

Appendix O: Base Station Installation Certification



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COMPANY _____
 SITE NAME _____
 SITE NO _____
 LOCATION _____
 NETWORK ID _____
 EMS ID _____

BTS SITE COMPLETION CERTIFICATION (40-00092-00 Rev 1.10)

SITE TYPE
 ANTENNA TYPE
 ANTENNA AZIMUTH
 BTS CHASSIS TYPE
 FREQUENCY BAND
 BTS CENTER FREQUENCY
 RFS ELECTRICAL DOWNTILT
 RFS MECHANICAL TILT
 RFS OVERALL DOWNTILT
 BTS ENCLOSURE

OTHER
 OMNI
 DEGREES

Combo
 2.4 ISM

GHZ
 DEGREES
 DEGREES
 DEGREES
 INDOOR

Uptilt Downtilt

A	Equipment Installed in Building	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
1	Equipment Installed and Secured Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2	Roof/Ceiling/Wall Penetrations Patched, Sealed and Painted	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3	Penetration(s) Inspected by Landowner Representative	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
B	Equipment Installed on Roof	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
1	Equipment Installed and Secured Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2	Structural Upgrades to Roof Installed Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3	Equipment Support Frame Installed	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
C	Equipment Installed on Grade	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
1	Equipment Installed and Secured Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2	Special Inspection for Foundation Steel Complete	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3	Concrete Placed and Vibrated	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4	Concrete Break Test Report Complete	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
D	Civil/Site Work	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
1	Fencing Complete (Tie-in to Ground System) Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2	Gravel/Crushed Rock Placed over Weed Barrier	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3	Above Ground Conduits Installed Plumb	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4	Landscaping/ Erosion Control Complete Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
5	Access Road Complete Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
6	All Trash and Debris Hauled Off Site	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
7	Site Area restored to Original Condition	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
8	Unistruts, iron angles and Rods properly cold galvanized	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
9	RF Safety Signage Installed where Required	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
E	Monopole/Tower Work	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
1	Monopole/Tower Plumb, Torqued and Free of Visible Defects	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2	Orientation of Monopole/Tower Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3	Safety Climb Installed and Tensioned per Manufacturer Spec.	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4	Weep Hole Free of Obstructions	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
5	Step Bolts Installed/ Removed Below 30 feet	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
6	Monopole/Tower Tie-In to Ground Ring Complete	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A



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F Grounding			
1 Monopole/Tower Grounding Installed	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2 Ground Wire Types and Size meet construction Specs	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3 Lightning Rod Provided and Installed Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4 5 Ohm Megger Ground Resistance Test Complete	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
5 Buss Bars Installed Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
6 Surge Protector Installed Between RFS Antenna and Cable	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
7 Coax Ground Kits Installed at RFS Antenna Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
8 Coax Ground Kits Installed at Tower Base Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
9 Coax Ground Kits Installed at Buss Bar Prior to BTS Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
10 Double Lug Connectors Used at All Buss Bar Attachments	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
11 Cable Tray/Ice Bridge Bonded and Grounded to Buss Bar	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
12 Surge Protectors Mounted and Secured on ground Buss Bar	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
13 Master Ground Buss Bar Tied-In to Ground Ring	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
14 Equipment Rack Ground Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
15 Power Supply/UPS, Rectifier Ground Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
16 Meter and Backhaul Ground Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
17 Fence Work Grounded Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
18 Additional Equipment Tied-In to BTS properly Grounded	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A

G Electrical, Backhaul and Network			
1 Power and Backhaul Conduits Installed Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2 Conduits Are Labeled and Pull Strings are Provided	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3 Meter is Installed Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4 Circuit Breakers Installed and Properly Labeled	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
5 UPS Installed and All Internal Connections Made	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
6 Rectifier Installed, Output and Wiring to BTS Checked	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
7 Network/Telco Tie-In to BTS, Tested and Complete	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
8 EMS Installed and Connected to Network	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A

H BTS System			
1 Cabinet is Positioned, Secured and Leveled Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2 Cabinet Outer Surfaces Free from scratches, dents, corrosion	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3 BTS Chassis Outer Surfaces Free from scratches and dents	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4 All Hardware Connections within BTS are tightened/secured	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
5 RF/GPS Coax Connectors Securely Connected to BTS	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
6 Signal/Power Cable Securely Connected to BTS	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
7 Network cables Dressed and Secured to BTS	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
8 Documents, License are Stored or Posted on BTS	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A

J Antenna and Feeder System			
1 RFS Antenna Height and Orientation Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2 RFS Antenna Mount Plumb Per Axis	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3 GPS Antenna Mounted Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4 Zinc Cold Galvanizing compound used everywhere	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
5 Coaxial Cables Run Straight (Not Exceeding Bend Radius)	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
6 Coaxial Cables Tagged and Color Coded Per Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
7 Connectors and Jumpers Installed and Weatherproofed	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
8 Cable Hangers, Bands or Ties Spaced up every 3 Feet	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
9 Antenna Power and Data Cable Continuity Tested	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
10 Antenna System Sweep Test Performed and Passed	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
11 SW and Hard Copy of Antenna Sweep Test Results Provided	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A



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LOCATION _____
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EMS ID _____

BTS SITE COMPLETION CERTIFICATION (40-00092-00 Rev 1.10)

NOTES

Printed Name _____

Signature / Date _____

Company _____

Phone No. _____

Printed Name _____

Signature / Date _____

Company _____

Phone No. _____

Printed Name _____

Signature / Date _____

Company _____

Phone No. _____

Appendix S: Location (FTP) Tests

Introduction

The Location, or FTP, Test is performed to check the Ripwave system operation through file transfers between the Base Station and the Modem. The test measures the data rate performance at various locations within the coverage area. Data throughput is measured by executing file transfers using the FTP protocol for both upstream and downstream links. A file server must be in place on the same subnet with the BTS to accurately perform the file transfer, and the Modem. User computer must be loaded with an FTP Client. As the file transfer is running, a data file is captured by the Modem tool. Data rates are captured by the FTP program.

Data is recorded in a spreadsheet format. The spreadsheet lists the location, GPS, and other information. As data rates are captured, the results are entered manually. An average SNR and sync RSSI can be read from the debug tool, and recorded, for quick comparison to the acceptable criteria (see “Acceptable Criteria” section of this appendix). For NLOS indoor locations, tests are performed both outside the building and inside, so that the obstruction loss for the building can be determined. Unless the customer can provide indoor access, all results will be LOS or Near NLOS.

