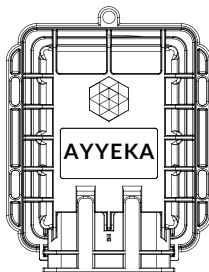


WAVELET 4R

QUICK START

GUIDE



CALL GEOTECH TODAY

(800) 833-7958

Geotech Environmental Equipment, Inc.
2650 East 40th Avenue • Denver, Colorado 80205
(303) 320-4764 • FAX (303) 322-7242
email: sales@geotechenv.com • website: www.geotechenv.com

Feb 17 2023

P/N 0100711 Rev 2



It is important that you read the Quick Start Guide in a controlled environment prior to installation.

Set up, activate, and successfully test the entire system (Wavelet 4R, sensors, and antenna connection) indoors, in a controlled environment, before going to the field for installation.

IMPORTANT



Contact **AYYEKA SUPPORT** for technical support:
support@ayyeka.com
+1 (310) 876-8040 (US)



ALWAYS COORDINATE Basic Wavelet Kit installation with the local authority before starting installation works, which should be completed by trained and authorized personnel.



The **WARRANTY** offered by Ayyeka covers only Ayyeka supplied hardware and software for the duration of the warranty period as per the warranty terms and conditions.



AYYEKA IS NOT LIABLE for damage or injury as a result of handling, installation, or maintenance of its supplied systems.



DO NOT THROW AWAY the Wavelet Kit because it contains a lithium battery. Dispose of the battery properly.



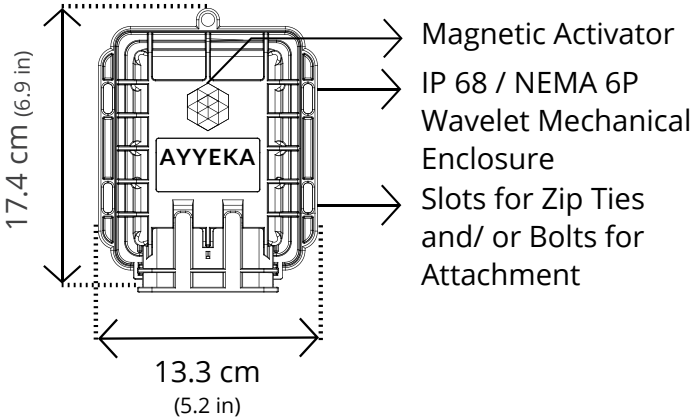
CELLULAR NETWORK SIGNAL is required for proper communication.



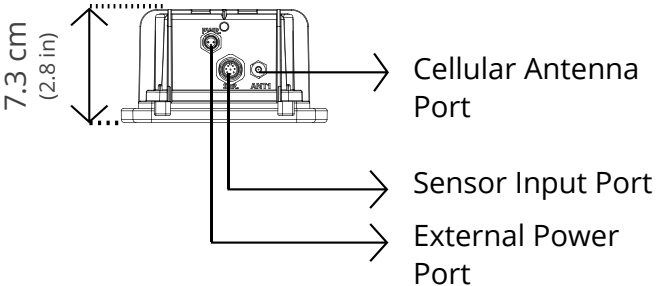
OPERATING TEMPERATURE RANGE of -40°C to +80°C (-40°F to +176°F).

SCHEMATIC

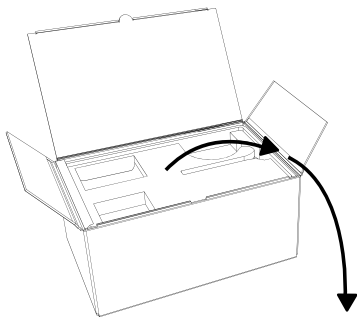
FRONT



BOTTOM

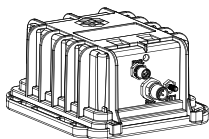


GETTING STARTED

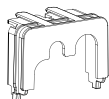


WAVELET 4R KIT

- 1** Wavelet Device & Protector

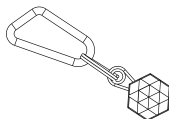


1x



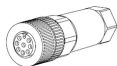
1x

- 2** Wavelet Activator



1x

- 3** M12 Field Attachable
Sensor Connector
(optional; ordered separately)



