

Product FAQ

Industrial Networking: Cellular Routers



Enhancement: 4G Long Term Evolution (LTE) Support

Date: February 2013

Products:

- Sixnet IndustrialPro® 6000 series
- Sixnet RAM® 6000 series

The below FAQs address frequently asked activation, provisioning, hardware and network questions regarding 4G LTE support on the Sixnet IndustrialPro 6000 (SN67XX) and RAM 6000 (RAM67XX) industrial cellular routers.



ACTIVATION & PROVISIONING FAQs

1. Does the LTE device need a SIM card? If so, where do I get one?

As with the GSM products, Sixnet IndustrialPro and RAM LTE devices will require a SIM card (standard form factor). They can be procured from network carrier agents and representatives.

Note 1: These devices do not support MicroSIM cards. Only Standard SIM form factor

Note 2: This is the first time that an LTE device on the VZW network requires a SIM card. SIMs can be procured from your VZW representative during the course of account activation.

2. For what networks are LTE devices available or certified on?

Currently, the Sixnet IndustrialPro 6000 and RAM 6000 LTE devices are certified for AT&T, Verizon and Bell Mobility 4G LTE networks. Additional North America LTE carriers support is planned for in 2013.

3. Can I use my AT&T LTE SIM to obtain AT&T (or other) LTE service on a Verizon Wireless LTE device?

No, Verizon Wireless LTE devices are intended to be used with Verizon Wireless LTE SIMs only.

4. Where is the SIM slot?

The SIM slot is located on the right side of the device on the 6000 series (as you are facing from status led indicators) and orientation is as follows:

- Gold contacts down and cut-out slot to the left
- Insert the SIM and push it till it clicks in to place

5. Can I get a Static IP on the VZW LTE network?

Yes, you can get a static IP on the VZW LTE network by working with your VZW representative or agent. This typically comes with one time cost of \$500 for VPN access to the private network.

6. Does the LTE device require an APN?

No. While the LTE device does use an APN, APN will be automatically loaded into the device from the SIM at time of initial booting process. If you use a private APN then you will need to configure this name in the device.

If you want to use a static IP address, then your carrier will provide a APN name that can be updated via Graphical Administrative utility:

- Click on Networking, Cellular Connection and Configuration
- In the Enter APN field, type in your APN name and then click Apply.

7. What is an IMEI?

IMEI (International Mobile Equipment Identity) is the equivalent to an ESN and is now used by Verizon Wireless instead of the ESN for LTE devices. The IMEI is printed on the silver label located on the bottom of the device.

NETWORK FAQs

8. Which LTE frequencies do Sixnet devices support for Verizon?

- **AT&T:** Band 17 - UL 704-716Mhz, DL 734-746Mhz
- **Bell Mobility:** AWS and Band 17 LTE (1700/2100/2600 & 700 future)
- **Verizon:** Band 13 - UL 777-787Mhz, DL 746-756Mhz

Sixnet IndustrialPro and RAM LTE devices do not support public safety Band 14 (D block) - UL 788-798Mhz, DL 758-768Mhz.

9. Will LTE devices support fallback to 3G (EVDO) and 2G (1xRTT) networks?

Yes, Sixnet IndustrialPro and RAM LTE devices support fallback to 3G and 2G networks where 4G services are not available.

10. Will LTE device support fallback to 3G (HSPA+) and 2G (EDGE) networks?

Yes, Sixnet IndustrialPro and RAM LTE devices support fallback to 3G and 2G networks where 4G services are not available.

HARDWARE FAQs

11. Is it necessary for me to use both antennas?

Two SMA connectors for RF antennas are present and marked with “Antenna” for main connection and Diversity” for MIMO (LTE) and diversity for 3G.

The additional antenna port “Diversity” is for Rx Diversity. Rx Diversity is designed to improve the quality of the downlink signal by essentially enabling the device to choose the best available signal. Rx diversity has been shown to improve signal quality. However, many customers decide to forego the expense of the second antenna and rely on one Rx signal.

Sixnet IndustrialPro and RAM LTE devices utilize 2x2 MIMO technologies. MIMO equals Multi-In/Multi-Out and is designed to improve the cellular signal and quality on both the down-link and up-link. MIMO for LTE works differently than Rx Diversity in that it utilizes two distinct Tx and Rx signals, which are intelligently combined to increase throughput where signal multipath is available. MIMO will increase throughput in areas where interference would otherwise cause throughput degradation. Our recommendation is that two antennas be used for optimal performance. A single antenna may be used, however with one antenna you will not receive full MIMO benefits and your antenna performance may not be optimized. It is up to the user to determine if two antennas are beneficial, as multi-path is determined by local topology.