

Firmware Change Log (new features and bug fixes) for Industrial Security Router Series IE-SR-4TX

List of affected Router variants:

Article name	Article number
IE-SR-4TX	2751270000
IE-SR-4TX-LTE/4G-EU	2751280000
IE-SR-4TX-LTE/4G-USEMEA	2739630000

Version 1.6.9, Build number 163587

Release date: Feb 06, 2024

Bug Fixes:

- The PPPoE settings on the web interface had been invisible due to a regression bug introduced with version 1.6.4
- The remote syslog was not working correctly after a system reboot.
- The date and time settings did not allow dates after 2023.
- Removed the VPNUP I/O signal toggle option as the device has no output signals.
- Fix SMS service on IE-SR-4TX-LTE/4G-USEMEA model with Sierra Wireless EM7455 modems
- Fixed the VPN LED / VPN UP configuration drop down. The IPsec option was lost in the drop down due to a regression bug. This has been fixed.
- Fixed a possible memory leak that could lead to a shortage of free RAM after an uptime of more than 200 days.
- A bug has been fixed that, under certain circumstances, could cause TCP streams directed to other IP addresses neighboring on a switch to be forwarded through the device. Therefore, setups with IP settings via DHCP and simultaneous TCP port forwards on these network interfaces are recommended to update to this version.

Feature updates:

- Added the possibility to upload a WWAN modem update in the device web interface. Use the web interface and navigate to: System -> Software Update -> Tab:WWAN. Please contact Weidmüller support for new firmware files if needed
- Enable the SMS features and the WWAN network scan for IE-SR-4TX-LTE/4G-EU models with Fibocom NL668EAU modem. Additionally the mobile phone number and ICCID of the SIM card have been added to the WWAN status page for all modems.

Version 1.6.4, Build number 157902

Release date: Sep 25, 2023

Bug Fixes:

- Config files from IE-SR-4TX-LTE could not be loaded into an IE-SR-4TX-LAN and vice versa. This has been fixed.
- U-link remote network routes will now be automatically configured for network interfaces using DHCP or Fallback IP assignment when the device is in 'Transparent Bridge' mode. Previously all network interfaces in these modes were skipped. Please note that u-link does not support changing network routes while the VPN connection is established!
- A regression bug in the web UI, specifically concerning the enabling of SNAT on interfaces with DHCP IP assignment, has been fixed.
- Fixed the logging of authentication failures on the web interface.
- Increased the maximum length of Eventlog entries as some lines were cut after 256 characters.
- The automatic transmission of new or modified static routes to u-link was not functioning as intended. It necessitated a manual u-link VPN restart on the device. With the current update, the u-link VPN on the device will now automatically restart when a change or addition is made to a static route along with u-link synchronization. As a result, the new route will promptly become visible to the u-link server. It's important to note that any u-link VPN connected users must still perform a restart on their VPN endpoints to access the newly added routes.
- OpenVPN client: Static routes with a gateway on the OpenVPN interface were not restored during the VPN reconnect, but only during the initial connection until it is lost. This has been fixed.

Feature updates:

- The Wireshark Remote Capture service "rpcapd" has been updated.
- The configuration variables for controlling u-link VPN are added to the Permission list.

Version 1.6.3, Build number 156152**Release date: Aug 04, 2023****Bug Fixes:**

- If the IP assignment of the WAN interface was changed from DHCP to static and the "Gateway via DHCP" option was activated at the same time, then the gateway field in the IP configuration was deactivated and it was not possible to make a gateway entry. This is fixed now.
- Improved the initial connection time and the time needed for reconnection after a link loss for the u-link WWH connections.
- The DNS proxy and the DHCP server must be configured separately since version 1.6.0. This separation was incomplete. The DNS proxy was running automatically in the background if the DHCP server was enabled on a certain interface. This has been fixed. Existing configurations will get updated on firmware update as follows: The DNS proxy will be enabled on all DHCP server interfaces if it was off before.

