ECS/Nexus

ECS-Nexus(81266) Cellular connection troubleshooting guide

ONLINE RESOURCES

BAZOOKA FARMSTAR

OVERVIEW

This guide will help you troubleshoot connectivity issues with your ECS/Nexus system's hardware & offers options for replacement parts.
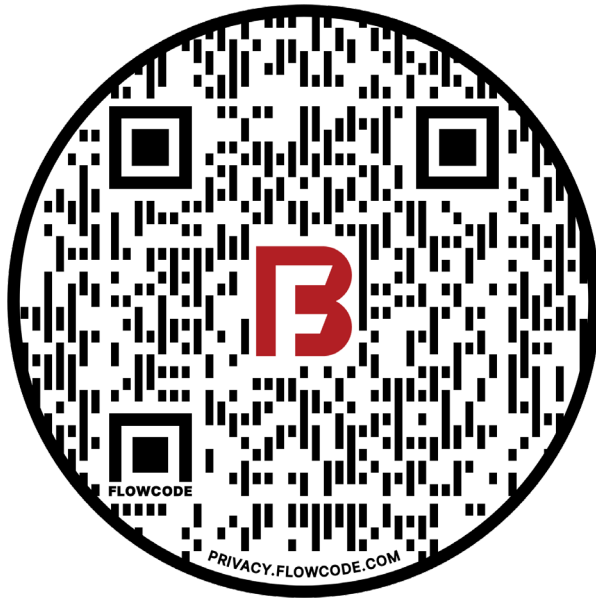

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For videos and additional resources, point phone camera at QR code and click the link.

https://bazookafarmstar-5546834.hs-sites.com/nexus

Nexus Troubleshooting Responsibilities

As part of the Nexus subscription, Bazooka will provide troubleshooting help for a Nexus panel. But if the modem isn't connecting, Bazooka cannot do anything remotely without help from the customer.

The customer is responsible for verifying the physical state of the panel and communicating with Bazooka what they see in the panel.

CUSTOMER	CELLULAR PROVIDER	BAZOOKA FARMSTAR
• Open the panel and check it out • Install replacement parts • Manage antenna location • Manage tablet cellular connectivity	• Cellular coverage	• Help troubleshoot • Send replacement parts • Verify SIM and account

Common replacement parts

ECS/Nexus
modem
network
cable
70-1542

ECS/Nexus Router/Modem
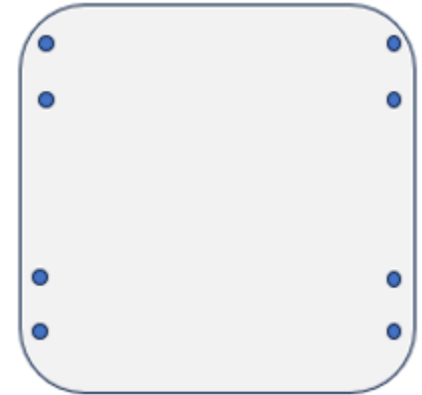replacement
70-3870

ECS/Nexus internal modem antenna cable
70-1545

ECS/Nexus modem power
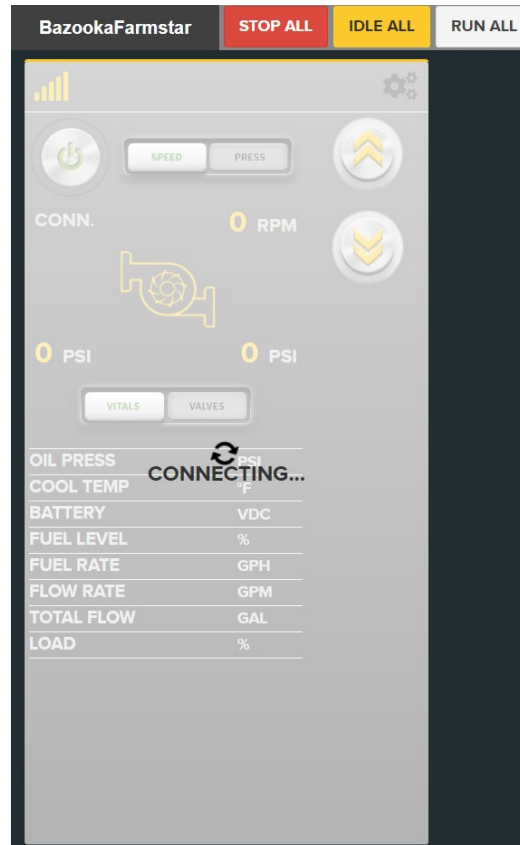cable 70-1674 & 70-1864

