Document Title	**SBG6580-8.9.0.4-GA-02-141 Customer Release Update**
Number	**365-095-34650**
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Revision Author(s)	**Richard DiBenedetto, William Armbruster**

Revision History – see Workflow History for approvers and approval dates, and Notice for release dates

Rev	Notice #	Description	Author	Revision Date
X.1		SBG6580-8.9.0.4-GA-02-141 Customer Release Update	DiBenedetto / Armbruster	6/25/2019
X.2		Removed MIB Support for Modifying the Newly Reissued CA Certificate	DiBenedetto / Armbruster	7/11/2019
X.3		Firmware Download Fails if Filename Syntax/Case is Changed	DiBenedetto / Armbruster	09/24/2019

1. INTRODUCTION

This GA firmware release is based on the SBG6580-8.9.0.3-GA-02-123 GA Release of firmware.

2. PRODUCT(S)

SBG6580

*Note: With the introduction of the SBG6580-6.5.0.0-GA-00-226 firmware release for the SBG6580, a new firmware numbering change has taken place. To locate this firmware on the DigitalCM Motorola Website (https://digitalcm.motorola.com), enter the "SBG6580" prefix in the "Search For: Enter Search Criteria" box located on the "Generally Available Software" page.

Note: The SBG6580 HW Rev.1, SBG6580 HW Rev.2, and SBG6580 HW Rev.3 will take the same firmware image as identified in Section 6 *"Firmware Release Name"*. The SBG6580 HW Rev. 2 **WILL NOT accept any firmware image prior to the SBG6580-3.3.1.0-GA-09-058 release of firmware. The SBG6580 HW Rev. 3 **WILL NOT** accept any firmware image prior to the SBG6580-3.5.8.1-GA-01-477 release of firmware. The SBG6580 HW Rev.1 will continue to support all previous releases of firmware.

***Note: Unless otherwise noted, all firmware Fixes and New Features affecting the complete SBG6580 family will be identified using the generic *SBG6580* naming convention. Any product specific changes will be noted with the specific product name, i.e.; SBG6580J.

3. RELEASE DATE

June 25, 2019 – SBG6580-8.9.0.4-GA-02-141

4. RELEASE TYPE

General Release builds are designated with the "GA-xx-xx" format. Engineering and Lab Trials are designated with the "ENG-xx-xx / LAB-xx-xx format" and are *not considered GA (General Availability) Releases.* "SH" builds refer to images, which have a shell capability for diagnostic and monitoring purposes. "NOSH" builds have this capability removed.

5. HARDWARE

SBG6580 (DOCSIS Variant)

- **This hardware version incorporates support for:**
  - **Upstream 5-42 MHz**
  - **Downstream 91–1002 MHz**

6. FIRMWARE RELEASE NAMES

SBG6580 – SBG6580-8.9.0.4-GA-02-141-NOSH-NNDMN.p7

7. OPERATIONAL CONSIDERATIONS

7.1. Firmware Download Fails if Filename Syntax/Case is Changed

With this release of firmware, the SBG6580 is *unable to download firmware* in which the firmware *filename does not begin with "SBG6580"*.

- For Example:
  - ☞ The filename on the TFTP/HTTP download server is "*ARRIS-sbg6580-8.9.0.4-ga-02-141-nndmn.p7*", *the firmware download will be <u>rejected</u>*.
  - ☞ The filename on the TFTP/HTTP download server is "*SBG6580-ARRIS-8.9.0.4-ga-02-141-nndmn.p7*", *the firmware download will be <u>loaded correctly</u>*.

☞ The filename on the TFTP/HTTP download server is "sbg6580-ARRIS-8.9.0.4-ga-02-141-nndmn.p7" will be rejected, *unless the SNMP, CLI, or TLV11 configurations are set to "SBG6580-ARRIS-8.9.0.4-ga-02-141-nndmn.p7" and then it will download*.

- So the bottom line is that the firmware name on the TFTP/HTTP download server needs to begin with an upper or lower case "sbg6580", and the requested image name *MUST,* to start with "SBG6580", (even if the filename is lower case).

7.2. Wireless Interface Index Numbering

The SBG6580 with the 8.5.0.0 and newer firmware uses the following wireless index numbers:

☞ 2.4 GHz wireless interface
- 10001 (Primary Wireless Interface)
- 10002 → 10008 (Guest Wireless Interfaces)

☞ 5.0 GHz wireless interface
- 10101 (Primary Wireless Interface)
- 10102 → 10108 (Guest Wireless Interfaces)

Any configuration files containing TLV11 statements or SNMP management tools with specific wireless interface settings must be modified to reflect the new Wireless Interface index number for the SBG6580.

7.3. TR-069 Support

By default, TR-069 connectivity is now "disabled" for units not configured for a specific Customer ID. To enable the TR-069 client, the Motorola Private MIB *cmTR69EnableCWMP* should be set to a value of "enable(1)". A value of "enable(1)" will enable CPE support of TR-069. *A restart of the SBG6580 will be required after initially setting or changing this OID for the change to take effect*. *The reboot is necessary for both a direct SNMP Set or setting the value via TLV-11 in the Cable Modem bootfile.* A value of "disable(2)" will disable CPE support of TR-069, and the TR-069 client will not be allowed to start.

☞ Additional Motorola Private MIBs will be required for complete TR-069 customization and configuration. These MIBs can be found in the *CM-TR69-MIB* MIB module available in the Motorola SURFboard MIB package.

7.4. SBG6x8x Bridging Mode Configurations and the Impact on MaxCPE Settings in the Modem Configuration File

With the introduction of the 8.4.x.x firmware images for the SBG6580, an end-user or Service Provider can set "Bridging" mode for the entire Gateway, or the Primary Network interface(s) only. When a unit is configured with **"Gateway Mode"** set to *"Bridged"* mode, any device connected to any of the wired or wireless interfaces will have their DHCP requests forwarded to a Service Provider's DHCP Server. If a Gateway unit is configured with **"Primary Network Only Mode"** set to *"Bridged",* only devices connected to the Ethernet ports or the Primary Wireless interfaces will have their DHCP requests forwarded to a Service Provider's DHCP Server. Any device connected to the "Guest" wireless networks will be issued an IP address from the Gateway's DHCP Server, and all traffic from these connected devices will be routed through the WAN (NAT) interface.

With the introduction of this new capability, a condition may occur in which an end-user's CPE device is unable to acquire an IP Address. This situation occurs when a Gateway device that has been provisioned with a configuration file setting TLV-18 (MaxCPE) for "1" (or no TLV-18 statement which defaults to "1") and is configured for "Primary Network Only Mode" set to "Bridged". This issue occurs because the Gateway device's WAN Interface takes the one IP Address.

7.5. Extended Upstream Transmit Power Support

SURFboard DOCSIS 3.0 Cable Modems and Gateways provide support for the enhanced "*Extended Upstream Transmit Power Capability*" feature as defined in the DOCSIS 3.0 Specifications. To provide control over this feature, two private MIB Objects were introduced and allow the MSO to *Enable/Disable* the feature as well as *adjust the values* for extending the Upstream Transmit Power.

☞ *cmExtendedUsTxPowerCapable*

- Enables/Disables the "*Extended Upstream Transmit Power Capability"* in a REG-REQ-MP. Enables/Disables the reporting of the extended upstream transmit power capability support in TLV 5.40 (used for post-registration).
    - o If this object is set to true, the CM will report extended u/s transmit power capability in the REG-REQ-MP.
    - o If false, the CM will report extended u/s transmit power capability in the REG-REQ-MP when the CMTS's pre-registration upstream-extended power (TLV16) is enabled

☞ *cmConfigExtendedUsTxPowerCapability*

- Specifies the maximum extended upstream transmit power (in quarter dBmV increments) of which this device is capable. ***The default value of "216" indicates that the device has extended upstream power capability up to +54 dBmV for each bonded upstream channel.*** The value specified in this object will be advertised in TLV 5.40 of the CM's modem capability message.
    - o Valid values other than "0" (which reflects no extended upstream transmit power is to be implemented) are "205 to 244" representing .25 dBmV values (205/4 = 51.25 dBmV) to (244/4 = 61.0dBmV).

Note:

i.   Due to the constant changing nature of the DOCSIS System and the HFC Plant, ARRIS cannot guarantee the integrity or quality of the Upstream Carrier for every situation when the higher than standard power levels are employed.

ii. This change in default value has been incorporated due to multiple MSO requests. The newly incorporated value of 216 (54dBmV) is based upon lab testing results that show optimum adjacent channel performance. The SBG6580 will support a value of 244 (61dBmV), however adjacent channel performance may be impacted. Any value higher than 216 (54 dBmV) would require testing in the specific environment for deployment.

iii. If no extended upstream transmit power is required, setting this OID to a "0" via SNMP or a configuration file TLV11 statement, will allow a unit to continue to operate according to the DOCSIS 3.0 baseline upstream transmit specifications.

7.6. 2.4 GHz 20/40 MHz Channel-Width Coexistence

The IEEE 802.11n standard allows bonding of two adjacent channels in the 2.4 GHz spectrum. By allowing this bonding, the channel bandwidth increases from 20 MHz to 40 MHz. This mode introduces some problems when operating where there are legacy wireless products in the environment. When using an 802.11n device in the 2.4 GHz band with a 40 MHz wide channel, the device will effectively occupy $^2/_3$ of the allowable spectrum. Because it is unlikely to find so many unused channels in the 2.4 GHz spectrum, the 40 MHz Bandwidth operation would likely interfere with legacy 802.11b/g products. To better minimize this interference, the 802.11n capable Access Point is required to listen for legacy products operating within the environment. If one of these legacy products is detected, the 802.11n Access Point will provide a coexistence mechanism in which the access point can move to a free channel or switch to operate in a 20 MHz channel width (freeing half of the designated 40 MHz channel). The access point will remain in 20 MHz mode as long as there is an overlapping BSS (Basic Service Set). Both idle (no traffic) and active (with traffic) neighboring access points will cause fallback to a 20 MHz wide channel. By allowing these options for more tolerance in a coexistence environment, the throughput will take a direct hit.

It is recommended that the SBG6580's 2.4 GHz Wi-Fi Radio be configured for a 20 MHz channel width to mitigate any impact on legacy wireless devices and remove any performance degradation that will occur due to the Access Point's coexistence mechanism being utilized.

7.7. 802.11n TKIP+AES

With the introduction of TKIP+AES support in order to adhere to the Wi-Fi Alliance's 802.11n interoperability test plans, WEP Encryption will no longer be available when the SBG6580 is operating in 802.11n mode. WEP Encryption is supported when 802.11b/g mode is enabled.

7.8. WPA/WPA2 Wireless Operational Considerations

The SBG6580 is an 802.11n Wireless-Gateway device with 802.11 b/g backward compatibility. Certain units are pre-configured with 802.11n enabled, a unique Primary SSID, WPA2-PSK encryption enabled, and a unique WPA/WPA2 Pre-Shared Key.

Several of the more common PC Operating Systems currently deployed do not support the WPA2 security protocol, and manual reconfiguration of the unit may be required to establish a secure wireless connection with those systems.

The following Windows® Operating Systems will support the SBG6580 pre-configured WPA2-PSK wireless settings:

- ☞ Microsoft Windows® 7
- ☞ Microsoft Windows® Vista
- ☞ Microsoft Windows® XP SP3
- ☞ Microsoft Windows® XP SP2 *w/ KB893357 hotfix*

Other Windows® Operating Systems (or devices that do not support WPA2) will require the user to manually change the default wireless encryption settings to include WPA-PSK.

Note: The latest release of the *SBG6580 Installation and Instructions* CD-ROM (P/N: 578816-001-B) will automatically verify the Windows® PCs ability to support WPA2-PSK before completing the Wireless Setup. Both the *Installation Assistant* and the *Wi-Fi Assistant* perform this pre-requisite check.

7.9. Default 802.11n DFS

The SBG6580 wireless driver is currently not fully DFS (Dynamic Frequency Selection) compliant. A future release will meet this requirement. In the interim, to be compliant with FCC regulations, the SBG6580 firmware has been modified to only support channels that do not interfere with government radar frequencies. This also means that the SBG6580 firmware disallows the "Auto" channel setting which allows a user to configure the best available channel when operating in 802.11n 5GHz mode. The "Auto" channel setting is supported when operating in the 2.4GHz mode with the SBG6580-3.3.0.0-GA-05-020 firmware release.

7.10. SNMP CPE Access Control

The SBG6580 supports (and requires) the following per the CM-SP-MULPIv3.0 specification:

- **TLV55 SNMP CPE Access Control**

  If the value of this field is a 1, the CM MUST allow SNMP access from any CPE attached to it. If the value of this field is a 0, the CM MUST NOT allow SNMP Access from any CPE attached to it.

Type	Length	Value
55	1	0 (Disable)
		1 (Enable)

The CM MUST disable SNMP access from CPEs connected to the cable modem unless this TLV is present in the config file with value equal to 1.

Refer to SURFboard® Technical Bulletin 08-009 for SNMP CPE Access Control requirements utilizing TLV55.
Refer to SURFboard® Technical Bulletin 08-008 for SNMP NmAccess Control requirements.

7.11. L2-GRE Tunneling

The SBG6580-8.5.0.0-GA-02 firmware is the first release of code to include L2-GRE Tunneling. GRE Tunneling may not be completely implemented/functional at this time for interaction with all GRE Tunnel Concentrators. Configuration of the GRE Tunneling Parameters is available via the Motorola/ARRIS Private MIBs in the GA Release of the *"SURFboard MIB Package, v1.47"*.

7.12. SURFboard MIB Package

It is recommended that you always run the latest Motorola SURFboard MIB Package (available on DigitalCM) to ensure you have access to the latest MIBs and documented support features. SURFboard MIB Package, *v1.58*, supports all features/functions contained in this firmware release unless otherwise noted.

