# IS-900 Firmware Upgrade Procedure

The IS-900 contains firmware that may be field-upgraded by customers. While this is generally a safe and fast procedure (often under 1 minute), and it is possible to recover from partial upgrades, InterSense recommends backing up all settings first and performing the procedure during non-critical usage periods in case of any problem. If possible, use of an uninterrupted power supply (UPS) is suggested to avoid any chance of a power failure occurring during the firmware update procedure. Note that while firmware is backward compatible relative to the hardware, the reverse is not true; e.g. if you are on version 4.2008, you may upgrade to 4.29; but if you are at version 4.2302, you may not be able to downgrade to 4.2008 -- attempting to do so may result in a non-bootable IS-900. While this can usually be recovered from, please avoid this by noting the original version and making sure that you do not change to an earlier version unless you are sure the earlier version was successfully running on your IS-900 at one time.

It is also highly recommended that settings be backed up, the IS-900 restored to factory settings after the upgrade, and the settings re-loaded and saved afterward, to ensure they are properly recognized. To backup or restore settings, use the **Tools > Configuration Script** tool in *ISDEMO* to download the settings from the IS-900 and save to a file. The reverse procedure can be used to reload the settings afterward. If any errors occur during the download of settings, *ISDEMO* will notify you of this; typically this is caused by using excessively long serial cables; setting a lower baud rate or using the InterSense supplied cable or Ethernet may help. Please visually verify that the backup file appears to have been created properly using a text viewer before proceeding.

The firmware versions below are all intended for the SimTracker or VETracker systems (1U form factor). For older IS-900s (VET, VWT, SCT), please contact Technical Support as the upgrade procedure is more complicated. To perform the upgrade, after backing up your settings, unpack the firmware files to a folder and run the **ISFileUpdate** program. This will allow you to specify an Ethernet or serial port to connect to, as well as Monitor Mode (Ethernet upgrades are only available if the current firmware is 4.2301 or later). Monitor Mode is primarily intended for use when the IS-900 does not boot properly; to put the IS-900 into monitor mode, press the F1 key while the "....." display is scrolling across the LCD during bootup. Monitor mode requires the use of a null modem cable such as the one InterSense supplies with the IS-900; it may also be needed during some upgrades from very old firmware versions to a current version. Contact Technical Support for more information or if you have any problems with the upgrade. All versions listed below require at least version 4.20 to be installed in order to upgrade:

**4.29** (released 2012-07-05)

- **NOTE:** *ISDEMO* version 4.2809 (from the IS-900 CD, version 2012a) or later is **required** to use 900 MHz wireless MicroTrax devices with this release
- 900 MHz wireless MicroTrax devices supported, with receiver sharing
- Simultaneous operation of 900 MHz and 2.4 GHz wireless MicroTrax devices
- Self-test reports include comm. integrity statistics and Genlock status
- Emitter volume adjustable from LCD menu
- Bug fixes:
    - BG100604609 – Comm. error following level 2 self-test without SoniStrips
    - BG100604610 – Level 2 self-test does not report noise for A1/B1 microphones
    - BG110519683 – MZ command does not reset the UDP data packet timestamps
    - BG110908703 – Tracking degrades if constellation has Z coordinates > +/- ~5 m
- NOTES:
    - Maximum number of stations is 8, which means only the first 4 ports can be used for stations when receiver sharing is enabled
    - URM noise test not available in level 2 self-test when sharing receivers
    - When downgrading firmware from 4.29, **isradio.ini** may contain a **DeviceOption** setting that is incompatible with earlier versions (MSB>0). The *isFile* kit should be modified to send **isradio.ini** with **DeviceOption=0**
        - Please contact InterSense Technical Support for assistance with this, if required

**4.2601** (released 2010-04-25)

- **NOTE:** *ISDEMO* version 4.2625 (from 4.2601 IS-900 CD) or later is **required** to use wireless MicroTrax with this release
- Improves large area tracking on SimTracker
- Provides serial port passthrough mode (allowing use of *RFScope* utility to determine optimal channels, and *HWDiags* for troubleshooting)
- Adjustable TCP port/subnet and *ISDEMO*-configurable Ethernet settings (with *ISDEMO* from 4.2601 IS-900 Product CD)
- Measurement quality values added to LCD and output records (item 76)
- Tracking improvements for close-range operation
- MiniTrax wireless devices now work with timing adjusters (ATA)
- Extended data output available

**4.2302** (released 2008-01-22)

- New LCD support added
- This release is the same as 4.2301 except for LCD support. If your LCD panel buttons do not work after loading this, please use 4.2601 (recommended) or 4.2301 instead.

**4.2301** (released 2007-07-31)

- Level 3 self-test implemented
- MicroTrax devices supported
- Firmware upgrades over Ethernet implemented
- Communication integrity output record implemented (item 75)

**4.2008** (released March 2006)

- Tracking improvements

**4.2007** (released July 2005)

- TCP connection improvements