



HST-3000 Release Notes

Firmware Revision: 7.30.12

Updated June 3, 2011

This document summarizes new features in the Revision 7.30.12 HST-3000 base unit firmware. Highlights of the new capabilities included in this release include:

- 1. Broadcom chipset ADSL/VDSL Single Pair/Bonded Pair SIM – (Page 2)**
- 2. Infineon Chipset ADSL/VDSL SIM – (Page 3)**
- 3. PTM Support Texas Instruments (TI) ADSL – (Page 6)**
- 4. Auto Mode for T1.413 Sync on TI Chipset ADSL2+ SIM – (Page 6)**
- 5. Triple Play Enhancements for Transport – (Page 7)**
- 6. New Filters for Wideband Noise – (Page 7)**
- 7. SELT Termination Capability – (Page 8)**
- 8. VoIP GUI Improvements – (Page 8)**

Release (FCS) of Revision 7.30.12 Firmware is June 2, 2011.

~~PDF versions of the latest revisions of User Guides corresponding to this release (updated Copper, VDSL, and IP Video User Guides) are available on the src/prc.~~

1. HST-3000 ADSL2 Testing User's Guide
1. HST3000 VoIP Testing User's Guide
2. HST3000 VDSL Testing User's Guide
3. HST3000 E1 Testing User's Guide
4. HST3000 xDSL Testing using the Broadcom SIM
5. HST_Software7_20Addendum.pdf
6. HST-3000 Leakage Mode Addendum

Detailed descriptions of the new features and functionality contained within this release as well as known bugs/issues in this release and bugs/issues corrected from previous releases are described below.



1. Broadcom Chipset ADSL/VDSL Single Pair/Bonded Pair SIM

The Broadcom SIM developed for the HST-3000 uses Broadcom's 96368 chipset. Rate vs. reach performance is based on the performance of Broadcom's reference design.

The Broadcom SIM supports the following features and is compliant to the following specifications:

Specifications

- G.998.1
- G.998.2
- G.994
- G.992.1 (G.dmt), Annex A and C
- G.992.2 (G.lite) Annex A and C
- ANSI T1.413
- G.992.3 (ADSL2) Annex A, C, L, and M
- G.992.5 (ADSL2+) Annex A, C, and M
- G.993.2 (VDSL2) Annex A
 - Profiles 8a, 8b, 8c, 8d, 12a, 12b, 17a

Features

- VDSL2 PTM Bonding
- ADSL2+ ATM Bonding
- Dual latency path support in VDSL2
- Four latency paths supported in ADSL2 and ADSL2+
- PhyR support (Broadcom proprietary method to enhance INP)
- Nitro (Broadcom ATM header compression)

From the application launcher screen the Broadcom modem will present three selections (applications) to the user in the following order from left to right: **XDSL**, **VDSL BOND**, and **ADSL BOND**.

XDSL

- This application supports both ADSL and VDSL2 single pair connections.
- VDSL1 (aka VDSL1.5) is not supported.
- This application offers an "auto" technology selection in which the modem will connect in either ADSL or VDSL2 according to the technology the port it is connected to supports.
- This application does not support bonded connections
- This application will support the following ADSL standards
 - T1.413
 - G.992.1 (G.dmt) Annex A, B, and C



- G.992.2 (G.lite) Annex A, C
- G.993.2 (ADSL2) Annex A, B, C, L, and M
- G.993.2 (ADSL2+) Annex A, B, C, and M
- This application will support single line VDSL2 connections on the following VDSL2 profiles:
 - 8a, 8b, 8c, 8d, 12a, 12b, 17a
 - 30a is not supported

VDSL BOND

- This application supports VDSL2 PTM bonded connections only
- It will not connect in ADSL
- With the current release of Broadcom software (4.06L.03) it supports bonded connections on only the following VDSL2 profiles:
 - 8a, 8b, 8c, 8d, 12a, 12b
 - 17a and 30a are not supported
- It will connect on a single pair VDSL2 connection, but the menu system will not change. Only single pair (pair 1 or 2) statistics will be shown, and Group results will not populate.
- If this application is used to connect on a single pair, Layer 2 and Layer 3 will not function.

ADSL BOND

- This application supports ADSL2+ ATM bonded connections only.
- It will not connect in VDSL2.
- It will connect on a single pair ADSL2+ connection, but the menu system will not change. Only single pair (pair 1 or 2) statistics will be shown, and Group results will not populate.
- If this application is used to connect on a single pair, Layer 2 and Layer 3 will not function.

2. Infineon Chipset ADSL/VDSL SIM

- **ATM mode over VDSL**
 - A new configuration shall be added to the modem configuration page in VDSL mode only that will allow the user to choose between ATM and PTM. The previous behavior was always PTM in VDSL.
 - When in ATM mode the other UI's should show counters and data consistent with other ATM modems. (i.e., cell counters, add oA data modes etc)
 - The current transport being used shall be made visible above the DSL line in the summary diagram in both the Modem and Data GUIs.

- **PTM mode over ADSL**
 - A new configuration shall be added to the modem configuration page in ADSL mode only that will allow the user to choose between ATM and PTM. The previous behavior was always ATM in ADSL.
 - When in PTM mode the other UI's should show counters and data consistent with other PTM modems. (i.e., no oA data modes and no ATM counters)
 - The current transport being used shall be made visible above the DSL line in the summary diagram in both the Modem and Data GUIs.

- **Additional ATM Error Counters**
 - The following error counters shall be added to the modem Error page and will only be visible when using an ATM transport.
 - i. HEC
 - ii. OCD
 - iii. LCD

- **Use the System Vendor Info in Serial Number**
 - New configuration "Serial Value" in ADSL general configuration. This configuration will only be visible with new modem firmware and will not be valid for previous modem firmware.
 - It shall have two possible values
 - i. Serial Number (default)
 - ii. Vendor Information
 - If "Vendor Information" is selected then instead of the serial number field containing the serial number it will instead have the vendor id.