Feature updates:

- Allow the configuration of an NTP relay which will always step its clock directly to the NTP servers time. For example, if the time on the uplink NTP server changes spontaneously with a large value even during runtime. The option is named "Allow spontaneous NTP time step" and can be found at "Date & time". It is disabled by default.
- The devices can now use the u-link WWH connection to synchronize their date and time to the u-link server. To enable the feature, activate "World-wide heartbeat time synchronization" on the Date & Time configuration page. The time will be synced if it differs more than 60 seconds from the server. The synchronization is done inline in the WWH protocol and therefore the interval is dynamic at ~60-200 seconds.

Version 1.6.2, Build number 154726**Release date: Jun 13, 2023****Bug Fixes:**

- Network groups: The string length of the newly introduced DNS based entries has been increased.
- Fixed SNMP service when configuration uses 0.0.0.0 (any IP) as allowed source IP for client.
- New packet filter rules were not applied or saved. This regression bug was introduced with version 1.6.1.

Version 1.6.1, Build number 154276**Release date: May 30, 2023****Bug Fixes:**

- On the System State page, the u-link references in the Interface State table have been corrected.
- Incorrect entries in tables are now intercepted via an error message. No error message appeared in the previous versions 1.5.0 and 1.5.1.
- Fixed problems with the NTP relay and Siemens PLCs, the ntpd server process reported "Rate Limit reached" in the Eventlog and stopped working. This has been fixed.
- Improved NTP client behavior on power up. In some cases, it took days to synchronize the clock if there was a dynamic IP setting on the uplink like DHCP or WWAN. This issue has been resolved.
- In the packet filter layer 3 section, the rules were incorrectly numbered, which has been fixed in this version.
- In versions 1.5.0 and 1.5.1 it could happen that WWAN PIN, MNC, and MCC and smartcard PIN settings with leading zeroes became invalid. This has been fixed in the current version, but there is a possibility that these codes must be entered again.

Feature updates:

- The HTTP/S and the DNS proxy access filter network interfaces have changed from physical mapping to interfaces with IP address only. Old configurations will continue to work as before, but on reconfiguration all pure Ethernet interface on bridges will get removed.
- Added the possibility to enable debug logs for the DHCP server.
- There is a new diagnostics download. It contains more internal details for Weidmüller support, is stored in plain text and does not contain any credentials or other confidential data from the configuration.
- Introduce DNS based packet filter. The already existent network groups can now be used with DNS host and domain names. In combination with integrated DNS proxy every DNS lookup will get synchronized with the packet filter IP addresses.

Version 1.5.1, Build number 151683**Release date: Apr 27, 2023****Bug Fixes:**

- The Permissions web page did not allow to remove checked elements due to a regression bug introduced with version 1.5.0.
- Fixed a regression bug regarding transparent bridge mode on the device web interface introduced with version 1.5.0. It was not possible to change the IP address due to a Java Script exception.

- The Permissions for the filter wizard were not controllable due to a regression bug introduced with version 1.5.0.
- Fixed a regression bug which prevented devices with u-link VPN or SCM memory cards to load and apply a cf2 settings file generated with the firmware version 1.5.0.
- The HTTP API (get.php) did respond with wrong multiline formatting on "statuslong" calls due to a regression bug introduced with version 1.5.0.