Planning the Locations

Before the actual testing is conducted, you need to select the test locations.

First, select one Line of Sight (LOS) location about 2 km away from the Base Station. The results at this location will be as good as you could expect to get from your system and will constitute your “base line” for future reference.

Second, based on your preliminary RF propagation, select 4 additional locations (LOS or NLOS), if the Base Station has a panel RFS; or 7, if it has an omni RFS.

Criteria of Acceptability

In order to evaluate the test results, several criteria are taken into consideration. These criteria are valid for both LOS and NLOS locations.

- ❑ Processed Sync Signal Strength: For a given test location, ± 2 dB variation during FTP
- ❑ Absolute Sync Signal Strength – Processed Sync Signal Strength: not greater than 2 dB variation during FTP

- SNR values consistent during the FTP for all carriers used:
 - a. QPSK: at least 11 dB
 - b. 8 PSK: at least 14 dB
 - c. QAM16: at least 17 dB
- UL and DL Packet Error Rates (PER) not greater than 1%. This will vary according to interference levels, but may not render the system inoperable.
- Uplink Beam Forming Gain: between 16 dB and 21 dB. Perform a comparison of UL and DL, Beam Forming Gain differences should be not greater than 3 dB.

- Modem Transmit Power < 25 dBm; BTS Transmit Power < 0 dBm per code channel with power control

- Sync vs. Data Rate:

<u>Absolute Sync (dBm)</u>	<u>UL Data Rate (Mbps)</u>	<u>DL Data Rate (Mbps)</u>
(A) -35 to -55	0.6 to 1.0	1.5 to 2.0
(B) -55 to -70	0.6 to 1.0	1.2 to 2.0
(C) -70 to -85	0.5 to 1.0	1.2 to 2.0
(D) -85 to -95	0.10 to 0.5	0.3 to 1.0
(E) -95 to -105	0.033 to 0.1	0.066 to 0.66

Process

The recommended process for performing the Location (FTP) tests is described below.

First: Verify that a single Modem transmits and receives data at expected rates, as indicated previously.

Second: Verify that multiple Modems simultaneously transmit and receive data at acceptable rates, and the parameters listed above are being met. NOTE: The exact number of Modems is determined by field conditions. The minimum is two.

Third: Verify operation at the full range of the system*. Include LOS Location Tests at cell edges. The height of Modem and uplink and downlink data rates are recorded for each site. Data rates are to be compared with expected results, as seen in the last item (Sync vs. Data Rate) of Acceptance Criteria. For example:

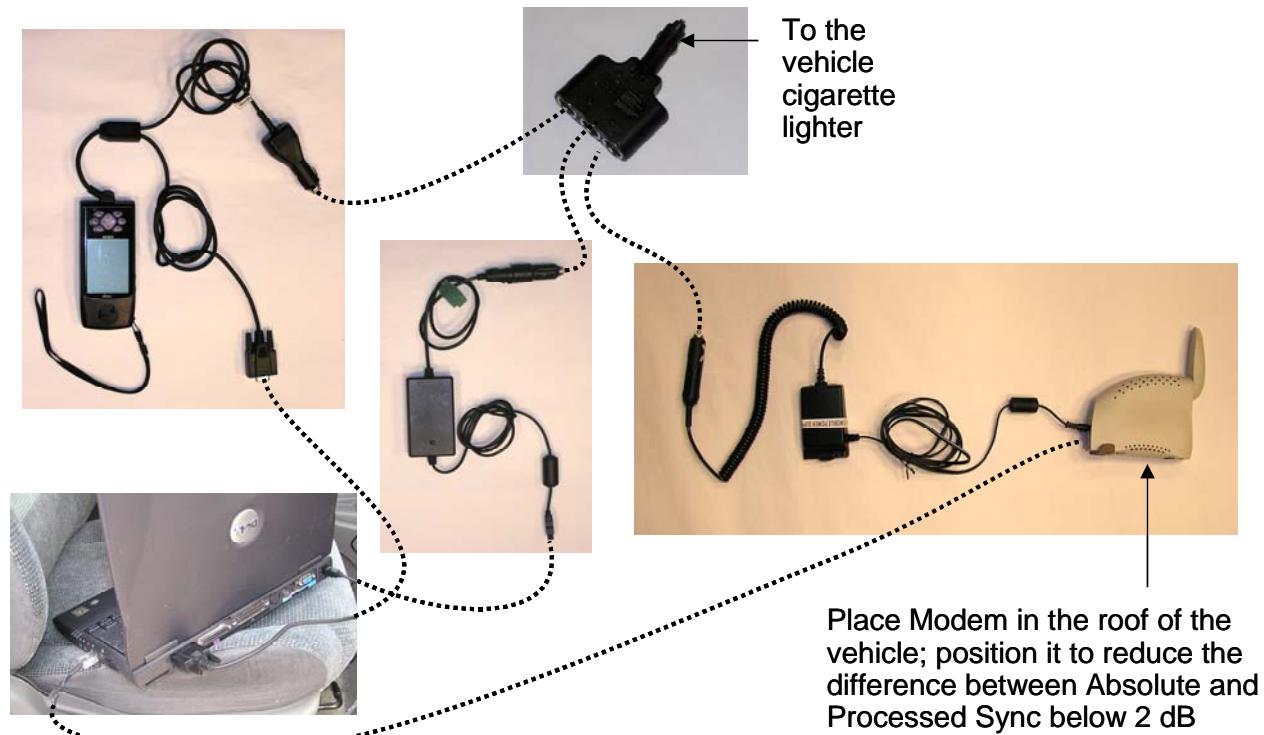
*2.6 GHz : ~12 Km

*2.4 GHz: ~ 3 Km

Equipment Required

- Laptop computer
- GPS receiver with serial cable
- Constellation Debugger application
- BTS Beam Form Display diagnostic tool
- Modem
- Modem power supply
- DC to AC power converter
- Ethernet Cable

Equipment Setup



Location (FTP) Test Procedure

Two people are needed to perform this procedure. One will be in the car performing the location test, and the other will be at the Base Station checking the operation using the BTS Beam Form Display diagnostic tool.