1x

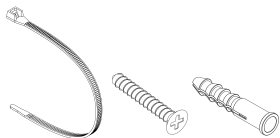
- 4** M8 Female Field Attachable
Power Connector
(optional; ordered separately)



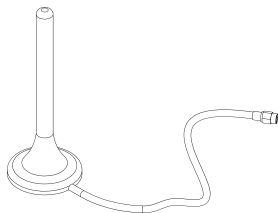
1x

5

Zip Ties, Screws, and
Anchors
(optional; ordered separately)

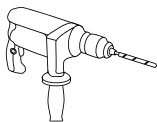
**2x****4x****4x****6**

Cellular Antenna
(REQUIRED; ordered separately)

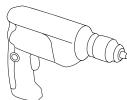


Other tools and/or materials may be required (not included):

Rotary Hammer

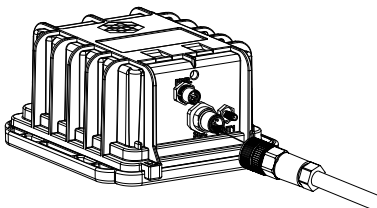


Electric Screw Driver
with Phillips PH1 bit



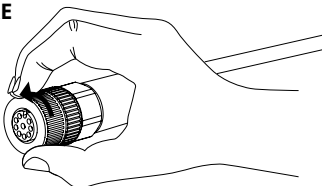
SENSOR CONNECTION

- 1 Connect the sensor cable assembly with the field attachable connector to the mating panel connector on the Wavelet. Turn the adjustable stainless steel end piece to secure the field attachable connector to the Wavelet.

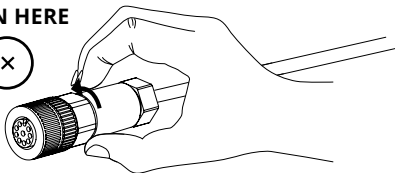


CAUTION: Do not turn the black plastic hood of the connector. Turning the black hood may cause the wires to disconnect, break, and/or damage the connector pins.

TURN HERE

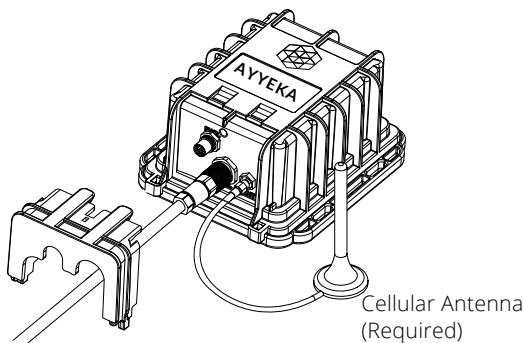


**DO NOT
TURN HERE**



EXTERNAL ANTENNA CONNECTION

- 2 Connect the cellular antenna to the antenna port (ANT 1).

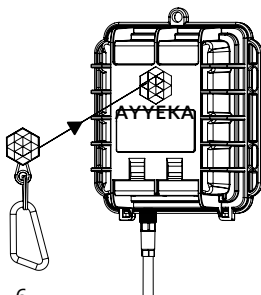


IMPORTANT NOTE:

The antenna does not appear in the remaining depictions in this guide, but should remain connected once properly secured to the appropriate panel connectors.

- 3 Place the magnetic Wavelet Activator on the embossed Wavelet logo on the front of the Wavelet enclosure and hold for 3 seconds. You can verify the Wavelet has been activated using the LED on the back panel (see page 11).

