's operating position. Place the remaining phones at the positions directed by the IMT staff.

2. Run one 50' cable from port 3 on the TP-Link Festa router/access point to the network port on the back of the closest Grandstream 2602G IP phone.
3. Run one 25' cable from the computer port on the back of the phone to the Network port on the back of the second phone.
4. Run one 25' cable from the computer port on the back of phone 2 to the Network port on the back of phone 3.
5. Plug up the power supplies for each phone to an available 110 V outlet. Each phone will boot and come online within 1-2 minutes.
6. If "NO LAN CABLE" message is displayed, confirm cabling sequence following the steps above.
7. Send physical address of the IMT Office to Amanda McGary (amanda.mcgary@kybaptist.org) and Jonathan Kitchen (ki4mtb@gmail.com) via email so 911 address for emergency services can be updated in case of emergency response is necessary.



See appendix 7 for basic phone operation information.

RECOVERY AND STORAGE

1. Disconnect and coil all network cables.
2. Disassemble phone by disconnecting receiver cable from receiver and phone, removing kickstand, and unplugging and coiling power supply cable.
3. Place all phone components back in the cardboard storage box.
4. Return phone kits, one 50' and two 25' network cables to the top layer of the Starlink kit (black rolling storage box with grey streamer). The Zoom IP Phone kit is now ready to travel.
5. Review the equipment list above to ensure all items are packed and accounted for before leaving the area.

WEBOOST 5G CELL PHONE BOOSTER

GENERAL

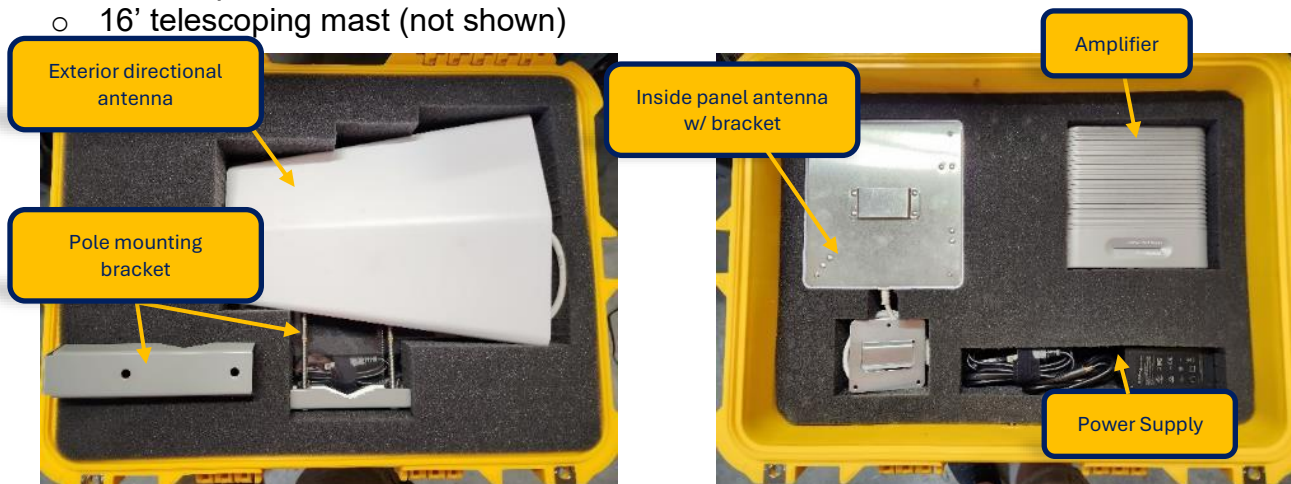
The weBoost 5G cell phone booster consists of a directional antenna, tripod and mast, an amplifier, inside antenna, and cables. Once connected and operating, the system will receive weak signals from a distant cell phone tower, amplify the signal, and re-broadcast the signal in an interior space. As a result, cell phone usage in the selected interior space should be enhanced.

OBJECTIVE

weBoost is used to provide volunteers with cell phone service so they can stay in touch with friends and family while deployed. Individuals impacted by the disaster may also benefit from the boosted cell tower signal.

EQUIPMENT/TOOLS NEEDED (YELLOW KIT)

- weBoost Kit (yellow case)
 - Exterior directional antenna
 - Pole mounting bracket
 - Inside panel antenna w/bracket
 - Amplifier
 - Power supply
 - Alcohol Prep Pads
- Tripod Kit (long black bag w/ yellow streamer)
 - 5-foot tripod
 - 16' telescoping mast (not shown)
- RG-6 coaxial cable, long, medium, and short and Flat RG-6 cable, approx. 6" long located in the crate accompanying the repeater
- Not Shown
 - Electrical tape
 - Emergency Exit Only signs
 - Cable covers, yellow, 3 ea.
 - 35 lb. sandbags, 3 ea.





Total Kit Size:

- Yellow Antenna Box is approximately 20.5" Long, 15.5" Wide, and 8" Deep
- Tripod Case is approximately 61" Long, 11" Wide, and 5.5" Deep
- 35 Lb Sandbags are approximately 17" Tall, 11" Wide, and 5" Deep each

LOCATION CRITERIA

When choosing a location to set up weBoost, keep the following requirements in mind:

- Exterior location, unpaved, clear of obstructions between the antenna and the direction of the cell tower.
- Close to a building entry point (window preferred but a door that can remain closed will also work).
- A window close to an electrical outlet for mounting the interior antenna amplifier.

SETUP

1. Collect all necessary equipment and tools from the list above.
2. To determine the general direction of the closest cell phone tower, open the weBoost app and select TOWER along the bottom row of icons. **(Fig. 15)**
3. The app will display a map of your location. The encircled large red arrow identifies your location and points in the direction of the closest cell tower for your phone's carrier. It also provides icons pinpointing the location of other cell towers in the area. Clicking on one of the cell tower icons will provide the name of the carrier, how far away it is from your location, and its Latitude and longitude coordinates. Note: some towers will display as unknown. **(Fig. 16)** Within the app you can also use the functions in the black box at the bottom of the screen to change the range from 1 to 10 miles (slider on the bottom) and filter the results to show a specific carrier's towers (right top corner).