1. Ensure that the Base Station has successfully completed calibration, RF sanity measurements, and the Drive Study at the frequency and TX/RX signal levels that were determined by the cell site survey. Also ensure that the Base Station is powered on and is able to transmit and receive data.
2. Connect the DC to AC power converter to the power port in the vehicle.
3. Connect the Modem to the DC to AC power converter.
4. Connect the Ethernet cable to the Ethernet port on the laptop computer and to the Ethernet port on the Modem.
5. Connect the GPS to the serial port on the laptop computer.
6. Drive to one of the locations selected on the RF coverage analysis. Stop and turn off the vehicle.
7. Power on the GPS, the Modem, and the laptop computer. Place the Modem on the roof of the vehicle.
8. Start the Navini Networks FTP/Location Test Tool program.
9. Verify that the Base Station is transmitting and that the Modem establishes sync and can communicate with the Base Station. Ping a device address on the network side of the Base Station, and verify that a reply is received. While monitoring the Constellation Debugger, position the Modem to reduce the difference between absolute sync and processed sync levels to 2 or less.
10. Enter a memo into the comment field about which link of the test is being performed.
11. Verify that the GPS input is seen in the application.
12. Put the location number/site identifier into the comment field of the Navini Networks Constellation Debugger, and press the Enter key. This will identify the site location.
13. On the EMS connected to the Base Station, start the BTS Beam Form Display diagnostic tool.
14. From the laptop computer with the Modem connected to it, start a downlink FTP file transfer. Record the results on the site page or in the log.
15. On the EMS connected to the Base Station, using the BTS Beam Form Display diagnostic tool verify the strength and direction of the beam during the file transfer. Record the results on the site page or in the log.
16. Repeat the file transfer three times, stopping and starting the Debugger and Beam Form Display diagnostic tool for each transfer
17. Repeat steps 14-15, this time performing an uplink FTP transfer.

18. When finished, remove the Modem from the roof and secure equipment for travel.
19. Drive to the next location selected on the RF coverage analysis. Stop, and turn off the vehicle.
20. Repeat steps 7 to 19 until all locations are tested. At this point send this data to the RF Engineers to analyze, or continue until each quadrant in the cell is complete. When you send the results depends upon the schedule or results from the file transfers.

Location (FTP) Test Form

The form for recording the Location (FTP) test results is an Excel spreadsheet. Shown in Table T1, the actual column headers go across the top of the form, but are broken into two sections here for readability.

Table T1: Location (FTP) Test Form

FTP LOCATION TEST FORM														
Company:				Antenna Type:				Tested By:						
				Azimuth:		Degrees:		Test Date (Start):		Test Date (End):				
				Up/Down Tilt(M/E):		Degrees:								
				Frequency:		MHz								
Site #	Site Name	GPS Coordinates	Data Capture File Name	Antenna Type:	Azimuth:	Degrees:	Test Date (Start):	Test Date (End):	Sync (dB)	Sync (dB)	Sync (dB)	Sync (dB)	Sync (dB)	Remarks
		Debugger	Beamform (dBi)	Km to BTS	LOS	NLOS	Down Link	Uplink	Absolute	Processed	Absolute	Processed	Absolute	Processed
1 Sector / Omni														
2 Sector / Omni														
3 Sector / Omni														
4 Sector / Omni														
5 Sector / Omni														
6 Sector / Omni														
7 Sector / Omni														
8 Sector / Omni														

FTP LOCATION TEST FORM												
Company: <input type="text"/> BTS Name: <input type="text"/> BTS ID: <input type="text"/> S/W Release: <input type="text"/>				Antenna Type: <input type="text"/> Azimuth: <input type="text"/> Degrees Up/Down Tilt (M/E): <input type="text"/> Degrees Frequency: <input type="text"/> MHz				Tested By: <input type="text"/> Test Date (Start): <input type="text"/> Test Date (End): <input type="text"/>				
Site #	Site Name	Data Capture File Name			Km to BTS	LOS	NLOS	FTP Data Rate (Kbps)		Sync (dB)		Remarks
		GPS Coordinates	Debugger	Beamform (.000)				Downlink	Uplink	Absolute	Processed	
9	Omnidirectional											
10	Omnidirectional											
11	Optional / Optional											
12	Optional / Optional											
13	Optional / Optional											
14	Optional / Optional											

Appendix V: IC Closeout Tool

Overview

This is a new complex form that replaces the following older forms:

1. RFS System Test Form
2. 2nd tab of the Base Station Installation Certification Form (Serial Numbers)
3. Calibration Verification Form
4. Drive Study Form
5. Location (FTP) Test Form

The I&C Closeout Tool (Part Number xx) consists of the following worksheets (tabs):

1. Company Info
2. BTS Info
3. Serial #
4. Layer 1 & 2
5. Cable Loss
6. Calibration Plot
7. RFS and Cable RFS Loss
8. RF Verification
9. Drive Test Form
10. Location Testing

Before Using the Form

Once a BTS has been added and fully configured in the EMS (including execution the RFS script from the floppy delivered with the antenna, as well as successfully calibrated, you must perform the “Export All BTS Data” action on this BTS. This creates a text-only file that will be used as input for the I&C Closeout Tool.

Using the Form

Open the IC_Form and select the first tab (Company Info) and click on the “Read BTS Export File (*.txt)” button. This action will read the configuration data contained in the BTS export file and populate most of the fields in all the tabs of the I&C Closeout Tool. Complete tabs 1

(Company Info), 2 (BTS Info), 3 (Serial #), and 5 (Cable Loss) by filling the green fields manually. No data needs to be entered manually in tabs 4 (Layer 1 & 2) and 6 (Calibration Plot). The remaining four tabs, 7 (RFS and Cable RFS Loss), 8 (RF Verification), 9 (Drive Test Form), and 10 (Location Testing) will be filled as part of the corresponding procedures.

Click on the “Save Workbook” button on the Company Info worksheet (first tab) before saving this Excel file. The purpose of this action is... ([ASK PHIL ABOUT THIS AND ABOUT THE CREATE AUDIT REPORT BUTTON](#)).

Figure V1: Company Info (1st tab)

The screenshot shows the 'Company Info' tab of an Excel spreadsheet. The sheet is organized into several sections:

- Site Location:** Contains fields for Company Name, Site Name, Address, City, State, and Zip, Country.
- Contact Information:** Contains fields for Name, Email Address, Address, City, state, Country, and Phone.
- BTS Configuration:** Contains fields for BTS ID and BTS Name.
- Deployment:** Contains fields for Installer Name, Phone, and Date.

At the bottom of the sheet, there are two buttons:

- A grey button labeled "Create Audit Report".
- A grey button labeled "Read BTS Export File (.txt)". This button is circled in red.

