



January 25, 2010

06_02_0110

Advanced Devices

Introduction

This bulletin covers the procedure required to update firmware of the Resolution T to v1.17. This firmware version was published to correct the signal tracking outage every 12.5 minutes due to the change in the GPS signal structure by the DoD.

The following application table shows which versions of hardware and firmware that can be updated.

Table 1

PRODUCT	BOARD ASSEMBLY	FIRMWARE
52664-05	52830-00-C	1.14
52664-05	52830-00-D	1.14
52664-05	52830-00-E	1.14

To update the firmware application on your Resolution T please use the following process in the order specified. Please note that the Boot Rom does not require any update.







Stage 1 Pre Update Preparation

The procedures that follow in this note include use of the Trimble GPS Studio application. If you cannot use this software with your installation, Trimble can also supply sample source code and a Firmware Loading Interface Document for programming the Resolution T flash.

Important note about communication to the target system.

If there is no direct connection to the Resolution T by either Trimble GPS Studio or any custom software then the target system should allow a pass through that allows communication between them.

If no pass through is available then the customer system application must follow the steps documented in the Firmware Loading Interface Document.

Please note that the flash process will require a change of the communication port settings to 115200 baud, 8 data bits, 1 stop bit and no parity which your installation must support. The new firmware cannot be downloaded to the Resolution T without these settings.

Remaining steps.

- Download and uncompress the latest version of Trimble GPS Studio (TGS) and the new v1.17 binary zip file from the Firmware Update directory here... <u>http://www.trimble.com/timing/resolution-t.aspx?dtID=support</u>
- 2. Print out this bulletin.







Stage 2 Use the TGS Application to Connect to the Resolution T

Prerequisites:

- Stage 1 requirements have been met.
- Trimble GPS Studio is running on PC
- PC has been attached to Resolution T via a serial connection.

Process

- 1. From the Trimble GPS Studio menu bar select *Connections > New Connection*
- 2. In the New Connection pop up window select *GPS Receiver* in the Device pull down.
- 3. In the *Com Port* pull down select the correct com port for the serial connection from your PC to the Resolution T.
- 4. Check the *Auto-detect* settings tick box.
- 5. Click the OK button.

Trimble GPS Studio		×
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Time [GPS] Time Date	Receiver Mode & Status Satellite Data Mode SV AMU Az. Elev. Status SV AMU Az. Elev.	
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	Monitoring OFF Logging OFF 1:29 PM	





6. TGS will connect to the Resolution T and display its current status as shown below. You are ready to proceed to the next stage.

Primble GPS Studio			
File Connections Tools Window Help			
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		GPS Status: (0) Doing Fixes Timing Bias: -330662.63 ns Bias Rate: 1355.84 ppb PPS Quant Error: 14.0 ns Miscellaneous UTC Offset: 15 seconds Temperature: 31.52 °C	Satellite Trading Self-Survey Active Stored Position Leap Second Pending Test Mode Position Questionable Almanac PPS Generated PPS Good Vonitoring ON Logging OFF 1:37 PM ;;

Exit Status

• PC is connected and able to communicate with the Resolution T







Stage 3Use TGS to Check the Current Hardware and FirmwareVersions

Prerequisites:

- Trimble GPS Studio is running on PC
- Trimble GPS Studio can communicate to Resolution T

Process

- 1. In the Resolution T GPS Timing Receiver Monitor window select *Monitor > View Receiver Version*.
- 2. Check that the Product Name is Resolution T
- 3. Check that the Version number is 1.14
- 4. If either of the fields in the above two steps do not match DO NOT PROCEED ANY FURTHER and contact your local Trimble sales representative.







5. If the values in fields under Product Name and Version are correct then click on the *Manufacturing Info* tab of the Receiver Version window.

