

UNAVCO Equipment Group Receiver Testing Procedure (2003 - historical)

191 Beth Bartel March 10, 2009 [UNAVCO Equipment Testing Procedures](#) 501

RECEIVER TESTING PROCEDURE

UNAVCO 8/8/03

SUMMARY

Inspecting and testing receivers is required as soon as possible upon return from a field project to identify and repair any damage the receivers may have incurred while in the field. Data files are cleared from internal memory, and the receivers are returned to standard survey configurations. Two test reports are generated every time a receiver is returned to UNAVCO, the QC Summary which is included with the receiver in the logbook, and the TEQC Report which is archived in the individual receiver's file to retain a history of the receiver performance. A Receiver Setup Report is also generated for new receivers and after every board level repair, and kept in the individual receiver's file. Once a receiver is ready for issue (RFI) a seal may be placed across the communication ports, or the box sealed, to guaranty integrity when it leaves UNAVCO without having to re-test. Any receiver used since the last test must be completely tested again prior to sending out on a project.

INSPECTION

1. Create a Receiver Setup Report for new receivers and place in the individual receiver's file.
2. For receivers that have returned from a field projects, verify with the PI/Engineer that any data files on the receiver may be deleted, or download the files and forward them to the archive.
3. Inspect the receiver for physical damage. Inspect the body, display, connectors, doors, etc.
 - Trimble 5700 – verify that a 128Mb minimum memory card is in the receiver.
4. Verify receiver has current firmware, and write firmware version on receiver QC Summary. Load new firmware if necessary.

Receiver Model	Firmware Required
Trimble 4000	7.19b
Trimble 4700 (not SuomiNet)	Any is acceptable
Trimble 4700 (SuomiNet only)	1.37
Trimble 4800	1.2
Trimble 5700	1.2
Ashtech Z-12	CD00
Ashtech microZ	CJ10
TruboRogue SNR8000	3.2.32.11

TESTING

1. Perform a hard reset:
 - Trimble 4000 – Hold down CLEAR and LOG DATA and turn on POWER.
 - Trimble 4700/4800 – Hold the power button down for one minute continuously.
 - Trimble 5700 - Hold the power button down for 30 seconds continuously. PC card must be in the receiver for the hard reset, which also re-formats the card.
 - Ashtech uZ – Hold the power button down for 6 seconds until the 3 LEDs change to “rolling green”.
2. Run a zero baseline survey – minimum two same model receivers using the same antenna. Collect at least four hours of data.
3. Download the files to a PC.
4. Perform a memory test on Trimble 4000, Ashtech uZ, and Ashtech Z-12 receivers.
5. Run TEQC quality check and print the TEQC Report. Write receiver type (ex: Trimble 4000) and name (ex: UN23) on TEQC Report.
6. Examine TEQC tracking plot for problems such as poor tracking. Notify senior technician of suspect results.
7. Complete the QC Summary form – notify senior technician of any out-of-range results.
8. Place the TEQC Report in the individual receiver folder.

REPAIR

If necessary repair the receiver.

1. Physical damage – provide list of damage to senior equipment technician and replace damaged parts if receiver performance is compromised.
2. Internal damage/poor performance – notify senior equipment technician to arrange repair per specific receiver repair procedures.
3. Repeat the TESTING procedure after any repair that affects the receiver electronics.

4. Print a new Receiver Setup Report after every board level repair, and place in the individual receiver's file.

PREPARATION FOR SHIPPING

1. Paste the QC Summary form in the receiver logbook.
2. Configure the receiver with UNAVCO standard configuration file:
 - Trimble 4000/4700/4800 – Use receiver defaults from a hard reset.
 - Trimble 5700 – Use Configuration Toolbox software to load the configuration file “unavco.cfg”.
3. Label the receivers as “Tested – RFI date” with seal across the communication ports.
4. Place receiver and logbook in the receiver case.
5. Turn on and verify satellite tracking as a final check just before shipping. (Internal battery could be dead.)

TESTING

1. Perform a hard reset:
 - a. Trimble 4000 – Hold down CLEAR and LOG DATA and turn on POWER.
 - Trimble 4700/4800 – Hold the power button down for one minute continuously.
 - Trimble 5700 - Hold the power button down for 30 seconds continuously. PC card must be in the receiver for the hard reset, which also re-formats the card.
 - Ashtech uZ – Hold the power button down for 6 seconds until the 3 LEDs change to “rolling green”.
2. Run a zero baseline survey – minimum two same model receivers using the same antenna. Collect at least four hours of data.
3. Download the files to a PC.
4. Perform a memory test on Trimble 4000, Ashtech uZ, and Ashtech Z-12 receivers.
5. Run TEQC quality check and print the *TEQC Report*. Write receiver type (ex: Trimble 4000) and

name (ex: UN23) on *TEQC Report*.

6. Examine TEQC tracking plot for problems such as poor tracking. Notify senior technician of suspect results.
7. Complete the *QC Summary* form – notify senior technician of any out-of-range results.
8. Place the *TEQC Report* in the individual receiver folder.

REPAIR

If necessary repair the receiver.

1. Physical damage – provide list of damage to senior equipment technician and replace damaged parts if receiver performance is compromised.
2. Internal damage/poor performance – notify senior equipment technician to arrange repair per specific receiver repair procedures.
3. Repeat the TESTING procedure after any repair that affects the receiver electronics.
4. Print a new *Receiver Setup Report* after every board level repair, and place in the individual receiver's file.

PREPARATION FOR SHIPPING

1. Paste the QC Summary form in the receiver logbook.
2. Configure the receiver with UNAVCO standard configuration file:
 - Trimble 4000/4700/4800 – Use receiver defaults from a hard reset.
 - Trimble 5700 – Use Configuration Toolbox software to load the configuration file “unavco.cfg”.
3. Label the receivers as “Tested – RFI date” with seal across the communication ports.
4. Place receiver and logbook in the receiver case.
5. Turn on and verify satellite tracking as a final check just before shipping. (Internal battery could be dead.)

Online URL:

<https://kb.unavco.org/article/unavco-equipment-group-receiver-testing-procedure-2003-historical-191.html>