At the very bottom of the sheet, there is a footer bar containing the text "40-00217-00 Rev A Version 1.0 03/04/04" on the left and a grey button labeled "Save Workbook" on the right.

Figure V2: BTS Info (2nd tab)

DEPLOYMENT INFORMATION	
Company Name	0
BTS ID	0
BTS Name	0
Reset BTS Info	
BTS Type	
Software Version	
Active	
Standby	
Antenna Information	
Type	
Gain (dB)	
Downtilt (Actual)	
Height	
Azimuth	
Neighborhood BTS	
BTS 1	
BTS 2	
BTS 3	
BTS 4	
BTS IP Configuration	
Backhaul Type	
IP Address	
Subnet Mask	
Gateway IP	
EMS Server IP Configuration	
IP Address	

Figure V3: Serial # (3rd tab)

HARDWARE INFORMATION												
Company Name	<input type="text"/>											
BT B ID	<input type="text"/>											
BT B Name	<input type="text"/>											
Note : Please Enter all Card Serial Numbers in the Spreadsheet Below												
	<input type="text"/> /PA1	<input type="text"/> /PA2	<input type="text"/> /PA3	<input type="text"/> /PA4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> /PA5	<input type="text"/> /PA6	<input type="text"/> /PA7	<input type="text"/> /PA8	
	-	-	-	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	-	-	-	-	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	-	-	-	-	-	-	-	-	-	-	-	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	-	-	-	-	-	-	-	-	-	-	-	
Reset Serial Numbers	RF SHELF					DIGITAL SHELF						
	RFC/PA1					SYN1						
	RFC/PA2					SYN2						
	RFC/PA3					IF1						
	RFC/PA4					IF2						
	RFC/PA5					CHP1						
	RFC/PA6					CHP2						
RFC/PA7					MDM1							
RFC/PA8					MDM2							
BTSEN					OC1							
RFSEN					OC2							

Figure V4: Layer 1 & 2 (4th tab)