The Wavelet will initiate a 15-minute test mode of sampling and send a few transmissions of data. The device will then return to its default configuration.



WAVELET ACTIVATION

- 4 Verify the installation with your mobile phone by using AyyekaGo mobile application.

If you haven't already done so, download the AyyekaGo mobile app for iOS or for Android. Search the App Store or Google Play for "AyyekaGo" or use the QR codes below

There are two ways to pair your phone with your Wavelet:

1. Select "Get Key Via Web". This will direct you to enter your log-in credentials for the StreamView user interface.
2. Select "Enter Key Manually". The Mobile Pair Key is found in the StreamView user interface in the Devices tab.



Access the Ayyeka user interface at home.ayyeka.com using your log-in credentials. Expect data to appear between 5 - 10 minutes after the test mode is initiated.



WAVELET ACTIVATION - continued

6

The screen display should resemble the following:



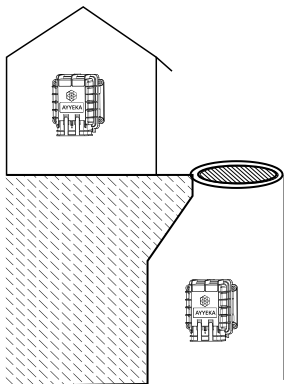
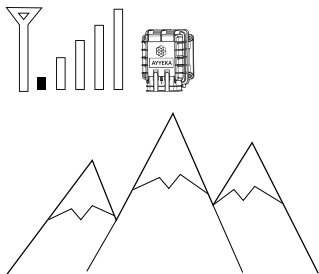
If the Wavelet is transmitting properly, you have completed the installation successfully and can begin collecting and viewing your data!



If data does not transmit properly, change the Wavelet installation location and activate again. If the problem persists, contact Ayyeka for assistance:

support@ayyeka.com
+1 (310) 876-8040 (US)
+31 40 209-1001 (EMEA)

SPECIAL INSTALLATION LOCATIONS



WEAK SIGNAL LOCATIONS:

If the Wavelet is installed in an area with weak cellular signal, activate the Wavelet and place in the intended installation location with closed doors/access hatch.

Log in to home.ayeka.com to ensure that cellular signal has been recently updated in the last few minutes.

UNDERGROUND/INDOOR WAVELET INSTALLATIONS:

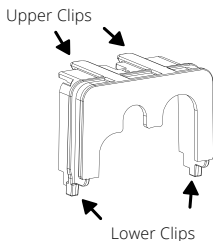
Make sure the cellular antenna is properly installed to provide adequate signal quality.

Wait for at least 15 minutes, then log in to the user interface at home.ayeka.com to make sure stable communication is confirmed.

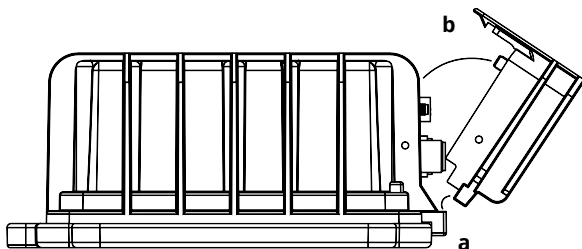
DEVICE PROTECTOR

7

After the Wavelet completes the transmission process, place the Wavelet protector above the connector ports and secure the Wavelet protector into the Wavelet enclosure.



- a. Insert the two lower clips into the two lower holes of the Wavelet enclosure.
- b. Snap the upper clips into place in the two grooves above the panel connector.

