APPLIED INSTRUMENTS

Application Note
11/23/2009
Proof of Performance Testing

1 Proof of Performance Testing

The Proof of Performance Test (PoP Scan) feature collects and stores signal level and quality data for later transfer to a PC for reporting. This feature may be used to document the quality of installation for later reference.

1.1 Install PC Software

The SatTransfer program is required to transfer the data from the instrument to the PC and to print reports. This software is available from the Applied Instruments web site along with the FlashUpdate software used to upgrade the instrument. (See Updating section of Operation Manual.)

1.2 Collect Test Data

Perform your satellite dish alignment as usual. When the system is fully peaked, use one of two main menu options to perform the PoP Scan and collect the data:

PoP Scan – uses the presently selected LNB port and collects data for that LNB only.
Full PoP Scan – steps through all LNB positions and collects data for all related orbital positions.

Tip: You should choose Full PoP Scan when you're connected to a multi-LNB head (LNBF assembly with built-in multi-switch) that is receiving signals from more than one satellite. You should choose PoP Scan when you're connected to a single LNB that is receiving signals from a single satellite.

Note: **When choosing PoP Scan, the user must first power the LNB using the LNB soft key** or the system may be powered externally. When using the Full PoP Scan, the meter must power the LNB so that it is able to cycle through the various LNBs.
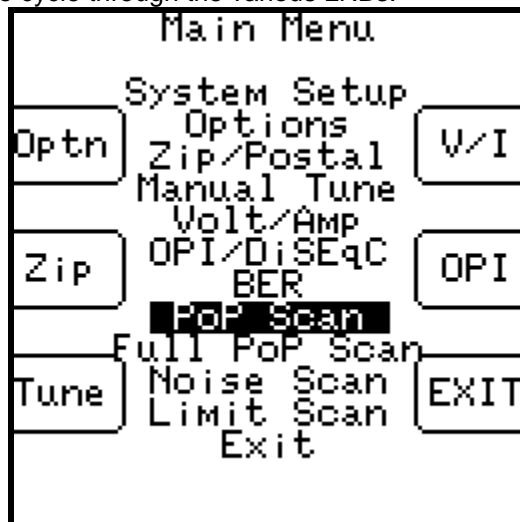
The meter will scan through all transponders on the satellite collecting the measurement data. You may press STOP to abort the scan, otherwise, wait until the scan completes.
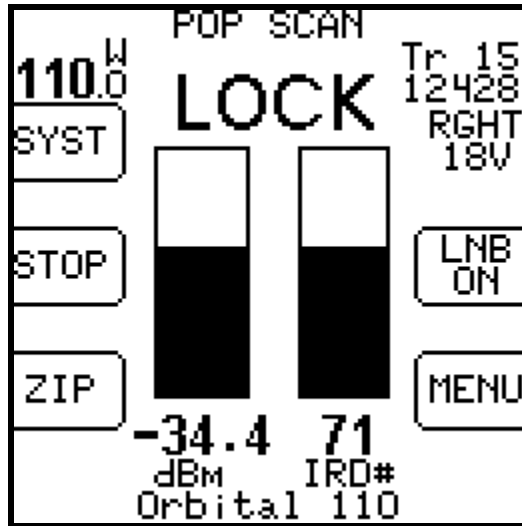
When the scan completes, the following screen displays a summary of the data:
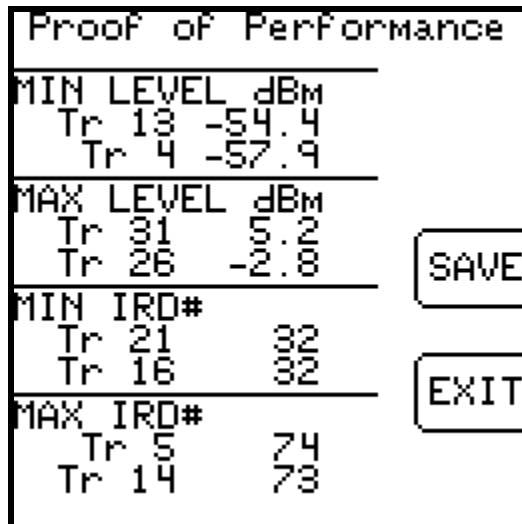
You press "Exit" to discard the data or "Save" to continue.