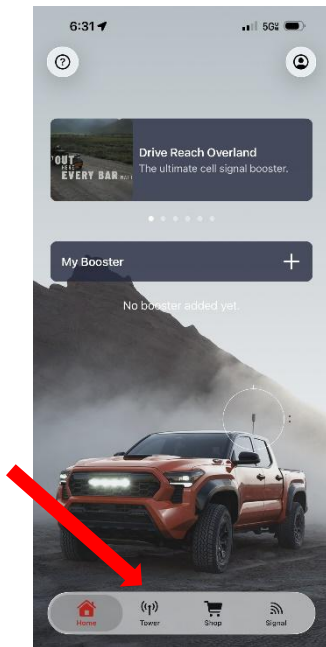


Fig. 15

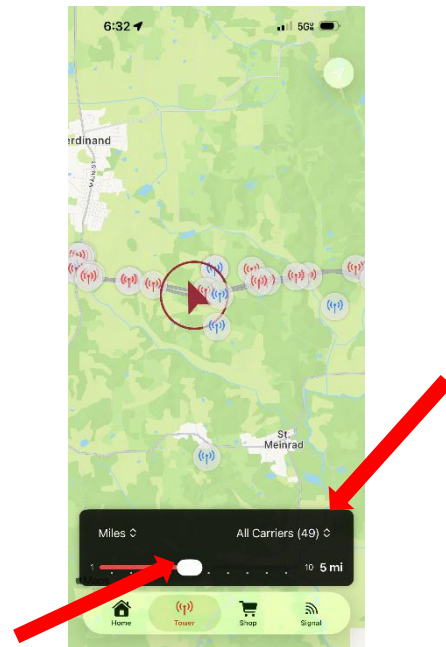


Fig. 16

Note: In most cases, the booster will only work for a single cell phone carrier. If a tower provides service for more than one carrier, the booster may strengthen the signal for multiple carriers as it amplifies any signals it receives. However, the app is providing antenna pointing information based on the cell phone carrier of the phone using the app. So, if you use a different carrier than most of the volunteers, you will need to use someone else's phone (such as a member of the IMT team) to confirm which direction to set the antenna. A schedule for multiple carriers may also be created based on the needs of the volunteers.

3. Place all necessary equipment clear of any obstructions in the direction of the cell tower. If possible, avoid trying to access cell tower signals through a building or other obstructions, such as large trees. Select a location close to a building entry point, either a window or unused door.
4. Remove all contents from the tripod kit bag.
5. Deploy the 5-foot tripod, extending it completely. Loosen the retaining bolts at each level to ensure the mast will pass through.
6. Install three 35 lb. sandbags, one on each tripod leg, by wrapping a Velcro strap around the tripod leg. Once secured, rotate the sandbag to the outside. **(Fig. 17)**
7. Install the 16' telescoping mast into the 5-foot tripod **(Fig. 18)**. Extend the top section of the mast a few inches to assist with installation of the antenna bracket.



Fig. 17



Fig. 18

- 8. Attach the antenna bracket to the top of the top section of the mast using 4-point pass through knobs. Secure finger tight. **(Fig. 19 and 20)**



Fig. 19



Fig. 20

- 9. Install the external directional antenna on the antenna bracket using two knurled plastic knobs. The knobs are already installed in the antenna and will need to be removed prior to aligning the antenna to the bracket. Once aligned, use the same knobs to attach the antenna to the bracket. Hand tightening these knobs is also sufficient. **(Fig. 20 and 22)**



Fig. 21



Fig. 22

- 10. Position the pigtail from the antenna down the mast.
- 11. Attach the RG-6 coaxial cable to the end of the pigtail and secure it to the mast with electrical tape. **(Fig. 23)**

12. Extend the 16' mast/antenna assembly by unlocking each section with a clockwise twist, extending fully, and locking back in place with a counterclockwise twist, starting with the uppermost section. Secure the antenna cable as each mast section is extended. The completed system is shown in **Fig. 25**.



Fig. 23



Fig. 24



Fig. 25

13. Using the weBoost app again, determine the exact pointing angle to the target cell tower. Rotate the mast to align the antenna with the arrow on the compass of the weBoost app. (**Fig. 16**)
14. Once final direction is determined, secure the mast with the bolts and nuts at each level. No tool is required; hand tightening of the nuts and bolts is sufficient. (**Fig. 24**)
15. Attach the RG-6 coaxial cable down one of the mast legs in the direction of where the cable will enter the building.
16. Use cable covers as necessary to mitigate any trip hazards on the cable at traffic areas.
17. Attach the short, flat RG-6 cable to the end of the cable opposite the antenna. Use the flat RG-6 to pass under an exterior door seal or window. If a door is used, attach **“EMERGENCY EXIT ONLY”** signs to both sides of the door. Laminated signs are stored in the lid of the yellow case. Passing the flat cable through a window is preferable. (**Fig. 26**)



Fig. 26

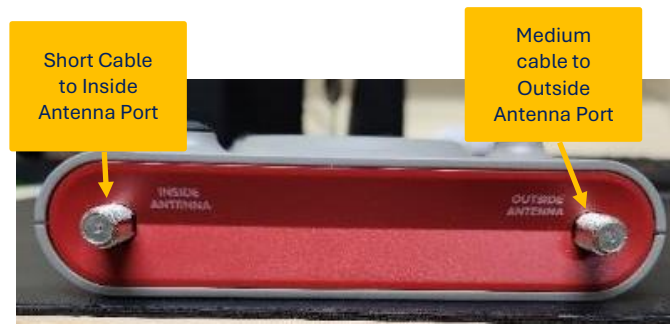


Fig. 27

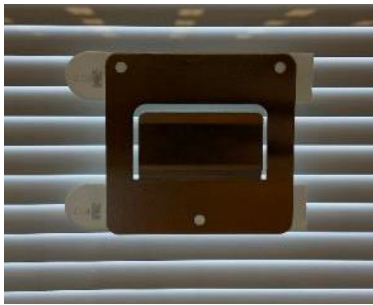


Fig. 28



Fig. 29



Fig. 30

18. Determine a stable location near a 110v outlet to place the amplifier and a good attachment point for the inside antenna. It is recommended to attach the inside antenna to a glass window for the best results.
19. Attach the **medium** length cable to the end of the flat RG-6 cable now inside the building. Attach the opposite end of the medium length cable to the port on the amplifier labeled **“Outside Antenna.”** (Fig. 27)
20. Attach the **short** cable to the port on the amplifier labeled **“Inside Antenna.”** (Fig. 27)
21. Use two adhesive Command Strips to attach the inside antenna mounting bracket to a glass window. Use an alcohol prep pad to clean the window in the target area to promote adhesion. (Fig. 28)
22. Install the inside antenna onto the mounting bracket, cable pigtail pointing downward.
23. Attach the short cable to the pigtail coming out of the inside antenna. (Fig. 29)
24. Plug the power supply into a 110v outlet and plug the other end of the cable into the power port on the amplifier. The amplifier will initiate a test sequence, and the indicator light will show solid green if all is working correctly. If any other color or light combinations are displayed, disconnect the power for 30 seconds and re-energize. If problems continue, check cable connections, and consult the troubleshooting guide in the app. (Fig. 30)
25. Use yellow cable protectors to cover exposed cables and mitigate trip hazards where necessary.
26. Cell phone booster is now operational.