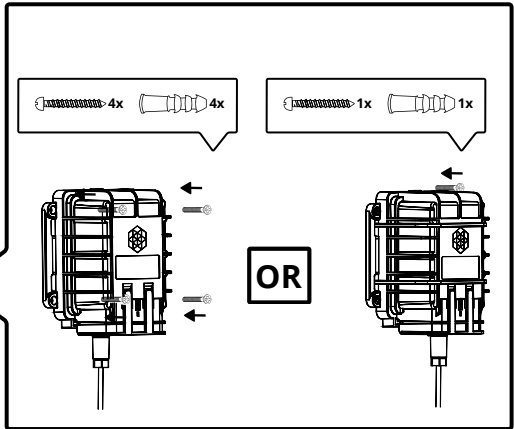


CAUTION: The protector is provided to shield the connector from tampering or overexposure that could result in disconnected wiring.

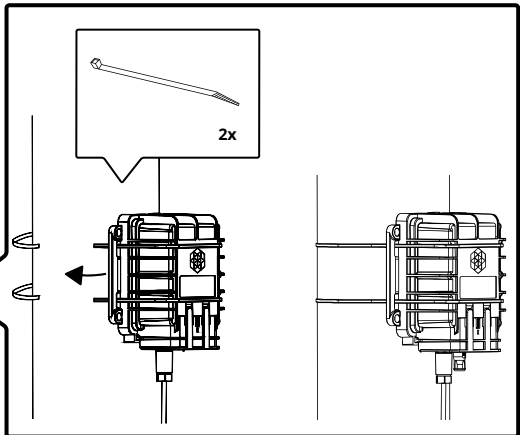
8

Secure the Wavelet on a wall, pipe, or other secure mounting location using zip ties or screws.

Wall Mounted



Pipe Mounted



ANTENNA MOUNTING

DOs

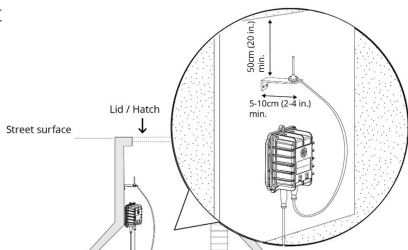
- Ensure the antenna connector is secured tightly to the panel connector.
- Mount the antenna under the open sky or at least 50cm (20 in.) beneath any object.
- Mount antenna at least 5 to 10cm (2 to 4in.) away from wall.
- Mount antenna at least 5cm (2in.) away from the device.
- Finalize the antenna setup to the exact physical conditions. For example, close the lid, close the door, etc.
- Make sure you have a signal and a successful data transmission by using the magnetic key Activator to initiate more rapid transmissions.

DON'Ts

- Do not attach the antenna to the device.
- Do not wrap cables, zip ties, or other items around the antenna.

IMPORTANT NOTE: There are a few minutes of delay between a successful transmission and the use of either of these methods for initiating data transmission. Repeating the use of either method will not expedite data transmission.

WARNING: If installing in a highly corrosive environment such as a sewer, apply technical grease to the antenna and sensor field attachable connectors after securing them to the panel connectors. Ayyeka recommends using Dow Corning Molykote 55 O-Ring Grease, although similar products can be effective.



ANTENNA TROUBLESHOOTING

If the device does not transmit, move the antenna to a different position.

If the device still does not transmit after multiple attempts at repositioning the antenna, consider using an alternative solution, such as an in-road or a high-gain antenna.

Note: Ayyeka supplies antenna wall mounting hardware and various antennas, including in-road antennas — contact Support for details.

USING YOUR OWN ANTENNA

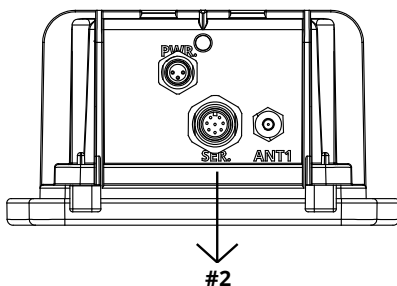
If you intend to use your own antenna, verify that the antenna uses an SMA male connector. Your antenna ideally supports all of the following frequencies (make note of the model number suffix of your device – for example “-US”):

Technology	-US, -SA	-EU
2G	850, 900, 1800, 1900 MHz	900, 1800 MHz
3G	850, 1700, 1900 MHz	900, 1800, 2100 MHz
4G (LTE)	700, 850, 1700, 1900 MHz	800, 900, 1800, 2100, 2600 MHz



YOUR WAVELET 4R IS NOW
SUCCESSFULLY INSTALLED!



