

### Weidmuller WI-IO-9-U2 Firmware Upgrade ECN – Firmware Change Upgrade

June 05, 2013  
A-WR1303

#### Products Affected:

Weidmuller WI Wireless Meshing I/O

WI-I/O-9-U2 6720005011

#### Product Change Details:

Additional features added and resolution of known firmware issues. Upgrade from 1.1.6 to 1.2.1

#### Details of Changes:

##### New Features:

- Modbus RTU slave
- Also reorganised serial and Modbus webpages for improved usability.
- Requires Modbus feature key for Modbus slave to operate.
- Support RTU Slave operation on RS-232 and RS-485 serial ports
- Feature Demo Mode
  - Allows users to test licensed features without a license
  - Demo Mode is active until the next unit reboot or 16 hrs elapses.
- Added interface for Network management software.
- WIBMesh dynamic destination monitoring for gateway mode.
  - This feature automatically disables/enables WIBMesh IP Gateway mode if specified destinations are unreachable.
  - Used only in large networks with more than one unit configured with IP Gateway mode enabled.
  - This is an advanced feature that can be configured using a hidden webpage only.
- Low Memory Detection.
  - Unit will now reboot if a low memory condition occurs
- New Radio / Product support
  - Added 2.4GHz IRIS radio support
  - Added 900MHz IRIS radio support (Requires radio processor firmware to also be changed.)
  - Future added product compatibility and scalability for Serial modems
  - IP / MAC / ARP network filtering (IRIS products only).
  - Network bridging for IRIS products
- Added Gratuitous ARP on boot

- Used to refresh ARP tables in any connected network equipment.
- User configurable Thermocouple Error Value.
  - This is the value set in the thermocouple value registers when the TC-ADP module is unplugged, or the thermocouple in open circuit

#### Enhancements / Improvements:

- **WIBMesh Improvements:**
  - Various changes to the Radio network meshing protocol, which improve mesh stability and operation in large networks.
    - Includes changes to improve operation for network configurations where IP Gateway mode is used.
- **I/O Processing:**
  - Modified Expansion I/O processing to only check for one unconnected I/O module per scan cycle.
    - This change reduced the poll time for expansion I/O.
  - Bug #474 - Set default RS485 port configuration to 'Expansion I/O'
  - Bug #477 - Expansion I/O now indicates Comm fail status in Digital I/O 10019+Offset to match product specification.
  - Extended K-type thermocouple for temp range for above 500C
  - Improved out-of-range detection for TCADP Thermocouple Input. Now detects open circuit regardless of thermocouple type or scaling of TCADP.
- **Modbus:**
  - Increased Maximum Modbus Master Commands from 30 to 100
  - Changes to Modbus so that it doesn't lockup and watchdog reset if the response timeout is set longer than the application's watchdog timeout (10s).
  - Added Feature Key status indication to Modbus TCP webpage.
  - Fixed bug in Modbus TCP server introduced with watchdog support.
    - Modbus server now responds quickly to connection requests
  - Fixed synchronisation bug in Modbus Master that caused the unit to Watchdog reset under certain operation conditions.
- **General:**
  - Web page modified to allow horizontal scrolling of wide pages where required.
  - Changed ARP configuration to reduce Radio ARP traffic (IRIS products)

#### **Recommended Actions:**

Check with Weidmuller for latest user manual changes for updating product literature.

Existing Product requiring Firmware upgrade:

Contact Weidmuller Support for the following patch files

- to upgrade from 1.1.6 to 1.2.2

It is highly recommended that Configuration Software (WI-config and WI Meshing-Config) also be upgraded to the latest release. WI Meshing Config version 1.2.0.51 and WI Series Config version 2.2.0.415

## Upgrade Procedure:

Backing up existing Configurations before doing this procedure is recommended.  
For more details please read User Manual which can be downloaded from [www.weidmuller.com](http://www.weidmuller.com)



### Web Based Upgrade

This procedure explains how to perform a full firmware upgrade on the WI-I/O-9-U2 Wireless I/O Module. Typically upgrades can be performed by applying a patch via the Modems webpage, however if a patch is not available a full firmware upgrade is required.