Trimble GPS Studio	
File Connections Tools Window Help	
TGS v1.01.7 Sconnect to Device - New Connection	💌 🗹 Data Logger 📋 Data Converter 🗹 Preferences 🛃 Exit
Image: Connections Tools Window Hep TGS v1.01.7 Connect to Device • New Connection Resolution T GPS Timing Receiver Monitor [COM 31] Monitor • Receiver • COM 31 • AUTO QUERY: ON Time [GPS] Time Sat 00:47:21 Mode -D-D, Manual (45%) Status Week 1567 Velocity DOPs Status Product Info Product Info Product Info Product Info Diamage Information is obtained from the products Information may not be available on all products.	Data Logger Data Converter Preferences Exit Data Loger Data Converter Preferences Exit Data Loger Data Converter Preferences Exit Data Loger Data Converter Preferences Exite Data Loger Data Converter Preferences Data Loger Data Converteres Data Lo
Latitude N Longitude W Altitude U Tx • Rx • Rec Query Close	PPS Quant Error: -13.5 ns Miscelaneous UTC Offset: 15 seconds Temperature: 30.87 °C PPS Good PPS Good
	Monitoring ON Logging OFF 4:47 PM

- 6. Check that the field for Hardware ID matches one of the numbers in the Board Assembly column of Table 1.
- 7. If the Hardware ID does not match one listed in Table 1 DO NOT PROCEED ANY FURTHER and contact your local Trimble sales representative.
- 8. If the Hardware ID is correct you are ready to proceed to the next stage.

Exit Status

• You have confirmed that the Resolution T Hardware and Firmware versions are suitable for updating to v1.17





Stage 4 Use FlashLoader to Update the Resolution T Firmware. FlashLoader is an application that resides in TGS enabling new firmware to be flashed to Trimble GPS receivers.

Prerequisites:

- Trimble GPS Studio is running on PC.
- Trimble GPS Studio can communicate to Resolution T.
- You have completed Stage 3.

Process

1. From the Trimble GPS Studio menu bar select *Tools > Flash Loader*

Primble GPS Studio	
File Connections Tools Window Help	
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	Monitoring OFF Logging OFF 6:16 PM

- 2. Use the *Browse* button to navigate to the new firmware file "ResolutionT_1_17_0_FW_ROM_ONLY.rom".
- 3. Check one of the *Com Port Selection* options. If necessary you can change one of the port numbers by using the adjacent pull downs.





Trimble GPS Studio File Connections Tools Window Help TGS v1.01.7 Connect to Device New Connection	💽 🖂 🖾 Data Logger 🔂 Data Converter 🗹 Preferences 🗐 Exit
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4. Select the *Start* button the upload process will begin. DO NOT DISCONNECT the PC and DO NOT REMOVE the Resolution T power supply during this period.







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6. If any errors occur at this point please contact Trimble.





7. Wait for the "Loading Successful" message in the Loading Status field.

Primble GPS Studio				
File Connections Tools Window Help				
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Monitor				
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- 8. Close the Flash Loader window.
- 9. We now want to check that the update has worked by reconnecting the Monitor window to the Resolution T. Repeat the steps in Stage 2 of this document.





10. Check the Firmware Info in the Application fields. It should read "1.17.0 01/21/10".

🖗 Resolution T GPS Timing Receiver Monitor [COM 31]			
📃 Monitor 🔹 🖗 Receiver 👻 Сом	31 🕑 AUTO QUERY: ON 💹 Map		
Time [GPS] Time [GPS] Time [GPS] Time [GPS] Date January 23, 2010 Week 1567 TOW 528853 Velocity East m/s North m/s Up m/s Speed m/s Speed m/s Latitude N 37° 23.07504' Longitude W 122° 0.37881' Altitude -6.79 m HAE	Receiver Mode & Status Satellite Data Mode O-D, Manual (7 SV) Status Status over-determined clock SV Almanac complete & current 16 DOPs Status 16 PDOP BBRAM 11 HDOP RTC ANT VDOP Osc (ppb) 11 TDOP 1.00 Success! Firmware Info Application 1.17.0 Monitor Protocols I1 TSIP In TSIP Out		
Tx @ Rx @ Monitoring Resolution T GPS Timing Receiver 0:01:03 COM 31: 9600-8-0-1			

11. The firmware update process is complete.

Exit Status

• You have confirmed that the Resolution T Firmware version has been updated to v1.17

If you have any further questions please call your local Trimble sales representative.