8.   UPDATES IN THIS RELEASE

8.1.   8.9.0.4-GA-02-141

8.1.1. Features

- Added a newly extended DOCSIS Cable Modem Device Manufacturer CA Certificate. The newly reissued CA Certificate is built into this release of firmware and expires on 7/10/2041. The use of this newly reissued CA Certificate is automatic and will be used in all CMTS communications after the firmware upgrade. (SBG-5181)

- Added a new implementation forcing the user to change the default password during the first login. (SBG-5180)

- Removed the "Backup and Restore" option in the GUI as it posed a potential security vulnerability. (SBG-5164)

- To further enhance security, Telnet\SSH support has been removed. (SBG-5183, SBG-5168, SBG-5167, SBG-5166, SBG-5165)

8.1.2. Defects Fixed

- Fixed an XSS Security Vulnerability in the "Diagnostics" page. (SBG-5188)

- Closed a security vulnerability of enabling factory mode via a default SNMP password. (SBG-5152)

- An XSS Security Vulnerability in the Wi-Fi Primary SSID Field and the Wi-Fi Guest SSID Field has been resolved. (SBG-5184, SBG-5170)

- Fixed a corner case issue of the device rebooting on accessing GUI in a unit with a malformed Device ID. (SBG-5182)

- Resolved an issue of HTTP accessibility when a malformed request is received. (SBG-5163)

- A Security Vulnerability due to DoS\Buffer overflow has been fixed. (SBG-5161)

- An XSS Security Vulnerability in a Trace route field is now resolved. (SBG-5169)

- A Port Forwarding issue with UPnP is now fixed. (SBG-5134)

9.   KNOWN ISSUES AND/OR LIMITATIONS

- The following TR-069/TR-181 issues are present:
  - The Ethernet port state change initiated from either the GUI or ACS is not retained after a power cycle. (PI57660)
  - An SPV on the "Device.WiFi.Radio.1.OperatingStandards" parameter to value "g,n" is successful but a GPV returns some other value like "b,g,n" or "b,g". (SBG-3419)
  - Validation checks missing while configuring the "Device.IP.Interface.1.IPv4Address.1.IPAddress", "Device.DHCPv4.Server.Pool.1.MinAddress", "Device.DHCPv4.Server.Pool.1.MaxAddress", and "Device.IP.Interface.7.IPv4Address.1.SubnetMask" parameters. (SBG-3380)
  - Modem sends Periodic INFORM messages 20sec before the time set in "Device.ManagementServer.PeriodicInformInterval". (SBG-3381)
- When the Primary IP Address subnet is configured via TR-069, a check needs to be added to make sure the address range does not overlap with the Wireless Guest Network Address pool. (SBG-4779)
- SBG6580 intermittently losing customer provided SSID/PSK settings due to a NON-VOL corruption after a power interruption. (SBG-3154, PI56295)
- SBG6580 intermittently exhibits latency spikes after a period of time. (PI57609)
- DNS queries should, but do not, happen based on the TTL values instead of the regular pre-defined intervals. (SBG-3352)
- A Connection Request fails from an ACS to an IP805 box, when both the eRouter and the IP805 are configured for IPv4 mode only. (SBG-3697)

- A LAN Client is unable to access the internet, when an SPV is executed on the "DHCPv4.Server.Pool.1.IPRouters" parameter. (SBG-3116)

- With TLV29 = 0 (no BPI+), error messages are logged stating TLV17.x settings are missing in the DOCSIS Configuration File. (SBG-560)

- In certain CMTS environments, when pinging from the directly connected CMTS, the ping to the SBG6580 RIP subnet "Gateway" IP address, fails. (PI37303)

- The unit's GUI does not support the capability to configure the subnet for the Gateway's LAN interface. (SBG-429)

- The SBG6580 is not compliant with an MSO's VTP requirement that the *docIfQoSProfileTable* MIB shows values for multiple Class of Service entries. Currently, the *docIfQoSProfileTable* MIB for modem shows values for only one Class of service entry. (SBG-450)

- The unit is not compliant with an MSO's VTP requirement US throughput not exceed 5% from the Rate Limit (20 Mbps) with Cisco10K. (SBG-459)

10. OLDER RELEASES

10.1. 8.9.0.3-GA-02-123

10.1.1. Features

- A Wireless AP Isolate feature has been added for the Primary and Guest wireless networks. (SBG-4894)

- A Private MIB *cmdot11WifiWpsPinMethodEnable* and GUI control option to show/hide the "Client" and "Gateway" WPS Gateway PIN Methods have been added. (SBG-4884, SBG-4892, SBG-4797)

- An end-user will now have to change the default "username" and/or "password" to enable Remote Configuration Management from the "Advanced Options" GUI page. (SBG-4877)

- *cmConfigGuiRootLanAccessEnable* will now be set to *"false(2)"* by default. (SBG-4876)

- "root" access through the WanMan IP Address port 8080 is now blocked when Remote Configuration Management is enabled. "root" access for a Service Provider is still available via the HFC IP Address port 80 when *cmConfigGuiHfcAccessEnable* is set to *"true(1)"*. (SBG-4875)

- Support has been added for the *"cmGwAdvCfgWanBlocking"* MIB to allow SNMP or TLV11 configuration of the "WAN Blocking" Feature previously only available from the "Advanced Options" GUI page. (SBG-4754)

- DHCP Option 82 support has been added to the *cmdot11wifiHotspotInsertDhcpOptionsMask* OID. (SBG-4792)

10.1.2. Defects Fixed

- Resolved an issue when a firmware image is placed in the TFTP server sub-folder where a Secure Code Download was unsuccessful. (SBG-5061)

- Unauthorized HTTP requests to download the "GatewaySettings.bin" file are now blocked. (SBG-5040)

- Multiple end-user security enhancements have been incorporated. (SBG-4908)

- The internal GUI will now work properly when printable special characters are used in the AES wireless encryption password. (SBG-3836)

- Multicast packets are now forwarded from the Wi-Fi interface to the LAN Ethernet interface when IGMPv2 and IGMPv3 clients are connected. (SBG-4844)

- The "WPS PIN Method" GUI field will no longer revert to a disabled state after a page refresh. (SBG-4896)

- GUI "Help → About" page displays "ARRIS" instead of "Arris". (SBG-4780)

- Error checking has been added for validating invalid port ranges on the "Port Triggering" GUI page. (SBG-4769)

- The GUI now displays the proper IPv6 HFC IP address. (SBG- 4768)
- Resolved an issue where some wireless clients are unable to connect to the 2.4 GHz radio using WPS Gateway PIN Method. (SBG-4766)
- An issue in which an SBG had UPnP "enabled" and certain wireless devices connected could "lock up" has been resolved. (SBG-4498, SBG-5433)

10.2. 8.9.0.1-GA-00-092

10.2.1. Features

- MIB support is now available for the Wireless Multimedia and Wireless Multimedia Automatic Power Save Detection (WMM-APSD) features previously only available via the GUI page "Wireless → Quality of Service". (SBG-4312)
- The newly supported MIBs are:
  - ☞ cmdot11WifiWMMEnable
  - ☞ cmdot11WifiWMMAPSDEnable

10.2.2. Defects Fixed

- The *cmGwAdvCfgUPnPEnable* MIB now works properly when set via SNMP. (SBG-4257)
- A unit will no longer reset if the *cmGwVirtualServerSetToFactory* MIB is set to *"true(1)"*. (SBG-4305)
- The Wireless Multimedia Automatic Power Save Detection (WMM-APSD) feature has been disabled by default to resolve interoperability issues with certain wireless clients. The option to enable this feature is available to an end-user on the "Wireless → Quality of Service". (SBG-4314)
- The IPv4 MTU size can now be configured from the "Basic → Setup" GUI page. (SBG-4299)
- An issue in which an SBG6580 which had UPnP "enabled" and certain wireless devices connected could "lock up" has been resolved. (SBG-4533)
- A TR-069 "Periodic Inform Request" will no longer cause the SBG6580 to reset, when an IP805 is connected. (SBG-4574)
- A condition in which Telnet connectivity could become enabled after an unsuccessful registration of a device has been resolved. (SBG-4640)
- The "Current Bandwidth" on the "Wireless → 802.11 Radio" page will now be correctly reported for the 2.4 GHz or 5 GHz Radio. (SBG-4309, SBG-4319)
- An L2TPv3 tunnel/session can now be established with authentication disabled. (SBG-4298)
- The "Lease Expiration Time" for attached clients will be properly reported on the "Basic → DHCP" GUI page. (SBG-4355)
- The 802.11 operating mode can be changed from "b/g/n mode" to "g/n mode" via TR-069. (SBG-4391)
- HTTP "Chunked data" will be handled properly by the TR-069 code. (SBG-4402)

10.3. 8.9.0.0-GA-05-062 (This release is available to Time Warner and Bright House Networks only)

10.3.1. Features

- The ability to change the TR-069 periodic inform interval to a value between "1 and 604800" via CLI and SNMP has been added. (SBG-4176)

10.3.2. Defects Fixed

- A condition in which a unit would reboot after downloading an XML configuration file has been resolved. (SBG-4241)
- A reboot caused by a task crash is no longer seen when the *cmConfigGatewayDeviceOperMode* OID is changed from *"gateway(2)"* to *"docsis(3)"*. (SBG-4213)
- A "Restore Guest Networks Defaults" now works properly when some settings are not configured correctly on "Wireless-Guest Network". (SBG-4242)

- The SSID will now display the backslash character "\" after a screen refresh. (SBG-4214)
- Changes made to the Ethernet Port Status via the GUI, TR-069, or XML file are now persistent across reboots. (SBG-4100, SBG-4118)
- An issue has been resolved, in which the wireless radio will be in the proper state when enabled or disabled via an XML configuration file. (SBG-4135)
- The maximum length of the text field in the Port Forwarding table has been increased from 34 to 48 to accommodate a full IPv6 address. (SBG-4140)
- Resolved an issue where use of the SBG6580 Install Wizard would cause the wireless radio to change to 5 GHz mode even when 2.4 GHz was selected. (SBG-4169)
- HFC GUI Access will be disabled by default on retail devices. (SBG-4010)
- ACS authentication values are now properly reported when an SBG6580 is upgraded from 8.6.x.x based firmware to 8.9.0.0-GA-05-062. (SBG-4079)
- The "Wireless Guest Network" GUI page now displays correctly when changes are made to the page from an attached IPv6 client. (SBG-4134)
- An SNMP related fix has been incorporated so that it is no longer possible to set the cmGwLanDhcpsMaxAddressCount to a value that may cause the IP address range to be out of bounds. (SBG-4132)
- Corrected the "accessType" for "Device.Bridging.X_TWC_COM_SubscriberLANBridged". (SBG-4078)
- An intermittent 5GHz wireless crash issue while handling video traffic has been resolved. (SBG-4139)

10.4. 8.9.0.0-GA-03-044 (Released to Targeted Customer Only)

10.4.1. Features

- Added Factory Reset RPC support. (SBG-4041, PI57659)
- Implemented Device.DHCPv4.Server.Pool.{i}.Option.{i}. parameters. The following objects are implemented as Read only: (SBG-3955)
  - ☞ Device.DHCPv4.Server.Pool.{i}.Option.{i}.Enable
  - ☞ Device.DHCPv4.Server.Pool.{i}.Option.{i}.Tag
  - ☞ Device.DHCPv4.Server.Pool.{i}.Option.{i}.Value

10.4.2. Defects Fixed

- Fixed the issue where changing the Wi-Fi Security settings from "Unencrypted" to any other mode always changed the 802.11 wireless mode to "b/g" with WEP enabled. (SBG-3913)
- Modifying the WEP Key generation no longer requires a GUI page refresh to complete the change. (SBG-3925)
- The Client List on the SBG6580 internal GUI page no longer displays the IP address of the previously connected clients, when "Primary Network Only Mode" is set to "Bridged" using "Device.Bridging.X_TWC_COM_SubscriberLANBridged". (SBG-3956)
- The SBG6580 is now able to register with an ACS when *cmTR69AcsUrlSource* is set as *static(1)*. (SBG-3960)
- Wi-Fi *ifAdminStatus* is updated to Up/Down when the wireless interface is Enabled/Disabled via the XML configuration file. (SBG-3969)

10.5. 8.9.0.0-GA-02-034 (Released to Targeted Customer Only)

10.5.1. Reference Code Merge

- This firmware release includes all fixes and enhancements available in the Broadcom Reference Code merge up to and including, BFC5.5.8mp9.