- **Bit Swapping Configuration**
 - New Configuration "Bit Swapping" added to general configuration for ADSL and VDSL.
 - This option will be valid for any Annex, Compatibility and DSL mode.
 - The possible values for this configuration will be:
 - i. Upstream only (default for CO modes)
 - ii. Downstream only (default for RT modes)
 - iii. Upstream and Downstream
 - iv. Neither

- **Hlog and QLN graphs**
 - When in the existing "Graphs" page in the modem GUI there will be two new choices under the "Results" tab.
 - i. H.log
 - ii. Quite Line Noise



- The user can return back to the BPT graph by choosing it under the Results soft key.
- **Attenuation for 100 kHz for Dr DSL**
 - This result will be available directly below the existing 300 kHz value in the Dr. DSL results.
 - This result must be made available to scripts.
- **G.lite support added to ADSL**
 - New available value standard G.lite
 - i. Shall only be allowed when in ADSL-R DSL mode
 - ii. Shall only be visible when in Annex A
 - When synced in G.lite the standard shall be visible on the Modem Summary screen.



3. PTM support for TI (Texas Instruments) ADSL

- If using datapump 7.05.02.202 or later the TI can sync in PTM mode if connected against a port on the DSLAM that will support PTM.
- There is no new configuration in the modem to choose this behavior.
- The GUI will assume you are in ATM mode to maintain consistency with prior behavior and will only change when Showtime is reached against a PTM port. At this point the transport displayed will become PTM and all the counters and data mode will change appropriately.
- Data will not work in PTM over ADSL though it will display correctly as a PTM line in the diagram. Because of this there should be a label on Data Configuration screen stating something similar to “Data Unavailable in PTM mode”

4. Auto Mode for T1.413 Sync on TI Chipset ADSL/ADSL2+ SIM

- A new version of ADSL2+ (Auto) is available. This will allow for sync from ADSL2+ (Auto) on T1.413. The timing will need to be determined for each technology to ensure that standards are given ample time to achieve sync. This “home-brew” mode will attempt the current ADSL2+ (Auto) behavior first before trying T1.413. This means favor ADSL2/ADSL2+ if it is available instead of T1.413 first.
- This feature will only be supported when using the following two drivers:
 - E.67.2.63
 - E.67.2.63-t5



5. Triple Play Enhancements for Transport

Modem

All Modem GUI's other than GSHDSL will have the current Transport (ATM/PTM/Auto) added to the diagram seen in the Summary screen. This will be done even for modems that do not allow you to change the transport just as another result. In the case of bonded modems where there is no diagram in the Group Summary screen, the user will be forced to go to a single pair summary to see the diagram and the Transport Label.

When in Auto Transport for the Modem GUI ATM specific error counters will be hidden but otherwise everything will look as it did before. This is because most of the modem counters are at the physical instead of data layer.

Data

Like the Modem GUI the Data Summary screen will have the current Transport (ATM/PTM/Auto) added to the diagram in the top left. In the case that the Transport is "Auto" the Data GUI will not allow you to change off the Summary Screen. Instead of showing you various counter and results in the main area, it will display a message informing the user that it is detecting the current transport.

Once the transport is decided and it changes from Auto the display menu will again be allowed to navigate amongst the other pages. The newly found transport will then replace "Auto" with the current transport (ATM/PTM) and all the counters will then show for that transport. If the user enters Data Configuration while the transport is still Auto then there will be a more detailed message to the user explaining that they cannot make changes until the Transport is decided and where the transport is found.

Video

The physical error counters may change when the Transport is changed. This would really just mean the addition or subtraction of ATM errors when appropriate.

6. New Filters for Wideband Noise

Filter Name	Low End	High End	Resolution
G2	18.75 kHz	2.20125 MHz	3750 Hz
G.1M	5.625 kHz	348.75 kHz	1875 Hz
G.2M	5.625 kHz	690 kHz	1875 Hz
E1	48.75 kHz	3 MHz	3750 Hz
UO	24.375 kHz	138.75 kHz	1875 Hz
D1	138.75 kHz	3.75 MHz	3750 Hz

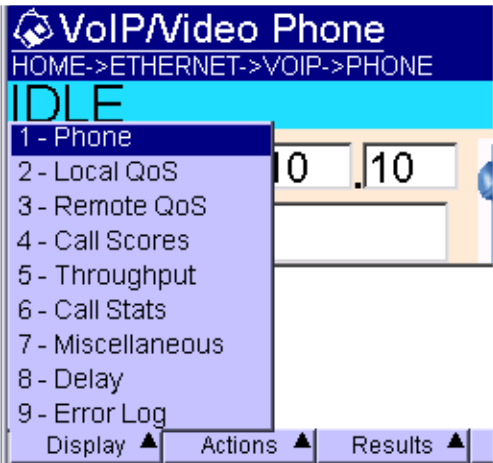

7. SELT Termination Capability

A new tab on the main summary screen for the Capri Bonded VDSL SIM has been added, labeled “SELT TERM”

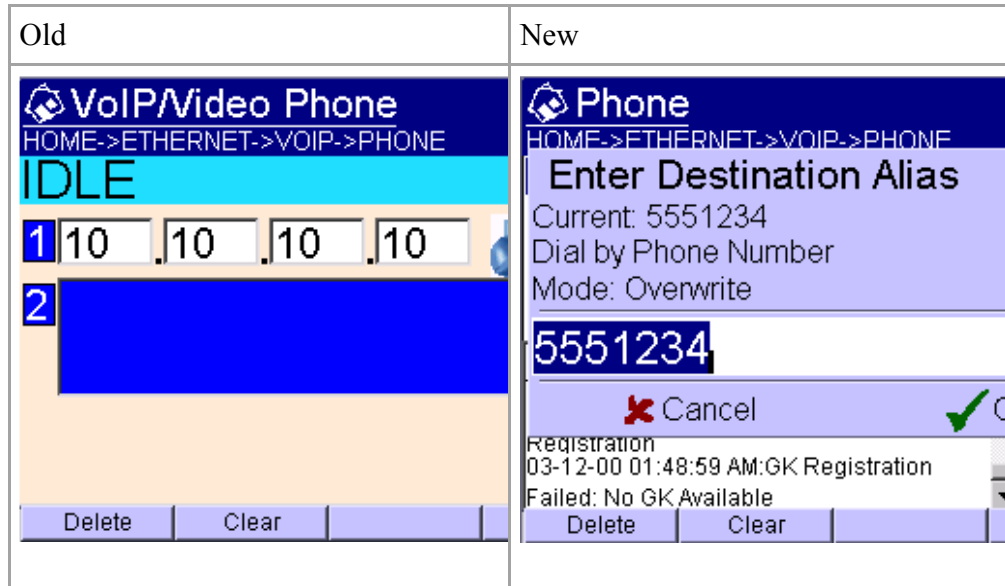
Pressing the corresponding softkey will stop the DSL modem and terminate the line in such a way that the remote SELT mechanism can remotely test the line.