1.3 Saving Data

If you press "Save" the following screen appears allowing you to enter some identification data about the test:

Note:
Alphabetic characters can be entered in the following way:
- Press the key once to display the numeric digit.
- Press it quickly a second time to display the first alphabetic character.
- Press it quickly a third time to display the next alpha character, etc.
- A new key always moves to a new column.
- A pause will also move to a new column.
- Left/right keys move between columns.

```
┌─────────────────────────┐
│ Proof of Performance    │
│ Date mm/dd/yyyy         │
│ 09/16/2009              │
│ Location                │
│ NEW YORK                │
│ Technician         ┌─────┐│
│ MICHAEL            │ CLR ││
│ Notes             └─────┘│
│                         │
│ ┌─────┐        ┌─────┐  │
│ │SAVE │        │EXIT │  │
│ └─────┘        └─────┘  │
│                         │
└─────────────────────────┘
```

Again, press "Save" to continue and the next screen lets you enter a file name:

```
┌─────────────────────────┐
│ Proof of Performance    │
│ File name               │
│ 110W_                   │
│                         │
│                         │
│                    ┌─────┐│
│                    │ CLR ││
│                    └─────┘│
│ ┌─────┐        ┌─────┐  │
│ │SAVE │        │EXIT │  │
│ └─────┘        └─────┘  │
│                         │
└─────────────────────────┘
```

The file name must be unique. An error message will appear if you enter a name that has already been used. At present, there is no method for determining which names have been used on the instrument other than by running the SatTransfer program.

