



VeEX TX320S Module User Manual

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**TX320S Module (SFP/SFP+)
Software Release Notes**



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TX320sm Module Firmware/Software Updates

The TX300s test set and its factory-installed 320sm option are constantly evolving to keep up with new applications and advanced capabilities. Use VeExpress from the >Utilities menu to get the latest delta or full software updates or go to www.veexinc.com to download the full upgrade packages to keep the test set and modules up to date. Refer to the last section of this document for details.

Software versions: 04.00.03 September 22, 2022

Release Scope:

Maintenance Release. General availability.

Requires TX300S Platform version 04.00.11 or newer. Use with ReVeal RXTS 01.02.08 or newer

New Transport features and improvements:

1. Compatibility with latest TX300S platform version. (Refer to TX300S Platform Release Notes for details.)
New Packet features and improvements:
2. Compatibility with latest TX300S platform version. (Refer to TX300S Platform Release Notes for details.)
3. Fixed Ookla Speedtest crash Known issues or limitations:
 - a. No new significant issues to report.

Software versions: 04.00.00

March 1, 2022

Release Scope:

Major Release. Limited availability.

Requires TX300S Platform version 04.00.05 or newer. Use with ReVeal RXTS 01.02.08 or newer

New Transport features and improvements:

1. Compatibility with latest TX300S platform version. (Refer to TX300S Platform Release Notes for details.)
New Packet features and improvements:
2. Compatibility with latest TX300S platform version. (Refer to TX300S Platform Release Notes for details.)
Known issues or limitations:
 - a. No new significant issues to report.

Software versions: 03.06.04

Oct 13, 2021

Release Scope:

Maintenance Release. General availability.

Requires TX300S Platform version 03.06.07 or newer. Use with ReVeal RXTS 01.02.08 or newer

New Transport features and improvements:

1. Compatibility with new R-Server client and latest TX300S platform version.
New Packet features and improvements:
2. Compatibility with new R-Server client and latest TX300S platform version.
Known issues or limitations:
 - a. No new significant issues to report.

Software versions: 03.06.03

Sep 8, 2021

Release Scope:

Maintenance Release. General availability.

Requires TX300s Platform version 03.06.04 and ReVeal RXTS 01.02.08 or newer.

General improvements:

Overall maintenance.

New Transport features and improvements:

1. Added 64K Codirectional with One-Way Delay (OWD) test feature, using external 1PPS reference or GNSS-assisted.

New Packet features and improvements:

2. Improved V-PERF performance in long latency scenarios.
3. Improved Advanced Saving feature for Ether applications.
4. Improved Advance Optical Testing application

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 03.06.00

Jul 28, 2021

Release Scope:

Formal Release. General availability.

Requires TX300s Platform version 03.06.02 and ReVeal RXTS 01.02.08 or newer.

General improvements:

1. Improved R-Server results saving.

New Transport features and improvements:

2. Improved E1 One Way Delay (OWD) display resolution to 1 μ s. Note: Resolution and accuracy on low data rates are physically limited by the size (width and separation) of the available pulses.

New Packet features and improvements:

3. Improved transceiver health check functionality.

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 03.05.06

Oct 30, 2020

Release Scope:

Maintenance Release. General availability.

Requires TX300s Platform version 03.05.07 and ReVeal RXTS 01.02.08 or newer

New Transport features and improvements:

1. Improved Clock Wander & Phase Measurements
2. Fixed an issue in C37.94 RTD where test result values did not match GUI values.

New Packet features and improvements:

3. Added fully encrypted profile support to ethernet applications
4. Added Ping and ARP to IPv4 Loopback
5. Added "Copy to + Increment" to MAC addresses, IP addresses and TCP/UDP Ports in V-SAM testing to simplify user configuration.
6. Added "Aggregated Traffic" results to V-SAM GUI and test reports.
7. Improved V-TESTS (four streams as default)
8. Improved V-SAM application with Copy To + Increment functionality

9. Improved V-PERF in routed IPv6 environments.
10. General improvements to the 1588v2 PTP engine and minor GUI improvements to packet timing graphs.
11. Fixed an issue where Service Disruption under Loopback app was not displaying measured values
12. Fixed an issue where Loopback was correcting CRC errors preventing the Receiver to see Frame Loss.
13. Fixed an issue where V-SAM timed tests may not stop at the configured mark
14. Fixed RFC 2544 issues when Frame Size was set to 64 Bytes the RX frames showed 0 and frames were not counted properly.
15. Fixed an issue where IP addresses last octet is .255 does not work with /31 mask, i.e.
10.0.0.255/255.255.225.254
16. Fixed an issue where V-PERF test result graphs were mislabeled

Known issues or limitations:

- a. It is recommended to limit the use of CPU intensive Remote Control functions (e.g. Web Remote, VNC, EZ-Remote or ReVeal) while the test set is running PTP emulation and packet timing measurements.
- b. Test set's GUI response may become slow while running protocols like IEEE 1588v2/PTP due to high CPU resources demand, especially at Sync rates above 32 packet/s or running multiple high-priority tasks concurrently, such as TE recording or Wander/Phase analysis. Although not a desirable behavior, this is considered normal operation as the mission-critical test functions have the highest processing priority. Users may experience GUI response lag when running/recording long-term PTP tests and/or used simultaneously with Web Remote or EZ-Remote, as the test set's first priority is to maintain protocol emulation and measurement performance integrity. During these high-tasking processes, you may also notice that the clock display at the bottom of the screen may not refresh as often as normal, nonetheless it is properly kept updated internally.
- c. The 1588v2PTP Client (SC) emulation is not recommended for use in 128 packet/s PTP environments. In such cases, it is recommended to use the actual PTP client appliance and run the physical TE measurement off the TSC's recovered (physical) 1PPS clock output.

Software versions: 03.04.10

Jul 1, 2020

Release Scope:

Maintenance Release. General availability.

Requires TX300s Platform version 03.04.12 and ReVeal RXTS 01.02.08 or newer

New Transport features and improvements:

1. Clock Wander & Phase Measurements improvements.
 - Refreshed GUI, new run-time TIE/TE Monitor grid with Manual, Tracking (centered fit, relative to the current trace in view) and Automatic (relative to zero) auto Y-scale modes.
 - New 1PPS Phase Error measurement Cable Delay Compensation for signal under test (RX/BNC) and reference (CLK/SMA) cables, for more accurate results, even if the cords are of different lengths and specs. [8137] – Always-visible Signal under test and Reference clock signal indicators.
 - Adjusted 1PPS TE sign.
- New Packet features and improvements:
2. Minor GUI improvements to the run-time 1588v2 PTP packet timing graphs. (Added smaller Y-scales, grid, X-scale label.)
3. Internal 10GE improvements.

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 03.04.09

May 13, 2020

Release Scope:

Formal Release. General availability.

Requires TX300s Platform version 03.04.10 and ReVeal RXTS 01.02.06 or newer

New Transport features and improvements:

1. General maintenance and improvements.

New Packet features and improvements:

2. Improved EoE test functionality.
3. Improved V-FTP download when transfer mode is set to Passive. [6720]
4. Improved IPV4 multicast performance in 1588v2/PTP Dual-port Monitor mode. [6651]
5. Improved 1PPS Clock Phase Measurements with the addition of Cable Delay compensation for the reference clock and signal under test. Users can now enter the delay induced by the test cables, for more accurate results, even if the cords are of different lengths and specs. [8137]
6. Improved 1GE and 10GE time stamping resolution and accuracy. Internal timestamping is currently based on UTC, provided by GNSS. If no GNSS receiver available (or off) the system ToD (RTC clock) would be used as an arbitrary clock seed.
7. Added SCPI command support to Clock Wander & Phase Measurement for configuration and run-time results.
8. Fixed an issue with Link and Activity LEDs not working on copper SFP+ transceivers. [7785]
9. Fixed an issue with the Fiber Channel Timed measurement mode not working correctly. [7652]
10. Fixed an issue with "Fibre Channel 8G not Supported" message being displayed on certain units. [7214]

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 03.04.02

Nov 21, 2019

Release Scope:

Formal Release. General availability.

Requires TX300S Platform version 03.04.01 and ReVeal RXTS 01.02.05 or newer

New Transport features and improvements:

1. Minor bug fixes and general improvements

New Packet features and improvements:

2. Added OOS alarm to Throughput test.
3. Added support for larger frame sizes in Layer 4 traffic tests.
4. Added IP Connect option to Loopback feature.
5. Added V-PERF graphs to test reports, for tests with <4 streams and window size = 1.
6. Added Fibre Channel Buffer-to-Buffer credits to the RFC2544 frame size.

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 03.03.01

May 23, 2019

Release Scope:

Formal Release. General availability.

Requires TX300S Platform version 03.03.06 and ReVeal RXTS 01.02.05 or newer

New Transport features and improvements:

1. New ITU-T G.Sup43 7.3 extended mapping support for 10GE-GFP[F]-OTU2 Ethernet over OTN is now

included in the EoOTN (GFP-F, ODUflex, ODU0) test mode. UPI value is set to 0xFD (frame-mapped 64B/66B encoded Ethernet, including the Ethernet frame preamble).

2. Added APS/SDT test feature to IEEE C37.94.

New Packet features and improvements:

3. Added 64 TCP stream support in the combines Client-Server and Server-Client test mode.
4. Added a Dual Port Layer 4+ and Basic Ethernet Testing mode. One port is used for Layer 4 testing, and the second port is used for all other basic Ethernet testing.
5. Added MPEG codec for 1080p support.
6. Improved stability for general IPv6 features in V-SAM and V-PERF.
7. Fixed an issue with V-SAM stream #1 default MAC. When the MAC was configured by the user, it would change back to the default MAC.
8. Fixed IGMP multicast issue in PTP.
9. Pre-release of the SFP/SFP+ Optical Transceiver verification and Pluggable Optical Module Diagnostics (Beta)

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 03.02.08

Feb 20, 2019

Major Release. General availability.