For remote upgrade, it is advisable to reduce radio traffic over the link from other devices, as much as possible. If necessary, create a temporary separate radio network to perform the upgrade to remote modules.

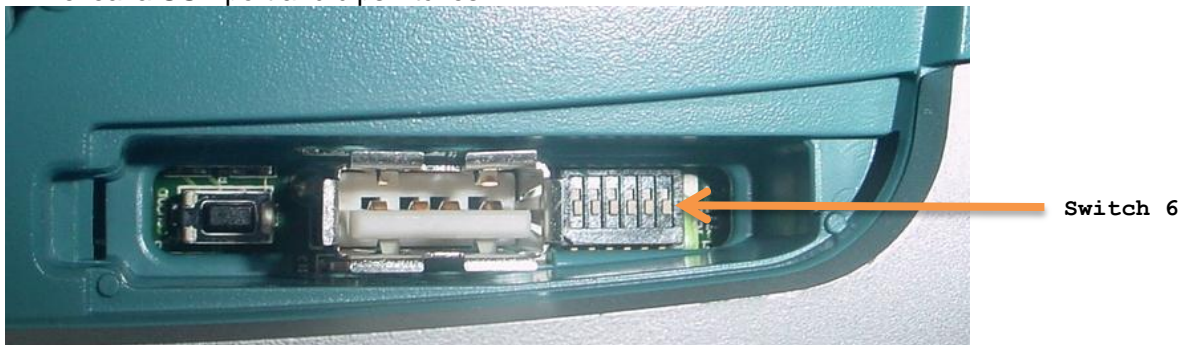
### Materials Required:

- WI-I/O-9-U2 to be upgraded.
- 12/ 24VDC Power supply minimum 10W.
- USB Memory stick (250MB minimum)
- Firmware files. – Contact Weidmuller Technical Support for these files.
- Windows PC to format and load firmware onto USB Memory stick.
- Internet Explorer or suitable Web browser
- Straight through Ethernet Cable,

Prior to performing upgrade note the current firmware version of the WI-IO-9-U2 via the modules home webpage. This will allow you to confirm at end of procedure that upgrade has been performed successfully.

Model:	WI-I/O-9-U2-900-1W-US
Serial Number:	02111129113
Hardware Revision:	1.4d
Firmware Version:	1.1.6p1 -- Tue Aug 16 14:52:00 EST 2011
Kernel Version:	#114 PREEMPT Thu Jun 30 16:35:28 EST 2011
Bootloader Version:	2.03 - Jun 1 2011 08:53:12 (2374)
Radio Firmware Version:	Software version : 1.00i build 994 [Jul 8 2011 11:50:09] (2482)

1. Remove power from WI-IO-9-U2 if it is currently powered on,
2. Remove small Hatch Cover on right hand side of Module (If looking front on) which will reveal a USB port and dipswitches.



3. Note Dipswitch 6 (furthest from USB port) this should be in the off (Disabled) position which is down towards the I/O terminal strip. (Default position)
4. Plug USB stick into USB port and apply power to the WI-IO-9-U2 Module,
5. After a few seconds the PWR led will be solid AMBER for approx. 10 seconds, then start to slowly flash AMBER for approx. 3 minutes then,
6. PWR will be solid AMBER for a short period of time (approx. 10 seconds),
7. PWR will then start flashing RED & GREEN for approx. 90 seconds.
8. After this period of time approx. 5 minutes in total the PWR LED will be on solid GREEN and RS485 LED will be flashing GREEN.
9. Remove USB stick from WI-IO-9-U2, Upgrade complete.
10. Modbus Feature Key and Configuration file will not be erased during this process.

### Upgrade Confirmation

When upgrade has been completed, review homepage to confirm Firmware has been upgraded from the previous version as detailed at beginning of procedure.