There is file storage space for about 70 files. The actual limit depends on the number of transponders used.

Press "SAVE" again and the system will copy the file from temporary storage to flash file storage. The instrument must then restart and go through the initialization count-down.   If an error occurs during the copy process or the flash storage area is too full, the message "Flash copy failed" will appear and the test data will be lost.

If you fill up the file storage space, you may transfer all of the stored files to a PC and then erase the meter's flash memory to create new space.

1.4 Transfer Data File to PC

After the data is collected you can take the meter back to your PC and transfer the files to the PC disk using the SatTransfer program. You will receive the SatTransfer program when downloading the FlashUpdate program. The SatTransfer program, SatTransfer.exe, will most likely be found in the default location of C:\FlashUpdate\

1) Connect the meter to your PC using the supplied download cable and turn the meter on.
2) Start SatTransfer after the meter has completed its 10 second boot-up countdown. An icon that looks like the Super Buddy should be installed on your desktop for this purpose.

SatTransfer.lnk

3) The File Transfer window appears somewhat like the following example.
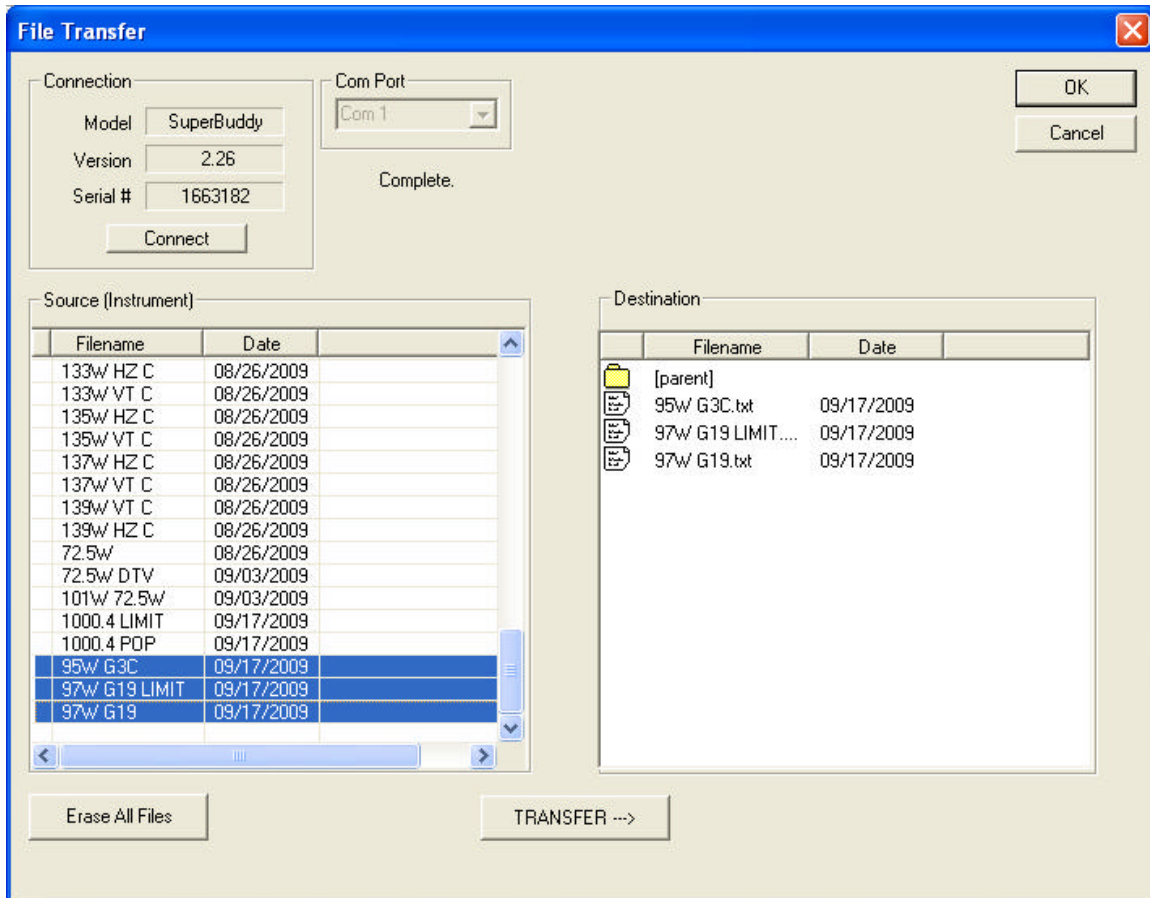
The box on the left displays the files stored on the meter. The box on the right shows the files stored on the PC. The files are stored in a text file format (.txt) so they can be easily opened in Excel or other PC applications.