DAILY FUNCTIONS

- Check that all equipment is secure and functions properly.
- Test the signal strength with the weBoost app and note on “IMT Workbook/Form 214”. ([Appendix 2](#))
- If a schedule has been established, change the antenna direction at the appointed time.
- In severe weather, notify IMT and follow the severe weather [protocol](#). (Page 32)

RECOVERY AND STORAGE

1. Remove power supply from wall outlet and weBoost amplifier and store in the lower level of the yellow case.
2. Remove cables from the weBoost amplifier and store the amplifier in the lower level of yellow case.
3. Remove the inside antenna from the bracket, coil the cable, and store it in the lower level of the yellow case.
4. Remove the Command Strips holding the inside antenna bracket and store bracket in the lower level of the yellow case with the inside antenna.
5. Install case divider and upper section in the yellow case.
6. Disconnect the short, flat RG-6 cable from the long and medium length cables.
7. Individually coil the medium length and short length RG-6 cables. Return cables to the crate accompanying the repeater kit.
8. Recover yellow cable covers used to mitigate trip hazards.
9. Collapse the mast by unlocking and lowering each section until the mast is completely collapsed. Lock each section once collapsed.
10. Remove electrical tape securing the cable, then coil the cable. Return long RG-6 cable to the crate accompanying the repeater kit.
11. Disassemble directional antenna from bracket, being sure to re-install the knurled knobs **BACK INTO THE ANTENNA**. Place directional antenna in upper level of the yellow case.
12. Disassemble antenna bracket into two pieces. **DO NOT REMOVE BOLTS**. Ensure 4-point pass through knobs are screwed back on the bolts.
13. Place both pieces of the antenna bracket back in the upper level of the yellow case. Close and secure the case.
14. Removed the antenna mast from the tripod and placed it back in the long black storage bag with the yellow streamer.
15. Remove each of the three sandbags from the tripod legs.
16. Collapse Tripod. Adjust tripod base pads to allow tripod to fit into the long black storage bag with the yellow streamer. The weBoost tripod Kit is now ready to travel.
17. Review the equipment list above to ensure all items are packed and accounted for before leaving the area.

BUSINESS BAND 2-WAY RADIO

GENERAL

Three kits of seven VHF/UHF handheld radios are available for on-site communications purposes among volunteer teams. These radios are programmed with multiple channels so each team may have their own frequency to communicate internally within a team, or the entire site may choose to use the same frequency. All NOAA weather radio frequencies are also programmed for immediate access to weather conditions and forecasts. Finally, two Repeater pairs are available for situations where the tactical repeater system is installed at the disaster operations site. Handheld radios can be helpful when caravanning to coordinate travel and fuel stops.

OBJECTIVE

The business band 2-way radios are assigned to team leaders on the site to assist them in efficiently communicating across the site.

EQUIPMENT/TOOLS NEEDED (ORANGE KIT)

- Handheld Business Band 2-Way Radio Kit (Orange case)
 - 6-position radio charger and cable
 - Extra belt clips
 - Flexible antenna, 9 ea.
 - Manual
 - Commercial grade VHF/UHF 2-way radio, 7 ea.
 - Waterproof hand microphones, 7 ea.
 - 16" flexible antenna, 2 ea. (located behind the lid foam)



Top Section



Lower Section

Total Kit Size: Approximately 20.5" Long, 15.5" Wide, and 8" Deep

LOCATION CRITERIA

When choosing a location to set up the handheld radios and the charger, select an out-of-the-way interior location within a few feet of the wall outlet, preferably where volunteers have meals.

SETUP

1. Release the four latches on the lid of the orange case and open the lid.
2. Remove the charger and power cable from the upper section of the orange case and connect to a 110v wall outlet. A light at each charging position will show red.
3. Remove one radio and one flexible antenna from the upper section of the orange case. Screw antenna into the antenna connector on the radio. Place the radio in one of the open charger positions.
4. Remove the top section of foam and plexiglass divider and set aside.
5. Remove five additional radios and flexible antennas, assemble, and place in open charging positions. **(Fig. 32)** Radio is fully charged when the red light for the position turns green.
6. Remove the first radio which reaches full charge and replace it with the seventh radio.
7. Install the hand mic by opening the cover on the right side of the radio, revealing 2 holes. Insert the pins on the mic connector in the two holes on the radio. **(Fig. 33 and 34)**



Fig. 31



Fig. 32



Fig. 33

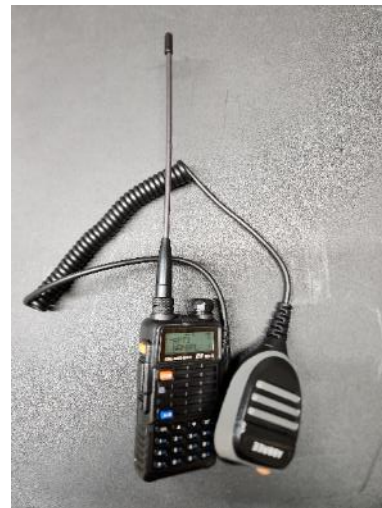


Fig. 34

DAILY FUNCTIONS

- Sign out radios first thing in the morning noting assignments on “IMT Workbook/Form 214”.
- Troubleshoot any radio reception problems if they occur. Likely causes of poor reception include, users not waiting a second after depressing the push to talk button before speaking, a loose antenna, wrong channel, dead battery, or too many obstacles in the way of the signal (building, refrigerated trailers, etc.)
- Retrieve the radios in the evening, marking their return on “IMT Workbook/Form 214”.
- Inspect each radio as it is returned and place it on the charger.
- Weather – While hand mics are waterproof, the radios are not. If there is rain in the forecast remind users to protect the radio by covering it under a rain jacket, under a tent, in a trailer, or in a building. In severe weather, notify IMT and follow the severe weather [protocol](#). (Page 32)
- If KY is running the IMT transfer the information from Form 214 to the Communications tab in the IMT Workbook. If another state is running the IMT, submit Form 214 to the KYDR State Director, Ministry Assistant, and the Communications State Coordinator.

RECOVERY AND STORAGE

1. When handheld radios are no longer needed, collect all radios, hand mics, and antennas and check them in per the daily activity routine.
2. Remove all hand mics and antennas, placing them back in the designated locations in the orange case.
3. Place six radios back in the lower section of the orange case, ensuring each is turned off. Install plexiglass divider and top foam section back in the orange case.
4. Place one handheld radio, 6-position charger, and power cord back in their designated location of the top layer of the orange case.
5. Secure the lid of the orange case with four latches. The handheld radio kit is now ready for travel.

UHF BUSINESS BAND TACTICAL REPEATER

GENERAL

A tactical repeater is a specialized radio system which uses two connected radios working together to simultaneously receive and rebroadcast signals from remote users. Signals are received and rebroadcasted from an efficient elevated antenna, significantly extending the coverage area.