10.5.2. Features

- Support for the following TR-069/TR-181 objects have been implemented:

- ☞ Implemented Rollback Functionality for all Wi-Fi parameters. During an SPV (Set Parameter Value), if any parameter value passed is incorrect all previous settings will be restored for all Wi-Fi nodes. (SBG-3692)

- ☞ The TR-069 IPv6 Forwarding Profile support is now implemented. (SBG-3686)

- ☞ The TR-069 Annex F Device Associated Profile objects have been added. (SBG-3599)

- ☞ Implementation of the "AdvancedFirewall:1" Profile has been completed. (SBG-3672)

- ☞ Added TWC proprietary support for below objects: (SBG-3655)

  - Device.WiFi.AccessPoint.i}.Security.X_TWC_COM_PreSharedKeySHA1

  - Device.WiFi.AccessPoint.i}.Security.X_TWC_COM_PreSharedKey

  - Device.WiFi.AccessPoint.i}.Security.PreSharedKey

  - Device.WiFi.AccessPoint.i}.Security.X_TWC_COM_KeyPassPhrase (A "Get" will return an empty value irrespective of value as per TR-181 Amendment 4 standard)

  - Device.WiFi.AccessPoint.i}.Security.KeyPassPhrase (A "Get" will return an empty value irrespective of value as per TR-181 Amendment 4 standard)

- ☞ "HostNumberOfEntries" object in the Host:1 Profile and the Baseline:2 Profile is now supported. (SBG-3596)

- ☞ Added support for TR181 Data model element "Device.Bridging.X_TWC_COM_SubscriberLANBridged". (SBG-3535)

- ☞ TR181 objects "X_TWC_COM_InhibitRadioControl" and "X_TWC_COM_InhibitLANControl" which will inhibit users from changing Wi-Fi settings and the LAN settings respectively when set to true. (SBG-3586)

- ☞ TR181 data model "Device.WiFi.AccessPoint.{i}.Security.X_TWC_COM_KeyPassPhraseDevice.WiFi.AccessP oint". (SBG-3587)

- ☞ Objects in the "dhcpv6clientserveridentity:1" profile are now supported. (SBG-3592)

- Support for the *cmGwIPv6FirewallProtectEnable* MIB to control IPv6 Firewall Protection has been added. (SBG-2795)

- Added the ability for the End User to override IPv6 DNS Server Addresses provided during WAN provisioning via the internal HTML pages. (SBG-3187, SBG-3671)

- Support for Remote Configuration Management on the WAN IPv6 Address has been added. (SBG-3466)

10.5.3. Defects Fixed

- Fixed the "Device.WiFi.AccessPoint.{i}.Security.KeyPassphrase" object name according to TR-181 object model. (SBG-3941)

- Fixed restricting "Bridge" mode to the Primary Network. Enabling "Bridge" mode by setting the "Device.Bridging.X_TWC_COM_SubscriberLANBridged" value to "true" will cause only the Primary Network of the device to go into "Bridge" mode and the WAN connection will continue to get an IP Address and communicate with the ACS server. (SBG-3936)

- An associated Wi-Fi client's 802.11 mode is now properly displayed on the "Wireless Access Control" HTML page. (SBG-3916)

- A CPE will now be identified as "ARRIS" when UPnP is enabled. (SBG-3803)

- CommandKey of "Reboot RPC" is now matched with the "M Reboot" event CommandKey. (SBG-3736)

- When the IPv6 DNS Server is not reachable, a fallback to an IPv4 DNS Server with a different ACS URL will be successful when the unit is configured in DPM (Dual-Provisioning Mode). (SBG-3288)

- The SBG6580 will now attempt to send an "Inform" if the eRouter is configured for Dual Provisioning Mode and the IPV4 address is obtained and the IPV6 address is not. (SBG-3745)

- The "Current Band" and "Current Channel" text shows the proper value after "5 GHz" has been selected for P2 units. (SBG-3741, SBG-3742)

- On changing "Bandwidth", "Mode" and/or "Sideband" field on the "Wireless → 802.11 Radio" page, a confirmation window will be displayed which gives a user the opportunity to "Apply" or "Cancel" the change. (SBG-3753)

- CSRF attack vulnerability has been addressed. (SBG-3873)

- The "Passphrase" field's text box will no longer disappear with the entry of an erroneous passphrase value, followed by hitting the CANCEL button. (SBG-3739)

- A Broadcom patch with the ARP cache issue fix has been imported. (SBG-3849)

- An issue with the Wi-Fi Extender Functionality has been resolved. (SBG-3700)

- "ManagementServer.X_TWC_COM_RootCertificate.{i}.Enabled" is now retained across a factory reset. (SBG-3746, PI57658)

- There is no longer a mismatch in the GUI reported Firewall Protection Level if the eRouter is provisioned in IPv6 only mode. (SBG-3695)

- Change the Open Source Attribution Language to "ARRIS" from "Motorola Mobility, Inc.". (SBG-3687)

- Fixed a TR-069 Certificate validation issue which was failing in the TWC tests on the SBG6580. (SBG-3669)

- Added a new table to display DHCPv6 Clients' IPv6 lease details. (SBG-3546)

- An Ethernet connection (wired) is no longer available when provisioning with an "Intelligent Home Only" post IControl install. (SBG-3756, PI42065)

- Now able to provision the SBG6580 eRouter in "Bridge" mode when the device was previously operating in Dual Mode. (SBG-3757, PI56227)

10.6.   8.6.1.0-GA-01-087 (Released to Targeted Customer Only)

10.6.1. Features

- Support for the following TR-069/TR-181 objects have been implemented:
    - ☞ TR181 Data model element "Device.Bridging.X_TWC_COM_SubscriberLANBridged". (SBG-3535)
    - ☞ TR-069 Annex F. Supported in both DHCPv4 and DHCPv6. (SBG-2613)
    - ☞ TR181 objects "X_TWC_COM_InhibitRadioControl" and "X_TWC_COM_InhibitLANControl" which will inhibit users from changing Wi-Fi settings and the LAN settings respectively when set to true. (SBG-3586)
    - ☞ TR181 data model "Device.WiFi.AccessPoint.{i}.Security.X_TWC_COM_KeyPassPhraseDevice.WiFi.AccessPoint". (SBG-3587)
    - ☞ Objects in the "dhcpv6clientserveridentity:1" profile. (SBG-3592)

- Support for the *cmGwIPv6FirewallProtectEnable* MIB to control IPv6 firewall protection has been added. (SBG-2795)

10.6.2. Defects Fixed

- Change the Open Source Attribution Language to "ARRIS" from "Motorola Mobility, Inc.". (SBG-3660)

- Implemented Rollback functionality for all Wi-Fi parameters to handle the incorrect values during "set" function. (SBG-3398)

- Fixed a TR-069 Certificate validation issue. (SBG-3647)

- The previous Client Table used to display only *"Stateless Auto-Configured Clients"*. Added a new table in the GUI called *"DHCPv6 Clients"* to display the DHCPv6 leases that were handed out by the eRouter DHCPv6 server. (SBG-3546)

- Fixed a device reset issue that occurred when deleting a client entry from "Device.DHCPv4.Server.Pool.{i}.Client.{i}. node". (SBG-3584)

10.7. 8.6.0.0-GA-09-059

10.7.1. Features

- The following TR-069/TR-181 fixes have been implemented:
  - ☞ UPnP can now be enabled on a per subnet basis. (SBG-3463)
  - ☞ Support for displaying DHCPv6 ACS Discovery options has been added. (SBG-3467)
  - ☞ Multiple objects in the DHCPv6 Client Profile are now implemented as read-only. (SBG-3483, SBG-3434)
  - ☞ DHCPv6 Server Client Profile parameters have now been implemented. (SBG-3526)

10.7.2. Defects Fixed

- Duplicate Port Forwarding entries can no longer be created by editing existing rules. (SBG-3545)
- A mutex lock/unlock issue causing intermittent wireless connectivity issues on units running in eRouter Dual Stack or IPv6 mode has been resolved. (SBG-3502, SBG-3562)
- The "Device.DHCPv6.Server.Pool.2.Option.4.Value" parameter now reports the correct value with regards to the order of "Options" under DHCPv6 Option 17. (SBG-3543)
- The "Device.DHCPv6.Client.1.SupportedOptions" value is now comma separated and the "Requested" option is now displayed under "Device.DHCPv6.Client.1.SentOption". (SBG-3544)
- When operating in "bridge" mode, the WPS feature related pop-ups are no longer displayed when changing the Wireless Security mode since WPS is not supported. (SBG-3255)
- An issue has been resolved where the Primary Wireless Network page goes blank when a Guest Wireless SSID contains a special character. (SBG-3542)
- An issue causing a delay when sending IPv6 packets to destinations that are off-link and having no matched prefix has been resolved. (SBG-3574)
- "TKIP-only" encryption support has been re-added to the WPA/WPA2 Wireless Encryption Options. (SBG-3541)
- Fixed a low wireless throughput issue which occurred when downstream data packets were marked as background data (DSCP=0x8) and WMM was enabled. (SBG-3495)
- "Reserved IP Address" entries configured on the "Basic → DHCP" GUI page are now retained across a reboot. (SBG-3515)
- When configuring Port Forwarding entries for two external IPs using the same source port, due to overlapping ports, a user was not allowed to add the second entry. Changes were made so that a user can add the second entry when the originating ports are the same but the external IP addresses are different. (SBG-3164)
- The GUI now shows the Ethernet ports as "Disabled" when <ethernet enable = "false"> has been configured in an XML file. The GUI and XML configurations are in sync now. (SBG-3342)
- The Primary SSID is now displayed properly on the "Wireless → Primary Network Settings" GUI page if it includes special characters. (SBG-3504)
- Special characters (!@#$%^&*) can now be used to modify the User's Password. (SBG-1813)
- If the eRouter mode is changed from its current mode to any other mode through a TLV-202 statement in the DOCSIS configuration file, the unit will reset, to ensure the unit operates properly in IPv6 or Dual-Provisioning mode. (SBG-3485)
- Incorrect error messages are no longer displayed when making "Username/Password" changes from the "Status → Security" GUI page. (SBG-3464)
- WPS is now disabled by default for units manufactured with a specific Customer ID. (SBG-3499)
- A complete error message is now displayed when a user attempts to set a LAN IP Address pool reserved for one of the Wireless Guest Networks. (SBG-3468, SBG-3456)
- The *sysName* value is now retained across reboots. (SBG-3409)

10.8.   8.6.0.0-GA-07-028

10.8.1. Features

- The *cmConfigExtendedUsTxPowerCapability* OID now uses a default value of *"216"* to reflect the maximum value for Extended Upstream Transmit Power support. In addition, a default value of *"true"* has been implemented for *cmExtendedUsTxPowerCapable*. (SBG-3392, SBG-3438)

  > Note: Please refer to Section 7.4 "Extended Upstream Transmit Power Support" for complete details

- For units manufactured with a specific Customer ID, the GUI login credentials (username and password) for the "Technician" account are no longer configurable from the "Status → Security" page. (SBG-3400, SBG-3443, SBG-3460, TWC ECN#44)

- Support for the "Reboot" RPC was added to the TR-069 stack. (SBG-957)

- The following TR-069/TR-181 parameters are now supported: (SBG-3293, SBG-3304, SBG-3308, SBG-3294, SBG-3291, SBG-3285, SBG-3337)

  ☞ Device.WiFi.Radio.{i}.Alias

  ☞ Device.WiFi.SSID.1.Alias

  ☞ Device.Ethernet.Interface.{i}.Alias

  ☞ Device.Ethernet.Link.{i}.Alias

  ☞ Device.Bridging.Bridge.{x}.Port.{y}.Alias

  ☞ Device.IP.Interface.{i}.Alias parameter

  ☞ When "ManagementServer.InstanceMode" is set to "InstanceAlias", the sublevel query result of "Device." node will return results with aliasname, if available.

  ☞ Added the "Device.ManagementServer.AliasBasedAddressing" object to the forced Inform parameter and confirmed the working of periodic notification for value change.

  ☞ Alias query will work for "Device.WiFi.SSID.[cpe-SSID1]" and "Device.WiFi.Radio.[cpe-Rd1]" after dynamically changing the 2.4GHz to 5GHz wireless band or vice versa.

- An end-user is now able to select "Primary Network Mode" in both IPv4 and IPv6 modes. (SBG-3248)

10.8.2. Defects Fixed

- A complete error message is now displayed when an end-user attempts to change the Primary LAN address pool from the internal HTML page, to a network that is currently reserved for one of the Wireless Guest Networks (e.g. "192.168.4.1"). (SBG-3450)

- The following TR-069/TR-181 fixes have been implemented:

  ☞ The URI Query String has been modified as per the latest format mentioned in TWC ECN#43. "Model" text has been removed in the query string in accordance with this change. (SBG-3435, TWC ECN#43)

  ☞ Devices will no longer exhibit an invalid value for "Device.WiFi.SSID.1.LowerLayers". (SBG 3402)

  ☞ Previously, an SPV on the "Device.NAT.PortMapping.1.Description" parameter did not throw any error and a GPV returned empty. Now, an assignment of the string to octet buffer code has been fixed. (SBG-3303)

  ☞ The "Device.DHCPv4.Client.1.DNSServers" parameter value no longer displays as "0.0.0.0" when multiple DNS Servers are configured from the Provisioning Server. (SBG-3307)

  ☞ "Device.WiFi.Radio.10000.OperatingStandards" and the GUI field "802.11 Mode" are now partially in sync. *Please refer to SBG-3419 and SBG-3427 in the "Known Issues" section for outstanding issues.* (SBG-3340)

  ☞ A Connection Request no longer fails from an ACS using DNSv6 server(s) and using an ACS URL as an FQDN (which resolves to both IPv6 and IPv4 ACS IP addresses). (SBG-3353)

  ☞ When an SPV on "Device.Ethernet.Interface.{i}.Enable" parameter is successful, a GPV will return the correct value. (SBG-3376)

☞ The "Device.UPnP.Device.Enable" parameter can now be used to enable or disable the UPnP feature on an SBG6580. (SBG-3393)

☞ An invalid ACS URL like 'http://abc:8080edge/tr69' instead of having a proper URL "http://abc:8080/edge/tr69" will no longer cause a unit to reset. (SBG-3396)

☞ The "Device.WiFi.AccessPoint.{i}.SSIDReference" parameter shows the proper index number for all wireless SSIDs. (SBG-3415)

☞ If a TR-069 Session could not be established, then the session retry will happen in intervals as specified by TR-069 Standard Amendment 4. (SBG-3274)

☞ An SPV or GPV of "Device.DHCPv4.Server.Enable" value will display the proper value. (SBG-3302)

☞ For "CWMPRetryIntervalMultiplier" object the flag used to check the validity of parameter is corrected. For "ConnectionRequestUsername" the length used to return the value is modified to return 256 bytes. (SBG-3289)

☞ "ManagementServer.InstanceMode" will be stored persistently without any issues. (SBG-3336)

☞ The "Sent" and "received" packet counts for both Unicast and Broadcast packets are now properly reported for the Primary LAN Interface. (SBG-3301)

☞ Executing an SPV of the "Device.WiFi.AccessPoint.10001.Security.PreSharedKey" parameter will no longer cause a unit to reset. (SBG-3311)

☞ A "0 BOOTSTRAP" event code is no longer sent after every reboot of an SBG. (SBG-2427)

☞ After a "Reboot" has been initiated from an ACS, the unit sends an Inform message with event codes "1 BOOT" and "M Reboot" as per TR-069 Amendment-4. (SBG-3351)

☞ "Device.IP.Interface.2.IPv4Address.1.SubnetMask" parameter is now correctly set. (SBG-3292)

- DUT filtering is now properly implemented. (SBG-3414)

- The "Copyright" year on the internal HTML pages have been updated to "2014". (SBG-3390)

- The "User Description Text" on the "Advanced → Port Triggers" GUI page has been updated. (SBG-3273)

- For an SBG6580 configured for a specific Customer ID, the *cmConfigGuiRootLanAccessEnable* MIB value will reset to its default value when a "Reset to Defaults" is done via the GUI, MIB, or the hard reset button. (SBG-3265)

- For Time Warner configured units, when the end user enters in the option to "enable" or "disable" the DHCP Server from the "Basic → DHCP" page, the SBG will retain the correct information. (SBG-3283)

- An end-user no longer has the ability to set the subnet mask for wireless Guest Networks. (SBG-3299)

- A configuration file initiated firmware upgrade in an IPv6 environment will no longer cause connectivity problems. (SBG-3347)

- An SBG which has lost its downstream SYNC during an SNMP initiated software download will now resume the firmware download after coming back online. (SBG-3332)

- Support for the DHCP Option 60 Hotspot feature has been reintroduced. (SBG-3356)

10.9. 8.6.0.0-GA-01-971

10.9.1. Reference Code Merge

- This firmware release includes all fixes and enhancements available in the Broadcom Reference Code merge up to and including, BFC5.5.8mp6.