ANTENNA

70-1600

Cradlepoint retrofit kit
(for adding new modems to older panels
applies to Farmstar515 & below)
70-3870-KIT

Tablet connection troubleshooting
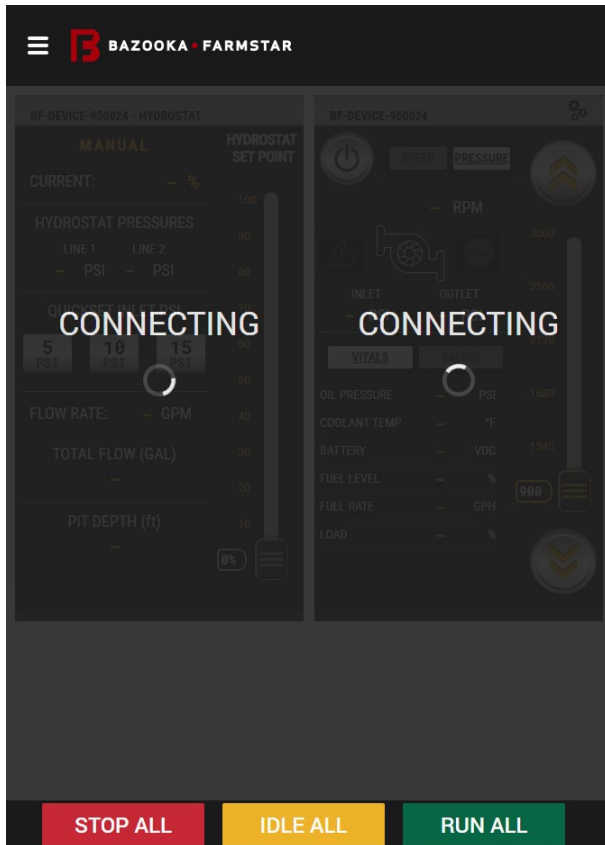
Use this troubleshooting guide when you see these "connecting..." Screens on Nexus.

First, check your tablet's internet connection by trying to load other websites in your browser.

You will see the same "connecting" screen whether your tablet in the tractor is losing its cellular connection or the pump is losing its connection.

Engine Grounding

VERY IMPORTANT

- Engine noise can cause cellular connection issues and even modem damage.

- Verify that you have a solid electrical connection between the engine block and the battery negative post.

- This can be done through multiple cables or even through the trailer frame, but ultimately there must be a cable or a series of cables that connect the engine block to the battery negative post.