Requires TX300S Platform version 03.02.08 or newer (not compatible with platform version 02.xx.xx) Use with ReVeal RXTS 01.02.04 or newer

General features and improvements:

1. Added support for version 3.x Test Card summary and application management GUI enhancements. Users can now manage, launch, switch, release, and monitor multiple test applications, from this intuitive entry point.
2. Overall system improvements, including software updates via WiFi, WLAN or LAN.
3. Updated Chinese language library.

New Transport features and improvements:

4. Added ISDN PRI support in Dual E1 Port Mode
5. Added microphone noise cancellation function for ISDN call applications.
6. Improved E4 (140M) and STM1e (155M) TX pulse shape and impedance matching.
7. Fixed an SDH TU-LOM issue when set to AU3

New Packet features and improvements:

8. New and Improved 10GE 1588v2/PTP testing option.
9. Added dual port SyncE. Each test port can be set to use independent reference/measurement clock sources to fit most application requirements.
10. Improved RFC2544 point-to-point testing with NAT traversal.
11. Improved Loop back control.
12. Improved compatibility with RTU-320 test head, including in-band test results push from client to server, IPv6 loopback control, 10GE loopback improvements with Linux servers, among others.
13. Improved dual port SyncE support with independent reference clock sources
14. Improved IPv6 back-to-back test in VPerf.
15. Fixed an issue with VLAN tags not being part of the total frame size calculations.

Known issues or limitations:

- a. No longer compatible with TX300S Platform 02.xx.xx versions. TX300S platform must be updated to the latest 03.xx.xx version available

Software versions: 02.00.53

Aug 31, 2018

Release Scope:

Minor Release. General availability.

Requires TX300S Platform version 02.00.64 and ReVeal RXTS 1.2.0 or newer New Transport features and improvements:

1. Improved E4 (140M) and STM1e (155M) TX pulse shape and impedance matching.

New Packet features and improvements:

2. General improvements.

Known issues or limitations:

- a. Not yet compatible with TX300S Platform 03.xx.xx versions.

Software versions: 02.00.49

May 16, 2018

Release Scope:

Minor Release. General availability.

Requires TX300S Platform version 02.00.58 (not compatible with 03.00.xx) and ReVeal RXTS 1.1.6 or newer New Transport features and improvements:

1. General improvements.

New Packet features and improvements:

2. General improvements.

Known issues or limitations:

- a. Not yet compatible with TX300S Platform 03.00.xx versions.

Software versions: 02.00.48

Apr 19, 2018

Release Scope:

Formal Release. General availability.

Requires TX300S Platform version 02.00.53 (not compatible with 03.0.xx) and ReVeal RXTS 1.1.6 or newer

General improvements:

1. Added a Save function to Wander and Phase Analysis. Allow users to save TIE and TE test results after the test is stopped, if the "Save to USB" was not enabled before starting the tests, so results stored in RAM are not lost. The use of real-time saving to USB Memory stick is still the recommended way to save long-term measurements, to prevent accidental loss of long-term data in the event of power loss or any other unforeseen circumstances. [3214]
2. Improved built-in Wander Analysis function to show the full view of the whole data range (TIE or TE) when the wander or phase file is open. Users are no longer presented with the first hour of TIE or TE (when the file is opened) and there is no need to adjust the =range. [3420]
3. Added an "Auto Start after Signal Loss" feature to Clock Wander Measurements, so long-term tests (e.g. weekend) efforts are not completely lost, in the event of temporary impairments with the test or reference signals. [3453]

4. Added "Test Signal" and "Ref. Clock" information to the built-in Clock Wander Analysis tool. Users can now see on the top of the screen the type of signals used in the test, when a file, when a Wander or Phase file is loaded for analysis. [3212]
5. Added Y-Axis (TE or TIE) Auto-Scale options to the Clock Wander Measurements tool. [3220]
6. Improved test resources list in the command line interface (CLI) to only show the test mode options matching the current port assignment. Options that are not applicable to the current port selection are no longer displayed in the command list (help).
7. Addressed a command line issue with the TX320SM+OTDR configuration, that presented users with four test port combinations in the test resources list.

New Transport features and improvements:

8. Improved SDH/SONET Pointer Tasks user interface, by adding self-guiding graphs to depict the different G.783 Pointer Tests Sequences and their parameters.
9. Improved C37.94 framing recovery functionality to address cases in which the data is misaligned.
10. Addressed an issue with the audible alarm buzzer not functioning properly.