Version 1.5.0, Build number 150459**Release date: Apr 13, 2023****Bug Fixes:**

- Fix DHCP server web interface page. It was not possible to disable the DHCP server using the web page once it had been enabled.
- More user-friendly configuration of the setup wizard regarding date and time selection (Web menu)

Feature updates:

- Cumulative update of integrated open source software components.
- The WAN port can now be configured to use PPPoE either with or without an additional VLAN tag.
- Log IP changes on WWAN interfaces in the Eventlog

Version 1.4.7, Build number 148034**Release date: Jan 18, 2023****Bug Fixes:**

- WWAN: configuration of an empty APN is no longer allowed as it makes no functional sense.
- Improved WWAN connection recovery. In case of signal loss, the connection will get reestablished faster or the following integrated WWAN modems: EM7455, EM73x4, MC7455, MC73x4 and SIM8202G
- Fixes an internal memory leak that occurs while u-link VPN is active. The leak is cleaned up when the VPN is down and occurs when the VPN is up. While the leak is present, the overall performance of the system slowly decreases. An update is recommended if u-link VPN is used as a permanent connection or over longer periods of time. The bug was introduced with versions 1.3.4
- The IP route pushing of additional static routes with u-link VPN client was broken. The bug was introduced with 1.3.4
- In some cases, the embedded web server was terminated when a user reconfigured the date and time. This has been fixed.
- Improved values for multiple interface dropdowns within the device web interface
- Removed an empty item in the packet filter interface drop-down lists.
- The current date and time were displayed differently on the home page than on the date and time page.
- New switch chip did not disable the WAN port if a digital in CUT signal was configured to do so.
- Added the possibility to disable the ports LAN1-LAN3
- Update of integrated software package dnsmasq to version 2.86. (see CVE-2021-3448)
- Status call nslookup4 crashes when static configured DNS server is not available
- The virtual IPsec network interface adapter was not displayed correctly in the various drop-down menus in the web interface. Especially if an uplink device ≠ WAN was used. Now the value is rewritten to match the current uplink device.
- IPsec Update to strongSwan 5.9.6
- Standard OpenVPN connections with a certificate chain of intermediate CA certificates did not work. OpenVPN was not able to follow the chain to the root CA and the connection could not be established.
- IPsec connections with certificates suffered from a race condition at system startup. This could lead to no IPsec connection being established immediately after booting.
- If the default gateway was changed on devices with 1:1NAT configuration, the 1:1 NAT IP addresses of the device could be temporarily lost. Only a reconfiguration or a device restart could rectify the situation.
- HTTPS connections to the device's web server could drop for several hours if the device's date and time were changed abruptly, such as when the NTP client was enabled.
- Fix 1:1 NAT on u-link or OpenVPN interfaces

Feature updates:

- Improved WWAN SIM card exchange on all devices with the following built-in WWAN modems: EM7455, EM73x4, MC7455, MC73x4 and SIM8202G. It was necessary to save the new settings and restart the device to get a new WWAN connection with a new SIM card and a different APN. This is now no longer necessary; the setting change works on the fly and recognizes the new SIM card.
- Added Support of new memory cards using the SCM slot.

Version 1.3.4, Build number 140962**Release date: October 14, 2022****Bug Fixes:**