Modem identification

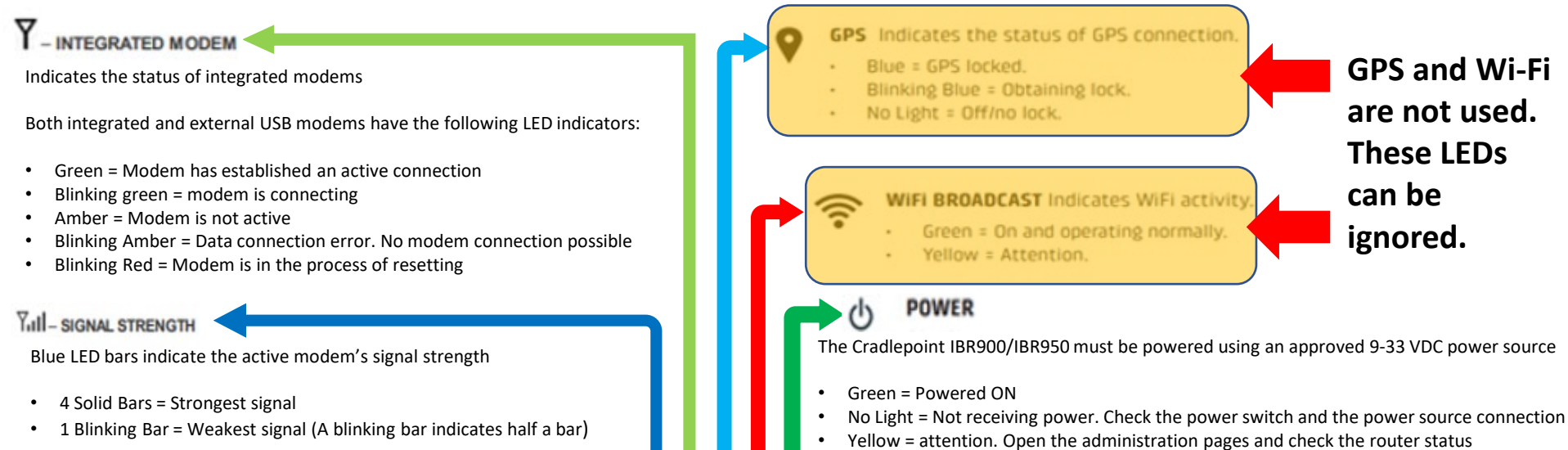**IBR1100 or IBR1150 series**

(obsolete)

IBR600 or IBR900 series

(obsolete)

S700 series

70-3870

LED troubleshooting

IBR600 or IBR900 series modem

Y – INTEGRATED MODEM

Indicates the status of integrated modems

Both integrated and external USB modems have the following LED indicators:

- Green = Modem has established an active connection
- Blinking green = modem is connecting
- Amber = Modem is not active
- Blinking Amber = Data connection error. No modem connection possible
- Blinking Red = Modem is in the process of resetting

Yull – SIGNAL STRENGTH

Blue LED bars indicate the active modem's signal strength

- 4 Solid Bars = Strongest signal
- 1 Blinking Bar = Weakest signal (A blinking bar indicates half a bar)

GPS Indicates the status of GPS connection.
- Blue = GPS locked.
- Blinking Blue = Obtaining lock.
- No Light = Off/no lock.

WiFi BROADCAST Indicates WiFi activity
- Green = On and operating normally.
- Yellow = Attention.

GPS and Wi-Fi are not used. These LEDs can be ignored.

⏻ POWER

The Cradlepoint IBR900/IBR950 must be powered using an approved 9-33 VDC power source

- Green = Powered ON
- No Light = Not receiving power. Check the power switch and the power source connection
- Yellow = attention. Open the administration pages and check the router status

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LED troubleshooting

IBR1100 or IBR1150 series modem

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– EXTERNAL USB MODEM

Indicates the status of external USB modems.

This feature is not used. This LED can be ignored.

POWER

- Green = powered ON
- No light = Not receiving power. Check the power switch and the power source connection
- Flashing Amber = Attention. Open the administration pages (see Accessing the Administration pages) and check the router status

LED troubleshooting

- Note that the LEDs on the modem go through a 1–2-minute bootup sequence before they start to try to connect online.

- Wait 1-2 minutes after cycling power before reading the LED status.

- If the power light isn't on, troubleshoot the power connection. (Green versus amber doesn't matter. An amber power light is just an internal configuration warning, not actually a problem.)