New Packet features and improvements:

11. Added configurable CBS/EBS for 10G VSAM
12. Improved IP connectivity to enhance the remote control experience of the test set.
13. Improved CIR/EIR resolution in VSAM; Added support for up to three decimal points.
14. Improved V-SAM FLR% accuracy
15. Optimized Events Table display
16. Optimized 2-Way TE calculations in PTP 1588v2
17. Addressed a 1000BASE-X issue in which P1 may have declared Frame Loss when P2 was in LOS condition
18. Addressed an RTD Max value issue that may occur when Random frame size was selected
19. Addressed issue with Do Not Fragment Flag bit in the IP Header: the correct bit setting was not being transmitted.

Known issues or limitations:

- a. Not yet compatible with TX300S Platform 03.00.xx versions.

Software versions: 02.00.45

Nov 10, 2017

Release Scope:

Formal Release. General availability.

Requires TX300S Platform version 02.00.50 and ReVeal RXTS 1.1.6 or newer

New Transport features and improvements:

1. Added real-time TIE Monitor graph with auto-scale, run-time MTIE/TDEV Analysis and file overwrite protection to STM1/OC3, E3, E1 Wander Measurements. The TIE monitor provides a real-time status of the current state of the measurement (shows last 7 minutes).
2. Added ISDN Overlap Dialing capabilities for backward compatibility verification and interop with legacy systems [2357].
3. Added SCPI command support for basic Wander measurements.
4. Added file over-write prevention to Clock Wander Measurements.
5. Improved ISDN to allow users to enter the test mode in Dual E1 Mode, for monitoring purposes.
6. Improved Clock Measurement GUI to prevent overwriting test results for long-term measurements, when Start is pressed by mistake, without changing the log file name.

7. Improved SDH/PDH Wander Measurements with the addition of the real-time (current) TIE Monitor window and runtime TIE/MTIE/TDEV Analysis function.
8. Fixed an ISDN protocol capture problem that happened after the circular capture buffer exceeded its 1000-message capacity. New Packet features and improvements:
9. Added real-time TIE Monitor graph with auto-scale, run-time MTIE/TDEV Analysis and file overwrite protection to SyncE and 1588v2/PTP Wander Measurements. The TIE monitor provides a real-time status of the current state of the measurement (shows last 7 minutes).
10. Added SCPI support for IEEE1588v2 (PTP) Pass-through test application.
11. Added buffer length setting for V-PERF UDP mode (the same usage as “-l” parameter of iperf3) and improved interoperability with iPerf3 PC server.
12. Added jitter statistics for V-PERF UDP mode.
13. Added V-PERF Transfer Direction control for Server to Client or Client to Server.
14. Improved V-PERF Expected Throughput rate calculation for fixed window size.
15. Added V-PERF Threshold Monitoring function. This function allows users to configure Throughput rate and Round-trip time thresholds. During the test, the application monitors the rate and delay against the user configured thresholds. At the end of the test a Pass, Warning or Fail result is provided based on the threshold crossing events.
16. Added V-PERF raw data export to USB stick. This function allows to export the per-second V-PERF results to an external USB drive. The results are saved in csv format.
17. Added Host Name configuration to multiple IP streams.
18. Improved Layer 4+ test functionality and test results.
19. Improved X-Loop compatibility mode.
20. Improved V-SAM long-term stability.
21. Improved SyncE and 1588v2/PTP Wander Measurements with the addition of the real-time (current) TIE Monitor window and run-time TIE/MTIE/TDEV Analysis function.
22. Fixed some issues with ARP and Ping in the Japanese language version.
23. Fixed issues in 1GE BERT unframed mode.
24. Addressed issues with PTP Quasi-slave delay request rate display, RTD graph and pass-through statistics.
25. Removed Collision counter

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 02.00.36

Jul 11, 2017

Release Scope:

Formal Release. General availability.

Requires TX300S Platform version 02.00.43 or newer and ReVeal RXTS 1.1.6 or newer

New Transport features and improvements:

1. Improved Jitter Transfer Function (JTF) measurements. Removed the dependency on previously used HP1/HP2-LP filters, improved loop calibration function, accuracy of attenuation readings and repeatability. The JTF jitter generator continues to use valid amplitudes to stress the DUT, all below the standard maximum tolerable jitter (MTJ) levels.
2. Improved the Maximum Tolerable Jitter test by increasing the number of data points, within the ITU-T G.823 and G.825 frequency ranges, to better evaluate against the standard masks.