By default, the text files are stored in a "Data" folder under the "FlashUpdate" folder where the SatTransfer program is installed. You may navigate to other folders by double clicking on the folder icons shown in the destination file box. The [parent] folder icon takes you up one level.

Select the files on the left that you want to transfer by clicking on them. Selected files are highlighted. You may select more than one by pressing and holding Ctrl. Then click on "Transfer" to have the files copied to the PC folder. A status message near the top of the screen

will show you when the transfer is complete and the right hand box will be redrawn with the newly added files.

1.5 Erasing Files

When you have transferred all desired files, click "Erase All Files" to erase the files from the meter and free up the flash storage space. Due to the way the flash memory works, it is not possible to erase only selected files; all files must be erased to free up the memory.

1.6 Print Reports

The File Transfer window is not the only window available in the SatTransfer program. You may also open one or more report windows to display and print the data.

There are two ways to open a report window:
1)   Double click the text file in the right side of the File Transfer window.
2)   Use the menu bar File, Open function.

The report may be viewed on the screen or printed using the File, Print menu option.

When a report window is opened, it is usually mostly hidden behind the File Transfer window. The File Transfer window may be moved aside or closed to get it out of the way:
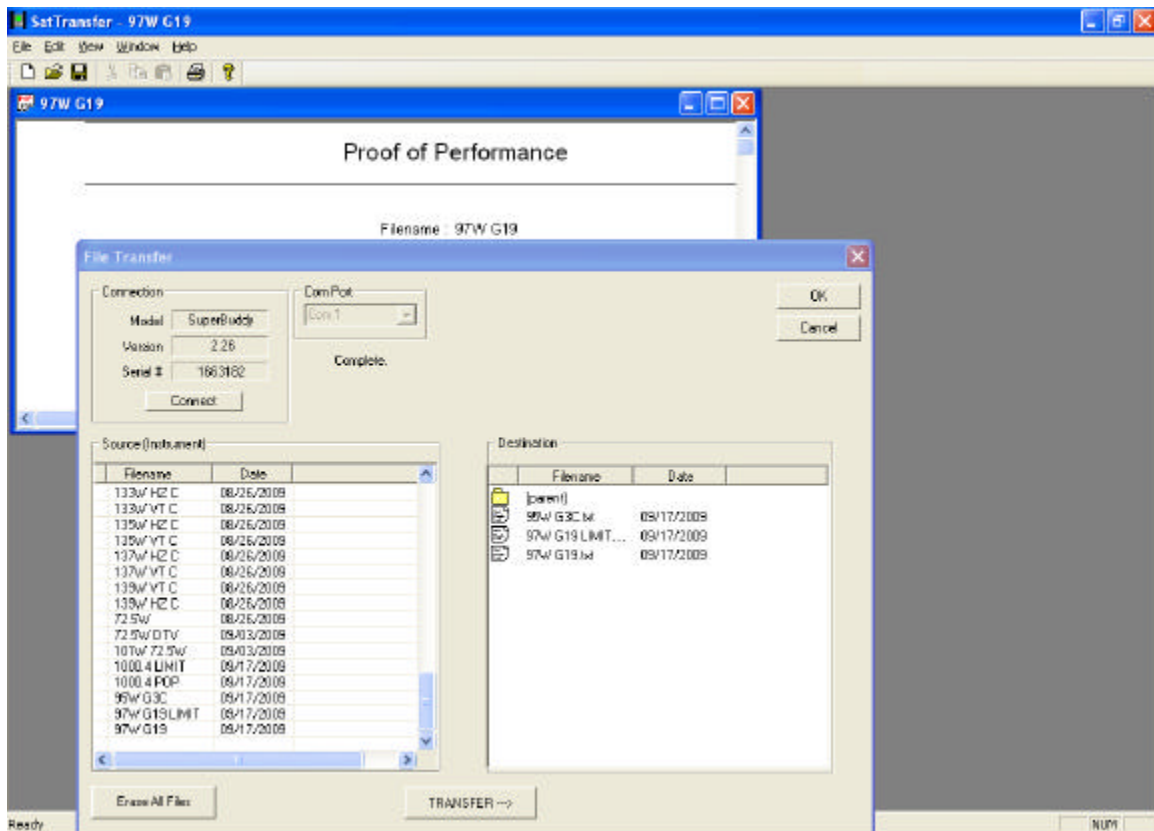
The report itself may not fit entirely on the screen but you may scroll down to see the rest.
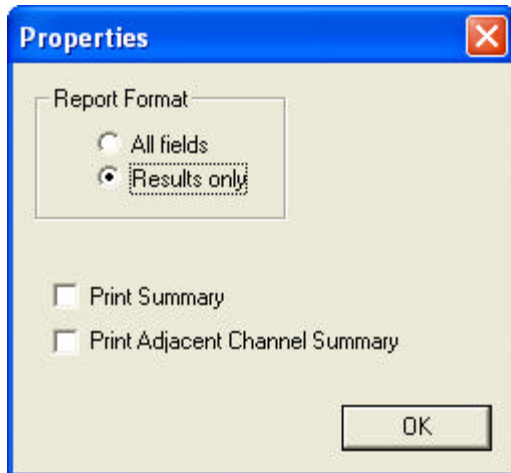
Proof of Performance

Filename : 97W G19
Date: 09/17/2009
Location: INDIANAPOLIS
Technician: MICHAEL
Notes: 97W G19
LNB Model: Std N.Am Ku 10.75
FieldGuide: North American V1.66
Software: 2.26
Serial: 1663182