10.9.2. Features

- Support has been added for FQDN name resolution of the ACS URL using IPv6 DNS Servers. (SBG-2936)

- TR-181 XML LAN network interface parameters settings can be changed for the below nodes: (SBG-3138)
  - ☞ Device.IP.Interface.1.IPv4Address.1.IPAddress to Device.IP.Interface.1.IPv4Address.8.IPAddress
  - ☞ Device.IP.Interface.1.IPv4Address.1.SubnetMask to Device.IP.Interface.1.IPv4Address.8.SubnetMask
  - ☞ Disabling NAT can be done by setting "Device.NAT.InterfaceSetting.1.Enable" to false. This will reboot the modem immediately & bring the modem to "docsis" mode.

    Note: Any changes to primary network changes needs reboot to take effect. Reverting the unit from "docsis" mode to "gateway" mode should be done either via SNMP or the GUI as the TR-069 client will not be running when a unit is operating in "docsis" mode.

- TR-181 DHCPv4Server Pool client implementation of WiFi clients has been added. (SBG-2935)

10.9.3. Defects Fixed

- The following UNH IPv6 inter-op failures have been resolved: (SBG-3233)
  - ☞ The eRouter now advertises itself as a router for the Delegated Prefix using the Route Information Option. (SBG-3207)
  - ☞ The eRouter no longer sends a DHCPv6 Renew for an invalidated prefix. (SBG-3152)
  - ☞ The eRouter no longer sends echo requests through to addresses not assigned to a LAN interface. (SBG-3110)
  - ☞ The eRouter no long sets the Prefix Lifetime to "0" when the WAN RA Router Lifetime is set to "0". (SBG-3109)
  - ☞ The eRouter no longer sends Neighbor Solicitation messages with a hop count of "1", which caused CPEs to not respond to the Solicitations. (SBG-3143)
  - ☞ The value of T2 provided by the DHCPv6 server is now less than the preferred lifetime of the IA_NA. (SBG-3264)

- The following TR-069/TR-181 fixes have been implemented:
  - ☞ When a "SetParameterAttributes" is executed on the root node, the unit will no longer reset. (SBG-3167)
  - ☞ Increased the buffer size for URL and User Credentials to 256 characters. (SBG-3148)
  - ☞ Dynamic update of Device.DHCPv4.Server.PoolNumberOfEntries based on the grouping of interfaces under Device.Bridging.Bridge when operating in TWC mode. (SBG-3150)
  - ☞ The impact of IP.Interface index changes on various profiles has been corrected. (SBG-3160)
  - ☞ A check has been added to include index and child index before sending notification when a "SetParameterAttributes" of the Device.WiFi.SSID.1.SSID to passive or active takes place. (SBG-2814)
  - ☞ The TR-069 console logs no longer display incorrect messages regarding the TR-069 connection establishment to the ACS. (SBG-2970)
  - ☞ An issue setting WPAAuthenticationMode as "PSKAuthentication", WPAEncryptionModes as "TKIPandAESEncryption", and BeaconType as "WPA", causing the GetParameterValue to return WPAAuthenticationMode as "EAPAuthentication" and WPAEncryptionModes as "TKIPEncryption" no longer occurs. (SBG-1389)
  - ☞ GetRPCMethods no longer returns a list of RPC's not currently supported. (SBG-3041)
  - ☞ A "SetParameterValues" on the ACS DHCP Discovery (Option 125) parameters no longer causes the "GetParameterValues" to return previous values. (SBG-2745)
  - ☞ The correct value now displays for the Device.DHCPv6.Server.Pool.x.IANAPrefixes parameter. (SBG-3202)
  - ☞ The Device.Firewall.Chain.{i}.Rule and Device.NAT.PortMapping parameter's SET functionality is now working. (SBG-3178)
  - ☞ When BeaconType is set to "WPA", WPS is now disabled. (SBG-1213)

    ☞ Implementation of IP Interface IPv6 objects and a few objects in the DHCPv6 profiles. (SBG-3253)

- The SBG6580 will now use a synchronization write for wireless configuration initiated from XML. (SBG-3224)

- The "Start" and "End" time fields are now "grayed" out and non-selectable if "All Day" is selected on the "Firewall/Parental Control" page. (SBG-3259)

- Junk characters on the "Help → About" page no longer display when using IE browser (v8.0.6). (SBG-3176)

- An error message will not display when the "Root Password" is changed using IE8, IE9 or IE10. (SBG-3105)

- For Time Warner configured units, if the *environmentControl* tag is "unlocked" in the XML file, the DHCP section of the GUI page will no longer be grayed out. (SBG-3252)

- In the Wireless Guest Network page, the options for WEP, WPA, WPA2, and WPA2/WPA are now available security options. (SBG-3194)

- When the NTP server is not set on the "Firewall/Parental Control" page, a rule to block a site for "All Day" and "Everyday" will still take effect. (SBG-3258)

- XML configuration settings no longer overwrite DHCP settings configured by an end-user via the GUI. (SBG-3257)

- XML processing code has been changed to check if the "technician" login has enabled routed DHCP operation, and if so, does not reset the "*lan_dhcp_enable*" setting. (SBG-3223, PI56140)

- The XML configuration file no longer changes the "Primary Mode" setting that has been configured by the end-user. (SBG-3205)

10.10. 8.5.0.0-GA-05-15

10.10.1. Features

- Parental Control "Time Based Rules" will now default to using the MSO provided ToD if NTP is unavailable or has not been configured. (SBG-3230)

- When configuring the "Primary Network Only Mode" to "Bridged" mode, a warning message advising the end user that internet connectivity may be lost will display, containing steps they may take in order to restore internet connectivity. (SBG-3206, PI56137)

  > Note: Please refer to Section 7.3 "SBG6x8x Bridging Mode Configurations and the Impact On MaxCPE Settings in the Modem Configuration File" for complete details

- An end-user now has the ability to override the IPv4 DNS Server values provided in the WAN DHCP Provisioning on the "Basic → Setup" page. (SBG-1428)

- For ease-of-use purposes, the LAN IP Address can now be set on the same page as other LAN configuration settings on the "Basic → DHCP" page. (SBG-3184)

10.10.2. Defects Fixed

- An issue in which older units running SBG6580-6.5.x.x firmware are unable to enable NTP on the Parental Control HTML page after an upgrade to 8.x.x.x code has been resolved. (SBG-3261)

- An end-user is now able to create and edit a Parental Control Time-Based rule without selecting the Time Zone. Previously, an error message would be generated until NTP was configured. (SBG-3260)

- A wireless client is now able to connect to the SBG6580 using the "WPS Client PIN" method. (SBG-3118)

- TR-181 – The DHCPv6 Server table objects have been modified to appear in sync with IP Interface Table. (SBG-3045)

- TR-069 connectivity with an ACS is successful and completes registration when the Management Interface is configured to use the HFC IP address. (SBG-2889)

- A user may now edit an existing IPv6 Port Forwarding entry from the HTML page. (SBG-3141)

- On upgrades from 6.5.x.x firmware to 8.x.x.x images, the "WiFi Bandwidth" and "Channel" values will be retained and not reset to defaults. (SBG-3161)

- For units manufactured with a specific Customer ID, when performing a "Reset Factory Defaults" via the internal HTML page, an error message no longer pops up. (SBG-3157)

- An end user is now able to create an entry in the "Firewall/Parental Control" HTML page with any starting and ending time. (SBG-3125)

- A "Reset to Defaults" initiated from the hardware reset button now correctly resets the Wireless SSID and encryption settings to their proper factory default settings. (SBG-3188, PI56124)

- Due to implementation issues, the L2TPv3 feature is now unavailable. (SBG-3162)

- Display issues have been resolved when enabling/disabling on the "Wireless → Primary Network Settings" page. (SBG-3204, PI56126)

- When a unit is configured with WPS enabled, and a user switches to a non-WPS security mode, only one "Do you want to continue?" message will be displayed. (SBG-3213)

- As WPS is not supported in bridge mode, the "enable" option has been removed from the GUI. (SBG-3210)

- An end-user may now block "TCP only" on the Parental Control GUI page. (SBG-3201)

- DNS Server changes made at the DHCP Server are now propagated properly to devices connected to the LAN side. (SBG-3156)

- GUI timeout issues should no longer occur when accessing the Parental Control HTML page when NTP (Network Time Protocol) is unavailable. (SBG-3222)

- When the "Primary Wireless Network" is disabled via an XML configuration file download, the enable/disable field is now "grayed" out and non-selectable. (SBG-3214)

- A new popup message asking the user to click "Yes" to enable WPS or "No, keep WPS disabled" when switching the Wireless Security Mode from WPA-PSK to WPA2-PSK or mix mode has been added. (SBG-3212)

- Upon aborting a "WPS Add Client" (Client PIN Method) via the GUI, the wireless security mode will no longer be changed to "Unencrypted". (SBG-3211)

- When there is an error in entering the LAN IP Address on the "Basic → Setup" page, it will no longer create the wrong IP address on the "Basic → DHCP" page. (SBG-3173)

- TR-069/TR-181 changes to the index for "IPInterface", and removal of the CM interface from the list. (SBG-3119)

- The parameter name of "Device.DHCPv4.Server.Pool.1.ReservedAddresses" has been corrected. (SBG-3093)

10.11. 8.5.0.0-GA-02-909

10.11.1. Reference Code Merge
- This firmware release includes all fixes and enhancements available in the Broadcom Reference Code merge up to and including, BFC5.5.8mp5. (SBG-3012)

10.11.2. Features
- TLV202.3 [eRouter Initialization Mode Override] is now supported. This feature is included in the Broadcom Reference Code merge.

- A new HTML based Graphical User Interface (GUI) for device configuration and management is being introduced. Changes in the GUI include easy to use connection pages, a new Configuration Wizard, and enhanced Help texts. The GUI update adds a more user-friendly look, feel, and navigation. (SBG-2252)

- An Installation Wizard available from the Home page that walks an end-user through the minimum steps needed for wireless configuration for their environment is now available. (SBG-2810, SBG-2918, SBG-2909)

- Support for GRE tunneling is now available. (SBG-3005)

- A "Time Zone" entry has been added to the "Firewall → Parental Control" HTML page utilizing a pre-configured SNTP Server. (SBG-2942, SBG-1429, SBG-2757)

  ☞ Added fields to enter the "Time Zone" and to enable automatic time zone adjustment for DST (Daylight Savings Time) to the bottom of the "Parental Control" page.

  ☞ A warning message will display at the top of the page if the time zone has not been entered.

  ☞ The time of day received from the SNTP timeserver is displayed. The message "Network Time Not Available" will display if the timeserver could not be contacted.

  ☞ Removed the "System Time" field from the bottom of the ""Status → Connection" and the "Basic → DHCP" pages for the "admin" user login.