- If the Integrated Modem light is alternating between flashing green and then flashing red, there is a cellular signal problem, and the modem can't connect to the internet. Troubleshoot the antenna connections. Try moving the pump or antenna to a less obstructed area. Check the Verizon coverage map in that area. There is nothing that Bazooka can do remotely if the modem cannot connect.

- If the Integrated Modem light is blinking Amber, check with Bazooka that the Nexus subscription is active and check the SIM card installation. (Note that it can be difficult to distinguish between amber and red. You might have to pull the modem out of the panel to see it clearly.)

- If the Integrated modem light is solid green, that means it has a good cellular connection. Troubleshoot the BVR connection. In this one case, Bazooka can remotely troubleshoot.

LED troubleshooting

S700 series modem

Status Indicator	Behavior
⏻ POWER	**POWER**: Detects that the unit has power.
⚪	No Light = Not receiving power. Check the power switch and the power source connection.
⚪	Solid White = Powered on.
∽ NETCLOUD	NETCLOUD MANAGER STATE: Detects whether the device is able to connect to NCM
⚪	No Light = Unable to connect to Netcloud Manager.
⚪	Solid White = Connected to NetCloud Manager.
📶 EMBEDDED MODEM	**EMBEDDED MODEM STATE**: Indicates information about the integrated modem.
⚪	No Light = Modem not detected
🟢	Solid Green = Modem has established an active connection
☀️🟢	Flashing Green = Modem is connecting
🟡	Solid Yellow = Data connection error.
☀️🟡	Flashing Yellow = Modem is in the process of resetting
🔴	Solid Red = Carrier reject
☀️🔴	Flashing Red = No SIM or SIM Door Open
▪️ CELLULAR HEALTH	**CELLULAR HEALTH**: Indicates the health of the primary cellular modem's signal.
⚪	No Light = No cellular connection
🟢	Solid Green = Cellular health is excellent/good
🟡	Solid Yellow = Cellular heath is fair
🔴	Solid Red = Cellular Health is poor
	NOTE: Cellular Health indicates the signal health for the connected modem, whether it is the embedded or modular modem. If both modems are active, then this LED shows the status of embedded modem.

This LED can be ignored. ⬅️ (pointing to NETCLOUD MANAGER STATE)

Modem power troubleshooting

IBR600 or IBR900 series

- Check for power on the modem with indicator lights when the key is on
- Green versus Yellow doesn't matter.
- The power port is located on the bottom left-hand corner of the modem when mounted in the Nexus panel
- Check for intermittent connection by wiggling the black power cable to see if Modem power light goes off/on *This could indicate that there are loose sockets or wires in the black cable*

- 70-1674 & 70-1864 / replacement modem power cable

IBR1100 or IBR1150 series

S700 series

Antenna troubleshooting

- Check the antenna globe for any obvious physical damages

- Check to see if antenna is clear of any major obstructions and is elevated above engine unit

- Check the antenna cables for any cuts, frays, split wires, crushes or kinks, or rubbed through spots. THE ANTENNA CABLE IS MORE SENSITIVE TO DAMAGE THAN A NORMAL ELECTRICAL WIRE.