3. Improved Wander measurement and frequency offset accuracy for SDH/SONET, PDH/DSn and Clock sources.

New Packet features and improvements:

4. Added support jumbo frame on Layer4+ application (MTU up to 10000bytes)
5. Added Port Status indication to TX320S in Dual Port mode.
6. Added Layer4+ dual port for 1GE/10GE interfaces.
7. Added UDP traffic support in VPERF.
8. Added Pause frames counters to VPERF in Bi-directional mode.
9. Added "List Files" button/feature to the FTP Upload test in V-FTP, similar to the FTP Download test.
10. Added an adjustable MTU size in V-FTP. The range is 64B to 10,000 bytes.
11. Added the temperature reading to the SFP+/SFP status screen.
12. Added support for manual entry of server's IP/URL address in V-TEST. Once manually entered the user can add the server to a "User Managed" server list. The VeEX managed list continues to be supported.
13. Added 10GBase-T option control. In the previous release the 10G-BaseT option was accessible when in 10GE LAN mode.
14. Improved Wander measurement and frequency offset accuracy for SyncE and PTP.
15. Improved V-SAM profile editing to include DHCP addressing.
16. Updated GUI for DHCP support in Throughput and VSAM.
17. Fixed an RFC2544 Profile issue when low rate MAX bandwidth and resolution are configured. ReVeal RXTS 1.1.6 is required with this new SW.
18. Fixed an issue with VPerf results saving.
19. Fixed a settings issue when configuring the transmit rate to 1 FPS.
20. Fixed an issue in Service Level OAM where the protocol was not initiating properly.

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 02.00.32

Feb 27, 2017

Release Scope:

Formal Release. General availability.

Requires TX300S Platform version 02.00.37 or newer and ReVeal RXTS 1.1.4 or newer

New Transport features and improvements:

1. Improved the numeric formatting for some test report fields, in the HTML file, to make them more user friendly.
2. Improved C37.94 Receive Data monitor screen, for easy identification of line rate bits and their complements, as well as hexadecimal display for quick pattern identification. Pause function also included for 16 consecutive frames.
3. Fixed a CSU loopback compatibility with Adtran's CSU.
4. Fixed an issue with real-time Level measurements and frequency measurements, that could have affected test reports, if the test set was disconnected from the test signal or the pluggable optics removed before saving the last test results.

New Packet features and improvements:

5. New CPRI Layer 2 Slave Wander Measurement for link frequency stability and accuracy verification. Validates that the sum of all phase noise and frequency variation contributions in a link are below the 2ppb limit. This feature also includes 'Real-Time TIE Monitor Graph' and direct access to 'Run-Time TIE/MTIE/TDEV Analysis'.
6. New SyncE+PTP. The combination of physical layer SyncE and packet based 1588v2 synchronization is now

allowed, by enabling SyncE (Master or Slave) before launching PTP Emulation. SyncE and PTP share the same clock. User can perform Wander Measurements at the frequency (SyncE) level or TE Measurements at the PTP quasi-emulation level.

7. New EoE Traffic Generation and Analysis test feature for 1GE and 10GE. Note: For Japan only.
8. Added automatic PTP time stamping alignment when reference clock is set to "GPS 1PPS"
9. Added support for 10GBase-T. Requires 499-05-681 software option and 301-02-012G copper SFP+ 10GBASE-T with RJ45 Connector.
10. Added support for 10GE V-FTP. Line rate FTP Throughput.
11. Added 1 FPS (frame per second) traffic generation in Throughput.
12. Added the ability to enable or disable the Service Disruption Time (SDT) measurement.
13. Added a Traffic Loss Trigger measurement in the Throughput application. The measurement is triggered when the RX Utilization = 0%.
14. Fixed a CRC/Bit error issue in 1GE when PRBS 2E31 was used.
15. Fixed a Bit error issue that occurred approximately 30 minutes after the start of the test.

Known issues or limitations:

- a. Ongoing Jitter Transfer Function (JTF) test improvements to remove any dependency on previously used HP1/HP2 filters, improve its loop calibration function for better accuracy.

Software versions: 02.00.26

Sep 29, 2016

Release Scope:

Formal Release. General availability.

Requires TX300S Platform version 02.00.29 or newer and ReVeal RXTS 1.1.4 or newer

New Transport features and improvements:

1. Added Bi-directional ISDN PRI Monitoring, Capture and Decode mode, using RX1 and RX2. RJ48 balanced interface requires a Y-cable with RX1 cable connected to pins 1 (B/Ring), 2 (A/Tip), and RX2 cable to pins 4 (B/Ring), 5 (A/Tip).
2. Added DS1 ESF Facility Data Link (FDL) generation and decode, including synchronization clock quality messages (SSM QL), loopbacks, and protection switching.
3. Added DS1 TX Line Build Out (LBO) emulation.
4. Added peak voltage readings (+Vp and -Vp) to the E1 Pulse Shape Analysis function.
5. Added G.821 BER evaluation results when C37.94 test records are saved.
6. Improved Remote Control responsiveness during mission-critical and real-time tests requiring high CPU priority, such as Wander and Phase run-time MTIE/TDEV analysis. Real-time Wander (TIE/TE) measurements and MTIE/TDEV Analysis tasks continue to have the highest priority in the system, to assure the requires accuracy and reliability.
7. Fixed a BERT Elapsed Time (ET) discrepancy that may have affected earlier hardware versions of the TX320SM module.