OBJECTIVE

The tactical repeater is used to broadcast the two-way radio's transmissions over a larger area or through obstacles.

EQUIPMENT/TOOLS NEEDED (BLACK KIT)

- Black rolling toolbox with:
 - UHF Business Band Tactical Repeater permanently installed
 - Tray with Antenna Ground Radials, 3 ea.
- 25-foot Push-Up Antenna Mast
- VHF/UHF Antenna
- Antenna Mount
- Black Crate containing:
 - Antenna Feedline
 - 100' Extension Cord
 - 2 lb. Hammer
- Black Tool Bag containing:
 - Impact Driver (with extra battery pack and charger), Socket Adapter, and Socket
 - Multi-Screwdriver
 - Tent Stakes, 3 ea.
 - Earth Anchors, 3 ea.
 - Mast Guy Lines, 3 ea.
 - Mast Base
 - Electrical Tape
 - Self-vulcanizing rubber tape



Total Kit Size:

- Repeater Box & Crate: 26.5" Tall, 22" Wide, 19" Deep. **Note:** The height of the Repeater Box generally will not fit under a flat Tonneau cover on the bed of a pick up truck and therefore may need to be stored in the cab of the truck, reducing the number of passengers you could transport. Please do not lay the Repeater Box on its side for transport.
- Antenna: The repeater antenna is in two parts. The longest is 74" long with 2.5" diameter and the shorter is 57" with 3.5" diameter with the attached brackets.

LOCATION CRITERIA

When choosing a location to set up the tactical repeater, keep the following requirements in mind:

- Exterior area 17' or more across, with no overhead lines (power, telephone, etc.)
- Higher elevation provides the best signal range.
- Unpaved ground suitable for earth anchors.
- Within 100' of a standard 110v power outlet or generator.

SETUP

1. Collect all equipment and tools described and pictured above. The repeater permanently installed in the black rolling toolbox, the antenna and mast will be loose, antenna ground radials will be in the top tray of the rolling toolbox, and all other equipment and materials will be in a black crate and cloth tool bag sitting on top of the rolling toolbox.
2. Select an appropriate location for the mast/antenna in a relatively open area. The area should be unpaved and within 100' of a 110v power outlet or generator.
3. Once a suitable place is located, install the round black plastic mast base directly on the ground, securing it in place with 3 tent stakes. **(Fig. 35)**
4. Uncoil the three ratcheting guy lines and extend to their longest length. **(Fig. 36)** Mark the location for each earth anchor approximately 8' from the mast base, evenly spaced approximately 120° apart. **(Fig. 37)** Each guy line is 16' and can therefore be used to assist in identifying the proper distance for the anchor from the base.



Fig. 35



Fig. 36

5. Collect the 3 earth anchors and unscrew the eyelet from the end to reveal a 10mm hex head fitting. **(Fig. 38)** Use the impact drill, socket adapter, and socket to drive one earth anchor at each of the 3 positions identified in **step 4. (Fig. 39)**

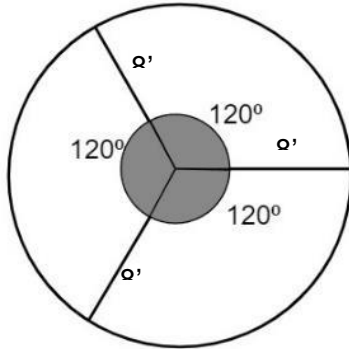


Fig. 37



Fig. 38



Fig. 39

6. Screw the eyelet back on each earth anchor.
7. Twist each section of the antenna mast to unlock it, extend the section, and twist in the opposite direction to lock it into place. Slide the three guy line attachment points to the lowest point of their section. **(Fig. 43)**
8. Attach the three guy lines to the threaded chain links attached to the mast using the end of the guy line that **does not** have the ratchet mechanism. Screw the link closed once the loop has been attached to the link. **(Fig. 43)**

Note: A second person is required for steps 9 through 17.

9. While a second person holds the antenna mast, attach the antenna to the top mast section using the integrated mount and knurled thumb nuts. **(Fig. 40)**
10. Install the 3 7" antenna ground radials in the threaded holes on the base of the antenna and finger tighten. **(Fig. 41)**
11. Roll out the antenna feed cable and attach the booted end to the pigtail extending from the antenna mount. **(Fig. 42)** Secure the antenna feed cable to the mast with loops of electrical tape at multiple locations along the length of the mast.



Fig. 40



Fig. 41

12. The antenna system is now complete, and the antenna end must be supported to keep the radials from hitting the ground and becoming bent.



Fig. 42



Fig. 43

13. Position one person at each end of the mast. Position the bottom end adjacent to the antenna base. One person holds the bottom of the mast against the ground with their foot while the second person starts moving towards the base of the mast, walking the mast up, hand over hand, into the air.
14. Once the mast is vertical, place the mast in the base and continue to hold the mast in the vertical position. **(Fig. 44)**
15. The second person will attach the guy line with the ratchet mechanism to the eyelet. **(Fig. 45)** Tension the guy line by pulling the end of the guy line through the mechanism. Repeat for the remaining two guy lines and continue to make tension adjustments until the mast is secured and vertical.



Fig. 44



Fig. 45

16. Remove the top tray from the black rolling toolbox and place it with the black crate. Place the black rolling toolbox containing the tactical repeater radios at the base of the antenna mast.
17. Connect the antenna and power cable to the appropriate connectors on the outside of the toolbox. **(Fig. 46)** Connect the power cable to the 100' extension cord and run the 100' extension cord to a nearby 110v AC outlet or generator.