- Added a new HTML page called "About" available from the "Home" page, which contains consolidated information about the SBG6580. (SBG-2825)

- Support for the Motorola Private MIB object *cmConfigWaitBeforeCpeMacReplace* has been added. (SBG-2908)

- A new Motorola Private MIB, *cmCustomerSerialNumber* has been introduced for the querying of a unit's Customer Serial Number. (SBG-2359)

- Extensive updates to the SBG6580 enhanced GUI adding a more user-friendly look, feel, and ease of navigation. This includes color coded Wireless Radio tabs, new and additional "Help" text for configurable fields, and detailed explanations/examples for the "Advanced" feature sets such as "Port Triggering" and "Port Forwarding". (SBG-2919, SBG2769, SBG-2922)

- Additional TR-069 and TR-181 support has been added to this release, including the following: (SBG-2944, SBG-2962, SBG-2888, SBG-2966, SBG-2956, SBG-2870, SBG-2965, SBG-2910, SBG-2365, SBG-2986, SBG-2911, SBG-2869, SBG-2687, SBG2518, SBG-2914, SBG-2329, SBG-2813, SBG-2564, SBG-2785, SBG-2652, SBG-2310, SBG-2299, SBG-1714, SBG-2281, SBG-2280, SBG-2270, SBG-2201, SBG-2198, SBG-2195, SBG-2193, SBG-2187, SBG-2184, SBG-2160, SBG-2154 SBG-2152, SBG-2132, SBG-2287, SBG-2304, SBG-2311, SBG-2317, SBG-1985, SBG-2542, SBG-2438, SBG-2328, SBG-2387, SBG-2453, SBG-2525, SBG-2477, SBG-2652, SBG-2777, SBG-2855, SBG-3094)

  ☞ Implement dynamic updating of the InterfaceStack Node on a unit operating in TWC mode

  ☞ After a unit receives an ACS URL through DHCPDiscovery, it can dynamically connect to a different ACS URL after setting URL from TR-181 Datamodel ManagementServer Node.

  ☞ TR-069: Implement Device.InterfaceStack

  ☞ DHCPv6 Server Profile Implementation for TR-181

  ☞ TR-069: Change the IP.Interface table rows such that each row represents a different IP and not different Port.

  ☞ TR-181: Associate Radio and SSID Instance numbers to follow the eRouter convention indexing.

  ☞ TR-069: Implement Phase 1 of EthernetLink:1 Profile.

  ☞ TR-181:Implement IPv6Interface:1 Profile.

  ☞ IPv6Routing:1 Profile Implementation for TR-181.

  ☞ Table support for multiple WiFi Associated Devices.

  ☞ Implemented DHCPv4Server and DHCPv4Client Profiles.

  ☞ Implementation of NAT related profiles.

  ☞ IP Ping profile implementation for IPV6 mode.

  ☞ The ability to resolve a TR-069 hostname to an IPv6 IP address has been added.

  ☞ A TWC specific TR-069 requirement for the username and password length has been implemented.

  ☞ A TWC specific TR-181 NAT feature has been implemented, as well as making the TR-069 "NATEnabled" parameter read-only.

  ☞ Bridge:1 Profile for the TR-181 Data Model is now supported.

- ☞ ManageableDevice table nodes have been added.
- ☞ SimpleFirewall:1 Profile and Objects under Firewall are now supported.
- ☞ Implemented remaining parameters from IPInterface profile.
- ☞ A TWC specific TR-069 requirement for HTTPS has been implemented.
- ☞ A new cli command for enabling the TR-069 log has been added.
- ☞ The ACS server will now be able to set TR181: "Device.ManagementServer.PeriodicInformEnable" to" true" or "false".
- ☞ Removed "ModemFirmwareVersion, SpecVersion" and " DeviceSummary" from the TR-181 tree as those are not valid as per the TR-181 specification.
- ☞ A TR-069 Time-Warner requirement on the url string has been implemented.
- ☞ The TR-069 ACS server is now able to modify the WAN DNS Servers if the WAN Addressing Type is set to "static" mode.
- ☞ A MIB object *cmTR69DataModel* has been implemented to toggle between the TR-098 and TR-181 data models.
- ☞ CLI "help" text has been corrected for the TR-069 Data model setting.
- ☞ Partially Implemented IPInterface:1 and IPInterface:2 profiles.
- ☞ The *cmTR69SslCertValidationLevel* MIB object and a CLI command for the same has been implemented.
- ☞ TR-069 Inform message sent by the modem will now contain the "WANIPConnection.1.ExternalIPAddress" parameter.
- ☞ Implemented LAN DHCP and ethernet parameters for the TR-098 data model.
- ☞ Wi-Fi Access Point Parameters have been implemented.
- ☞ TWC Username and Password requirements changes have been made.
- ☞ Implemented the ParameterKey for TR-098 and TR-181 data models.
- ☞ TR-181: Implementation of remaining NAT profile's parameter 1:Interface 2:AllInterfaces
- ☞ TR-181: Implementation of remaining parameter of Device.WiFi.SSID.{i} and Device.WiFi.Radio.{i}.
- ☞ The TR-181 routing profile has been expanded.
- ☞ DHCP modifications implemented to support TR-069 ACS Auto-Discovery.
- ☞ Added a CLI command "tr69_enable_cert" to enable a particular cert for ACS authentication.
- ☞ Implemented EthernetInterface:1 profile parameters.
- ☞ A TWC requirement for ACS Discovery integration has been added.
- ☞ TR-181 routing 2 profile and Routing 1 profile staticRoute implementation.
- ☞ The eRouter DHCPv6 server will now send any ACS Discovery options received during IPv6 WAN provisioning to LAN side CPEs that send the text "dslforum.org" in Option 16, using any Enterprise number.
- ☞ TR-181: Implementation of Device.WiFi.AccessPoint parameter with X_002040_DevicePassword parameter for Device.WiFi.AccessPoint.{i}.WPS.
- ☞ TR-069: Implement SimpleFirewall:1 Profile and Objects under Firewall.
- ☞ TR-181 Device.IP.Diagnostics.IPPing parameter has been implemented.
- ☞ User:1 Profile Implementation for TR-181 added.
- ☞ Implement TLV configuration of TR-069 Management Server parameters as per the CableLabs eRouter specification. (SBG-3063)
- ☞ The number of entries in "DHCPv4.Server.Pool" no changes based on the bridging of the Wireless interfaces on a unit operating in the TWC mode. (SBG-3057)
- ☞ Implement all the T1/T2 parameters required as per the TWC requirements. (SBG-2926)
- ☞ Added the "Device.Ethernet.LinkNumberOfEntries" parameter. (SBG-3052)

☞ The ability to dynamically connect to different ACS URL after setting URL from TR181 "Datamodel ManagementServer Node" has been added. (SBG-2944)

☞ Implemented "Device.InterfaceStack". (SBG-2962)

☞ DHCPv6 Server Profile Implementation for TR181. (SBG-2888)

☞ Changed the "IP.Interface" table rows such that each row represents a different IP and not different Port. (SBG-2966)

☞ Associate Radio and SSID Instance numbers to follow the eRouter convention indexing. (SBG-2956)

☞ Implement TR181 TWC requirements for MoCA - Phase VI. (SBG-2847)

☞ Implement Phase 1 of "EthernetLink:1" Profile. (SBG-2965)

☞ "Ipv6Interface:1" profile parameters are implemented. (SBG-2870)

☞ "IPv6Routing:1" Profile Implementation for TR181. (SBG-2986)

- Support for GRE tunneling is now available. (SBG-3005)

- GRE Tunneling configuration is now available utilizing Motorola Private MIB objects found in the *CM-dot11plus-MIB*. (SBG-3048)

- The 2.4GHz and 5GHz wireless interfaces are now allowed to be configured with the same SSID. (SBG-3102)

- When the user makes a change to a MoCA setting, a modal box with a warning is displayed. This will occur only once each time the page is loaded. (SBG-2993)

- Wireless configuration now allows a user to select five different modes for a 2.4 GHz wireless and two different options for the 5 GHz wireless radio. For the 2.4 GHz wireless configuration the five options are " b only mode", "b/g mode", "g/n mode", "b/g/n mode", and "n only mode" modes. The 5GHz wireless card allows two options of "a/n mode" and "n only mode" modes. (SBG-2742, SBG-2878)

  ✱ End Users can customize the Wi-Fi Modes by migrating to the 802.11 Radio Page in the GUI. *Wireless → 802.11 Radio → 802.11 Mode*

  ✱ MSOs can customize the Wi-Fi modes via SNMP using the appropriate combination of cmdot1plus MIB Objects as noted below.

802.11 Mode 2.4 GHz (Displayed on GUI)	*cmdot11WifiNMode*	*cmdot11Wifi54gNetMode*
b only mode	off (2)	mode54g11bOnly (0)
b/g mode	off (2)	mode54gLRS (5)
g/n mode	auto (1)	mode54gOnly (2)
b/g/n mode	auto (1)	mode54gLRS (5)
n only mode	nOnly (3)	mode54gLRS (5)

802.11 Mode 5 GHz (Displayed on GUI)	*cmdot11WifiNMode*	*cmdot11Wifi54gNetMode*
a/n mode	auto (1)	mode54gLRS (5)
n mode	nOnly (3)	mode54gLRS (5)

- Added cmdot11BssMaxAssociationsLimit to the cmdot11BssEntry Table. (SBG-2100)

- New "Help" text offering more detailed information for each of the configurable fields has been added to the "Basic → Setup" page. (SBG-2316)

- TWC ECN#0036 is now supported for units configured for TWC mode. Selections made via the <routingMode> XML tag setting will not be persistent over a reboot. (SBG-2718, ECN#0036)

- Support of "Hot Spot" is now available on a 2nd Guest SSID. A Motorola Private MIB object *cmConfigGwHotSpotFeatureEnable* is used to enable/disable the "Community Hot Spot" feature. By default this setting is "disabled(2)". Enabling this feature will place the second & third Guest Network SSIDs in "bridge" mode. This value is persistent across reboots, and the device automatically resets when this value is changed. (SBG-1521)

- The CableLabs® WiFi MIB is now supported. (SBG-2099)

- For specific MSO configured units, a user password can be set using the special characters !@#$%^&* in addition to the alpha numeric characters. (SBG-2821)

10.11.3. Defects Fixed

- The "Basic → DHCP" page, *"Starting Local Address"* field has two '.'s (dots) after the 3rd byte of IPv4 address. (SBG-3134)

- A "hard reset" of the SBG will now give correct Guest Network IP subnet pools when operating in TWC mode. (SBG-3114)

- WEP will now only be displayed for the 2.4GHz wireless radio when the radio is configured to operate in a "non-N" type condition. (SBG-3126)

- The "wireless client(s)" and "wireless access control" links on the Help/About GUI page are now properly directed to the Wireless Access Control page. (SBG-3124)

- A Broadcom patch to address a CableLabs MAC-40 failure has been imported. (SBG-3122)

- The *esafeErouter* MIBs are now accessible when the eRouter is operating in "disabled" mode. (SBG-3113)

- A user may now enter in a IPv6 address for Port Forwarding. (SBG-3088)

- Increased the buffer size in non-vol for the "Conn Req" username, password, parameter key and provision code to match the latest TR-069 amendment. (SBG-3050)

- Fixed an issue where a crash could occur when doing a WAN Renew in Dual or IPv6-only mode. (SBG-3084)

- Changes have been made to resolve an issue with units that operate in "World-Wide" mode. (SBG-3092)

- The encryption on the "Wireless → 802.11 Radio" HTML page will now correctly store and display the encryption value of the wireless. (SBG-3090)

- 802.11b support is now disabled by default in support of a Service Provider request. (SBG-3083)

- The time format is now properly displayed on the "Firewall → Parental Control → Time Zone → Current Time" filed. (SBG-3070)

- The "Firewall → Parental Control" page will now block websites based on time based rules. (SBG-3068)

- The local and external IP address and start/end ports have swapped locations on the "Advanced → Port Forwarding" HTML page. (SBG-3067)

- The TR-181 "InterfaceStack" and "Bridge Table" are updated to reflect the TWC settings in TWC mode. (SBG-3064)

- Changing WPS, and then restarting the SBG, will retain the value that was previously set, before the unit was restarted. (SBG-3061)

- The WPS fields under the Wireless/Primary Network Settings GUI page are now only visible when WPS is enabled. (SBG-3060)

- A "Reset to Defaults" initiated from a console connection now resets the Guest Network settings when a unit is configured for TWC-mode. (SBG-3056)

- Changed the "IPInterface" according to TWC Guest Network settings when in TWC-mode. (SBG-3042)

- "AccessPoint" index number{i} now follows eRouter convention indexing. (SBG-3037)

- Mapped the legacy Wi-Fi index numbering of "32 – 39" (2.4 GHz radio) and "112 – 119" (5 GHz radio) to "10001 – 10008" and "10101 to 10108" to ensure a smooth transition of settings made via TLV11 statements in a modem configuration file. (SBG-3034)

- "MinAddress" and "LeaseTime" paramaters no longer require a reboot to work when set via TR-069. (SBG-3025)

- An end user may no longer enter in these invalid entries: x.x.x.0, x.x.x.x.1, and x.x.x..255, as valid IP Port Forwarding Addresses. (SBG-3013)

- The TR-181 "Hosts Table" will now list IPv6 Clients. (SBG-2984)

- Implemented adding and deleting each interface to a different subnet as done in XML. (SBG-2968)

- The internal HTML page will now display wireless clients that are connected to the Guest Networks. (SBG-2951)

- The Edit/Remove/Remove All buttons under "Firewall → Parental Controls" GUI page are disabled to dis-allow actions while in the "Create" state. Click "Cancel" or "Apply" to get out of the "Create" state to edit or remove an existing filter. (SBG-2916)

- Setting the ethernet option to "disable" via an XML configuration file will now grey out the Ethernet Port option in the internal HTML page. (SBG-2890)

- Increased the stack size of TR-069 MainThread to 32K to avoid a stack overflow. (SBG-2788)

- The TR-181 http request uri for TWC will be sent in the format: http://acs.twcable.com?username=010203-TWC1000-010203040506& model=TWC1000&provcode=provisioned). (SBG-2773)

- Dynamic enable /disabling of "PeriodicInformEnable" is now supported. (SBG-2732)

- The unit will now continue sending Periodic informs after changing a username/password via TR-069. (SBG-2731)

- Information for Wi-Fi Clients connected to the 2.4 GHz radio on the "Wireless → Access Control" page will show Speed (Kbps) properly. (SBG-2634)

- The "Device.WiFi.AccessPointNumberOfEntries" and "Device.WiFi.SSIDNumberOfEntries" parameters now show properly. (SBG-2551)