- Complete rewrite of the Modbus/TCP Service for controlling and monitoring the VPNs of the device. Please see the updated manual for details. It is - for example - now possible to use the u-link acknowledge by API with Modbus/TCP.
- The Modbus/TCP API reported seemingly valid values for whereas this product does not have the CUT and ALARM feature. This has been changed. There will be a Modbus Exception if these registers are read or written.
- The u-link internal configuration variable vpn_list_10 will now contain "switched" instead of "deactivated" as default in its last field. All running configurations will be updated on firmware update.
- Standard OpenVPN connections with a certificate chain of intermediate CA certificates did not work. OpenVPN was not able to follow the chain to the root CA and the connection could not be established.
- The u-link VPN servers are now dynamically requested via world wide heartbeat (WWH) on each new connection allowing a better control for the new world wide u-link VPN servers.
- OpenSSL update to version 1.1.1o. Fixes several CVEs. Please see <https://www.openssl.org/news/openssl-1.1.1-notes.html> for details.
- Packet filters with a negated IP network group did not work correctly. This has been fixed.
- The control of switched IPsec connections by using the JSON/RPC or Modbus/TCP API could run into a dead lock if the connection could not be established
- The JSON/RPC method alarm.get() did not work as expected. This has been fixed.
- The internal WWAN connection monitor process was not stopped when the feature was disabled. A save and reboot cycle was required to stop the feature.
- The WWAN MMC and MNC settings were only applied when they got configured for the first time but not anymore after a reboot.
- Updated integrated zlib library regarding CVE-2018-25032
- The available configuration settings on the permissions web page have been cleaned up and those missing up to now have been added.
- The global permissions list on the web interface has been reviewed cleaned up.
- The internal OpenVPN processes have not been stopped in case of reconfiguration from layer 2 to layer 3 mode. This has led to unwanted behaviours as the old process continued to run and the did not like to start. A save and reboot was required to fix the situation up to now.
- The OpenVPN status page did show OpenVPN connections as alive even if they had been shut down.
- OpenVPN server connections in TUN mode did not add the IP routes to the subnets behind the connected clients to their routing table.
- Web interface: fixed size of packet filter wizard popup
- Fixed several uplink-state checks in the setup wizard
- Re-added the item folder "Information" to the web interface which got lost
- IPsec connections with DNS host names as the remote endpoint did not retry DNS lookups. If the first attempt failed, the IPsec connection was not started. This has been changed to infinite repetitions with an interval of 5 seconds. Otherwise, the connection was not established if the DNS server could not be reached directly when booting, as is usual with WWAN connections.
- Changing the configuration of IPsec parameters can take up to 60 seconds due to internal timeouts in the IPsec stack while the old connection is open and the remote terminal is already gone. This timeout has been shortened to 5 seconds, which leads to a much faster reaction of the web interface to configuration changes.
- Fix IPsec option "send certificates". This option was ignored internally.
- The internal time zone database has been updated.
- The various u-link checks in the start-up wizard, configuration page and status page have been synchronized.
- The Web interface Eventlog is now a "read only" HTML element.
- u-link was not available on the forwarding page
- The On Demand mode was described in the WWAN connection mode tool tip. However, this mode cannot be selected. The EN tool tip was ok.
- The configured time zone was ignored
- Security Update of the integrated libcurl to version 7.83.1
- Modbus/TCP API: The behavior has been changed on write access. Several registers like VPN switching require some internal processing time. Previously these actions have been forked into the background. This has led to problems in case of fast changes due to additional writes. Now the device will process these things directly and the Modbus/TCP reply will be delayed until the process is finished.
- If the VPN LED was configured for IPsec, it indicated a link while the connection was being established by shining permanently. This behavior has been fixed, while the VPN connection is being established, the LED is now blinking, as it does for u-link VPN or OpenVPN.

Feature updates:

- IPsec: It is now possible to use wildcards to match remote identities (e.g. *@<your _domain.de>, *.<your _domain.de>, or C=DE, O=<your _domain>, CN=*)
- Support for hardware with new 4G WWAN modem: Fibocom NL668EAU

Removed features:

- The support of PPPoE for pass through DSL modems has been removed.
- Configurations of the device acting as OpenVPN server with authentication against Radius servers is no longer supported.
- The DHCP relay feature has been removed.

Version 1.2.9, Build number 136467**Release date: March 22, 2022****Bug Fixes:**

- Fixed a bug which caused the web interface to behave very slowly especially on the "Save Settings" page. The bug is only present on the latest devices with a slightly different hardware.

Version 1.2.6, Build number 132889**Release date: December 02, 2021****Feature updates:**

- Support for IE-SR-4TX* with alternative Ethernet switch chip. These routers cannot be downgraded to older firmware versions than 1.2.6.
- JSON/RPC API has been extended with a new config.import_config() call.

Bug Fixes:

- A very rare error which can occur when restoring the factory settings has been fixed. In the event of an error, the affected devices no longer show a valid configuration and can then no longer be reached via the network. In these cases, the only thing that helped was a new factory reset.