New Packet features and improvements:

8. Added dual-port Bidirectional Packet Capture & Decode
9. Added 1GE & 10GE EoE Traffic Generation and Analysis option
10. Added 1588 Quasi Slave mode. The Quasi Slave mode applies G.8260 defined filters to PDV values in order to estimate the achievable performance of a network Slave. The Quasi Slave is the recommended mode for PTP Slave Emulation Wander measurements.
11. Added a 1GE & 10GE test profile Load & Run shortcut directly from the File Manager

12. Added VPerf enhancements – 64 TCP sessions and MTU up to 10,000 bytes
13. Added per-stream VLAN Priority field.
14. Improved ReVeal Test Profiles compatibility.
15. V-SAM enhancements: Added support for 8 frames EMIX pattern, added support for CBS/EBS up to 1000kB and support for EMIX in 10GE mode.

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 02.00.18

May 3, 2016

Release Scope:

Formal Release. General availability.

Requires TX300S Platform version 02.00.21 or newer

New Transport features and improvements:

1. Resolved an issue with SFP rate mismatch that may have caused incorrect SDT measurement and Elapsed Time reports to some users.
2. General bug fixes and improvements

New Packet features and improvements:

3. New TE measurement on 1588v2 slave emulation
4. New concurrent IEEE-1588v2 Master and Slave emulation in Dual test mode
5. New PESQ VoIP Expert (requires VoIP Call Expert 499-05-595 and one PESQ Server License installed on a server). This is a PESQ Client function for end-to-end voice quality measurements based on the ITU-T P.862 PESQ (Perceptual Evaluation of Speech Quality) algorithm
6. New PTP Forward (T1) and Reverse (T4) delay measurements in Slave Emulation and Pass-Through modes. Require 1PPS reference.
7. Added IP monitor / top talker on 10GE/1GE
8. Added 1GE and 10GE Layer1 Unframed mode
9. Added the ability to monitor SyncE ESMC/SSM messages while testing 1588v2 PTP
10. Improved ViPAG
11. Improved Event Log navigation with table scroll on BERT, Throughput, RFC and V-SAM
12. Improved FTP File List navigation with table scroll, and added postfix filter on layer4+ application
13. Improved PTP now supports independent emulation on the two ports (M+M, M+S, S+M, S+S)
14. Improved VLAN scan application to display all VLAN tags when the incoming packets contains stacked VLAN
15. Improved IP testing results now display extra information for unreachable pings
16. Fixed GUI issues on PTP pass-through mode

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 02.00.10

Feb 19, 2016

Release Scope:

Limited Release. General availability.

Requires TX300S Platform version 02.00.16 or newer

New Transport features and improvements:

1. New G.703 64K Codirectional Test Application option
2. New IEEE C37.94™ Test Application option with terminal and pass-through monitoring modes, RTD and GPS-assisted one-way-delay (OWD) asymmetry measurements
3. Add Asynchronous, Bit Synchronous and Byte Synchronous E1 Mappings to SDH Test Setup [2292]
4. Fixed a bug in Japanese GUI that made SDH Payload Broadcast/Unequipped selection disappears [2291]
5. Added run-time MTIE/TDEV analysis to 1PPS Phase Measurements
6. Improved DS3 Auto Monitor signal detection for DS3-bulk with All1s pattern [2186]
7. Fixed an issue with test profile management that could have lock-up the GUI when more than 128 test profiles (for the same interface) were stored
8. Fixed an issue with STM-1 optical synchronization and received jitter tolerance [2324] **New Packet features and improvements:**
9. Added support for Ethernet Test Application auto-launch after a low battery shut down
10. Enhanced VLAN scan for 1GE/10GE
11. Improved PDV measurement synchronization and calculations
12. Fixed a dual-port statistics issue, with fields not matching when Stop All was pressed.
13. Fixed RFC2544 declare fail in short fiber loop back condition
14. Fixed a bug that caused Packet Capture to lose some packets when Start All was used in dual-port mode

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 02.00.04

Jun 6, 2015

Release Scope:

Minor Release. General availability.

Requires TX300S Platform version 02.00.04

New Transport features and improvements:

1. General improvements to Clock Wander Measurements functions. Internal optimization and minor GUI adjustments
2. General fixes and improvements

New Packet features and improvements:

3. New Fibre channel SDT measurement based on IPG, valid for all speeds (1/2/4/8/10G)
4. General fixes and improvements

Known issues or limitations:

- a. No new significant issues to report.

Software versions: 02.00.02

Mar 19, 2015

Release Scope:

Initial Release. General availability.