LAYER 1 & 2 INFORMATION					
Company Name	0				
BTS ID	0				
BTS Name	0				
Reset Layer 1 & 2 Values					
Center Frequency:					
Antenna Power					
Rx Sensitivity					
Cable Loss					
Bub-Carriers	<input type="checkbox"/> 1/4	<input type="checkbox"/> 3/4	<input checked="" type="checkbox"/> 5/4	<input type="checkbox"/> 7/4	<input type="checkbox"/> 9/4
Access BubCarriers	<input type="checkbox"/> 1/4	<input type="checkbox"/> 3/4	<input checked="" type="checkbox"/> 5/4	<input type="checkbox"/> 7/4	<input type="checkbox"/> 9/4
RFB Type					
WD Table					
Antenna Gain:	Tx Gain (DAC)	Rx Gain (DAC)	Cable Loss		
Ant1			0		
Ant2			0		
Ant3			0		
Ant4			0		
Ant5			0		
Ant6			0		
Ant7			0		
Ant8			0		
Median	#NUM!	#NUM!	0.0		
Power Splitter	I	Q	Loss(dB)		
Ant1			0.0		
Ant2			0.0		
Ant3			0.0		
Ant4			0.0		
Ant5			0.0		
Ant6			0.0		
Ant7			0.0		
Ant8			0.0		
Rx-2 Antennas Cable Loss vs. Rx					
Rx-2 Antennas Cable Loss vs. Rx					
■ = Tx-Cable(DAC) ■ = Rx-Cable(DAC)					
20	10	0	-10	-20	
-30	-40	-50	-60	-70	
-80	-90	-100	-110	-120	
-130	-140	-150	-160	-170	
-180	-190	-200	-210	-220	
-230	-240	-250	-260	-270	
-280	-290	-300	-310	-320	
-330	-340	-350	-360	-370	
-380	-390	-400	-410	-420	
-430	-440	-450	-460	-470	
-480	-490	-500	-510	-520	
-530	-540	-550	-560	-570	
-580	-590	-600	-610	-620	
-630	-640	-650	-660	-670	
-680	-690	-700	-710	-720	
-730	-740	-750	-760	-770	
-780	-790	-800	-810	-820	
-830	-840	-850	-860	-870	
-880	-890	-900	-910	-920	
-930	-940	-950	-960	-970	
-980	-990	-1000	-1010	-1020	
-1030	-1040	-1050	-1060	-1070	
-1080	-1090	-1100	-1110	-1120	
-1130	-1140	-1150	-1160	-1170	
-1180	-1190	-1200	-1210	-1220	
-1230	-1240	-1250	-1260	-1270	
-1280	-1290	-1300	-1310	-1320	
-1330	-1340	-1350	-1360	-1370	
-1380	-1390	-1400	-1410	-1420	
-1430	-1440	-1450	-1460	-1470	
-1480	-1490	-1500	-1510	-1520	
-1530	-1540	-1550	-1560	-1570	
-1580	-1590	-1600	-1610	-1620	
-1630	-1640	-1650	-1660	-1670	
-1680	-1690	-1700	-1710	-1720	
-1730	-1740	-1750	-1760	-1770	
-1780	-1790	-1800	-1810	-1820	
-1830	-1840	-1850	-1860	-1870	
-1880	-1890	-1900	-1910	-1920	
-1930	-1940	-1950	-1960	-1970	
-1980	-1990	-2000	-2010	-2020	
-2030	-2040	-2050	-2060	-2070	
-2080	-2090	-2100	-2110	-2120	
-2130	-2140	-2150	-2160	-2170	
-2180	-2190	-2200	-2210	-2220	
-2230	-2240	-2250	-2260	-2270	
-2280	-2290	-2300	-2310	-2320	
-2330	-2340	-2350	-2360	-2370	
-2380	-2390	-2400	-2410	-2420	
-2430	-2440	-2450	-2460	-2470	
-2480	-2490	-2500	-2510	-2520	
-2530	-2540	-2550	-2560	-2570	
-2580	-2590	-2600	-2610	-2620	
-2630	-2640	-2650	-2660	-2670	
-2680	-2690	-2700	-2710	-2720	
-2730	-2740	-2750	-2760	-2770	
-2780	-2790	-2800	-2810	-2820	
-2830	-2840	-2850	-2860	-2870	
-2880	-2890	-2900	-2910	-2920	
-2930	-2940	-2950	-2960	-2970	
-2980	-2990	-3000	-3010	-3020	
-3030	-3040	-3050	-3060	-3070	
-3080	-3090	-3100	-3110	-3120	
-3130	-3140	-3150	-3160	-3170	
-3180	-3190	-3200	-3210	-3220	
-3230	-3240	-3250	-3260	-3270	
-3280	-3290	-3300	-3310	-3320	
-3330	-3340	-3350	-3360	-3370	
-3380	-3390	-3400	-3410	-3420	
-3430	-3440	-3450	-3460	-3470	
-3480	-3490	-3500	-3510	-3520	
-3530	-3540	-3550	-3560	-3570	
-3580	-3590	-3600	-3610	-3620	
-3630	-3640	-3650	-3660	-3670	
-3680	-3690	-3700	-3710	-3720	
-3730	-3740	-3750	-3760	-3770	
-3780	-3790	-3800	-3810	-3820	
-3830	-3840	-3850	-3860	-3870	
-3880	-3890	-3900	-3910	-3920	
-3930	-3940	-3950	-3960	-3970	
-3980	-3990	-4000	-4010	-4020	
-4030	-4040	-4050	-4060	-4070	
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-4130	-4140	-4150	-4160	-4170	
-4180	-4190	-4200	-4210	-4220	
-4230	-4240	-4250	-4260	-4270	
-4280	-4290	-4300	-4310	-4320	
-4330	-4340	-4350	-4360	-4370	
-4380	-4390	-4400	-4410	-4420	
-4430	-4440	-4450	-4460	-4470	
-4480	-4490	-4500	-4510	-4520	
-4530	-4540	-4550	-4560	-4570	
-4580	-4590	-4600	-4610	-4620	
-4630	-4640	-4650	-4660	-4670	
-4680	-4690	-4700	-4710	-4720	
-4730	-4740	-4750	-4760	-4770	
-4780	-4790	-4800	-4810	-4820	
-4830	-4840	-4850	-4860	-4870	
-4880	-4890	-4900	-4910	-4920	
-4930	-4940	-4950	-4960	-4970	
-4980	-4990	-5000	-5010	-5020	
-5030	-5040	-5050	-5060	-5070	
-5080	-5090	-5100	-5110	-5120	
-5130	-5140	-5150	-5160	-5170	
-5180	-5190	-5200	-5210	-5220	
-5230	-5240	-5250	-5260	-5270	
-5280	-5290	-5300	-5310	-5320	
-5330	-5340	-5350	-5360	-5370	
-5380	-5390	-5400	-5410	-5420	
-5430	-5440	-5450	-5460	-5470	
-5480	-5490	-5500	-5510	-5520	
-5530	-5540	-5550	-5560	-5570	
-5580	-5590	-5600	-5610	-5620	
-5630	-5640	-5650	-5660	-5670	
-5680	-5690	-5700	-5710	-5720	
-5730	-5740	-5750	-5760	-5770	
-5780	-5790	-5800	-5810	-5820	
-5830	-5840	-5850	-5860	-5870	
-5880	-5890	-5900	-5910	-5920	
-5930	-5940	-5950	-5960	-5970	
-5980	-5990	-6000	-6010	-6020	
-6030	-6040	-6050	-6060	-6070	
-6080	-6090	-6100	-6110	-6120	
-6130	-6140	-6150	-6160	-6170	
-6180	-6190	-6200	-6210	-6220	
-6230	-6240	-6250	-6260	-6270	
-6280	-6290	-6300	-6310	-6320	
-6330	-6340	-6350	-6360	-6370	
-6380	-6390	-6400	-6410	-6420	
-6430	-6440	-6450	-6460	-6470	
-6480	-6490	-6500	-6510	-6520	
-6530	-6540	-6550	-6560	-6570	
-6580	-6590	-6600	-6610	-6620	
-6630	-6640	-6650	-6660	-6670	
-6680	-6690	-6700	-6710	-6720	
-6730	-6740	-6750	-6760	-6770	
-6780	-6790	-6800	-6810	-6820	
-6830	-6840	-6850	-6860	-6870	
-6880	-6890	-6900	-6910	-6920	
-6930	-6940	-6950	-6960	-6970	
-6980	-6990	-7000	-7010	-7020	
-7030	-7040	-7050	-7060	-7070	
-7080	-7090	-7100	-7110	-7120	
-7130	-7140	-7150	-7160	-7170	
-7180	-7190	-7200	-7210	-7220	
-7230	-7240	-7250	-7260	-7270	
-7280	-7290	-7300	-7310	-7320	
-7330	-7340	-7350	-7360	-7370	
-7380	-7390	-7400	-7410	-7420	
-7430	-7440	-7450	-7460	-7470	
-7480	-7490	-7500	-7510	-7520	
-7530	-7540	-7550	-7560	-7570	
-7580	-7590	-7600	-7610	-7620	
-7630	-7640	-7650	-7660	-7670	
-7680	-7690	-7700	-7710	-7720	
-7730	-7740	-7750	-7760	-7770	
-7780	-7790	-7800	-7810	-7820	
-7830	-7840	-7850	-7860	-7870	
-7880	-7890	-7900	-7910	-7920	
-7930	-7940	-7950	-7960	-7970	
-7980	-7990	-8000	-8010	-8020	
-8030	-8040	-8050	-8060	-8070	
-8080	-8090	-8100	-8110	-8120	
-8130	-8140	-8150	-8160	-8170	
-8180	-8190	-8200	-8210	-8220	
-8230	-8240	-8250	-8260	-8270	
-8280	-8290	-8300	-8310	-8320	
-8330	-8340	-8350	-8360	-8370	
-8380	-8390	-8400	-8410	-8420	
-8430	-8440	-8450	-8460	-8470	
-8480	-8490	-8500	-8510	-8520	
-8530	-8540	-8550	-8560	-8570	
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-8630	-8640	-8650	-8660	-8670	
-8680	-8690	-8700	-8710	-8720	
-8730	-8740	-8750	-8760	-8770	
-8780	-8790	-8800	-8810	-8820	
-8830	-8840	-8850	-8860	-8870	
-8880	-8890	-8900	-8910	-8920	
-8930	-8940	-8950	-8960	-8970	
-8980	-8990	-9000	-9010	-9020	
-9030	-9040	-9050	-9060	-9070	
-9080	-9090	-9100	-9110	-9120	
-9130	-9140	-9150	-9160	-9170	
-9180	-9190	-9200	-9210	-9220	
-9230	-9240	-9250	-9260	-9270	
-9280	-9290	-9300	-9310	-9320	
-9330	-9340	-9350	-9360	-9370	
-9380	-9390	-9400	-9410	-9420	
-9430	-9440	-9450	-9460	-9470	
-9480	-9490	-9500	-9510	-9520	
-9530	-9540	-9550	-9560	-9570	
-9580	-9590	-9600	-9610	-9620	
-9630	-9640	-9650	-9660	-9670	
-9680	-9690	-9700	-9710	-9720	
-9730	-9740	-9750	-9760	-9770	
-9780	-9790	-9800	-9810	-9820	
-9830	-9840	-9850	-9860	-9870	
-9880	-9890	-9900	-9910	-9920	
-9930	-9940	-9950	-9960	-9970	
-9980	-9990	-10000	-10010	-10020	