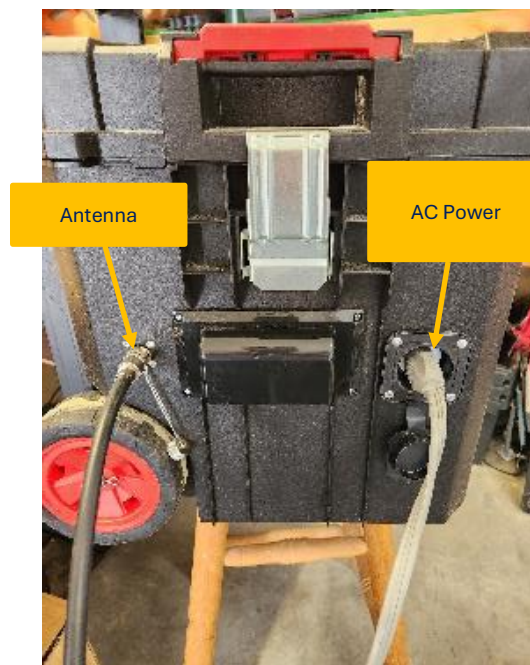


Fig. 46

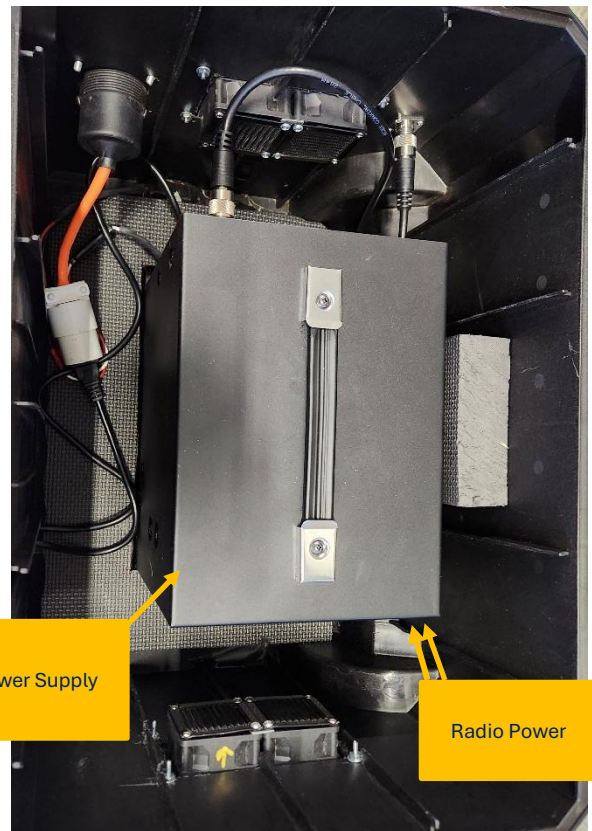
18. Toggle the power supply on/off switch on the front of the repeater. **(Fig. 47 & 48)**

Note: The Repeater is permanently installed in the black rolling toolbox. The power supply switch and radio power buttons on the front of the repeater must be activated from within the rolling toolbox. **Fig. 48.**




Front view of Repeater Radios

Fig. 47



Top View of Repeater inside black rolling toolbox

Fig. 48

19. Power on a nearby handheld radio and set channel to RPT1.
20. Power on both repeater radios by depressing the power button  on top of the radio, starting with the top (transmitter), followed by the bottom (receiver). A morse code ID will be heard on the handheld radio as the repeater controller boots up. **(Fig. 47)** The repeater will continue to ID in morse code at 15-minute intervals during periods of activity and hourly intervals during periods of inactivity. Select the appropriate repeater pair for the mission as described in the “**Repeater Operation Basics**” section of this manual. Ensure all handheld radios are set to the same channel, RPT1 or RPT2.
21. Once proper operation is confirmed, install the lid on the black rolling toolbox and secure it with two latches.

DAILY FUNCTIONS

- Set up the repeater every morning before teams begin working.
- Bring the black rolling toolbox with the repeater inside at night after all teams are in for the evening. The mast may remain in position.
- Weather – The repeater case is watertight so it can remain outside in the rain. In the case of severe weather, notify the IMT and follow severe weather [protocol](#). (Page 32)

RECOVERY AND STORAGE

1. When the tactical repeater is no longer needed, remove the lid and turn the power off the top and bottom radios. **(Fig. 47 & 48)**

2. Turn power off at the power supply toggle switch. **(Fig. 47 & 48)**
 3. Disconnect the antenna and power cable from the exterior ports on the black rolling toolbox. **(Fig. 46)**
- Note: A second person is required for steps 4 through 8. Do not let the antenna end of the mast hit the ground to ensure the antenna ground radials are not damaged.**
4. While one person holds the antenna mast in the vertical position, push the button on the ratcheting mechanism on the guy line tensioners and pull the guy line through the mechanism to its longest length. Repeat the process on each of the three anchors and guy lines. **(Fig. 45)**
 5. Remove the mast from the mast base. **(Fig. 44)** One person will walk the mast down, hand over hand, while the second person holds the bottom end of the mast against the ground with their foot.
 6. Remove the antenna ground radials from the base of the antenna and place them between the foam inserts in the tray of the rolling black toolbox. **(Fig. 41 & 49)**



Fig. 49

7. Disconnect the antenna feed cable from the feed line pigtail at the bottom of the antenna mount. **(Fig. 42)**
8. Remove the antenna from the mast by loosening the four knurled thumb nuts. **(Fig. 40)**
9. Remove the tent stakes holding the mast base in position. Return the mast base and tent stakes to the black cloth tool bag.
10. Roll the antenna feed cable up small enough to go back into the black crate. Secure the cable roll with a yellow Velcro cable tie and return it to the black crate.
11. Disconnect the guy lines from the antenna mast and return them to the black cloth tool bag. **(Fig. 36 and 45)**
12. Twist the antenna mast at each section and collapse it to the shortest position.
13. Remove the eyelets from each of the earth anchors.
14. Use the impact drill, socket adapter, and socket to remove the three earth anchors. **(Fig. 39)** Reattach the eyelets to the anchors and return the anchors, impact drill, and socket adapter to the black cloth tool bag. Return tool bag to the toolbox.
15. Coil the 100' extension cord small enough to go back into the black crate. Secure the coil with a yellow Velcro cable tie and return it to the crate.
16. Inventory all equipment and tools prior to leaving the area.

ON-SITE DUTIES

Once all the equipment needed for the response is set up and operational, the Communicator will transition into routine on-site duties. These duties include but are not limited to the following:

- Review all equipment for effective and safe operation. Add red flags, marker cones, and cable covers where necessary to ensure a safe installation.
- Check equipment daily for proper operation. Check all masts and tripods for secure and proper installation.
- Perform a network speed test on KYDR_(Equipment number) WI-FI network to confirm proper operation. This test can be performed with the Starlink App or Speedtest by Ookla, available at mobile phone app stores. Network speed can also be checked using a computer at www.speedtest.net.
- Power down the tactical repeater disconnect the power and antenna cables from the exterior ports on the black rolling toolbox, and secure repeater and cables inside each night or temporarily during periods of severe weather.
- Perform logistical operational support communications duties for the on-site White Hat and Blue Hats.
- In coordination with the IMT Planning Chief, maintain awareness of local weather conditions. In the event of severe weather protect the communications equipment by following the severe weather protocol.
- Using whatever means available, provide communication services even to the point of being a courier.
- Support technology related requests for DR Leadership, volunteers, and disaster survivors, within the expertise of the Communicator.
- Perform other communication activities as time permits, including skill development activities and training.
- Issue and maintain accountability of portable and hand-held radios and other DR communications equipment.
 - Record each volunteer's name, serial number of the radio, and whether a hand mic is issued on a single line on "IMT Workbook/Form 214" in the RESOURCES ASSIGNED section. Record the date and time in the ISSUED column.
 - Radios are to be turned in at the end of each workday for charging, inspection, and accountability. Record the date and time in the RETURNED column in the "IMT Workbook/Form 214" for each radio as it is turned in.
 - Inspect each radio for damage and proper operation. Additional antennas and belt clips are available in the orange case if necessary.
 - Turn off the radio and place it in an open position on the 6-position charger, rotating the seventh radio on the charger when possible.
 - Make notes on "IMT Workbook/Form 214" ACIVITY LOG section if any information needs to be communicated to the Communications State Coordinator about the equipment. Be specific about the issue and which system needs attention. If the issue

is with a handheld or portable radio, record the serial number of the specific radio and label the radio using tags available in the black toolbox.