8. VoIP GUI Improvements

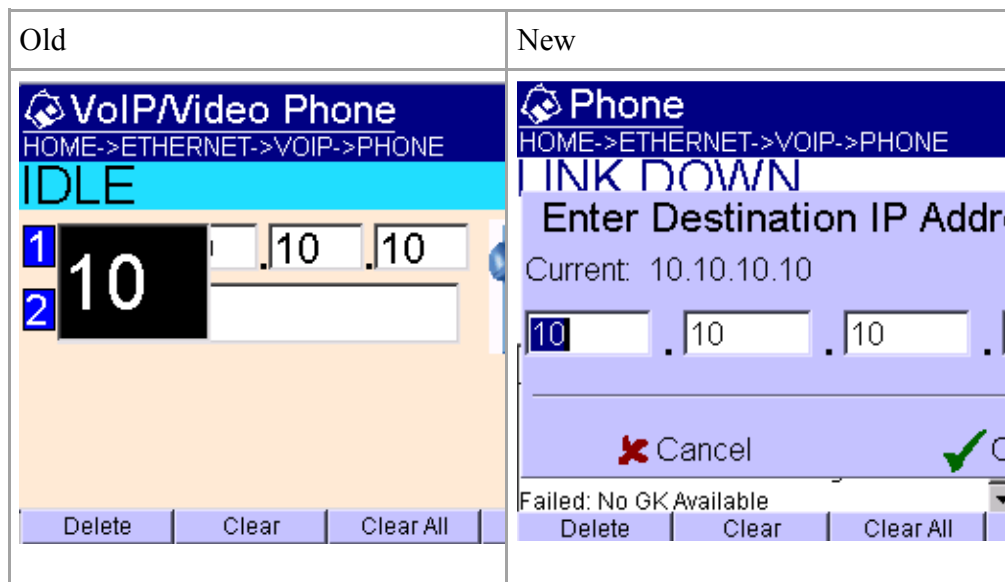
1. The Local and Remote QoS pages have been rearranged so that there are now Audio and Video QoS pages with Local and Remote statistics on each page.

Old	New
	

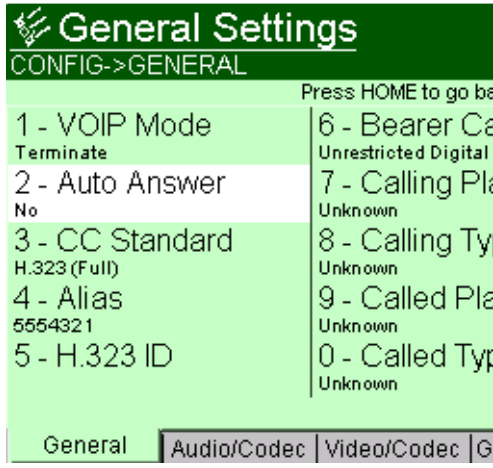
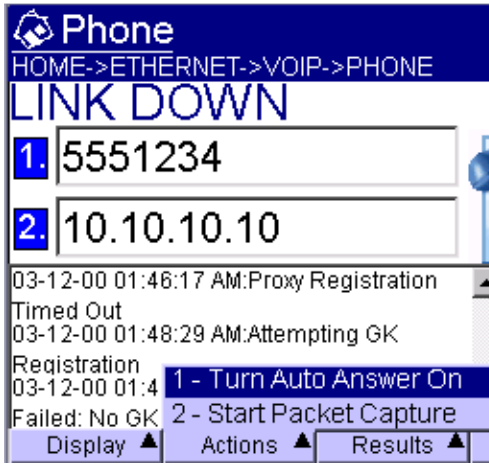
2. In order to dial a phone number you must press the <1>, and an edit box will appear.



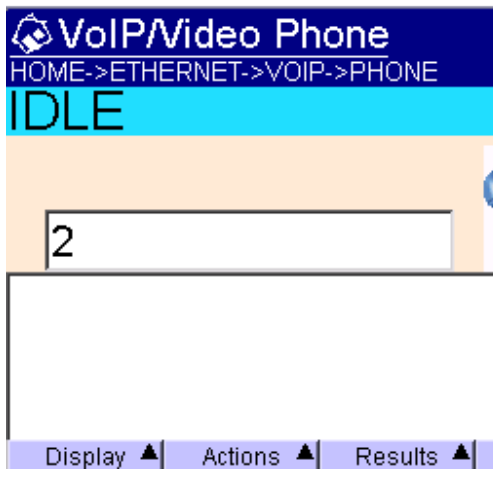
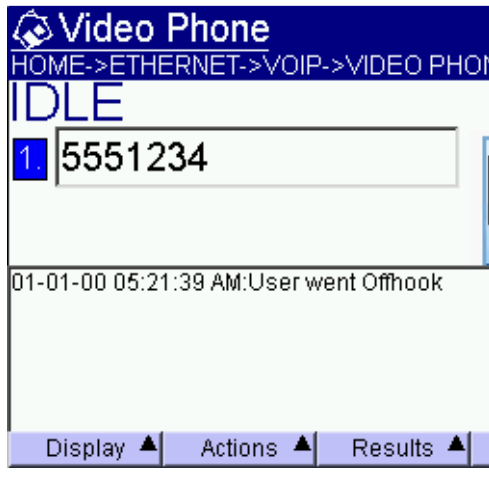
1. In order to enter an IP address, you must be in the correct mode (H.323 and no G.K.) and you must press <2>. When you press <2> an IP edit dialog will appear (it will look like the dialogs in the config pages).