- Check "MAIN" & "AUX" coax connections are clear of corrosion & are tight in each terminal under the ECS/Nexus panel
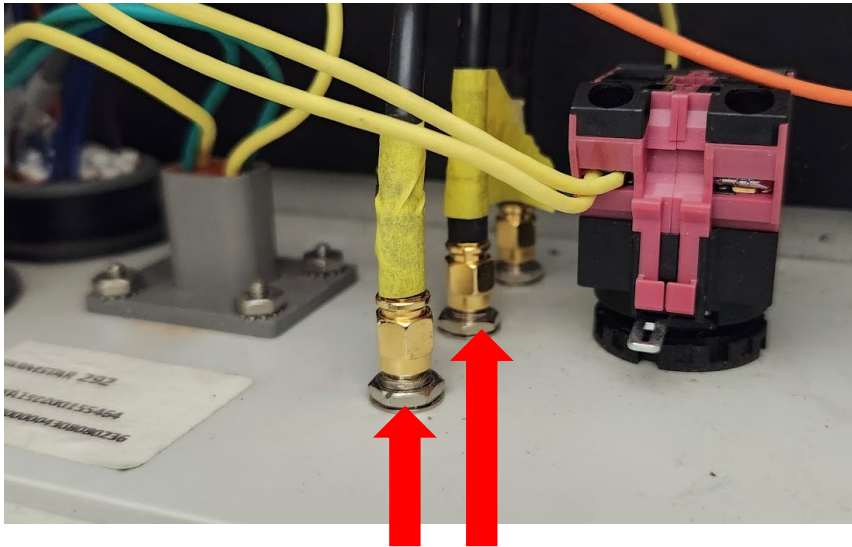
- 70-1600 - Replacement antenna
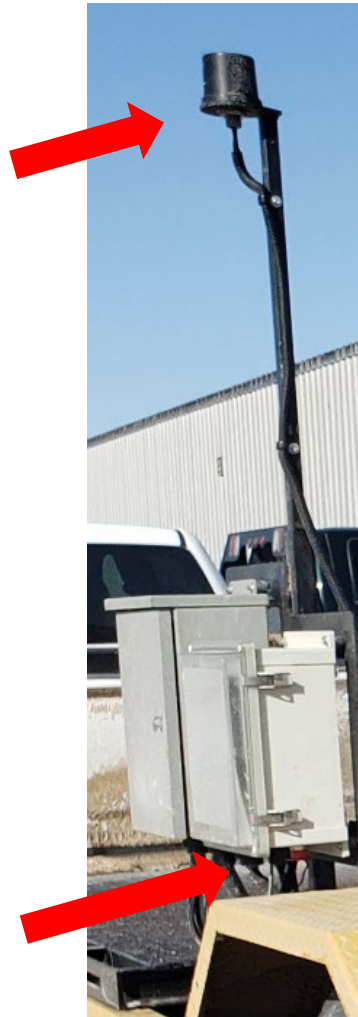
(Underside of the ECS/Nexus panel)

Antenna troubleshooting

AUX   (Swap around)   MAIN
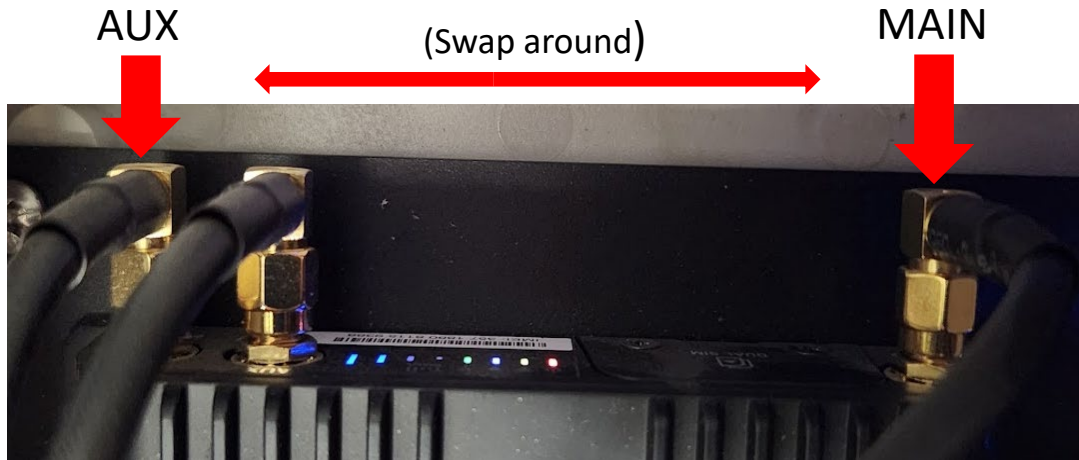
- Check internal coax connections on top of the modem and at the bottom of the panel