WAVELET PINOUT



SENSOR PANEL CONNECTOR – M12 8-PIN MALE

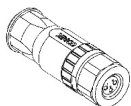
Connector Pin #	Function	Description	Sensor Pin Assignment
1	Signal	4-20mA or 0-24V Input #1	Front 
2	Signal	Pulse Counter/Digital Input #0	
3	Signal	RS485 A and RS232 RX	
4	Supply	Wavelet 12V Power Supply #1 (+)	Back 
5	Signal	RS485 B and RS232 TX	
6	Signal	Pulse Counter/Digital Input #1	
7	Signal	4-20mA or 0-24V Input #2	
8	Common	GND	

WAVELET PINOUT

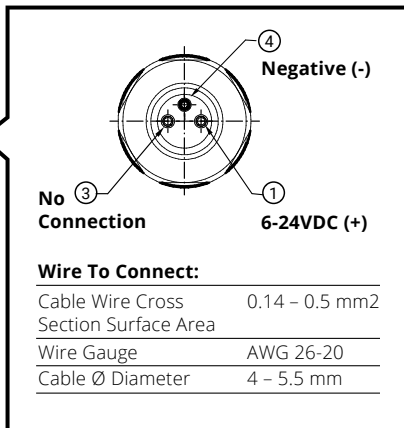
If using an external power source, refer to the pinout below:

EXTERNAL POWER:

M8 3-Pin Female
Power Connector



+ Installation Tool
for Wire Termination
(Included)



EXTERNAL POWER PANEL CONNECTOR – M8 3-PIN MALE

Connector Pin #	Function	Description	Power Pin Assignment
1	Supply+	6-24VDC	
3	No Signal	No Connection	
4	Common	Negative (-)	

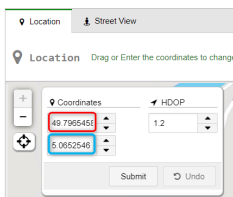
WAVELET 4R DEVICE LOCATION

Unlike some other models of the Wavelet, the Wavelet 4R device does not include an internal GPS. To take advantage of the map features within the StreamView, you can identify the GPS coordinates before field installation. Alternatively, during field installation, you can manually add the GPS coordinates for the device by using your smartphone, tablet, or laptop.

For guidelines on using Google Maps to find latitude and longitude coordinates, refer to the Google Maps Help Center:

https://support.google.com/maps/answer/18539?hl=en&ref_topic=3092444

In the StreamView, click **Devices** in the left pane, and then click the desired Site. On the right-hand side of the screen, in the lower section with the map display, paste the GPS coordinates that you copied from the Google Maps web page:



The screenshot shows a software interface for entering location data. At the top, there are two tabs: "Location" (selected) and "Street View". Below the tabs, the text "Location" is followed by the instruction "Drag or Enter the coordinates to change". A central form titled "Coordinates" contains two input fields: the first field contains the value "49.7965455" and is highlighted with a red border; the second field contains the value "5.0652546" and is highlighted with a blue border. To the right of these fields is a "HDOP" field with the value "1.2". Below the coordinate fields are "Submit" and "Undo" buttons. On the left side of the form, there are navigation controls: a plus sign, a minus sign, and a crosshair icon.

- Copy the first of the two GPS coordinates and paste into the first box (identified above in **red**)
- Copy the second GPS coordinate and paste into the second box (identified above in **blue**)
- Click **Submit** to save the new GPS coordinates associated with this Site.

For Sales & Service Contact

geotech

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Phone 303-320-4764 • Fax 303-322-7242

1-800-833-7958

www.geotechenv.com