- Communications Activity Reporting
 - If KYDR is NOT running IMT for the site - Complete Form 214 – Communications Activity Log (Appendix 2) daily and send to KYDR State Director, Ministry Assistant and the Communications State Coordinator at the end of each day.
 - If KYDR is running the IMT for the site and utilizing the Office 365 Excel Workbook - incorporate the data from Form 214 into the Communications tab in the Excel Workbook at the end of each day.
- Process and send health and welfare messages for those affected by the disaster and fellow volunteers if other communications resources are unavailable.
- Note: Depending upon the circumstances of the deployment, two laptops may be included in the communications equipment sent to the site. These laptops can be used to provide volunteers or individuals impacted by the disaster with a way to send messages via email.
- Maintain all forms described above and return them to the Communications State Coordinator for filing at the end of the deployment.

SEVERE WEATHER PROTOCOL

The IMT Planning Chief is responsible for monitoring the weather and communicating severe weather protocols to all volunteers. The Communicator assists in monitoring weather and is responsible for securing the communications equipment in the event of severe weather that could damage the equipment. Severe weather may include:

- Thunderstorm Warning
- Tornado Watch or Warning
- Extreme wind that might topple an antenna
- Lightning in the immediate area, even if there isn't a thunderstorm warning

In the event of severe weather that could damage the equipment, the Communicator is responsible for the following:

1. Notifying the IMT and assisting them in communicating any message they want sent out to the volunteers.
2. Once all teams have been notified and confirmed they received the message, power down the repeater and bring it inside.
3. Transfer all IMT computers, Zoom Phones, and printer to another internet source, if one is available, before taking down the Starlink antenna. If no other internet source is available, inform IMT that internet access will be interrupted until weather conditions improve.
4. Lower the antennas on all exterior equipment.
5. If the threat includes significant wind that might topple an antenna, power the equipment down, lower the masts, and bring the antennas inside.

OPERATIONS EXPERTISE

BUSINESS BAND RADIO OPERATIONS

Regulatory Information

The Kentucky Baptist Convention Disaster Relief operates business band 2-way radios under license from the Federal Communications Commission (FCC) using call sign WQTJ714. This license covers multiple frequencies in both the commercial 2-meter and 70-centimeter bands. See frequency plan below for specific frequencies.

Kentucky Baptist Convention is also authorized to operate under the FCC license issued to the North American Mission Board using call sign WQAL495.

For interoperability purposes with other state communications teams operating under WQAL495, each radio is programmed with the common frequency 151.625 MHz and is identified with channel ID NAMB. An additional channel with channel ID NAMBPL is also on 151.625 MHz but adds 100 Hz Private Line Tone.

The FCC issued call sign is not required to be used, however, tactical callsigns can be useful for clarity. Examples might include Kentucky DR Command, Inventory, Shower Unit, or something similar which identifies the function of the unit. Names of individual radio users may also be used. No periodic ID is required.

Frequency Plan

The frequency plan loaded in all KYDR hand-held radios is provided below for use by Communicators to program their personal equipment if desired. Tone mode TSQL indicates the associated tone is applied to both the transmit and receive function of the radio. Mode Narrow FM is indicative of 12.5 kHz bandwidth and channel spacing. Communicators may not use the frequencies listed below for any purpose other than KYDR operations, while on or traveling to a response site.

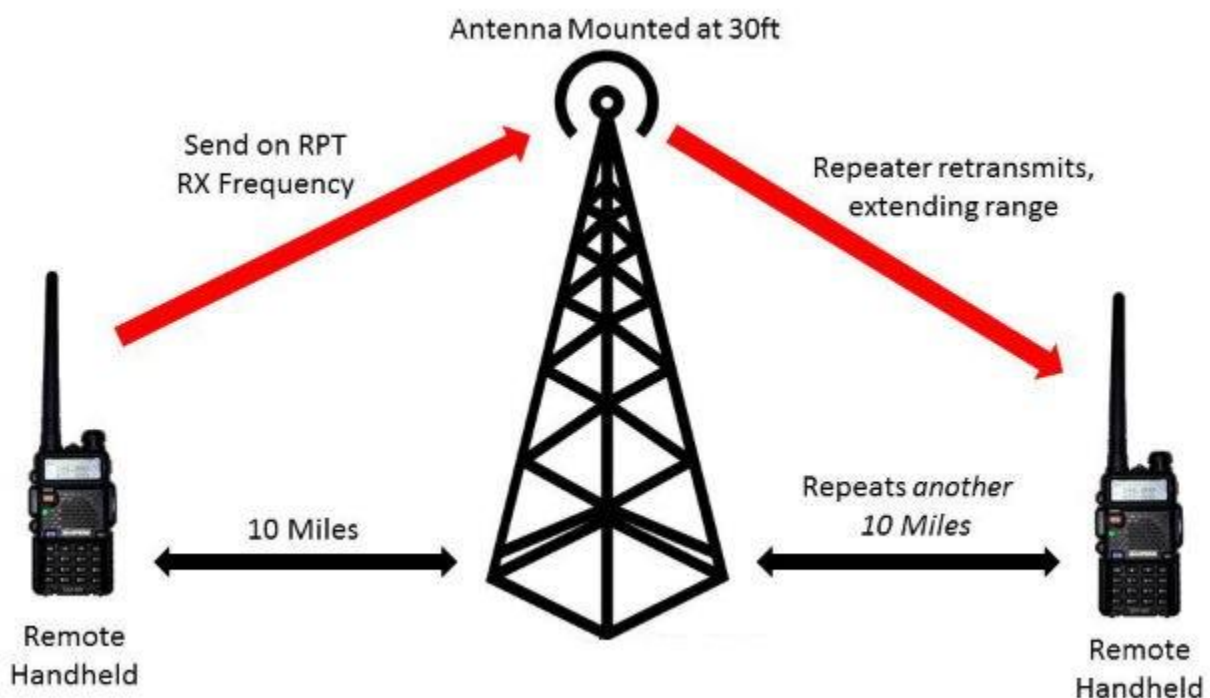
Channel Name	Receive Frequency	Transmit Offset	Tone Mode	PL Tone	Mode
NAMBPL	151.6250 MHz	None	TSQL	100.0 Hz	Narrow FM
NAMB	151.6250 MHz	None	None	None	Narrow FM
KYDR22	151.5050 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR23	151.5125 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR24	151.7000 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR25	151.7600 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR26	154.5275 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR27	158.4000 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR28	158.4075 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR41	451.8000 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR42	451.8125 MHz	None	TSQL	107.2 Hz	Narrow FM