- Verify they're clear of corrosion & are tight in each terminal

- Swap MAIN & AUX connections around at the modem to see if reception can be obtained

70-1545/Internal coax cables

Antenna troubleshooting

S700 series

LTE 1
(Larger cable)

GPS
(skinny cable)

LTE 2
(Larger cable)

Network connection

IBR900 & IBR600 series

- Blue network cable plug into this "LAN" port on the modem

70-1542 Blue network cable

**IBR1100 & IBR1150 series**

- Blue network cable plug into port "1" on this modem

S700 series

BVR troubleshooting

- Are there green lights flashing on the BVR (outlined in the photo in red)?

- Does the network port light's blink (green/yellow) when connected to modem?

- Are the wires on the BVR device, outlined in red, in the correct terminals marked below?

  - Orange wire on B+ (1) terminal
  - Green wire on B- (2) terminal
  - Clear wire on CAN HIGH (6) terminal
  - Black wire on CAN LOW (7) terminal
 - Blue wire on DIGITAL OUTPUT (9) terminal

Network Cable
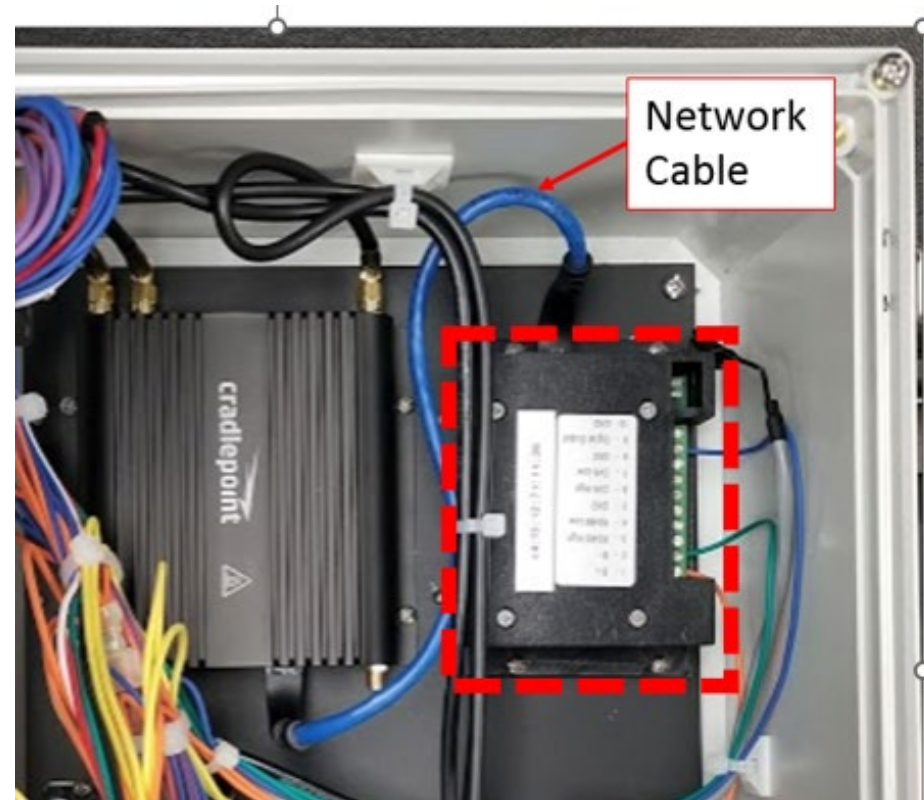
600/900 SIM troubleshooting

- Ensure SIM card has been placed in modem "Contacts down, Notch in" (see figure on right).
- It can be in either slot, SIM1 versus SIM2 doesn't matter.