Requires TX300 Platform version 02.00.01

New Transport features and improvements:

1. Includes support for OTU1, OTU2, OTU1e, OTU2e, STM-64/16/4/1/0, OC-192/48/12/3/1, STS-3/1, E1/2/3/4, DS1/3 testing, with independent dual port testing (one PDH test in port 1 only)
2. Ethernet over OTN (EoOTN) with OTU2e, OTU1e, ODU0 and ODUFlex
3. Complete multi-stage mapping and multiplexing of PDH, SDH and/or OTN test signals

4. Service disruption measurements
5. OTU1 and OTU2 Round Trip Delay (RTD) measurement
6. Added the ability to save Pulse Mask results
7. Jitter, Wander and Phase measurements with TIE recording and MTIE/TDEV analysis
8. Improved DS3 Auto Monitor signal detection for DS3-bulk with All1s pattern

New Packet features and improvements:

9. Independent dual port for 10/100/1000Base-T, 100Base-FX, 1000Base-X, 10GBase-X Ethernet and 1/2/4/8/10G Fibre Channel testing
10. New 10GE Pass Through Monitor feature between two SFP+ ports
11. New 1GE Advanced Pass Through Monitor feature between two SFP+ ports
12. 10GE and 1GE SyncE with ESMC message support
13. 1GE SyncE Wander measurements
14. 1588v2 PTP Emulation, measurements, protocol monitoring and wander measurements
15. GPS-assisted one-way latency measurement option for 1GE and 10GE
16. 1GE/10GE Multi-stream IP testing
17. MPLS-TP and MPLS-TP OAM option for 1GE and 10GE
18. Service Disruption Time (SDT) measurements for 1GE copper and fiber
19. Fibre channel SDT measurement based on IPG, valid from all speeds (1/2/4/8/10G)
20. Support for 614.4M to 9.8G CPRI and 768M to 6.1G OBSAI layer 1 testing for DAS (Distributed Antenna Systems)

Known issues or limitations:

- a. TX300S platform and factory-installed modules' software and improvements are now tracked separately. Please refer to the individual test module's software downloads and release notes for TX300S Platform, 300SM (XFP/SFP), 320SM (Dual SFP+) and OTDR for more details.

References

Test Profiles and Test Results Backup Procedure

The TX300S File Management system offers backup [To USB] and restore [From USB] functions. They can be found in the

>Utilities >Files >Saved, on the left side of the screen.

To enable the [To USB] and [From USB] functions, insert a FAT32 USB Memory stick into any of the USB ports. Wait for the USB memory to be recognized (the folder icon will change appearance with a green USB memory icon).

Select the desired test results, test profiles, screen capture and protocol capture files to be saved, using the individual check boxes. For a full backup, check the master box on the header and all files will be marked.

Tap the [To USB] button to initiate the file transfer procedure and wait for the progress bar to finish. Original files won't be deleted from the test set.

When all files have been copied to the USB, you may tap the folder icon (top-right corner) and select "Remove USB Drive" to make sure all cached data is transferred to the USB drive, especially when transferring small files.

It is highly recommended to select all important test profiles and results, and make a backup copy to a USB drive, before upgrading the unit's software. The software upgrade process cleans up all the data stored in the unit. After the unit has been updated, use the [From USB] function to restore the data back to the test set.

Synchronizing the Test Set with VeExpress

The TX300S needs to connect to VeExpress to auto-register, validate its licenses (newly assigned or shared) and check for any new Platform (System) or Application (Test Module) software updates available.

Connect the TX300S to the Internet via its LAN management port (located on the right side of the test set), verify that a valid IP address is displayed on the bottom-left corner of the screen, press the utilities' V icon on the top-left corner of the screen to access the Utilities section, and select >Utilities >VeExpress to access the built-in client. Press the Check button to register and update licenses (permanent, rented or leased). It also checks if the test set

is running the latest software version.

It is recommended to sync the TX300S with VeExpress on a regular basis, especially after performing software upgrades, to refresh its licenses (e.g., expecting a new license or releasing/sharing licenses with other test sets). Connecting to VeExpress is also required if new software features (licenses) have been purchased, leased, rented or shared/reassigned.

Mangers can also login to www.v-express.com, using a PC or tablet, to manage test sets and licenses

Updating the TX300S Platform (System) software

Depending on the hardware configuration, the TX300S can have up to three software components that need to be updated, basically the Platform (System) software and the built-in test modules' software (TX300SM, TX320SM or OTDR hardware).

