



INTELESENSE TECHNOLOGIES

Global Integrated Monitoring™

INTELECELL FIELD ROUTER – GUIDE FOR BETA TESTERS

This guide is intended for beta testers of the new IntelCell Field Router (also called the IntelCell “Next Generation” model.)

First of all: Congratulations for being selected as a beta tester for our new device! We’re truly excited about our new IntelCell and hope you will share this excitement.

The *Next Generation* model of our IntelCell is quite different from our previous (or *Classic*) version. Not only has it been redesigned for improved robustness, it also gives you a number of very powerful features that enhance usability and offer additional capabilities.

Below is a list of steps that we would like you to take as a beta tester. The purpose of the beta test is to refine the IntelCell hardware and software ahead of its final production release. We need your feedback to do that.

STEP 1

To become familiar with the device and its new features, we created a video tutorial that is available on our website: <http://www.intelesense.net/support/intelecell/ifrvideos>

We suggest you start with these videos. Go through the videos in the order they are listed on our website, and follow along with your own IntelCell. When you do that, make sure to keep notes on anything that is not working for you, anything you didn’t understand, or that doesn’t seem intuitive, and any questions or comments you have. Start keeping notes right away, from the very first time you’re using this device, since there will be only one “first impression” or “first use”. We’re very interested in your feedback and providing detailed feedback to us is part of the beta test.

STEP 2

Once you went through the video tutorial, start using the IntelCell in your office environment. Set it up with sensors of your choice, and let it run for a few days collecting data. Connect to it periodically via WiFi to check status and sensor data, or to reconfigure it for other sensors. Go through a few battery discharge and recharge cycles. Collect data from motes, both in real time, and sampled periodically. Switch between adhoc and infrastructure modes. And again, keep detailed notes throughout these steps, comments on what doesn’t work, what you’d want us to change, but also comments on what you really liked.



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STEP 3

Ask other co-workers to use the new IntelCell and ask them to record their experiences and feedback as well. The more users interface and connect to it the better. We're especially interested in how WiFi connectivity works across various hardware and software platforms and in various environments (laptops, smart phone, office routers and switches, firewalls, etc.).

LIMITATIONS

The beta version of the IntelCell Field Router has a few important limitations that we want you to know. Some of them limit its use in a deployment setting, and we therefore suggest you do not deploy your new IntelCell at a site where these limitations would affect performance. While deployment is an important part of testing the device, the main goal of this beta test is to provide feedback on general usability first. Only then should you think about setting up the IntelCell Field Router as part of a deployed configuration, and this should be an easily accessible site.

- The 900MHz XTend radio is operating at a reduced 100mW transmit power. See *Known Issues – 900 MHz Radio* for more details.
- Mounting hardware for mounting the device in an external enclosure has not been provided. (Future mounting hardware will attach to the threaded holes on the back of the device and allow for easy snap-mounting onto a NEMA case back-plate)
- External BSM including cellular BSM is not supported. This is only due to a hardware limitation, the firmware driver for the external BSM is fully functional, but the voltage provided on the serial ports is too high. The final version will provide a programmable sensor voltage, and fully support external BSMs as well as external cellular modems.
- Firmware update only works in infrastructure mode. See *Known Issues – WiFi* for more details.
- The case is a rapid-prototyping case and does not offer the same mechanical stability as a final injection-molded case. The material is much weaker and more brittle due to the rapid-prototyping process used to create the case.
- Charging the device when the ON/OFF switch is turned off is disabled. The switch has to be turned ON in order to charge the battery using the enclosed charger.
- Port adapter cables were only provided for the serial ports. Please contact us if you require port adapters for the analog ports.
- Charge port connectors were enclosed in case you are interested in connecting a solar panel to your IntelCell. Please contact us for directions and pinout information if you want to do this.



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KNOWN ISSUES

While we worked hard to deliver a beta version that is fully functional and free of bugs, there are a few issues that couldn't be resolved before the release date. We're currently working on fixing these. We suggest you study the list of known issues before testing the device so you're aware of them when you encounter them. They are grouped according to function so when you run into a problem you can easily find out if we already know about it, and how to resolve it.

900 MHZ RADIO

- XTend module sometimes does not initialize correctly on wakeup when other InteleCells are transmitting at the time of wakeup. Putting it back to sleep and waking it up again will often resolve the problem. A reboot will certainly resolve the problem.
- XTend radio transmits with 100mW output power (that's 10% of its full output power.) This is caused by a power management circuit limitation of the beta version. The power management block has already been redesigned and the final version will have full 1W output power available.

WIFI

- Adhoc mode WiFi connection is periodically interrupted for 3-5 seconds every time the seconds value of its time hit 0. Commands submitted during that time will fail, and have to be resubmitted. The connection will not be completely lost though, meaning you will not have to reconnect. This does not affect Infrastructure mode. This problem causes firmware file uploads to fail when in adhoc mode, therefore you must use infrastructure mode when uploading new firmware.

FIRMWARE UPDATE

- Firmware update only works in infrastructure mode (see section *WiFi* for more details.)

SD-CARD

- SD-Card write operations may cause an occasional (rare) freeze of the device. The cause for this has been found and is currently being fixed.

ENCLOSURE

- Side lid does not latch properly, use extra care when removing and installing it
- SD-Card is difficult to remove since it is partially covered by sidewall