- The SBG6782 unit no longer goes into a continuous reboot state when the "WAN Connection Type" is configured for "Static IP" on the "Basic → Setup" HTML page. (SBG-2989)

- Modifications to prevent rejection of a configuration file with unknown TLV statements have been implemented. (SBG-2862, SBG-2980)

- Both TR-069 and the TR-181 data model are now enabled by default. (SBG-2749)

- Firewall Protection setting will not be displayed in Firewall --> protection Level UI page when the unit is in IPv6 mode, since the mentioned settings are for IPv4. (SBG-3003)

- A unit will now properly reset upon occurrence of a T4 timeout when the unit is TR-069 enabled in IPv6 mode, Dual mode or IPv4 mode. (SBG-2949)

- Allow the user to configure WPA-Enterprise & WPA2-Enterprise security modes. (SBG-2713)

- The *Timezone* settings were added to the Backup/Restore process. (SBG-2999)

- Setting a specific channel for the 2.4 GHz radio configured for 40 MHz bandwidth causes the "Current Channel" to set to any available channel as if the channel setting is for "Auto" even though a specific channel is set. (SBG-2979)

- Hostname resolution for the configured ACS URL fails when two Domain Servers are configured (DHCP Option 6) in the WAN template. (SBG-3007)

- Spelling corrections on the "Advanced → Port Forwarding" GUI page; *automatically* is now spelled correctly. (SBG-3009)

- Updated the Time Zone/City Listing in the "Firewall → Parental Controls" GUI Page. (SBG-3024)

- When the end-user enters in a reserved lease on the "Basic → DHCP" GUI page, and they enter in the host name, it will no longer be over-written by the computer name, when the computer receives the DHCP IP Address. (SBG-2876)

- PPTP pass through can now be enabled / disabled dynamically through the MIB *cmGwAdvCfgPptpPassThroughEnable* without rebooting the modem. (SBG-2424)

- RIP DHCP is now disabled if LAN DHCP is enabled from XML (SBG-2523)

- Ethernet Switch Interfaces will no longer revert to 10 Mbps on an SBG6580-P2 when connected to certain Network Interface Cards. (SBG-2880)

- An end-user can control the display style of the Guest Network passphrase when page access is allowed. (SBG-2976)

- A "Client Fairness" issue has been resolved ensuring 802.11n wireless clients will now be sufficiently given time when 802.11g wireless clients are present. (SBG-1403, SBG-2116)

- Devices managed by Time Warner, manufactured with a specific Customer ID, will limit the changes to the Wi-Fi radio that an end-user can make. (SBG-2917, SBG-2861, and SBG-2856)

- A unit will now be able to get its WAN-MAN IPv6 address successfully when in IPv6 or Dual mode. (SBG-2556)

- A Web Filter rule will now be deleted when a "Restore Factory Defaults" executed from the internal HTML page or the *cmResetToDefaults* MIB. (SVG-2379)

- The *cmConfigGuiHfcAccessEnable* MIB object setting is now maintained across reboots on TWC units. (SBG-2717)

- Connecting to the wireless radio using a Windows® 7 client no longer causes the wireless LED to blink orange and "out of sync". (SBG-2555,SBG-2820)

- The WPS failure indication will be stopped after two minutes causing the wireless LED to return to "green". (SBG-2224, SBG-2223)

- The inability to enable /disable the LAN DHCP server from NBBS Edge Manager 5.4 has been resolved. (SBG-1892)

- A Provider is now able to configure the WPS on the modem with Configuration Method to "Keypad" via TR-069. (SBG-1782)

- A wireless client connected to the Guest Network Wi-Fi will no longer be able to log into the GUI. (SBG-2323)

- A Web Filter rule will now be deleted when a "Restore Factory Defaults" executed from the internal HTML page or the *cmResetToDefaults* MIB. (SVG-2379)

- Performing a "Restore Factory Defaults" via the GUI or the *cmResetToDefaults* MIB will now set the IPv6 firewall back to the factory default value of "enabled". (SBG-2981)

- When the unit's internal IP address of 192.168.100.1 is pinged with a ping buffer size of more than 1500 bytes, the unit will no longer reset. (SBG-2977)

- Now able to delete the selected index on Device.Firewall.Chain.1.Rule in a TR-069/TR-181 implementation. (SBG-2826)

- A user can now disable a previously enabled "Port Triggering"entry on the "Advanced → Port Triggering" page. (SBG-2843)

- A user now has the ability to choose to display the Guest Network wireless password in clear text or as "dots". (SBG-2835)

- The default channel for the 5GHz radio is now correctly set to 149. (SBG-2934)

- Added support for Q2/51, Q2/52, AU/18, AU/19 country codes. (SBG-3049)

- Both TR-069 and the TR-181 data model are now enabled by default. (SBG-2749)

- Changes have been implemented to resolve certain cosmetic and functionality issues found in the initial release of the new Graphical User Interface. (SBG-2912, SBG-2903, SBG-2896, SBG-2790, SBG-2789, SBG-2693, SBG-2815, SBG-2829, SBG-2836, SBG-2513, SBG-2503, SBG-2502, SBG-2493, SBG-2233, SBG-2596, SBG-2559, SBG-2515, SBG-2478, SBG-2460, SBG-2451,

SBG-2448, SBG-2234, SBG-2677, SBG-2837, SBG-2274, SBG-1645, SBG-2373, SBG-2377, SBG-2379, SBG-2392, and SBG-2639)

- An issue was resolved in which after a unit upgrade the *cmTR69AcsUserName* was not in the proper format. (SBG-2383)

- A parameter was added to "RgContentFilter" page to control the IPv6 Firewall when the unit is configured for eRouter Dual Mode. (SBG-2426).

- Fixed initialization of the 2.4 GHz channel setting to "0" (Auto) after a system is reset to default. (SBG-2548)

- Added a method to generate the WPS PIN. (SBG-2578, SBG-2336, and SBG-2680)

- Auto Channel Selection (ACS) feature now works for a 2.4 GHz radio configured for 40 MHz bandwidth. (SBG-2877)

- When a device is in TWC mode, changing settings on the "Wireless → 802.11 Radio" page will not cause errors and the user will be able to make changes. (SBG-2696)

- Modifications to prevent rejection of a configuration file with unknown TLV statements have been implemented. (SBG-2862, SBG-2980)

- Connectivity with an ACS server now works when the Data model is set to 1(TR98) and the eRouter is operating in "IPv6 Only" or "Dual Provisioning" mode. (SBG-2866)

- When configured for TWC mode and operating in a TR-069 environment, the Product Class Value is the same as the Model Name. (SBG-2765)

- The appropriate 2.4 GHz and 5 GHz tabs are now operational for units with one radio and multiple radios. (SBG-2875)

- Multicast streams can now be simultaneously played on two or more attached CPE devices. (SBG-2841)

- The SBG will no longer drop IP ping packets when a "ping" is initiated from the CMTS. In previous releases of the Reference Code Base(s) BFC5.x, an "enhancement" was included to add an IP Flood Detection / Denial of Service (DoS) Snoop of ICMP Traffic. This DoS prevention mechanism is activated when the number of pings that the CM interface receives exceeds 10 pings/sec and drops every 11th packet. This feature has now been removed. (SBG‑2879)

- A client should see normal throughput rates with Layer 2/3 Triple Play QoS. (SBG-2113)

- When a unit is managed by a specific MSO, the administrative user, change username / password list box will populate properly. (SBG-2748)

- The *cmExtendedUsTxPowerCapable* set value is retained across reboots. (SB-2863)

- A certain test condition causing the SBG6580 to reset when conducting simultaneous throughput testing to 10 wirelessly connected clients has been resolved. (SBG-2074)

- On the "Advanced → Port Forwarding" page, the port and IP addresses are checked for validity and the user is prompted to make changes. (SBG-2405)

- "Restore Guest Network Defaults" no longer resets the SSID of the Guest Network to a corrupted value. (SVG-3536)

- *ifOperStatus* is now updated correctly for the Ethernet interface on a TWC unit. (SBG-2760)

- Currently, the http inform message is constructed irrespective of an empty URL. Once the message building is finished , the message is sent to an empty URL -- which can have side effects. This fix is not to allow building of an inform message, when an empty URL is present. (SBG-2704)

- The *cmConfigEtherOperStatus* OID will now return the correct value when queried. (SB-2860)

- Because the *sysDescr* displays the Bootloader version number alone and not the complete string a new Motorola Private MIB object, *cmConfigBootloaderVer* has been added. (SBG-2422)

- Fixed an issue of a continuous reboot after an XML configuration file download. (SBG-2606)

- These changes only apply to a TWC configured unit (SBG-2729):

    ☞   If a unit running with 6.5.2.0-GA-05 or GA-06 firmware is in "Docsis" and is upgraded to 8.x.x.x code the unit will now come up in Gateway mode but the "Primary Network Only Mode" will be in Bridged Mode.

    ☞   If the user sets the "Primary Network Only Mode" to Bridged Mode, the unit will ignore TLV202 statements.

- Modifications to ignore TLV11 statements in a configuration file for objects *cmGwObjects* when in Bridged mode have been implemented. The MIB objects *cmGwObjects* are not available in Bridged mode; however, the MIB object c*mGwProvErouterMode* is available in either Bridged or Routed modes. (SBG-2482)

- A TWC unit in Bridge mode will no longer display the Configuration and MAC Address tables. (SBG-2539)

- The Stateless Auto Configuration table on the "LANIPv6" GUI page is now being updated properly. (SBG-2293)

- The DHCPv6 Server will now send the 'Server Unicast' option to the client for unicast communication with the server. (SBG-2279)

- The eRouter DHCPv6 Solicit now presents Sub-Option 1 (CL eRouter Container Option 1027). (SBG-2131)

10.12. 6.5.2.0-GA-06-077

10.12.1. Features

- None

10.12.2. Defects Fixed

- A 2.4 GHz wireless coexistence issue causing significant throughput issues in an environment where interference is encountered in the 40 MHz channel-width spectrum has been resolved. (SBG-2354)

- For units manufactured with a specific Customer ID, and which have been placed in "Bridge" mode (NAPT disabled) via the unit's GUI, a TLV202 statement contained in a configuration file or a statement in the XML configuration file over-riding that setting will be ignored. (SBG-2487, PI43802, and PI43846)

- For units manufactured with a specific Customer ID, a "class" value of 'ResidentialAndCommercialWirelessGateway' is now sent to the XML Configuration Tool. (SBG-2348, PI43620)

10.13. 6.5.2.0-GA-04-050

10.13.1. Features

- None

10.13.2. Defects Fixed

- A throughput issue with certain RealTek GigE Network Interface Cards has been resolved. (SBG-2331)

- A crash issue, which may occur when loading an XML configuration file, has been corrected. The cause was a synchronization problem of two threads attempting configuration of the Wireless networks. (SBG-2421)

- An issue in which the SBG6580 showed significant upstream packet loss in a specific test environment has been resolved. This issue was only seen during CableLabs® testing, showing significant packet loss ratios (>10E-4), at even very low data rates (<3Mbps), using only a single CM, on a DOCSIS 3.0 8x4 channel bonded plant, running against an Arris C4 CMTS. (SB-2827)

- An IPv6 addressing issue has been corrected for SBG6580 units that are provisioned in an environment with both Primary and Secondary IPv6 DHCP Servers being utilized. (SBG-2286)

10.14. 6.5.2.0-GA-03-025

10.14.1. Features

- A Motorola Private MIB *cmDRWEnforcementDisable* (available in the *giCmConfig.mib* file) has been implemented to enable/disable the Dynamic Range Window power level enforcement, which is specified in the DOCSIS 3.0 specification. Setting the value to "true (1)" violates the DOCSIS 3.0 specification, and is for working around CMTS issues only. This MIB is set to "false(2)" by default. (SBG-2166, PI42477)

- Introduced two Motorola Private MIBs (available in the *giCmConfig.mib* file) to disregard the DOCSIS 3.0 requirement of sequenced downstream packets. Setting the MIB(s) to "true (1)" allows the SBG to disregard the requirement that the packet sequence number for a newly created unicast resequencing DSID must begin at zero. This allows the SBG to recover more quickly when an invalid initial PSN is received for a unicast DSID. (SBG-2236)
  - ☞ cmUcastDsidAllowNonZeroInitialPsn
  - ☞ cmStartDsidLearningWhenDccRspArriveSent

- A Motorola Private MIB *cmGwProvErouterMode* (available in the *cmGateway.mib* file) for managing the eRouter Provisioning Mode has been added. (SBG-2191)

- TR-069 - Whenever an ACS URL changes via SNMP, CLI, or TR-069, an inform will be sent out immediately to the new ACS URL. (SBG-1821)

- TR-069 - The SBG will now support dynamic loading of an SSL certificate. A reboot after the certificate is downloaded is no longer required. (SBG-2094)

- A new Motorola MIB object *cmTR69ClearAcsUrl* was added to allow for clearing the value of *cmTR69AcsUrl*. In addition, the CLI command "tr69_clear_server_addr" has been added to allow for clearing the ACS URL value via the CLI. (SBG-2053)

- Support for routing mode configuration in XML file using the <routingMode> tag has been added. (SBG-1841)

- Added the CLI command "tr69_datamodel" under "Console/tr69". Two values are supported: *TR181 data model(0)* or *TR98 data model(1)*. By default, the value is the **TR98 data model(1).** After any change to the setting, a reboot is required for the change to take effect. Only one data model may be accessed at any point of time. (SBG-2037)

- Addition of TR-181 Wi-Fi Guest Network Parameters. (SBG-2134)

- Additional default settings have been added based upon a unit setting of a specific Customer ID. (SBG-2002, SBG-1968, and SBG-1980)

- TR-069 now has the following features (SBG-1959).
  - ☞ HTTPS support.
  - ☞ MIB/TLV-11 support to download an SSL certificate.