Satellite: 97.0 West

Tran		Dnlink MHz	Freq MHz	Error MHz	Pol	Mod Type	Code Rate	Symbol Rate	Level dBm	IRD SigQ	C/N db	Eb/No dB	Es/No dB	Lock Status	LNB Volts	LNB mA
1	.	11706	956.000	-0.016	V	DVB	1/2	7160	-41.5	43	5.6	7.4	6.9	LOCK	13.1	120
3	ID	11789	1039.000	-0.404	V	DVB	2/3	28125	-35.0	63	7.6	8.4	9.1	LOCK	13.1	120
4	.	11778	1028.000	0.349	H	DVB	3/4	3979	-37.7	72	8.6	8.9	10.1	LOCK	18.0	120
5	.	11836	1086.000	-0.406	V	DVB	3/4	20765	-34.6	77	9.7	9.8	11.0	LOCK	13.1	120
7	.	11867	1117.000	-0.408	V	DVB	2/3	22000	-34.1	61	7.6	8.2	6.9	LOCK	13.1	120
8	.	11874	1124.000	-0.914	H	DVB	2/3	22000	-33.5	57	7.2	7.8	8.5	LOCK	18.0	120
9	.	11898	1148.000	-0.412	V	DVB	3/4	22000	-34.0	77	9.6	9.9	11.1	LOCK	13.1	120
11	.	11904	1154.000	-0.415	H	DVB	1/2	6680	-34.4	47	6.0	7.6	7.3	LOCK	18.0	120
11	.	11929	1179.000	-0.410	V	DVB	3/4	22000	-34.4	65	8.0	8.1	9.3	LOCK	13.1	120
12	.	11936	1186.000	-0.927	H	DVB	3/4	20000	-33.4	55	6.9	7.0	8.2	LOCK	18.0	120
14	.	11967	1217.000	-0.925	H	DVB	3/4	22000	-33.2	56	7.0	7.1	8.3	LOCK	18.0	120
15	.	11991	1241.000	-0.427	V	DVB	3/4	22000	-33.5	71	8.7	8.8	10.0	LOCK	13.1	120
17	.	12022	1272.000	-0.430	V	DVB	3/4	22000	-33.6	75	9.4	9.5	10.7	LOCK	13.1	120
19	.	12053	1303.000	-0.433	V	DVB	3/4	22000	-33.9	77	9.6	9.9	11.1	LOCK	13.1	120
20	.	12060	1310.000	-0.936	H	DVB	3/4	22000	-33.3	67	8.3	8.4	9.6	LOCK	18.0	120
21	.	12084	1334.000	-0.439	V	DVB	3/4	22000	-33.3	62	7.7	7.8	9.0	LOCK	13.1	120
22	.	12091	1341.000	-0.941	H	DVB	3/4	20000	-33.9	73	8.9	9.0	10.2	LOCK	18.0	120

It is recommended to select File/Properties/Results only before printing Proof of Performance Scans to reduce the number of columns printed. Most field technicians do not need to or want to see the transponder parameters (modulation type, code rate, baud rate). Screenshots of the Properties settings change and the subsequent trimmed down Proof of Performance Scan results are shown below.

Properties

Report Format
- ○ All fields
- ● Results only

- ☐ Print Summary
- ☐ Print Adjacent Channel Summary

OK

SatTransfer - [97W G19]

File Edit View Window Help

Proof of Performance

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Date: 09/17/2009
Location: INDIANAPOLIS
Technician: MICHAEL
Notes: 97W G19
LNB Model: Std N.Am Ku 10.75
FieldGuide: North American V1.66
Software: 2.26
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Satellite: 97.0 West

Tran	Freq MHz	Error MHz	Level dBm	IRD SiqQ	C/N db	Eb/No dB	Es/No dB	Lock Status	LNB Volts	LNB mA
1	956.000	-0.016	-41.5	43	5.6	7.4	6.9	LOCK	13.1	120
3	1039.000	-0.404	-35.0	63	7.8	8.4	9.1	LOCK	13.1	120
4	1028.000	0.349	-37.7	72	6.8	8.9	10.1	LOCK	18.0	120
5	1086.000	-0.406	-34.6	77	9.7	9.8	11.0	LOCK	13.1	120
7	1117.000	-0.408	-34.1	61	7.6	8.2	8.9	LOCK	13.1	120
8	1124.000	-0.914	-33.5	57	7.2	7.6	8.5	LOCK	18.0	120
9	1146.000	-0.412	-34.0	77	9.6	9.9	11.1	LOCK	13.1	120
11	1154.000	-0.415	-34.4	47	6.0	7.6	7.3	LOCK	18.0	120
11	1179.000	-0.410	-34.4	66	8.0	8.1	9.3	LOCK	13.1	120
12	1186.000	-0.927	-33.4	66	6.9	7.0	8.2	LOCK	18.0	120
14	1217.000	-0.925	-33.2	66	7.0	7.1	8.3	LOCK	18.0	120
15	1241.000	-0.427	-33.5	71	8.7	8.8	10.0	LOCK	13.1	120
17	1272.000	-0.430	-33.6	75	9.4	9.5	10.7	LOCK	13.1	120
19	1303.000	-0.433	-33.9	77	9.8	9.9	11.1	LOCK	13.1	120
20	1310.000	-0.936	-33.3	67	8.3	8.4	9.6	LOCK	18.0	120
21	1334.000	-0.439	-33.3	62	7.7	7.6	9.0	LOCK	13.1	120
22	1341.000	-0.941	-33.9	73	8.9	9.0	10.2	LOCK	18.0	120

Ready

NUM