

## NTS 02-G & NTS 03-G+ Firmware Release Notes

### VERSION 3.20r (November 2016)

- **Feature:** Added support for NTS 03-G+ 4 Port Plus IRIG-B Expansion. Tekron Configuration Tool 4.2.1.0 or later is required to configure the 4 Port Plus IRIG-B Expansion programmable outputs.
- **Feature:** Added support for NTS 03-G+ OCXO and Rubidium frequency reference options.
- **Feature:** Added support for Parallel Redundancy Protocol (PRP). Ports ETH3 and ETH4 (and ETH5 and ETH6 where fitted), can be linked to form a redundant pair. PRP support is available on all existing NTS 02-G and NTS 03-G hardware. Tekron Configuration Tool 4.2.1.0 or later and a PRP license are required to enable PRP support. Please contact Tekron to purchase a PRP license.
- **Feature:** Added support for ITU-T G.8275.1 PTP Telecom Profile. Both Telecom Grandmaster and Slave operation is supported. Tekron Configuration Tool 4.1.1.0 or later is required to configure PTP in this profile.
- **Feature:** Added an option to allow the unit to be reset to factory defaults in the event of a forgotten administrator password. Physical access to the unit is required to perform the reset procedure. This option is disabled by default. Tekron Configuration Tool 4.2.1.0 or later is required to enable this option. When this option is disabled, the unit must be returned to Tekron for reprogramming in the event of a forgotten administrator password. This option may be permanently disabled by Tekron on request. This factory reset is different from the factory reset that can be performed with the Configuration Tool, as that reset does not require physical access, but requires an administrator password.
- **Improvement:** Added ability to disable the holdover time setting, allowing the clock to remain in holdover indefinitely. This leaves it up to client devices to determine when they will stop synchronizing to the clock, based on the advertised quality in the time outputs.
- **Improvement:** Added a configurable option for suppression of output signals at startup, when the clock has not yet received a valid time.
- **Improvement:** Added a Fixed Manual delay mode to the available PTP delay mechanisms, in addition to the existing End-to-End and Peer-to-Peer options. Fixed Manual delay mode may be useful in some non PTP aware networks (networks which do not have switches with PTP support).
- **Improvement:** Added a PTP Forced Master option. When selected, this option ensures that the port will not operate as a PTP Slave.
- **Bug Fix:** Fixed a bug that could cause loss of communication to non-admin Ethernet ports after 25 days of operation. If this event occurs, non-admin Ethernet ports (ETH2 and above) will stop acting as an NTP or PTP master. Resetting the clock will restore normal operation.
- **Bug Fix:** Fixed a bug that could cause PTP Announce messages generated by the unit to occasionally contain incorrect information when the unit is itself synchronized to an external PTP grandmaster, that is, when the unit is operating as a PTP boundary clock.

## VERSION 3.18r6 (October 2016)

- **Bug Fix:** The NTP time stamp consists of two fields, a 32 bit field for the number of seconds since 1 January 1900 and a 32 bit field for the sub-second fraction. From 23:00:00 UTC on December 31st 2016 (one hour before the leap second is applied) the sub-second fraction will be frozen at its maximum value (binary all 1's). However, the number of seconds field will continue to update and maintain correct time. This has the effect of decreasing the time stamp resolution from 16ns to 1s and means that the date and time will remain accurate down to 1 second accuracy only. At 23:59:00 UTC the sub-second fraction will return to normal operation and the leap second will be applied correctly.
- **Bug Fix:** Added the ability to automatically recover from an internal communication error. This rare event could cause non-admin Ethernet ports (ETH2 and above) to unexpectedly lose synchronization. Resetting the unit will return it to normal operation.

## VERSION 3.18r5 (Limited Release)

- **Feature:** Fiber Slave option introduced.

## VERSION 3.18r4 (March 2016)

- **Initial Release**