2. The only time the phone will auto hang up is if you were in a call, and the call terminated either because of error or a normal reason. Every other instance, it is the user's responsibility to hang up the phone.
3. Auto Answer is no longer in the config page, but is in the action tab on the Phone Screen.

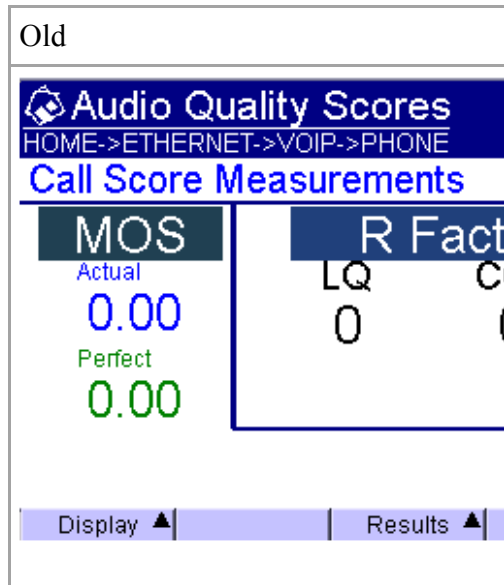
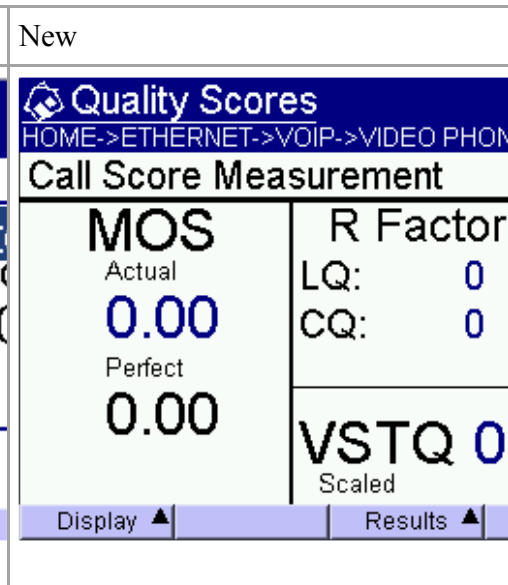
Old	New
 <p>General Settings CONFIG->GENERAL</p> <p>1 - VOIP Mode Terminate</p> <p>2 - Auto Answer No</p> <p>3 - CC Standard H.323 (Full)</p> <p>4 - Alias 5554321</p> <p>5 - H.323 ID</p> <p>6 - Bearer Cap Unrestricted Digital</p> <p>7 - Calling Pla Unknown</p> <p>8 - Calling Typ Unknown</p> <p>9 - Called Pla Unknown</p> <p>0 - Called Typ Unknown</p> <p>General Audio/Codec Video/Codec G</p>	 <p>Phone HOME->ETHERNET->VOIP->PHONE</p> <p>LINK DOWN</p> <p>1. 5551234</p> <p>2. 10.10.10.10</p> <p>03-12-00 01:46:17 AM:Proxy Registration Timed Out</p> <p>03-12-00 01:48:29 AM:Attempting GK Registration</p> <p>03-12-00 01:4 Failed: No GK</p> <p>1 - Turn Auto Answer On 2 - Start Packet Capture</p> <p>Display ▲ Actions ▲ Results ▲</p>

- The Phone state icons have changed, now if you are in a video mode the icon (on an ACE2) will be a TV showing an image of a phone in the appropriate state.

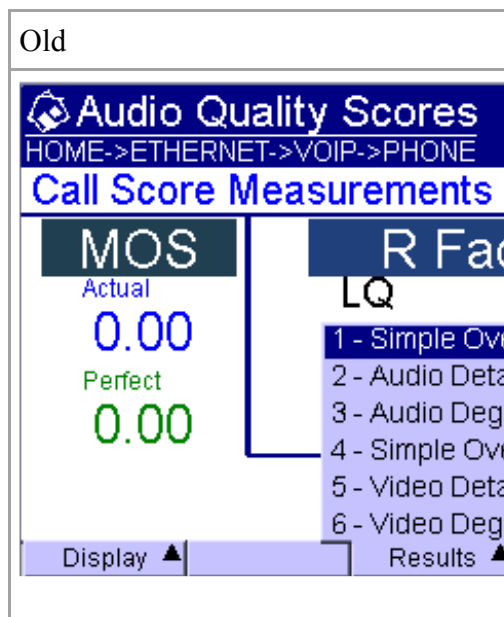
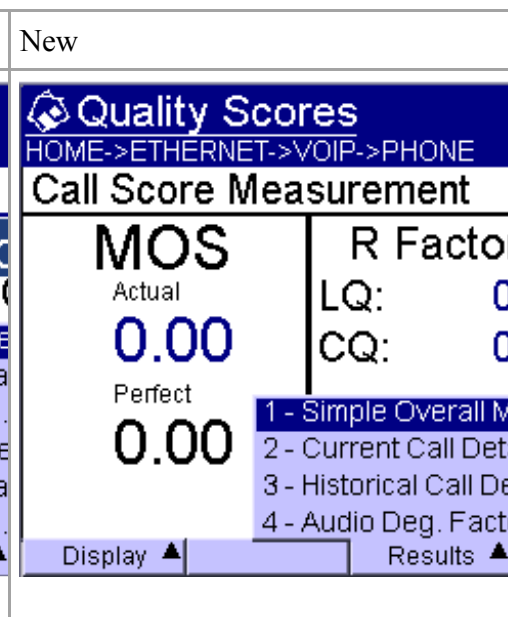
Old	New
 <p>VoIP/Video Phone HOME->ETHERNET->VOIP->PHONE</p> <p>IDLE</p> <p>2</p> <p>Display ▲ Actions ▲ Results ▲</p>	 <p>Video Phone HOME->ETHERNET->VOIP->VIDEO PHON</p> <p>IDLE</p> <p>1. 5551234</p> <p>01-01-00 05:21:39 AM:User went Offhook</p> <p>Display ▲ Actions ▲ Results ▲</p>

- The Call Scores screen looks slightly different in that the titles do not have a colored background anymore, and the VSTQ Statistic has been added. VSTQ is a range from 0.00 to 5.00.