- Added a Motorola private MIB to enable/disable the extended upstream transmit power capability in a REG-REQ-MP (SBG-1853).
  - ☞ *cmExtendedUsTxPowerCapable*
  - ☞ Enable/disable to report the extended upstream transmit power capability TLV 5.40 (used for post-registration). If this object is set to true, the CM will report extended u/s transmit power capability in the REG-REQ-MP. If false, the CM will report extended u/s transmit power capability in the REG-REQ-MP when the CMTS's pre-registration upstream-extended power (TLV16) is enabled.

- Added 256QAM Upstream Modulation support (SBG-1766).
  - ☞ *cm256QAMUpstreamCapable*
  - ☞ Enables/disables the ability for the DOCSIS 3.0 CM to register on a 256QAM Upstream Channel when available. By default, this feature will be OFF. *The value of this MIB object only takes effect after a device reboot.*

10.14.2. Defects Fixed

- The SBG will no longer drop IP ping packets when a "ping" is initiated from the CMTS. In previous releases of the Reference Code Base(s) BFC5.x, an "enhancement" was included to add an IP Flood Detection / Denial of Service (DoS) Snoop of ICMP Traffic. This DoS prevention mechanism is activated when the number of pings that the CM interface receives exceeds 10 pings/sec and drops every 11th packet. This feature has now been removed. (SBG‑1793)

- An issue in which RIP and the associated routing configuration may be lost after an XML configuration file download no longer occurs. (SBG-2257)

- An XML configuration file with a valid interface string of "ethernet" will now be accepted. (SBG-2271)

- TR-069 - In support of interoperability requirements with ClearAccess, the Host field in the http header will contain the hostname of the ACS (if the hostname is set as the ACS URL) instead of the IP Address. (SBG-2079)

- When WEP is disabled, a TR-069 ACS server is no longer able to change the WEP key index. (SBG-1700)

- A TR-069 ACS server can now modify the WPS device name. (SBG-1781)

- The "WanSet" TR-069 option is now supported. (SBG-1895)

- The Wi-Fi LEDs will always reflect the status of the Primary SSIDs. (SBG-2054)

- When the SBG6580 is configured for a specific Customer ID, the "Help" text on the Wireless HTML pages will no longer display the Guest Network "Help" text. (SBG-2017)

- TR-069 - When using the *SetParameterAttributes* object to define a parameter, the SBG sends multiple "4 VALUE CHANGE" informs. (SBG-2093)

- The following MIB objects (as part of the *cmConfigMtaObjects* branch), required by MSOs to be able to set the Username/Password options for GUI logins via SNMP or TLV-11 are again supported. (SBG-2149)
  - ☞ cmPasswordOfDayEnable
  - ☞ cmPasswordOfDaySeed
  - ☞ cmRegularUserName
  - ☞ cmRegularUserPassword
  - ☞ cmSuperUserName
  - ☞ cmSuperUserPassword

- TR-069 - *PeriodicInformTime* is now supported across all SBG platforms. (SBG-1384)

- TR-069 - Some *Get/SetParameter* objects were hard coded for all non-hard coded tools. The SBG will now get a value dynamically for non-hard coded tr69 parameter. (SBG-1612)

- Changes were made to resolve TR-069 issues in retrieving/setting various TR-069 data models. (SBG-1773)
  - ☞ InternetGatewayDevice.LANDevice.1.WLANConfiguration.1.MaxBitRate
  - ☞ InternetGatewayDevice.LANDevice.1.WLANConfiguration.1.Channel
  - ☞ InternetGatewayDevice.LANDevice.1.WLANConfiguration.1.StandardSet
  - ☞ InternetGatewayDevice.LANDevice.1.WLANConfiguration.1.WPS.Enable

- The *cm256QAMUpstreamCapable* MIB setting is now retained across reboots. In addition, a "Reset To Defaults" will reset *cm256QAMUpstreamCapable* back to its default setting of "false". (SBG-2055)

- The TR-069 Port Mapping table is now read only. Only valid Port Forwarding entries which are entered from the internal HTML page are displayed in the TR-069 table. The entries in the TR-069 table may not be in the same order as displayed in the GUI, however all the entries which are getting displayed in the GUI would be in the TR-069 Port Mapping Table. (SBG-1894)

- When changing *ifAdminStatus* on the wireless primary interface, the *ifOperStatus* on that interface will reflect the same setting, and the LED will turn ON/OFF accordingly. (SBG-1989)

- Several internal HTML issues were resolved (SBG-1155):
  - ☞ An incorrect lease was sometimes deleted when attempting to remove a lease from the "Basic → DHCP" HTML page.
  - ☞ The last lease in the lease table could not be deleted from the same GUI page.
- An issue which occurred during noisy Wi-Fi traffic has been resolved. Some clients were getting deleted from the USFS table due to frequent ARP polling with a very short ARP interval. These clients were dropping packets because their MAC address was being filled in as "0" since they did not exist in the USFS table. (SVG-3125)
- TR-069 SDK has now been properly merged. (SBG-1837)

10.15. 6.5.0.0-GA-00-226

10.15.1. Reference Code Merge

- This newest firmware release includes all fixes and enhancements available in the Broadcom Reference Code merge up to and including, BFC5.5.6mp5.

10.15.2. Features

- The TR-069 implementation has added accessibility via the SBG6580 WAN/MAN interface, in addition to the previous CM (HFC) only interface. (SBG-1825)
- All applicable OSS attribution text is now available via a link on the internal HTML "Login" page. (SBG-1801)
- The SBG6580 will now support the operational changes as noted in a specific MSO Engineering Change Notice (Subscriber Wired Data Service Access Ports) when configured for a specific Customer ID. (SBG-1921, and ECN#0024)
- The SBG6580 will now support the operational changes as noted in a specific MSO Engineering Change Notice (TFTP Blocksize Option for Firmware Download). (SBG-1942, and ECN#0028)
- The SBG6580 now supports the ability to configure any combination of Guest SSIDs into the same logical interface. (SBG-1866)
- Support for FCI-008 (*cmFactoryCustomerId* set to "6") has been implemented for default configuration settings per a specific MSO's requirements. (SBG-1541)

10.15.3. Defects Fixed

- When configured for a specific Customer ID, Dynamic DNS enable/disable will only be available to a "root" capable login. (SBG-1803)
- The IPv6 Delegated Prefix is now included in the DHCPv6 Request if the Prefix is in the Advertise message. (SBG-1755)
- The "Wireless" LED will now flash while initiating a WPS client association. (SBG-1721)
- The *cmGwDhcpMib* objects are now accessible when the eRouter is in IPv4 Only and Dual modes (SBG-1665)
- The Security mode column on the "Scan Wireless APs" HTML page now shows the correct security mode for a wireless AP with WPA2-PSK security mode enabled. (SBG-1346)
- An issue has been resolved in which an attached CPE device could not access a website with an IP address ending in "255" when the SBG6580 was configured with the Firewall "Enabled". (SBG-1792)
- The *cmdot11BssRadiusReAuthInterval* MIB will now correctly set the interval timer when in WPA2 authentication mode for wireless. (SBG-1738)
- The IPv6 eRouter properly populates the DHCPv6 Request T1/T2/preferred lifetime/valid lifetime values when the preference option is in the Advertise message. (SBG-1674)
- A TLV11 entry corresponding to *ifIndex.5* in the SBG6580 configuration file will now be ignored and no longer cause the configuration file to be rejected. (SBG-1635)
- The contents of the Firewall "Help" page have been updated to reflect the new Firewall settings introduced with the SBG6580-3.5.8.x firmware releases. (SBG-1659)

- On the "Advanced → Port Triggering" internal HTML page there is now a "Cancel" button for the end user to use if they click on the "Create" button and then decide they no longer want to create. (SBG-1658)

- The Internal/External Start Port & End Port values on the "Advanced → Forwarding" HTML page can now be properly edited. (SBG-1653)

- Pressing the "Help" link on the "Firewall → Web Filter" HTML page will no longer display a "page not found" error. (SBG-1647)

- The SBG6580 will no longer reset if a user tries to access the "Wireless → Access Control" page when in "Bridge" mode. (SBG-1644)

- The "Basic → LAN" IPv6 HTML page has been modified for consistency purposes. (SBG-1632)

- On the "WPS Add Client" section of the "Wireless → Primary Network" HTML page, extraneous characters found next to the "Abort" button have been removed if the user assigns the PIN and clicks on the "Add" button. (SBG-1602)

- The "Results" box on the "Status → Diagnostics" HTML page will now be blank upon pressing the "Clear Results" button. (SBG-1598)

- The SBG6580 will no longer reset upon multiple and repetitive clicking of the "Release WAN Lease" or "Renew WAN Lease" buttons on the "Basic → Setup" HTML page. (SBG-1598)

- Previously, when the RIP reporting interval was changed from 30 seconds to 0 seconds, the unit would "hang", CLI communication stop, and the SBG6580 was not accessible. The SBG6580 will no longer allow setting the RIP reporting interval to 0 seconds. The unit gives an error when a user attempts setting to the value of 0. (SBG-1568)

10.16. 3.5.8.4-GA-00-505

10.16.1. Features

- None

10.16.2. Defects Fixed

- Multiple areas of the SBG6580 GUI previously had inconsistent or incorrectly displayed text strings. Changes were made so that the GUI has consistent and correct text strings displayed. (SBG-1444)

- When the SBG6580 is in "Bridge" (NAPT Disabled) or "DOCSIS" mode, the unit will no longer reboot when a wireless client is associated with the device, and any user attempts to access the "Wireless → Access Control" HTML page. (SBG-1623)

- Register settings for the Ethernet switch have been corrected in order for tagged traffic to pass to a CPE without issue. (SBG-1555)

- The following issues found during the University of New Hampshire (UNH) IPv6 Interoperability Testing are now resolved:
  - ☞ eRouter sending a Router Advertisement using the link local address before the address has completed Duplicate Address Detection. (SBG-1672)
  - ☞ SBG6580 eRouter only transmits one Router Advertisement on the LAN interface. (SBG-1673)

- If the SBG6580 wireless radio is configured for 5GHz and the Wireless Country Domain is set for "Worldwide", the channel number will no longer change to channel "36" after a reset if it was previously set to "Auto". (SBG-1648)

- An SBG6580 configured with a specific Customer ID setting, previously provisioned in IPV4 mode, then provisioned in IPV6, will now accept a configuration file without an *IpFilterIndex* error. (SBG-1583, PI41310)

- A Broadcom patch has been incorporated to fix an issue where 2 Xbox devices on the same home network could not both connect to the Xbox Live network. A Motorola patch was incorporated in the SBG6580-3.3.0.0-GA-05 release to resolve this issue prior to Broadcom making a patch available. (SBG-1767)

- The remote access will now be disabled as expected when operating in "DOCSIS" or "NAPT Disabled" mode for units with a specific Customer ID setting. (SBG-1582, PI41300)
- A wireless client will now show up on the "Access Control" GUI page under "Connected Clients" for the associated interface. (SBG-1470)

10.17. 3.5.8.3-GA-00-492 (Released to Targeted Customers Only)

10.17.1. Features

- None

10.17.2. Defects Fixed

- An issue has been resolved in which the SBG6580 was not forwarding Router Advertisement packets to wireless clients when operating in "Bridged" mode. (SBG-1510)
- The SBG6580 CM DHCP Discover Option 43 no longer has multiple sub-option 2 and 3 entries. (SBG-1448, PI41441)
- NAT upstream packet handling has been optimized to provide expected TCP throughput on the upstream in an 8 DS x 4 US bonded environment. (SBG-1373)

10.18. 3.5.8.2-GA-00-488

10.18.1. Features

- None

10.18.2. Defects Fixed

- The following issues found during the University of New Hampshire (UNH) IPv6 Interoperability Testing are now resolved:
  - ☞ The Router advertisement packet that goes from the eRouter to the LAN clients now has the Router lifetime equal to 0 before the unit comes online. (SBG-1489)
  - ☞ The eRouter LAN RA lifetime will now update after a change is initiated at the CMTS. (SBG-1483)
  - ☞ The Prefix length in the RA (Route Information Option) now matches the prefix length of the assigned Prefix Delegation (PD). (SBG-1481)
  - ☞ The eRouter now sends no more than one RA every 3 seconds. (SBG-1471)
  - ☞ An "ICMP Destination Unreachable" message is now formatted correctly. (SBG-1467)
- The SBG6580 will now continue to attempt to provision in IPv6 mode, as directed by the *docsIf3CmMdCfgIpProvMode =1* setting, if previous attempts failed due to the DHCPv6 server being unavailable. (SBG-1482)
- When NAPT is on and RIP DHCP is enabled, the XML file can be successfully downloaded when the URL contains a Domain name. (SBG-1447)
- If the modem configuration file contains a TLV 202 setting causing the eRouter to go from IPv4 to IPv6 or vice versa, the modem will now restart, so that the end user will have the correct GUI pages. (SBG-1437)
- The stack size has been increased to prevent a memory overflow that could cause the unit to crash after downloading an XML configuration file. (SBG-1430)
- The Primary and Guest Network SSID may now be 32 characters in length. (SBG-1409)
- Parameters under the node *IGD.LANDevice.1.LANHostConfigManagement.IPInterface.{i}* have been added to the TR-069 implementation. (SBG-1379)
- The Interface/Prefix field will no longer show on the "Basic → Setup" internal HTML page when the unit is in eRouter IPv4 mode. (SBG-1344)
- The SBG6580 will disable wireless SSID 0 when given an MSO specific IP0 tag. (cqvds00026405, PI38226)

10.19. 3.5.8.1-GA-01-477

10.19.1. Reference Code Merge

- This newest firmware release includes all fixes and enhancements available in the Broadcom Reference Code merge up to and including, BFC5.5.5mp8.