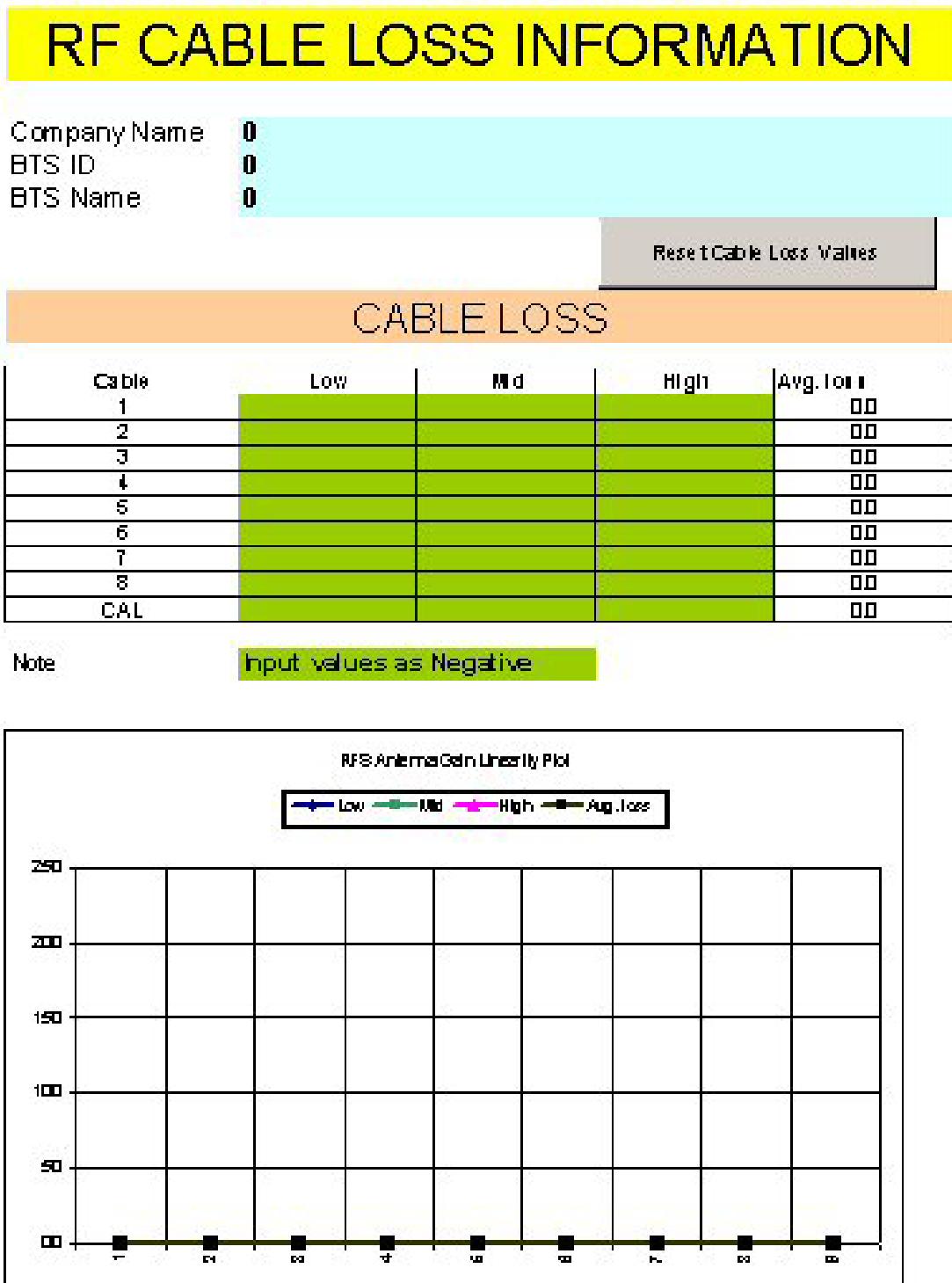
Figure V5: Cable Loss (5th tab)