NOTE: VSTQ: Video Service Transmission Quality: a value that indicates the ability of an Internet protocol data network to transport IP video signals. The VSTQ value is codec independent and ranges from 0 to 50.

Old	New
	

6. Current call details displays the MOS scores for only the current call.

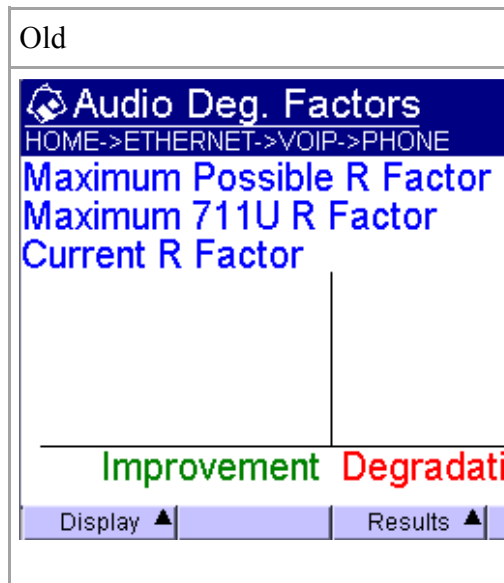
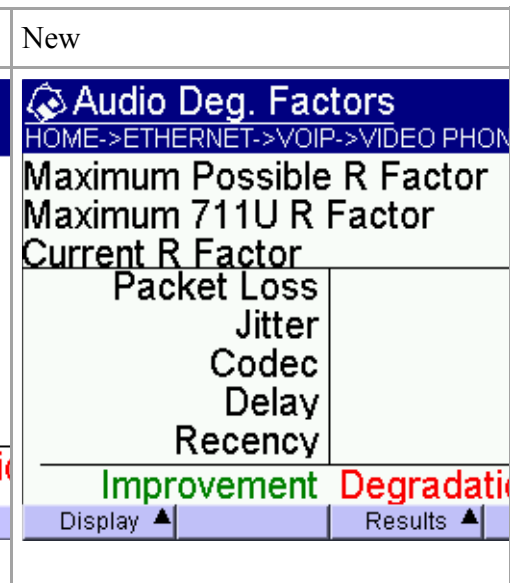
Old	New
	

Current Call Details HOME->ETHERNET->VOIP->PHONE		Current Call Details HOME->ETHERNET->VOIP->VIDEO PH	
	Current		Current
CQ R	0	CQ R	0
LQ R	0	LQ R	0
G.107 R	0	G.107R	0
Burst R	0	Burst R	0
Gap R	0	Gap R	0
CQ MOS	0.00	CQ MOS	0.00
LQ MOS	0.00	LQ MOS	0.00
VSTQ	-.--	VSTQ	0.00
Display ▲	Results ▲	Display ▲	Results ▲

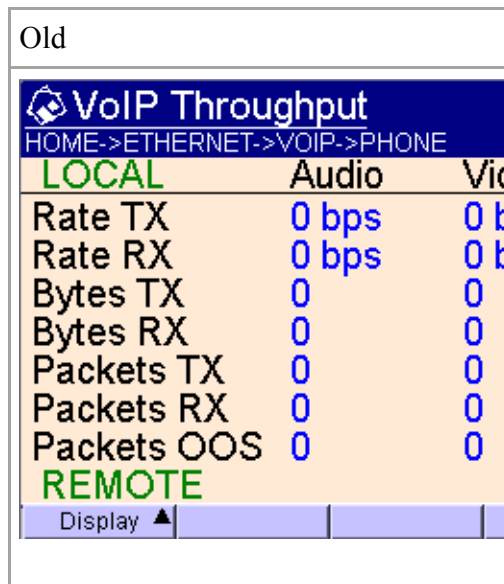
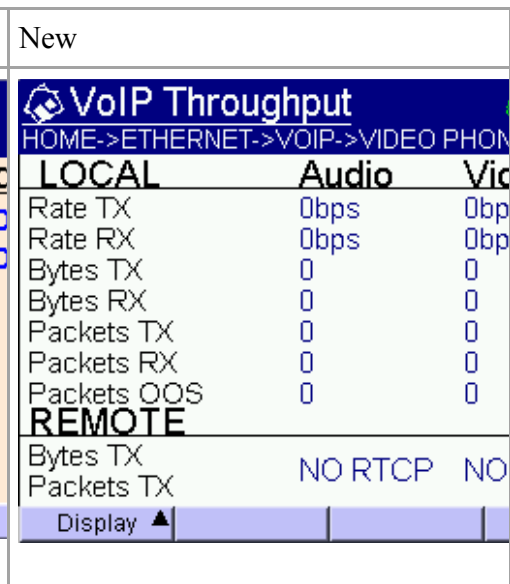
7. Historical call details shows the values for all calls that have been placed NOT INCLUDING THE CURRENT ACTIVE CALL.

Old				New			
Audio Details HOME->ETHERNET->VOIP->PHONE				All Calls Details HOME->ETHERNET->VOIP->PHONE			
More ▼	CUR	AVG	MIN		AVG	MIN	M
CQ R	0	0	0	CQ R	0	0	0
LQ R	0	0	0	LQ R	0	0	0
G.107 R	0	0	0	G.107 R	0	0	0
Burst R	0	0	0	Burst R	0	0	0
Gap R	0	0	0	Gap R	0	0	0
CQ MOS	0.00	0.00	0.00	CQ MOS	0.00	0.00	0.00
LQ MOS	0.00	0.00	0.00	LQ MOS	0.00	0.00	0.00
				VSTQ	-.--	-.--	-
Display ▲	Results ▲			Display ▲	Results ▲		

8. Audio Deg. Factors is the same as the old screen except that all the possible labels are visible all the time (Packet Loss, Jitter, Codec, Delay, and Recency).