Channel Name	Receive Frequency	Transmit Offset	Tone Mode	PL Tone	Mode
KYDR43	456.8000 MHz	None	TSQL	107.2 Hz	Narrow FM
KYDR44	456.8125 MHz	None	TSQL	107.2 Hz	Narrow FM
RPT1	451.8000 MHz	+ 5 MHz	TSQL	107.2 Hz	Narrow FM
RPT2	451.8125 MHz	+5 MHz	TSQL	107.2 Hz	Narrow FM

Repeater Operation Basics

A tactical repeater is a specialized radio system which uses two connected radios working together to simultaneously receive and rebroadcast signals from remote users. Signals are received and rebroadcasted from an efficient elevated antenna, significantly extending the coverage area. Typically, the antenna for a repeater should be placed as high as reasonably possible to have a large footprint of coverage.

In a tactical situation, an extended mast, highest level of a multi-story building (secure guys with sandbags instead of earth anchors), or location on the top of a hill in the served area (such as the yard of a church member) are all feasible options. Ultra-High (UHF) Frequency radio waves are considered to be “line of sight” rather than propagating through the ionosphere. UHF can typically tolerate more physical obstructions than Very High Frequency (VHF) radio waves. As with any radio system, the higher the antenna, the better the coverage. In a disaster relief situation, this system should provide reliable communications between volunteers and remote teams up to 10 miles or more apart, depending on terrain and antenna location. Reference the below infographic for a graphical representation of a repeater’s operation.



The KYDR tactical repeater is programmed with four frequencies, two for transmit and two for receive. These two pairs of frequencies, 5 MHz offset from each other, are used simultaneously, with one receiving signals from a remote transmitter and retransmitting to other users in the coverage area. The proper configuration of the tactical repeaters is shown below in Fig. 50 and 51 and includes the channel ID for the handheld radio for each repeater pair configuration. Two pairs are available if other users in the area are using one of the pairs, causing interference. The primary pair is 451.800/456.800 MHz (RPT1), with 451.8125/456.8125 MHz (RPT2) as an alternative.



Fig. 50 – Channel RPT1

**451.8000 – RPT1TX
456.8000 – RPT1RX**



Fig. 51 – Channel RPT2

**451.8125 – RPT2TX
456.8125 – RPT2RX**

ITU PHONETIC ALPHABET AND FIGURE CODE

When it is necessary to spell out call signs, service abbreviations and words, the following letter spelling table shall be used. Symbols to be emphasized are underlined.

Letter	Code Word	Spoken As	Letter	Code Word	Spoke As
A	Alfa	<u>AL</u> FAH	N	November	NO <u>VEM</u> BER
B	Bravo	<u>BRAH</u> VOH	O	Oscar	<u>OSS</u> CAH
C	Charlie	<u>CHAR</u> LEE	P	Pape	PAH <u>PAH</u>
D	Delta	<u>DELL</u> TAH	Q	Quebec	KEH <u>BECK</u>
E	Echo	<u>ECK</u> OH	R	Romeo	<u>ROW</u> ME OH
F	Foxtrot	<u>FOKS</u> TROT	S	Sierra	SEE <u>AIR</u> RAH
G	Golf	GOLF	T	Tango	<u>TANG</u> GO
H	Hotel	HOH <u>TELL</u>	U	Uniform	<u>YOU</u> NEE FORM
I	India	<u>IN</u> DEE AH	V	Victor	<u>VIK</u> TAH
J	Juliett	<u>JEW</u> LEE <u>ETT</u>	W	Whiskey	<u>WISS</u> KEY
K	Kilo	<u>KEY</u> LOH	X	X-ray	<u>ECKS</u> RAY
L	Lima	<u>LEE</u> MAH	Y	Yankee	<u>YANG</u> KEY
M	Mike	MIKE	Z	Zulu	<u>ZOO</u> LOO

When it is necessary to spell out figures or marks, the following table shall be used:

Figure	Spoken As
0	ZAY-ROH
1	WUN
2	TOO
3	TREE
4	<u>FOW</u> -ER
5	FIFE
6	SIX
7	SEV-VEN
8	AIT
9	<u>NIN</u> -ER
Decimal	<u>DAY</u> -SE-MAL

KY DISASTER RELIEF COMMUNICATOR CHECKLIST

PRE-DEPARTURE CHECKLIST

- Ensure you have read and understand the content in the Basic Disaster Communications Training & Operations Manual and have it downloaded to your phone or printed to take with you.
- Download cell phone apps for Starlink, weBoost, and Easy QTH Locator.
- Identify your preferred source of weather information. (cell phone app or NOAA radio station on handheld) www.weather.gov/nwr/station_listing
- Confirm you have the contact information for KYDR Leadership and Communications State Coordinator on your phone.
- Pack any documentation you may need such as equipment manuals, training manual, road maps, etc.)
- Complete the KYDR Release Form and Waiver of Liability and Release form on VicNet.
- Personal vehicle check (tires, oil, etc.)
- If you are the first Communicator at the location, coordinate with the Communications State Coordinator regarding picking up and transporting the communications equipment needed for the call-out.
- If you are transporting equipment or the driver of a carpool, be sure to save receipts for reimbursable expenses.

TRAVEL AND ARRIVAL AT SITE

- Report your departure, any issues during travel, and your arrival at the disaster operations site to the KYDR office and the Communications State Coordinator.
- Top off fuel 100 miles before arriving at call-out location.
- Report to the IMT upon arrival.
- If you are the first Communicator at the location, set up and test all equipment, then assist the KYDR IMT team in connecting laptops, printers, and phones to the WI-FI network.
- If you are relieving a Communicator who is going home, meet with the current Communicator who will brief you on the site and introduce you to leadership and volunteers who utilize the handheld radios.

ON-SITE DAILY – MORNING

- Sign check-in sheet.
- Check the weather forecast.
- Move Tactical Repeater outside and turn it on.
- Start a new Communications Activity Log (214). (If KYDR is running IMT, use the Communications Tab in the IMT Excel Workbook).
- Test, assign, and distribute handheld radios at breakfast (if the weather forecast indicates rain, remind everyone to protect their radios under a jacket, tent, etc.). Noting radio assignments in the “IMT Workbook/Form 214”
- Check all equipment, cords, and antennas.
- Check in with all leadership to identify needs.
- Help where needed.