Version 1.1.2, Build number 125086**Release date: August 25, 2021****Bug Fixes:**

- New OpenVPN Static Key Dropdown was always empty. This has been corrected.

Version 1.1.0, Build number 123476**Release date: July 23, 2021****Feature updates:**

- JSON/RPC API was extended to upload certificates and keys and setting files (.cf2). A new object on the API named "file" will therefore appear.
- The forwarding has been enhanced with Reverse SNAT per line. This can now be activated for a forwarding entry with an IP alias and any protocol (*). For IP connections that are started from the internal network, the source IP is replaced by the specified IP alias.
- Added "slow link" checkbox to the u-link configuration page. Enable this feature if you have links with round trip times above 1000ms, i.e. satellite connections or a slow mobile network.
- OpenVPN client or server connections can now be configured to use the OpenVPN TLS protection options tls-auth or tls-crypt.

Bug Fixes:

- Configuration changes which arrived through JSON/RPC API did not appear in the Eventlog.
- Fixed 4G fallback mode when using a monitored service with a TCP port. This bug was introduced in 1.0.12. Improved fallback to work even if SNAT is not active on the monitoring interface. Monitoring with ICMP was not affected.
- Write permissions for u-link configuration and SMS service configuration can now be changed using the web interface permissions page.
- Fixed dynamic routing with RIP
- Config-Wizard did not enable u-link completely, the user had to enable it additionally on the u-link web page.
- The VPN key setting for u-link did not work directly if it was activated before entering the activation code. This behavior has been corrected. The system now goes online immediately after setting the activation code and the VPN key is still on.

Version 1.0.12, Build number 116627**Release date: March 28, 2021****Feature updates:**

- The Forwarding feature has been extended to forward UDP or TCP port ranges.

Bug Fixes:

- Fix of an internal race condition of IP forwarding feature in cases of configuration changes with parallel traffic. In seldom cases this could lead to some running TCP streams to not get forwarded as expected.
- Fix of regression bug introduced with 1.0.7. NATing and filtering of active FTP was broken.
- Bugfix in case of problems with IPsec connection establishment with user supplied CA certificates.
- IP forwarding with IP aliases could be influenced by OpenVPN or u-link connection events due to an internal race condition in terms of connection tracking with parallel traffic.
- Fix of issue referenced by CVE-2021-3156: Integrated FOSS component 'sudo' has been updated to version 1.9.5p2. Prior to that version there was a privileged escalation bug weakening the internal security chain.
- Fix of issue referenced by CVE-2020-25684: If the DNS Proxy feature is enabled the device is vulnerable to a DNS Cache poisoning attack as described by the CVE.

Version 1.0.9, Build number 112614**Release date: November 23, 2020****Feature updates:**

- IPsec IKEv2 can now be activated. By default, active connections are now initiated using IKEv2, but IKEv1 connections are passively accepted.
- Update of the integrated lighttpd web server from 1.4.33 to 1.4.55. Note: none of the known CVEs had any security effect to any Weidmüller security routers as the faulty components or configurations were not enabled at any time: CVE-2013-4508, CVE-2013-4559, CVE-2013-4560, CVE-2014-2323, CVE-2014-2324

Bug Fixes:

- The mobile WWAN connection was not monitored for connection loss on IE-SR-4TX-LTE/4G-EU version. In case of a long-time interrupt (hours) of mobile connectivity the connection was not reestablished automatically even on the configuration setting "permanent" was enabled.
- Fixed IPsec status web page.
- Fixed IPsec logging into the Eventlog
- Fix new WWAN fallback using TCP ping which was introduced in the previous version.

Version 1.0.7, Build number 109487**Release date: October 8, 2020****Bug Fixes:**

- Fixed function of the Digital Input to initiate VPN connection

Version 1.0.7, Build number 106548**Release date: July 7, 2020****Initial Release**