Old	New
 <p>Audio Deg. Factors HOME->ETHERNET->VOIP->PHONE Maximum Possible R Factor Maximum 711U R Factor Current R Factor</p> <p>Improvement Degradation</p> <p>Display ▲ Results ▲</p>	 <p>Audio Deg. Factors HOME->ETHERNET->VOIP->VIDEO PHON Maximum Possible R Factor Maximum 711U R Factor Current R Factor</p> <p>Packet Loss Jitter Codec Delay Recency</p> <p>Improvement Degradation</p> <p>Display ▲ Results ▲</p>


9. The Throughput page has been altered so that the fonts are small enough for every value to fit on the same screen.

Old	New
 <p>VoIP Throughput HOME->ETHERNET->VOIP->PHONE</p> <p>LOCAL Audio Video</p> <p>Rate TX 0 bps 0 bps Rate RX 0 bps 0 bps Bytes TX 0 0 Bytes RX 0 0 Packets TX 0 0 Packets RX 0 0 Packets OOS 0 0</p> <p>REMOTE</p> <p>Display ▲</p>	 <p>VoIP Throughput HOME->ETHERNET->VOIP->VIDEO PHON</p> <p>LOCAL Audio Video</p> <p>Rate TX 0bps 0bp Rate RX 0bps 0bp Bytes TX 0 0 Bytes RX 0 0 Packets TX 0 0 Packets RX 0 0 Packets OOS 0 0</p> <p>REMOTE</p> <p>Bytes TX NO RTCP NO Packets TX</p> <p>Display ▲</p>

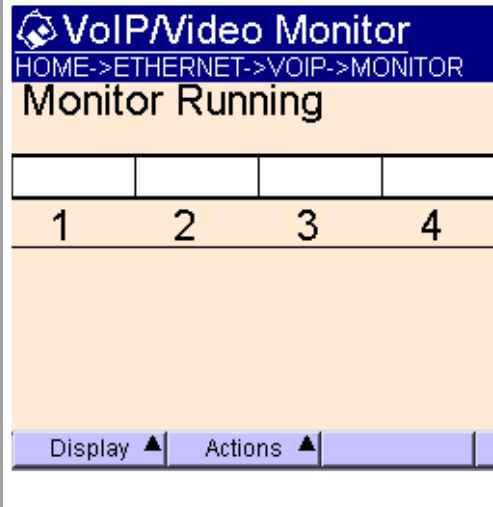
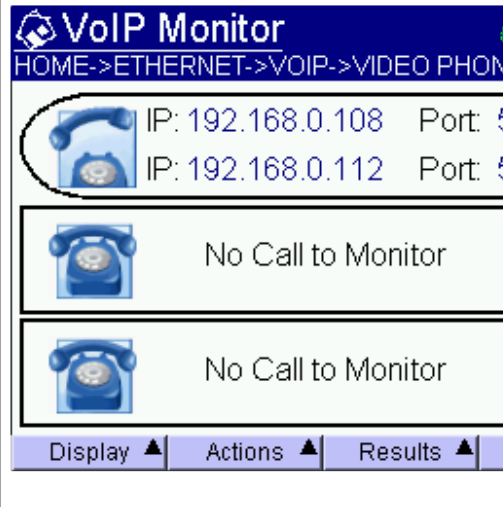
10. The Call Stats page now shows the hours in the call duration all the time. So it shows hh:mm:ss all the time.

Old	New
<p>VoIP Call Stats HOME->ETHERNET->VOIP->PHONE</p> <p>Call Duration 00:00 Far End IP Far End Name Far End Alias Connect Method Call Security Normal Audio Security None RTP Failures 0 RTCP Failures 0</p> <p>Display ▲</p>	<p>VoIP Call Stats HOME->ETHERNET->VOIP->PHONE</p> <p>Call Duration 00:00:00 Far End IP 0.0.0.0 Far End Name Far End Alias Connect Method</p> <p>Audio Parameters</p> <p>RTP Payload RX RTP Payload TX Codec RX Codec TX RTCP Load</p> <p>Display ▲</p>

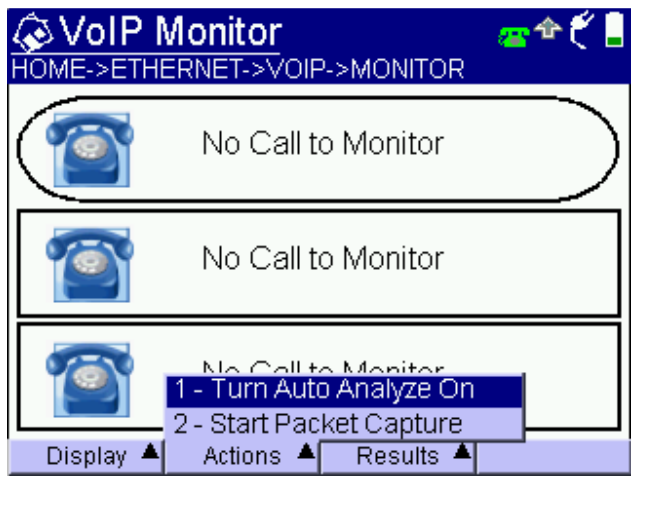
11. The Misc Measurements screen no longer has the dials. There are just five values.

