

**Wiring & Termination**

- Validates RF operation with a simple site visit
- Identifies radio positions before installation
- Battery operated for easy survey mobility
- High impact ABS enclosure
- Automatic battery power management
- LED and beeper indication of acceptable/unacceptable performance
- Separate tools for Transmitters & Repeaters

The **BA/FV418** is an RF receiver field tool designed to verify how far the transmitters will go in a specific installation. The BA/FV418 verifier is equipped with an LED bar graph indicating signal strength and sounder from a single BAPI 418MHz transmitter or from all the BAPI 418MHz transmitters on the job.

The **BA/FV900** is an RF transceiver field tool designed to verify how far the repeater will go in a specific installation. The BA/FV900 verifier is equipped with an LED and sounder indicating packet reception from the other BA/FV900 verifier. Units are used in pairs with one unit being set-up as the Transmitter and the other unit set-up as the Receiver.



418MHz Kit



900MHz Kit

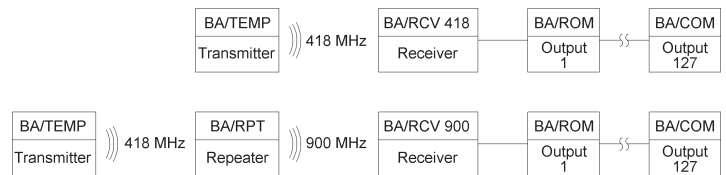


Kit Carrying Case (Included)

**ORDERING INFORMATION**

- BA/FV-Kit** Combined Field Verifier Kit, (**BA/FV418K & BA/FV900K**)
- BA/FV418K** Field Verifier Kit 418 MHz, (1-transmitter & 1-verifier included)
- BA/FV900K** Field Verifier Kit 900 MHz, (2-units per kit)
- BA/FV418** Field Verifier 418 MHz, (1-verifier only)
- BA/FV900** Field Verifier 900 MHz, (1-verifier only)
- BA/BS2-FV** Field Transmitter 418 MHz, (1Transmitter Only)

**Typical BAPI Wireless System**



**Specifications**

<b>Battery Power</b>	BA/FV418, (2) 3.6 volt Lithium BA/FV900, 9VDC
<b>Auto off</b>	BA/FV418, 17 minutes BA/FV900, 1 hour
<b>Storage/Operating</b>	32° to 158°F (0 to 70°C)
<b>Frequency/RF-Power/Transmission time</b>	
<b>BA/FV418K</b>	418MHz/ 1mW / ~every 10S
<b>BA/FV900</b>	900MHz/100mW / ~ every 1S
<b>Receiver Sensitivity</b>	418MHz-112dBm 900MHz-110dBm
<b>Typical open air range</b>	418MHz 100 feet 900MHz 1000 feet
<b>Indication</b>	50db @5ft beeper (Off selectable)
<b>BA/FV418</b>	10 element LED, ~6db per element
<b>BA/FV900</b>	2 LED's, 1-transmit and 1-recieve
<b>Antenna</b>	Detachable whip (must be installed to operate)
<b>Weight</b>	0.5 lb (.23kg) per unit

**Indoor Range Est. "Rules of Thumb"**

$X_{mtr} = \text{Transmitter}$       $R_{ptr} = \text{Repeater}$

- A) Xmtr, 0-100ft, Will work in open office instances.
- B) Xmtr, 100-150ft, May work but verify.
- C) Xmtr, >150 ft, Needs a repeater.
- D) Rptr, 0-1,000ft, Will work in most instances.
- E) Rptr, 1,000ft -2,000ft, May work but verify.
- F) Rptr, >2,000ft, Needs another repeater.
- G) Xmtr, possible line of site range, 900ft but verify.
- H) Rptr, possible line of site range, 2500ft but verify.



### **Operation & Set-up**

**BA/B2-FV:** Remove cover and remove battery tabs or insert batteries. Transmission starts immediately and every 10-15 seconds thereafter.

**BA/FV418 SET-UP:** Be sure to attach 3.5" antenna and insert batteries. (Supplied)

**On/Off:** Push & hold the top side button to turn on or off.

On = LED bar, ripple lighting up to the green LED), Off = LED bar, ripple lighting down to the red LED  
Unit will turn off automatically after 17 minutes after no activity.

