

**Palisade Firmware 7.12 Release Notes**

The following additions and changes summarize the enhancements in the firmware since 7.02.

**GPS Core**

<b>Version 7.02</b>	<b>Version 7.12</b>
Stinger 6 Signal Processor	Stinger 10 Common with other Timing Products
Receiver fails to output PPS pulses at BIAS rollover. This causes a PPS dropout 1 – 2 times / hour.	GPS always outputs PPS when tracking at least 1 satellite after completion of self survey.
If PPS output is connected to event input, result was not 0.	PPS looped to event returns 0 +/- the quantization error of 40 ns.
Receiver is oversensitive to multipath signals.	Raised SNR mask from 0.0 to 5.0 to reduce multipath.

**Self-Survey**

<b>Version 7.02</b>	<b>Version 7.12</b>
Surveys in 2D/3D automatic mode. Cannot perform 2-D survey with fixed altitude.	Survey mode is Configurable and defaults to 3D Survey. High-precision 2D survey can be performed if accurate altitude is provided.
Setting survey limit does not generate response.	Returns survey limit packet.
Survey Limit does not reset at factory reset.	Resets to 2000 fixes at factory reset.

**UTC Time**

<b>Version 7.02</b>	<b>Version 7.12</b>
User is unable to detect whether UTC or GPS PPS is selected when listening only to 8F-0B packet on port A.	8F-0B UTC offset indicates seconds to add to get to the other time base: UTC offset > 0: UTC PPS selected. UTC offset < 0: GPS PPS is selected.
Receiver does not output UTC time until UTC almanac has been acquired from GPS almanac transmissions.	Receiver stores relevant integer UTC offset in EEPROM. Receiver must still acquire fractional UTC offset from GPS almanac.
Inserts UTC leap second at 23:59:59 GPS time on 8F-0B packet.	Correctly inserts leap second at 23:59:59 UTC time, leap second is designated as 23:59:60 in 8F-AD. 8F-0B/AD UTC offset is incremented by 1 second after insertion of a UTC leap second.
8F-0B Event time does not account for fractional UTC offset.	8F –0B Event time is corrected with fractional UTC offset.

**Timing Port**

<b>Version 7.02</b>	<b>Version 7.12</b>
Receiver only outputs 8F-0B when doing fixes.	Output PPS packets after acquiring initial satellite time. User should monitor 8F-0B tracking list for at least one tracked satellite (SV ID > 0).
Cannot disable 1 Hz 8F-0B or 8F-0B Event Packets	Full configuration of timing packets stored in EEPROM. Can select None, 1Hz, Event or both, for 8F-0B and 8F-AD packet output.
Fails to output 8F-0B PPS packets, outputs duplicate and/or corrupted 8F-0B PPS packets	No duplicate or corrupted 8F-0B packet output. Outputs every timing packet after time is acquired.
Does not provide UTC leap second information.	Added 22 byte UTC timing packet 8F-AD, with UTC leap second flag and tracking status flag. This packet is always output before 8F-0B.
No Support for NMEA	Supports NMEA ZDA of Timing port A.



**Event Input**

<b>Version 7.02</b>	<b>Version 7.12</b>
Event Trigger is an Upcharge Option	Event Trigger functionality is included standard.

**EEPROM Integrity**

<b>Version 7.02</b>	<b>Version 7.12</b>
Receiver can crash if invalid accurate LLA or ECEF position is uploaded.	Receiver does not crash if invalid position is uploaded.
If receiver EEPROM is corrupted, or invalid data is stored, receiver can crash and require physical entry into case because receiver goes into an infinite loop in app fatal error.	Receiver Break sequence has been fixed. If a <b>fatal error</b> occurs, receiver resets EEPROM to defaults. Receiver performs a warm start after app fatal error. Lots of error checking and recovery has been added.
Can not save snapshot of configuration to EEPROM	Allows requesting immediate storing of all settings to EEPROM.
Receiver is not aware of software upgrades.	Version Number is stored in EEPROM. Resets to Factory defaults when version Number changes.
Clear Segments 8E-45 does not work correctly	Works on all public segments.
Allows user to select TSIP protocol and 7 bits.	TSIP is 8bit. Does not allow setting TSIP output and 7 bits.
GPS Message request outputs several packets.	Only a single GPS message is output.

**User Interface**

<b>Version 7.02</b>	<b>Version 7.12</b>
Cold Start Position is Non-Zero.	Cold Start Position is 0,0,0 LLA.
Outputs Ephemeris and Almanac data as it is acquired.	Suppresses output of Almanac and Ephemeris by default. Can be enabled using 8E-4D packet.
Break Sequence does not provide user time to send configuration packets.	Break sequence works like other timing products.

**Datum Support**

<b>Version 7.02</b>	<b>Version 7.12</b>
Factory Reset does not reset Datum.	Resets to WGS-84.
Position is always WGS-84.	Corrects position for selected datum.