Old	New
<p>Misc. Measurements HOME->ETHERNET->VOIP->PHONE</p> <p>Audio Signal Level</p> <p>Mic.  Speaker --- ---</p> <p>Audio Jitter Buffer</p> <p>Replay 0 Idle 0 Dropped 0</p> <p>Display ▲</p>	<p>Misc. Measurements HOME->ETHERNET->VOIP->VIDEO PHONE</p> <p>Audio Signal Level</p> <p>Mic: 0.0 dBm Speaker: 0.0 dBm</p> <p>Audio Jitter Buffer</p> <p>Replay: 0 Idle: 0 Dropped: 0</p> <p>Display ▲</p>

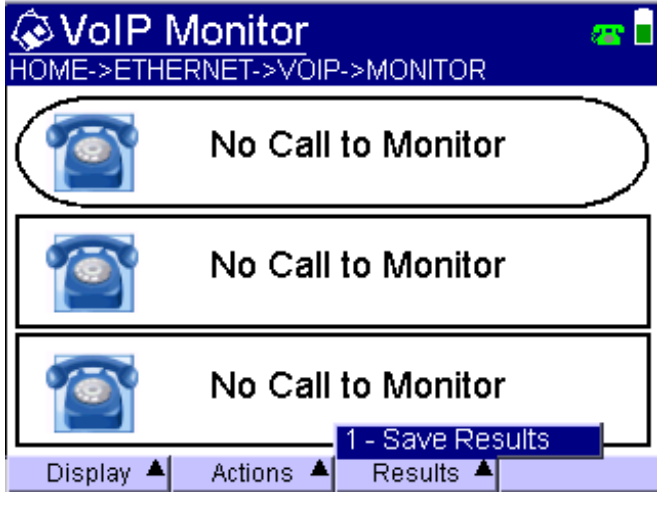
12. The main monitor screen has changed

New	Old
 <p>The new screen features a blue header with the title 'VoIP/Video Monitor' and a breadcrumb trail 'HOME->ETHERNET->VOIP->MONITOR'. Below the header, it says 'Monitor Running'. The main area is a large orange rectangle with a grid of four numbered slots (1, 2, 3, 4) at the top. At the bottom, there are 'Display' and 'Actions' buttons.</p>	 <p>The old screen has a blue header with the title 'VoIP Monitor' and a breadcrumb trail 'HOME->ETHERNET->VOIP->VIDEO PHON'. It displays two IP addresses: 'IP: 192.168.0.108 Port: 5' and 'IP: 192.168.0.112 Port: 5'. Below this, there are two sections, each with a telephone icon and the text 'No Call to Monitor'. At the bottom, there are 'Display', 'Actions', and 'Results' buttons.</p>

13. If the box has rounded edges then you can press <OK> to start monitoring that call.

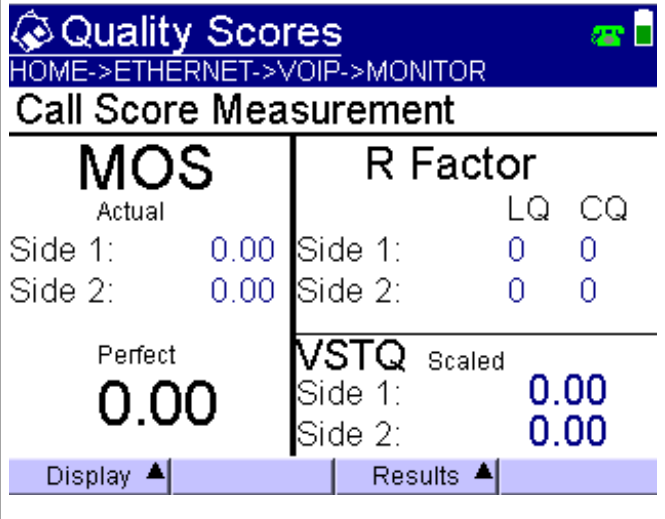
Old	New
<p>Does Not Exist</p>	 <p>The new screen has a blue header with the title 'VoIP Monitor' and a breadcrumb trail 'HOME->ETHERNET->VOIP->MONITOR'. It displays three rounded rectangular boxes, each with a telephone icon and the text 'No Call to Monitor'. The bottom box has a blue overlay with the text '1 - Turn Auto Analyze On' and '2 - Start Packet Capture'. At the bottom, there are 'Display', 'Actions', and 'Results' buttons.</p>

14. You can now save results in monitor mode as well, only from the summary screen.

Old	New
Does Not Exist	

15. Everywhere where you used to see Side 1 or Side 2 or (RX/TX) you now see the IP address of that device.

16. The MOS Screen now shows both sides' scores for the summary screen and the Current Call Details screen.

Old	New
Does Not Exist	

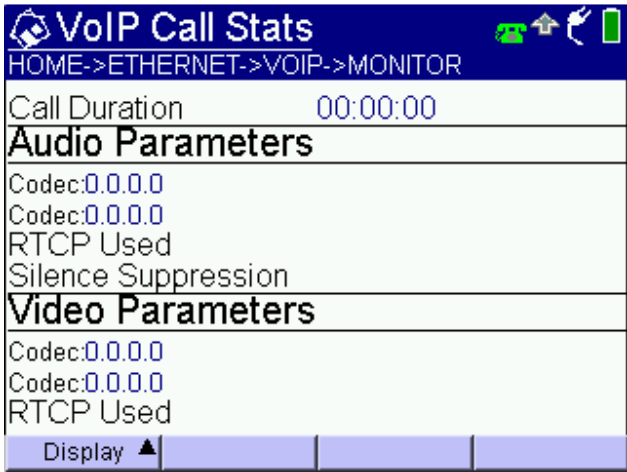
Current Call Details		
HOME->ETHERNET->VOIP->MONITOR		
	10.4.208.39	10.4.208.104
CQ R	95	95
LQ R	95	95
G.107R	92	92
Burst R	25	25
Gap R	96	96
CQ MOS	3.91	3.91
LQ MOS	3.91	3.91
VSTQ	0.00	0.00

Display ▲ Results ▲

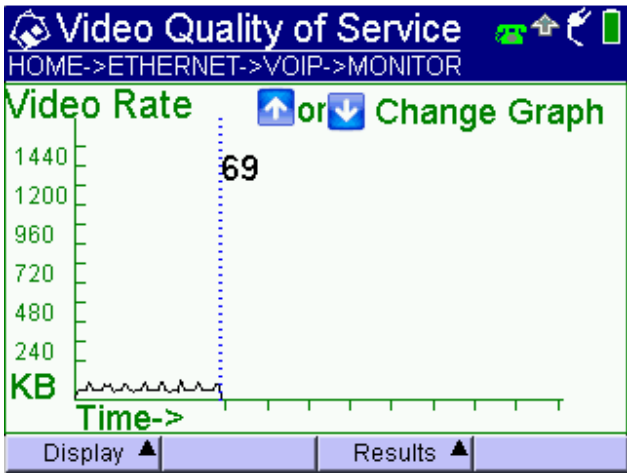
17. The Throughput screen now shows video statistics. Also the Call Duration was removed.