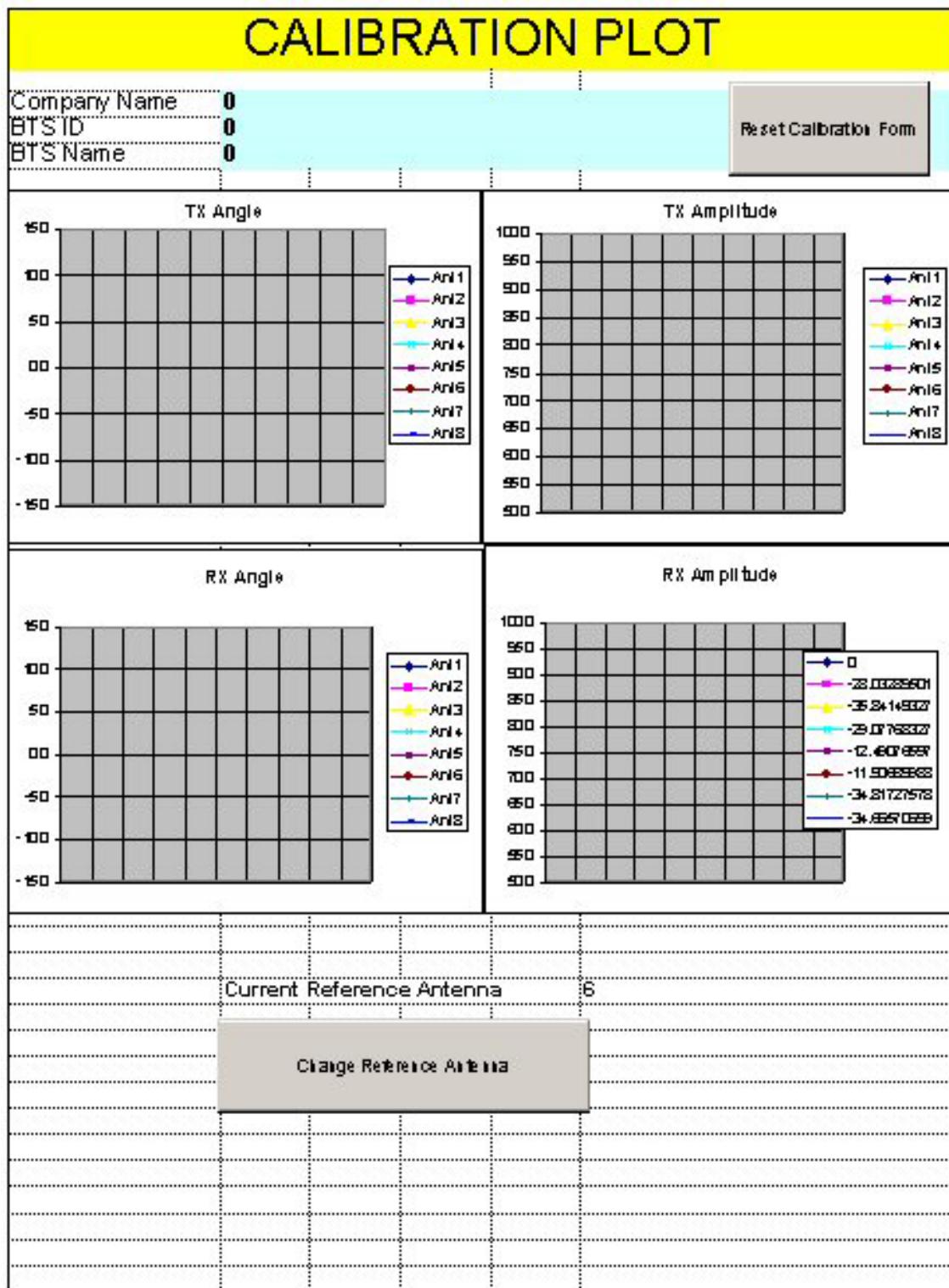
Figure V6a: Calibration Plot (6th tab) – Part One of Three

Figure V6b: Calibration Plot (6th tab) – Part Two of Three

TX Angle								
	Ant 1	Ant2	Ant3	Ant4	Ant5	Ant6	Ant7	Ant8
Carrier 1								
Carrier 2								
Carrier 3								
Carrier 4								
Carrier 5								
Carrier 6								
Carrier 7								
Carrier 8								
Carrier 9								
Carrier 10								
TX Amplitude								
	Ant 1	Ant2	Ant3	Ant4	Ant5	Ant6	Ant7	Ant8
Carrier 1								
Carrier 2								
Carrier 3								
Carrier 4								
Carrier 5								
Carrier 6								
Carrier 7								
Carrier 8								
Carrier 9								
Carrier 10								
RX Angle								
	Ant 1	Ant2	Ant3	Ant4	Ant5	Ant6	Ant7	Ant8
Carrier 1								
Carrier 2								
Carrier 3								
Carrier 4								
Carrier 5								
Carrier 6								
Carrier 7								
Carrier 8								
Carrier 9								
Carrier 10								
RX Amplitude								
	0	-28.0329	-35.8415	-29.0777	-12.4908	-11.9069	-34.8173	-34.6657
Carrier 1								
Carrier 2								
Carrier 3								
Carrier 4								
Carrier 5								
Carrier 6								
Carrier 7								
Carrier 8								
Carrier 9								
Carrier 10								

Figure V6c: Calibration Plot (6th tab) – Part Three of Three

		Original TX Calibration Data							
		Antenna 1	Antenna 2	Antenna 3	Antenna 4	Antenna 5	Antenna 6	Antenna 7	Antenna 8
Carrier 1	Real								
	Imag								
Carrier 2	Real								
	Imag								
Carrier 3	Real								
	Imag								
Carrier 4	Real								
	Imag								
Carrier 5	Real								
	Imag								
Carrier 6	Real								
	Imag								
Carrier 7	Real								
	Imag								
Carrier 8	Real								
	Imag								
Carrier 9	Real								
	Imag								
Carrier 10	Real								
	Imag								
		Original RX Calibration Data							
		Antenna 1	Antenna 2	Antenna 3	Antenna 4	Antenna 5	Antenna 6	Antenna 7	Antenna 8
Carrier 1	Real								
	Imag								
Carrier 2	Real								
	Imag								
Carrier 3	Real								
	Imag								
Carrier 4	Real								
	Imag								
Carrier 5	Real								
	Imag								
Carrier 6	Real								
	Imag								
Carrier 7	Real								
	Imag								
Carrier 8	Real								
	Imag								
Carrier 9	Real								
	Imag								
Carrier 10	Real								
	Imag								

Figure V7: RFS & Cable RFS Loss (7th tab)

RFS AND CABLE SWEEPS INFORMATION							
Company Name: 0							
BTS ID: 0							
BTS Name: 0							
Reset RFS & Cable Sweeps Values							
INSERTION LOSS THRU RFS							
	Low	Mid	High	Average	Cal path loss (calculated)	LNA gain (calculated)	
1	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
2	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
3	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
4	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
6	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
8	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
7	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
9	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0

INSERTION LOSS THRU CAL CABLE AND RFS							
	Low	Mid	High	Average	Cal path loss (calculated)	LNA gain (calculated)	
1	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
2	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
3	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
4	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
6	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
8	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
7	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0
9	TX path			0.0	3.0	0.0	0.0
	RX path			0.0		0.0	0.0

INPUT ALL VALUES AS NEGATIVE							
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Figure V8: RF Verification (8th tab)