ON-SITE DAILY – EVENING

- At dinner, collect handheld radios and put them on the charger. Switch out the 7th radio before retiring for the night.
- Complete Communications Activity Log
 - If KYDR is running IMT, use the Communications tab in the IMT Workbook to track information.
 - If KYDR is not running IMT, send Form 214 to the KYDR State Director, Ministry Assistant, and the Communications State Coordinator by 7:00 pm.
- Once all teams are in, turn off the Tactical Repeater and bring it and the cords inside for the night.

DEPARTURE

- If you are departing and the site remains active, brief the incoming Communicator who will be taking over communications on the site.
- If the site is shutting down, coordinate with leadership before breaking down and packing the equipment to ensure they have communications capabilities they need until they are ready to leave.
- If you bring the equipment home with you, coordinate with the Communications State Coordinator regarding delivery of the equipment.

NOAA WEATHER RADIO INFORMATION

Frequency	Modulation
162.400 MHz	Wide FM
162.425 MHz	Wide FM
162.450 MHz	Wide FM
162.475 MHz	Wide FM
162.500 MHz	Wide FM
162.525 MHz	Wide FM
162.550 MHz	Wide FM

A COMPLETE DIRECTORY OF FREQUENCIES BY STATE CAN BE FOUND AT [HTTPS://WWW.WEATHER.GOV/NWR/STATION LISTING](https://www.weather.gov/nwr/station_listing).

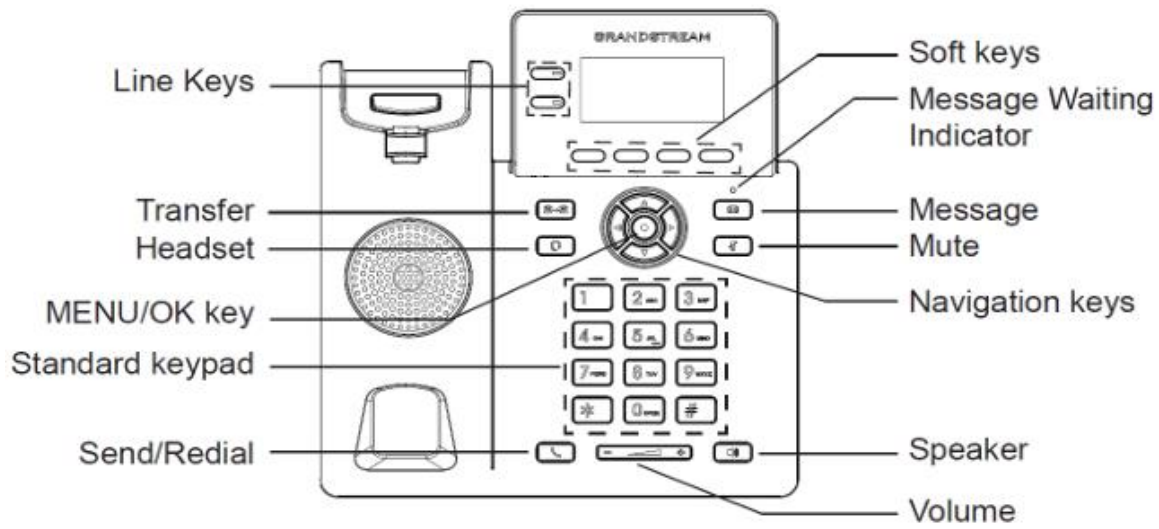
VOIP PHONE SYSTEM BASICS

IDLE SCREEN INFORMATION



Date and Time	Displays the current date and time and is synchronized with internet time server.
Network Icon	Shows the status of the network. It will indicate whether the network is up or starting. Additional messages will also be displayed if there is no network connection.
Status Icon	Shows the status of the phone. Will change based on features being used at the time. Receiver icon displayed when phone is "off hook."
Line status indicator	Displays the name of the account in use.
Softkeys in idle screen	The softkeys are context sensitive and will change depending on the status of the phone. Default functions assigned to softkeys are: <ul style="list-style-type: none"> • Menu – Brings up the phone's main menu. • History – Shows up the phone's call history. • Contacts – Access local phonebook and groups if any have been created. • DND – Enable/Disable Do No Disturb (DND)

USING THE KEYPAD



	Hold. Press to put call on hold or resume the call.
	Mute. <ul style="list-style-type: none"> • During a call, Press Mute button to mute or unmute the call. • When the phone is on idle, Press to Enable/Disable DND
	Headset. Press to switch between headset and handset mode in an active call.
	Message. Press to view voicemail messages.
	Transfer. Press to transfer an active call to another number.
	Speaker. Press to switch between speaker and handset mode in an active call.
	Send/Redial
	Volume. Adjust volume.
	Navigation keys. <ul style="list-style-type: none"> • In idle screen, press up key to display the IP. • When entered the menu, Press the UP/DOWN keys to scroll through menu options. • Use RIGHT/LEFT keys to switch between Tabs or to toggle between enabling and disabling some options. for example: switch between “All” and “Missed” Calls Tabs in call history
	MENU button. <ul style="list-style-type: none"> • In idle screen, press to enter the main menu. • Confirm the current selection or the inputted info.

TO CHECK VOICEMAIL:

1. Light above Message button will be flashing green if unheard message is waiting.
2. Tap Message button.
3. Enter pin number "1478" and #.
4. Press 1 to listen to messages.
5. Follow the same procedure to listen to saved/old messages.

TO UPDATE VOICEMAIL GREETING:

1. Send proposed text of the voicemail greeting to Amanda McGary (amanda.mcgary@kybaptist.org) and Jonathan Kitchen (ki4mtb@gmail.com) via email. They will update the voicemail greeting remotely and respond when completed.

COMPLETING CALLS:

- **On hook dialing:** Enter the number when the phone is on hook and then send out.
 1. When the phone is in idle, enter the number to be dialed out;
 2. Take handset off hook, or Press Speaker button
 3. The call will be dialed out.
- **Off hook and dial:** Off hook the phone, enter the number, and send out.
 1. Take handset off hook press Speaker button
 2. You shall hear dial tone after off hook.
 3. Enter the number.
 4. Press SEND or # keys to dial out.

TO PLACE A CALL ON HOLD:

1. If the phone is being used as a speaker phone, the HOLD icon is displayed on the screen. Press the HOLD soft key, looks like a pause icon, during an ongoing call. The active LINE key will blink in green.
2. If the handset is being used, press the far-right soft button to go to the second page of soft keys. The HOLD button is visible on the 2nd page. Follow the same procedure as above. The handset can be returned to the cradle without disconnecting the call.
3. Resume the call by pressing the HOLD soft key again.