Old	New																																				
	<table border="1"> <thead> <tr> <th colspan="3">VoIP Throughput</th> </tr> <tr> <th colspan="3">HOME->ETHERNET->VOIP->MONITOR</th> </tr> <tr> <th>10.5.208.39</th> <th>Audio</th> <th>Video</th> </tr> </thead> <tbody> <tr> <td>Rate RX</td> <td>78.75k</td> <td>93.10k</td> </tr> <tr> <td>Bytes RX</td> <td>50.08k</td> <td>42.50k</td> </tr> <tr> <td>Packets RX</td> <td>313</td> <td>67</td> </tr> <tr> <td>Packets OOS</td> <td>0</td> <td>0</td> </tr> <tr> <th>10.5.208.104</th> <td></td> <td></td> </tr> <tr> <td>Rate RX</td> <td>78.75k</td> <td>93.10k</td> </tr> <tr> <td>Bytes RX</td> <td>50.16k</td> <td>42.50k</td> </tr> <tr> <td>Packets RX</td> <td>209</td> <td>67</td> </tr> <tr> <td>Packets OOS</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>Display ▲</p>	VoIP Throughput			HOME->ETHERNET->VOIP->MONITOR			10.5.208.39	Audio	Video	Rate RX	78.75k	93.10k	Bytes RX	50.08k	42.50k	Packets RX	313	67	Packets OOS	0	0	10.5.208.104			Rate RX	78.75k	93.10k	Bytes RX	50.16k	42.50k	Packets RX	209	67	Packets OOS	0	0
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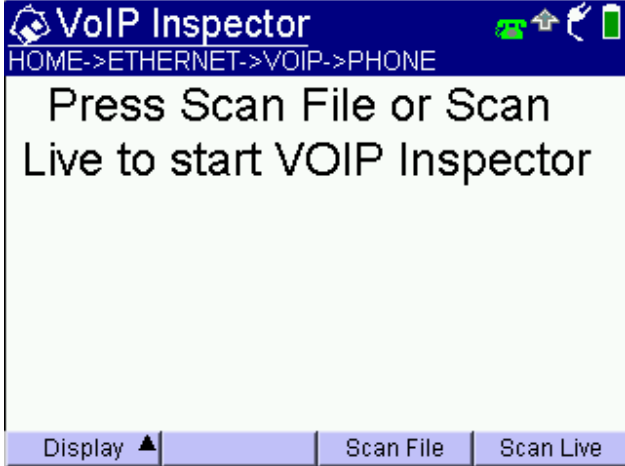
18. Call Stats screen had Call duration added to it.

Old	New
	

19. There is now a bandwidth graph on both the Audio and Video QOS pages. The graph only shows the bandwidth used by that portion of the call. That means on the Video QOS page the Bandwidth graph shows the amount of bandwidth used for the video portion of the current call.

Old	New
	

20. The Inspector Page has changed drastically. When data is up AND you are in Ethernet, you will see “Scan File” and “Scan Live.”

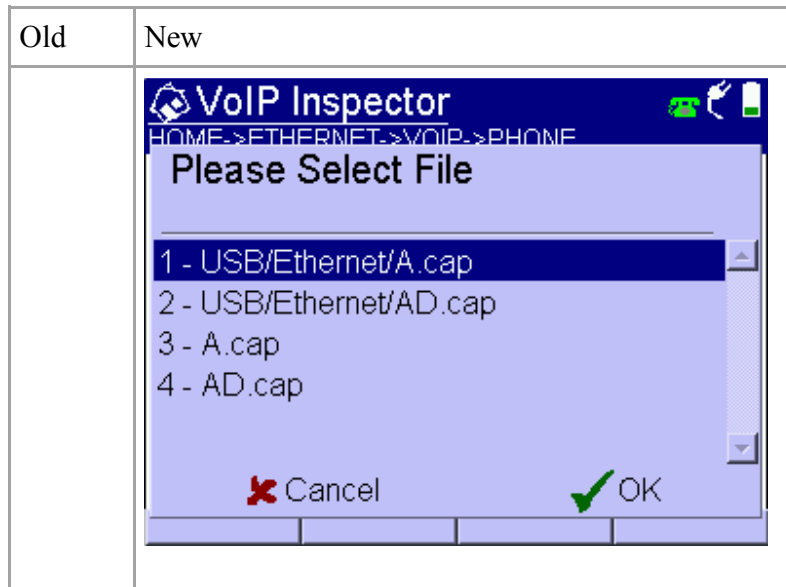
Old	New
	

21. The Inspector Page has changed drastically. When data is up AND you are in Ethernet, you will see “Scan File” and “Scan Live.”

22. When data is not up OR you are not in Ethernet, you will see only “Scan File.”

Old	New
	

23. If you choose to scan a file then it will show you the files that are available. It checks on the HST under /results/<APPNAME>/capture, the root directory of the USB (if inserted), and the /results/<APPNAME>/capture directory on the USB. Things that are on the HST are shown just as filenames. Things that are in the root directory of the USB show up as USB/<FILENAME>. Things that are in the capture directory of the USB are shown as USB/<APPNAME>/<FILENAME>.



24. When a scan is running you will see “Scanning for Phones...” or “Scanning File...” One change from the previous version is that now there is a preliminary result of how many phones were found.





25. The way the found phones are displayed is mostly the same way.



26. When you press <1> or whatever number corresponds to the phone you want to clone, the unit will display all the settings like so. If it requires a password, it will prompt you. If you hit cancel on this dialog, or the password dialog then the unit will not clone the settings.