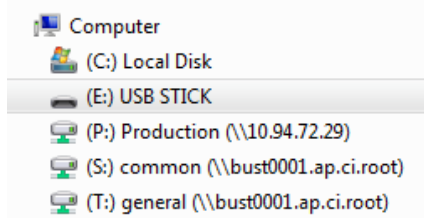
Model:	WI-I/O-9-U2-900-1W-US
Serial Number:	11101025601
Hardware Revision:	1.3b
Firmware Version:	1.2.1 -- Tue Aug 28 09:35:11 EST 2012
Kernel Version:	#176 PREEMPT Thu May 10 15:07:40 EST 2012
Bootloader Version:	2.03 - Jun 1 2011 08:53:12 (2374)
Radio Firmware Version:	Software version : 1.00i build 994 [Jul 8 2011 11:50:09] (2482)

If Radio Firmware Version displays “Radio\_firmware\_version\_not\_set” check that the Switch #6 Position next to USB port is in the default run position as indicated above. Reset power to unit and check home page again.

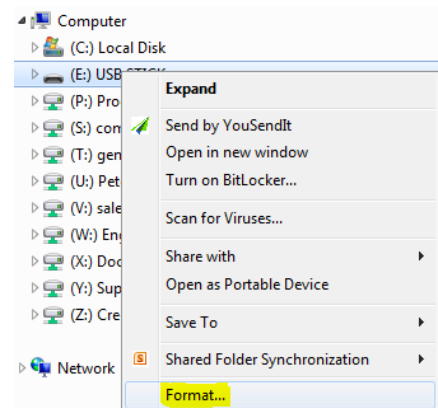
### **Background Information:**

#### Troubleshooting USB stick and program:

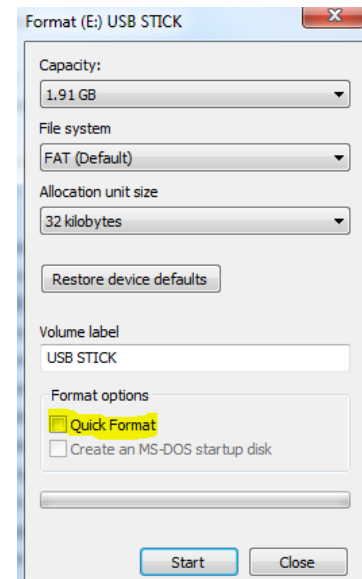
1. Format USB Stick
2. Plug USB Stick into PC and locate using Windows Explorer



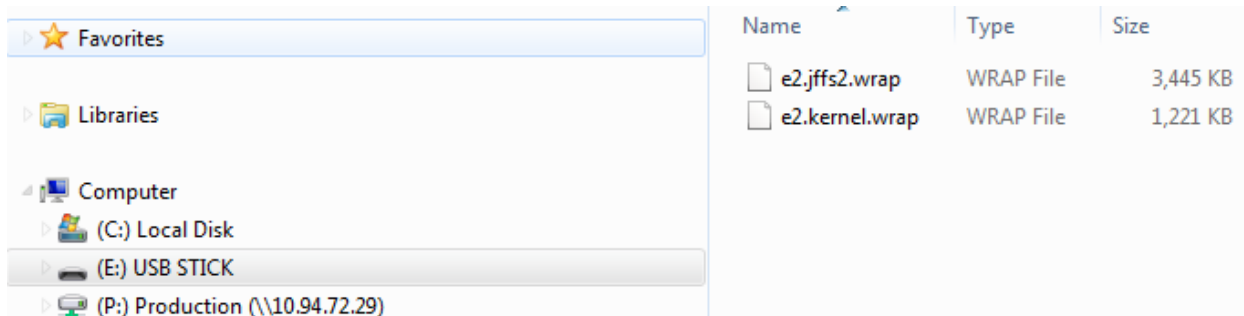
3. Format USB stick by selecting the USB Stick in menu, Right click mouse and select Format...



- When Format screen pops open ensure that **Quick Format** is deselected (unchecked) as seen below then press Start.



- When USB Stick is formatted copy supplied firmware files to USB stick. They should look like below. **DO NOT RENAME FILES. DO NOT EXTRACT OR MAKE CHANGES TO FILES.**



- When files are copied to the USB stick, remove from PC. And retry the upgrade procedure.

If you have any questions, please feel free to contact Technical Support.

Technical Support: [support@weidmuller.com](mailto:support@weidmuller.com) / [support@weidmuller.ca](mailto:support@weidmuller.ca)