RF VERIFICATION FORM																																																																																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Date</td><td colspan="7"></td></tr> <tr><td>Company Name</td><td colspan="7">0</td></tr> <tr><td>BTS Name</td><td colspan="7">0</td></tr> <tr><td>BTS ID</td><td colspan="7">0</td></tr> <tr><td>Frequency (MHz)</td><td colspan="7">0.00</td></tr> <tr><td>Software release</td><td colspan="7">0.00</td></tr> <tr><td>Personnel</td><td colspan="7"></td></tr> <tr><td>Cal cable loss (-)</td><td colspan="7"></td></tr> <tr><td>Attenuation (-)</td><td colspan="7"></td></tr> <tr><td>Total Path loss (-)</td><td colspan="7">0.0</td></tr> <tr><td>RX sensitivity (set in EMS) (-)</td><td colspan="7"></td></tr> <tr><td>Antenna power (in EMS)</td><td colspan="7"></td></tr> <tr><td>Antenna gain</td><td colspan="7">0.0</td></tr> <tr><td>Sync scale</td><td colspan="7"></td></tr> <tr><td>Modem correction factor</td><td colspan="7"></td></tr> <tr><td>Modem EID</td><td colspan="7"></td></tr> <tr><td>Sync correction</td><td colspan="7">0.0</td></tr> </table>								Date								Company Name	0							BTS Name	0							BTS ID	0							Frequency (MHz)	0.00							Software release	0.00							Personnel								Cal cable loss (-)								Attenuation (-)								Total Path loss (-)	0.0							RX sensitivity (set in EMS) (-)								Antenna power (in EMS)								Antenna gain	0.0							Sync scale								Modem correction factor								Modem EID								Sync correction	0.0						
Date																																																																																																																																															
Company Name	0																																																																																																																																														
BTS Name	0																																																																																																																																														
BTS ID	0																																																																																																																																														
Frequency (MHz)	0.00																																																																																																																																														
Software release	0.00																																																																																																																																														
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Attenuation (-)																																																																																																																																															
Total Path loss (-)	0.0																																																																																																																																														
RX sensitivity (set in EMS) (-)																																																																																																																																															
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Sync scale																																																																																																																																															
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Modem EID																																																																																																																																															
Sync correction	0.0																																																																																																																																														
<input type="button" value="Reset RF Verification"/>																																																																																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr><th rowspan="2"></th><th colspan="4" style="text-align: center;">Cable Loss</th></tr> <tr><th style="text-align: center;">Low</th><th style="text-align: center;">Mid</th><th style="text-align: center;">High</th><th style="text-align: center;">Avg. loss</th></tr> </thead> <tbody> <tr><td>1</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> <tr><td>2</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> <tr><td>3</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> <tr><td>4</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> <tr><td>5</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> <tr><td>6</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> <tr><td>7</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> <tr><td>8</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> <tr><td>CAL</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td><td style="text-align: center;">0.0</td></tr> </tbody> </table>									Cable Loss				Low	Mid	High	Avg. loss	1	0.0	0.0	0.0	0.0	2	0.0	0.0	0.0	0.0	3	0.0	0.0	0.0	0.0	4	0.0	0.0	0.0	0.0	5	0.0	0.0	0.0	0.0	6	0.0	0.0	0.0	0.0	7	0.0	0.0	0.0	0.0	8	0.0	0.0	0.0	0.0	CAL	0.0	0.0	0.0	0.0																																																																																		
	Cable Loss																																																																																																																																														
	Low	Mid	High	Avg. loss																																																																																																																																											
1	0.0	0.0	0.0	0.0																																																																																																																																											
2	0.0	0.0	0.0	0.0																																																																																																																																											
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Figure V9: Drive Test Form (9th tab)

DRIVE TEST FORM		
DRIVE TEST INFORMATION		
Drive test area name	0	
Date of Drive Test		
Drive Tester Name	0	
Standard Vehicle Name and Type		
CPE EID		
CPE Test device Antenna gain (calibrated)		
Drive Route (Map attached)		
Drive test file name		
SITE CONFIGURATION		
Site Coordinates		
Frequency (MHz)	0 . 00	
BTS Transmit Power	0	
BTS ID	0	
BTS antenna Omni/Panel	0	
Antenna Azimuth (Orientation)	0	
Antenna downtilt (Degrees)	0	
BTS antenna height	0	
DRIVE TEST ROUTE PLAN	YES / NO	TYPICAL CLUTTER HEIGHT
High Density Urban Covered	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Commercial/Industrial	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Residential with Trees	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Residential with Few Trees	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Paved Areas	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Grass/Agriculture	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Open Area	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Forested Areas	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Water	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Airports	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Others	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	

Things to pay attention to:

1. Make sure that the GPS data on the constellation debugger is updating all the time during the drive test.
2. Make sure that the Drive Test CPE only selects the upright antenna all the time.
3. Make sure that the CPE is locked to the correct BTS by checking the BTS ID and frequency.
4. Make sure that the RF connections are good all the time. Check this by observing the stability of the RF signal strength in a LOS location.
5. Please make proper log information in certain important locations.

Figure V10a: Location Testing (10th tab) – Part One of Two

FTP LOCATION TEST FORM											
Company: <input type="text"/> BTS Name: <input type="text"/> BTS ID: <input type="text"/> S/N Release: <input type="text"/>				Antenna Type: <input type="text"/> Azimuth: <input type="text"/> Up/Down Tilt(M/E): <input type="text"/> Frequency: <input type="text"/>				Tested By: <input type="text"/> Test Date (Start): <input type="text"/> Test Date (End): <input type="text"/>			
Site #	Site Name	GPS Coordinates	Data Capture File Name Debugger Beamform (bfm)	Km to BTS	LOS	NLOS	FTP Data Rate (Kbps)		Sync (dB)		Remarks
							Downlink	Uplink	Absolute	Processed	
1	Sector / Omni										
2	Sector / Omni										
3	Sector / Omni										
4	Sector / Omni										
5	Sector / Omni										
6	Sector / Omni										
7	Sector / Omni										
8	Sector / Omni										

Figure V10b: Location Testing (10th tab) – Part Two of Two

FTP LOCATION TEST FORM											
Company: <input type="checkbox"/>				Antenna Type: <input type="checkbox"/>				Tested By: <input type="checkbox"/>			
BTS Name: <input type="checkbox"/>				Azimuth: <input type="checkbox"/>		Degrees		Test Date (Start):			
BTS ID: <input type="checkbox"/>				Up/Down Tilt (M/E): <input type="checkbox"/>		Degrees		Test Date (End):			
S/W Release #: <input type="checkbox"/>				Frequency: <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> MHz							
Site #	Site Name	GPS Coordinates	Data Capture File Name Debugger	Km to BTS	LOS	NLOS	FTP Data Rate (Kbps)		Sync (dB)		Remarks
							Downlink	Uplink	Absolute	Processed	
9	Optional										
10	Optional										
11	Optional										
12	Optional										
13	Optional										
14	Optional										