**Sound on/off:** With power on, push & hold the bottom side button to turn on/off. Note rippling sounder/LED for status.

**Multiple device mode:** To toggle to the multiple transmitter reception, push & hold top then bottom side buttons and hold simultaneously until you hear a single beep with no lights, then release. The unit is now in the multiple device reception mode.

**Single device mode:** To toggle to the single transmitter reception, push & hold top then bottom side buttons and hold simultaneously until you hear a beep and the bottom red LED lights up, then release. The unit is now in the single device reception mode. Go to **Training single transmitter** as the next step as needed.

**Training single transmitter:** To train a specific single transmitter for reception, push & hold top then bottom simultaneously until you hear a beep and the green LED on the bar lights up, then release. Then push the specific transmitter training button to be monitored. A double beep will confirm the training procedure is complete and store in non-volatile memory.

**BA/FV900 SET-UP:** Be sure to attach 8" antenna and insert batteries. (Supplied)

**On:** Push & hold the red front button to turn the unit on and release at the desired mode selection.

**Mode 1:** (1 short beep and Tx LED blinks); Sets unit to Transmit as indicated by an LED and a beep.

**Mode 2:** (1 short beep and Rx LED blinks); Sets unit to Receive as indicated by an LED and a beep.

**Mode 3:** (Tx LED blinks, no beep); Sets unit to Transmit as indicated by an LED only.

**Mode 4:** (Rx LED blinks, no beep); Sets unit to Receive as indicated by an LED only.

**Off:** Both LED's blink then the unit turns off. Unit is now off. The red button must be pushed again to cycle on.

**Off:** If the unit is on; push the front red button once then the unit turns off.

**Note:** The unit will turn off automatically after 1 hour.

### **Verifying Procedure**

**Step Process:** Use the **BA/FV418** for placing transmitters, BA/RPT49 repeaters and BA/RCV418 receivers.

Use the **BA/FV900** for placing added BA/RPT49 repeaters and BA/RCV900 receivers.

**Note:** Both **BA/FV418 & BA/FV900** units will be needed for a complete survey if repeaters are required.

A site map/print is recommended and notes for each wireless device location.

**BA/FV418 Verifying Procedure** Note: Each transmission is ~10-15 seconds apart.

A. Set up your field verifier per the instructions in **Operations & Set-up, BA/FV418 Set-up & BA/B2-FV** above.

B. Place the test transmitter upright at the exact location of the proposed transmitter or repeater site.

C. Walk slowly with the receiver to the proposed receiver location. (Antenna @45°-90° upright)

If the LED bar is in the green or yellow the signal is good/acceptable. (Each bar represents ~6db)

If the LED bar or beep doesn't update in 10-15 seconds every time then you are out of range. Walk back.

If the LED bar is on the Red LED the signal is poor and a repeater is recommended.

To place the repeater walk back toward the transmitter until the signal is good plus a few steps closer.

This is the proposed site for a BA/RPT49 repeater or BA/RCV418 receiver.

Go to **BA/FV900 Verifying Procedure** below to verify or place the receiver or next repeater location.

**BA/FV900 Verifying Procedure** Note: Each transmission is ~1 second apart.

1. Set up your field verifier per the instructions in **Operations & Set-up, BA/FV900 Set-up** above.

2. Place the test transmitter at the exact location of the proposed repeater site.

3. Walk with the receiver to the proposed repeater/receiver location. (Antenna's should be @45°-90° upright)

If the blinking Red receive LED is lit up the signal is acceptable.

If the Red receive LED is off or blinking erratically (>1 second intervals) then the signal is poor. Add a repeater.

To ID the repeater site walk back toward the transmitter until the signal is good plus a few steps closer.

Relocate the **BA/FV900** transmitter to that spot for the added repeater & repeat step 3 above.

**Note:** Be sure power will be available at each repeater location.

### **Final Location Adjustment**

After all minimum quantities and initial locations of repeaters and receivers have been identified; it's good to average the distances between repeaters and receivers and relocate the repeater closer to the transmitter to improve reception of the entire RF system. Then re-check with the new locations to make sure reception is still acceptable. Adjust locations and/or add repeaters as deemed necessary to achieve maximum RF performance.

**NOTE: Remove all Batteries before shipping.**