- Check dual SIM door is securely attached with screws to ensure device powers up without issue
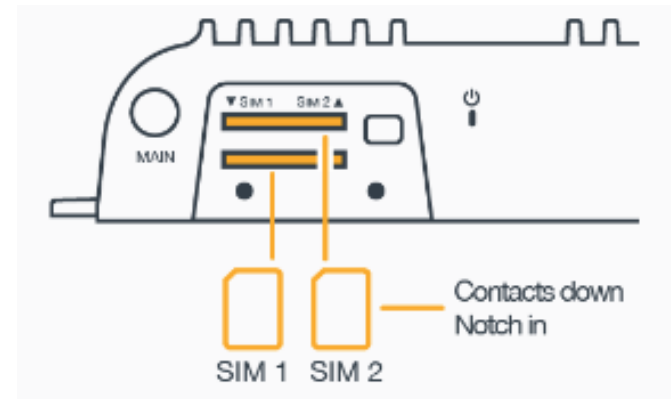
NOTE Modem will not turn on at all or flash red embedded modem light & will not connect if SIM door is not properly installed*
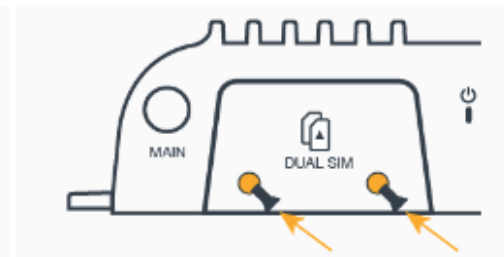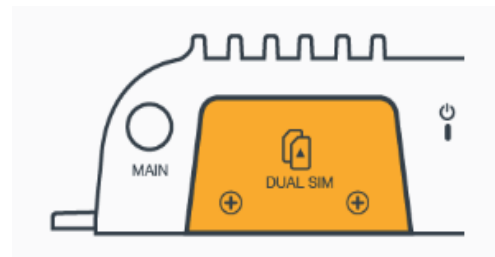
1100 SIM troubleshooting

1100 series SIM card slot

- Turn modem over to show the serial tag of that modem
- Remove the four screws holding the door in place
- Flip one of the tabs you see on the left and insert the SIM card
  - Doesn't matter which one
- SIM card will only install in one direction
- Flip tab back down and snap into place
- Place cover back on and install the screws for the door

S700 SIM troubleshooting

- The SIM card slot is located on the right-hand side of the modem
- Two screws will need to be removed and replaced as there is a door switch on the cover that will disable the modem until it is put back in place and secured

Unscrew and remove the SIM door from the router.

Insert an activated 4FF-sized SIM card into the SIM1 slot. The SIM card clicks into place.

Optionally, insert an activated 4FF-sized SIM into the SIM2 slot with the same orientation.

Insert with metal contacts up and notch in.
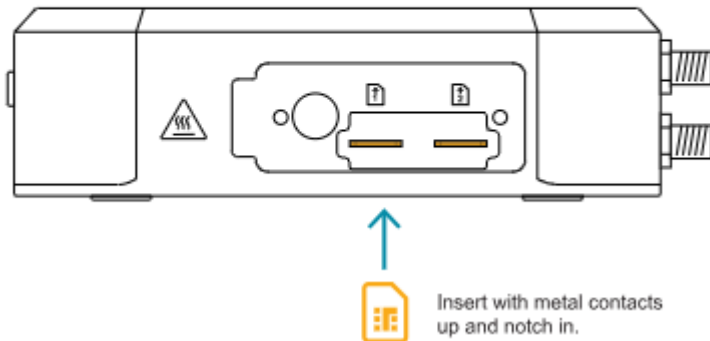
NOTE: THIS MODEM USES A SMALLER SIM THAN THE OLD MODEMS. THE OLD MODEM SIM IS NOT COMPATIBLE WITH THE NEW MODEMS. A NEW SIM WILL BE REQUIRED.

Contact us

If you are still experiencing issues connecting to your panel, please email or call Bazooka Farmstar for further assistance and have the following information ready for faster service:

- Name of account
- Farmstar panel number
- Model of modem

Nexus@bazookafarmstar.com

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