There are two main ways to keep the TX300S system up-to-date:

1. Using the built-in VeExpress feature (>Utilities >VeExpress). Using an Internet connection, through the Management Port, the test set connects to the VeExpress server and user can press the Check button to see if there is a new SW update (Delta Push directly to the test set) or full upgrade (performed via USB memory). The Software Upgrade tab should show all the applicable software versions available (if not shown, please go to item 2).
 - A) Delta Update: Using the built-in VeExpress users can perform consecutive (incremental) updates directly from the test set (for example, updating from 2.0.1 to 2.0.2). The advantage is that update packages are smaller and a lot faster to download. The test set must be connected to a LAN (using the Management port) and have access to the Internet.
 - B) Full Upgrade: If the software version in the test set is much older than the current release, then a FAT32 USB Memory stick needs to be inserted in the USB port located on the left side of the test set. Select the applicable software components using the check boxes and press Download. The test set will then download the selected install packages directly to the root of the attached memory stick. When finished, turn the test set OFF. Then press the App, and Power buttons simultaneously to power the test set ON in software upgrade mode. The three buttons can be released once the confirmation tone (beep) is heard. Wait for the upgrade process to finish.
2. Via USB Memory Stick: Using a (PC) web browser, go to <http://veexinc.com/en-us/Products/TX300s> and click on the open the Software download window and click on the link to get the latest SW upgrade package for the Platform (no need to login). Select the applicable module page and download the Module software. Copy the tx300s-veex-arm.tar.gz file to the root of a FAT32 USB memory stick and then plug it to the USB port located on the left side of the TX300S. Turn the power OFF. Press the App, and Power buttons simultaneously, to power the test set ON in software upgrade mode. The three buttons can be released once the confirmation tone (beep) is heard. Wait for the upgrade process to finish.

Note: Software packages and other tools can be downloaded from the TX300S product page at www.veexinc.com

>Products and Solutions >TX Series >TX300S >Software

The TX300S must be connected to AC/DC charger at all times during the whole upgrade process. DO NOT turn it off at any time; the upgrade process will take several minutes and the TX300S will reboot itself at the end.

To verify the current software version number installed in the unit, open the Utilities section, select Settings, and open About.

Note: If installed in your PC, some file compression agents (applications) may show the resulting tx300s-veex-arm.tar.gz as a compressed file, but there is no need to expand the file any more. Keep it as is.

Updating the Built-in Test Modules' Software (via USB)

Make sure the TX300s Platform is running the latest firmware version available. The TX300s Platform always formats the internal SD card during a platform (system) upgrade, so the modules' software needs to be reloaded after the system upgrade. Take this opportunity to check if new versions are available for the 300sm Multi-service

(XFP/SFP), 320sm Multiservice (SFP/SFP+), 340sm Multi-service (SFP+), 100G and/or OTDR modules.

- Download the applicable test module software from the web site or using the built-in VeExpress client.
- Copy the test modules' uncompressed firmware update package files to the root of the memory stick (both modules can be upgraded simultaneously)
- Plug the memory stick into the USB port located on the left side of the platform
- Turn the TX300s On and wait for the boot up process to finish.
- The TX300s may display an "incompatible software version" warning message to indicate that the test module requires a firmware update. Tap the OK button to close the message.
- Touch the Utilities button on the top bar, open the Utilities tab on the left bar, and select M.Upgrade.
- The platform will search the memory stick for valid update packages and show their information.
- Use the check boxes to select the desired software updates
- Tap on the Upgrade button to start the firmware update process. This could take several minutes. The test set will shut itself off at the end.
- Turn the test set ON, connect to a LAN, go to >Utilities >VeExpress and press Check to update its licenses The TX300s must be connected to AC/DC charger at all times during the whole upgrade process. DO NOT turn it off at any time; the update process would take a few minutes and the test set may reboot itself at the end.
To verify the software version number installed in the current test module, turn the test set back on, open the Utilities section, select Settings, and open About.

Updating the Test Set Software via WiFi or LAN

Make sure the test set is ON and connected to a wireless LAN, set as an access point (AP) or connected to a LAN. This functionality will only be available after the test platform has been upgraded to 03.02.06.

PCs, Mac, tablets, and smartphones can be used to perform this task, as long as they provide access to the file system and allow you to select the software upgrade install file.

- Open the Web Browser and enter the IP address of the test set into the browser's address/search field (e.g., 10.0.1.15).
The test set's IP address is displayed on the bottom-left corner of the screen,
- Once the test set's Web Remote Access page loads, select Platform Upgrade from the menu on the left side of the screen.
- Tap or click on the Select File button and point it to the Software Image file.
- Tap or click on the Upload button to transfer the Software Image file to the test set.
- Once the file transfer is done, tap or click on Upgrade and let the test set go through the process, uninterrupted. This will take a few minutes.
- The test set will reboot itself during upgrading process. IP connection to the test set will be lost. Need to check the status directly on the test set display

ReVeal RXTS (PC software)

Offers Remote Access, download screen capture, results, profiles, and wander files, create reports, etc.

Download it from www.veexinc.com >Transport/Metro/Core >TX300s Family >Downloads

ReVeal Wander Analysis (PC software)

Wander and absolute phase analysis and reporting. MTIE and TDEV analysis and standard pass/fail masks

Download it from www.veexinc.com >Transport/Metro/Core >TX300s Family >Downloads

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Documents / Resources

	VeEX TX320S Module [pdf] User Manual TX320S Module, TX320S, Module
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References

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