10.19.2. Features

- Initial firmware version in support of the SBG6580 HW Rev.3 unit.

- Updated and enhanced Help Text. (cqvds00026519, cqvds00026914)

- Guest Networks are now disabled when the SBG6580 is placed in DOCSIS mode. (cqvds00025471)

- Changed the default security method from WPA2/PSK to Disabled for all the Guest Networks. (cqvds00025647)

- Optimize the time taken by Restore Wireless Defaults via GUI by restarting the Wi-Fi driver once for all guest networks after reconfiguring all guest networks. (cqvds00025602)

- Enhance SNMP and CLI tools to support selection of Firewall Protection Level. (cqvds00025469)

    ☞ Added a new MIB object *cmGwFirewallProtectionLevel*, which allows the selection of different firewall policies.

    - *cmGwFirewallProtectionLevel* can be set only if *cmGwFirewallProtectEnable* is turned on.

    ☞ Also added a new CLI command "*firewall_protection_level*" to allow the MSO to select the firewall policy via the CLI.

- Added copyright notices and permission notes as applicable to the operating system within the SBG6580 code base. (cqvds00026185, cqvds00026186, cqvds00026502, and cqvds00026499)

- Enhancements included to allow the GUI to load faster. (cqvds00026352)

- Added the ability for the Installer or End-User to scan for existing Wireless Access Points. Under the "Wireless → Basic" GUI Tab there is a new button that initiates a *Scan Wireless APs* session and pops up a new window with the results. (cqvds00025887)

    ☞ The Popup Window details the following items:

    - **Network Name –** Lists SSIDs seen by the SBG6580
    - **Security Mode –** Details the broadcasted security mode
    - **Mode –** Current mode (generally managed)
    - **PHY Mode –** Available 802.11 operating modes
    - **RSSI –** Receive Signal Strength Indicator in dBm
    - **Strength –** Visual Strength Indicator of nearby Access Points to your SBG6580.
        - **Green Star** indicates channels/signal levels that are the lowest power level
        - **Yellow Star** indicates channels/signal levels that are in the mid-range power level
        - **Red Star** indicates channels/signal levels that are seen in the highest power levels
    - **Channel –** Current Wi-Fi transmit channel of nearby APs
    - **BSSID –** Basic Service Set Identifier (MAC Address of nearby APs)

- With the Release of the SBG6580-3.5.8.1 code, the "*Rg PassThrough*" option in the *Advanced→Options* Tab has been deprecated. The only method of getting the SBG6580 into "*Passthrough Mode*" is to disable NAT. (cqvds00026652)

    ☞ When NAPT mode is disabled via GUI (Basic→Setup), this now places the modem in DOCSIS mode, requiring ALL CPEs to perform DHCP to the Cable Headend Provisioning System. When in passthrough (DOCSIS) mode also the (Basic→Setup) GUI page will now will be displayed

    - Enabling the NAPT option will put the modem back in Gateway mode.

- The SBG6580 will now support the operational changes as noted in a specific MSO Engineering Change Notice (DHCP Address Allocation Ranges). *"The Gateway MUST support the ability to*

change the DHCP allocation address range, and lease time values, for all subnets via the XML configuration" (cqvds00026664, ECN#0022)

- The SBG6580 will now support the operational changes as noted in a specific MSO Engineering Change Notice (Wireless Radio Control). (cqvds00027198, cqvds00025651, and ECN#0010)

- The SBG6580 will now support the operational changes as noted in a specific MSO Engineering Change Notice(s) (Subnets and UPnP) for the Intelligent Home Service. (cqvds00026885, cqvds00027046, ECN#0018.4, and ECN#0019.2)

- The SBG6580 will now support the operational changes as noted in a specific MSO Engineering Change Notice (WPS Pairing Feature Control). (cqvds00027251, ECN#0021)

- The SBG6580 will now support the operational changes as noted in a specific MSO Engineering Change Notice(s) (Subnets and UPnP). (cqvds00026912, ECN#0018.4, and ECN#0019.2)

  ☞ When the specific MSO customers provisions with an XML file and if the logical interface environmental control tag is locked, then the following inputs on the GUI will be grayed out.

      • RgSetup GUI page - NAPT mode and LAN IP address

      • RgDhcp GUI page - DHCP Server, Starting Local Address, Number of CPEs, and Lease Time

      • RgAdvanced GUI page - UPnP Enable

- A Motorola Private MIB *cmConfigGuiRootLanAccessEnable* is implemented to disable LAN access to the SBG6580 GUI for the "root" user. For a specific Customer ID, by default, this setting is "false(2)". For all other units, by default, this object is set to "true(1)". (cqvds00026474).

- A new Motorola Private MIB object *cmConfigExtendedUsTxPowerCapability* was introduced. (cqvds00026535)

  ☞ *MIB Description:* Specifies the maximum extended upstream transmit power of which this device is capable. A value of zero indicates that the device has no extended upstream power capability. The value specified in this object will be advertised in TLV 5.40 of the CM's modem capability message.

      • *Reference:* Data-Over-Cable Service Interface Specifications DOCSIS 3.0 MAC and Upper Layer Protocols Interface Specification CM-SP-MULPIv3.0-I15-110210 section 6.4.28.1.15

- Added support for the Motorola Private MIBs *cmGwAdvCfgIpsecPassThroughEnable* and *cmGwAdvCfgPptpPassThroughEnable* for control of the "Ipsec Passthrough" and "PPTP Passthrough" settings found on the *"Advanced→Options"* internal HTML page. (cqvds00026633)

- Added first phase TR-069 support. (cqvds00026487, cqvds00027032, SBG-1383, SBG-1270, SBG-1340, SBG-1229, SBG-1380, SBG-1239)

  ☞ Added support for Motorola Private MIB *cmTR69*. (cqvds00026991)

10.19.3. Defects Fixed

- An issue in which the SBG6580 would attempt ranging on an A-TDMA or S-CDMA upstream prior to ranging on a stored favorite upstream UCID configured for TDMA has been resolved. (SBG-1427)

- The *docsIf3CmMdCfgIpProvMode* MIB can now be set to "honorMDD(4)". (SBG-1419)

- The SBG6580 will now successfully download an XML configuration file. (SBG-1416)

- Patches have been added to resolve a wireless issue in which a buffer over-run condition would occur when four or more wireless clients were attached and continuously transmitting/receiving large amounts of data. (SBG-1404, SBG-1405).

- Resolved an issue in which RIP routes are not established when the routes are configured through SNMP or the SBG6580 configuration file. (SBG-1255)

- The SBG6580 no longer reboots due to an XML implementation bug when comparing XML file settings with current non-vol settings. (SBG-1375)

- A potential timing issue has been eliminated that would result in data not flowing through the Ethernet interface. (SBG-1368)

- Clicking the "Release WAN Lease" or "Renew WAN Lease" button on the "Setup → Basic" HTML page will no longer cause the unit to crash when the provisioned in eRouter Dual or IPv6 mode. (SBG-1358)

- The NAPT mode displayed on the "Setup → Basic" HTML page is now reporting properly based upon the eRouter provisioning mode. (SBG-1354)

- A reset will not occur when setting the *cmdot11ResetToDefaults* MIB to "true(1)" by SNMP access through the HFC interface address. (SBG-1337)

- An intermittent reset will no longer occur when wireless changes are made to the SBG6580 via SNMP and the internal HTML pages simultaneously. (SBG-1195)

- Changing the LAN IP Address via an XML configuration file download will not cause the SBG6580 to reset. (SBG-1336)

- An intermittent crash that could occur when downloading an XML configuration file has been resolved. (SBG-1335)

- The SBG6580 will now register on a CMTS configured for IPv6 Alternative Provisioning Mode. The modem will now be able to register successfully with an IPv4 address. (SBG-1316)

- The SBG6580 will check the result from the XML parser function to avoid a crash due to an invalid closing tag in the XML configuration file. (SBG-1313)

- The DHCP Configuration HTML page will display an error message and no longer allow improper input. (SBG-1312)

- The password can now be changed as expected by using XML configuration file. (SBG-1311, PI38598)

- With MDD override MIBs in the configuration file, the modem would first register in IPv4 then reinitialize and get an IPv6 address as expected. With a modem power cycle, this process would complete every time without issue. However, when the modem is reset from the CMTS *"clear cable modem <mac> reset"*, the modem would reset but then only register with IPV4 address. Power cycle would again register modem to IPV6. The SBG6580 now comes up in the correct mode after a CMTS *"clear cable modem <mac> reset"*. (SBG-1396)

- Pings from the WAN side interface to the Routed Subnet Gateway Address are now successful. (cqvds00025599, cqvds00025973)

- When in 802.11n mode, setting *cmdot11BssSecurityMode* to **wpapsk** does not change the *cmDot11BssWpaAlgorithm* to **tkip**. (cqvds00025472)

- The SBG6580 now correctly formats the DHCPv6 Information Request Reply it sends in response to a LAN side CPE sending an Information Request. Windows 7 now accepts the Reply. (cqvds00025652, cqvds00025600)

- When operating in dual-stack or IPV6 mode, the IPV6 DNS server entries are not being displayed in GUI. (cqvds00026268)

- The eRouter IPv6 Delegated Prefix on the GUI disappears after a DHCPv6 RECONFIGURE is sent to the eRouter WAN interface. (cqvds00026272)

- A Reconfigure sent for the IPv6 lease attached to the eRouter will now result in the eRouter sending DHCPv6 Renew messages for both its IA_NA and its IA_PD. 9 (cqvds00025989)

- University of New Hampshire InterOperability Laboratory (UNH Interop Testing)
  - ☞ The SBG6580 now sends a Router Solicitation message prior at the beginning of its IPv6 provisioning process. (cqvds00025802)
  - ☞ The eRouter now includes the Domain Search List option in RA messages sent to the LAN interfaces. (cqvds00025799)
  - ☞ The eRouter no longer advertises itself as the default router if its delegated prefix has been deprecated. (cqvds00025830)
  - ☞ The eRouter now includes the Route Information Option in its RA messages. (cqvds00025816)

☞ The eRouter should now respond with an NA when a device on its LAN interface sends an NS for the globally routable IPv6 address it assigned to its LAN interface. The eRouter will now send an NS for its globally routable IPv6 address that it assigns to its LAN interface, and should fail provisioning if it receives an NA response for this address. The eRouter will also not respond to a ping sent to the globally routable IPv6 address that it would have assigned to its LAN interface, if it had not detected it was a duplicate address. (cqvds00025814)

☞ The eRouter now sends any Domain Search Lists it receives during its WAN DHCPv6 provisioning to the CPEs on the LAN via the DHCPv6 Information Request Reply. (cqvds00025813)

☞ The eRouter should now respond with an NA when a device on its LAN interface sends an NS for the link-local address already assigned to the eRouter LAN interface. The eRouter will now send an NS for its link-local address when it comes up, and should fail provisioning if it receives an NA response for its link-local address. The eRouter will also not respond to a ping sent to its link-local address under these conditions. (cqvds00025812)

☞ The eRouter should now release both the IA-NA and IA-PD when an ipv6config release is performed from the *ip_hal* directory on the CLI. (cqvds00025800)

☞ No ICMP Destination Unreachable message sent by eRouter when the prefix is deprecated. (cqvds00026868)

☞ SBG6580 fails RFC-6204 G-5 Router Requirement. (cqvds00026878)

- The eRouter should now be included the Advertised Delegated Prefix in the DHCPv6 Request message it sends to the DHCPv6 server. (cqvds00025765)

- The eRouter will now send new DNS Server information to CPEs on the LAN interfaces via DHCPv6 Information Request Replies and in the RA, if the DNS server information is updated during an eRouter WAN DHCPv6 renewal. Renewal(s) can be due to a Reconfigure or due to the timer, firing that would trigger a Renew message to be sent. (cqvds00025698)

- When the Current Channel is set to "Auto", disabling wireless does not turn off the WLAN LED. (cqvds00025944)

- The eRouter WAN interface will no longer respond to NS messages with NA messages when the NS message target address is not one of the eRouter's WAN interface IPv6 addresses, or it is not for an address that has a prefix that matches the eRouter's delegated prefix. (cqvds00026023)

- When the SBG6580 is provisioned in Dual-Stack or IPV6 mode, it crashes while accessing the web page. (cqvds00026569)

- When setting up Port Forwarding *(Advanced ➞ Forwarding)*, if the end-user populates the Internal IP Address & Start/End Port and nothing is entered for the External settings, the incoming traffic is not forwarded to the assigned internal IP Address. (cqvds00026193)

- An issue has been resolved, in which Ping Delay's could occur while the SBG6580 is in Motorola Partial Service mode. (cqvds00026755)

- When the SBG6580 Cable Modem was set to IPv6 only provisioning mode and the end-user attempted to release the WAN IP address by pressing the "*Release WAN Lease*" button on the Basic page, it return an error message "Error Converting one or more entries" on the page. (cqvds00026667)

- Resolved and issue where depressing the "*Release WAN Lease*" and "*Renew WAN Leas*'" buttons just released and renewed the SBG6580's IPV4 addresses. Also, when the "*Release WAN Lease*" is pressed, it clears the IPv4 address, but still displays the IPv6 address. (cqvds00026275)

- When the SBG6580 is provisioned in eRouter IPv6 mode, upon a reset of the unit, the DHCPv6 Release messages are not seen at the DHCP server. (cqvds00025971, cqvds00026872)

- Secondary SSID's will drop connection when the Primary SSID is disabled via the SBG6580 internal HTML "Wireless" page. (cqvds00026406, PI38236)

- The SBG6580 now reports the proper TFTP block size for IPv4 (1428) and IPv6 (1448) when performing a Secure Code Download. (cqvds00026770, cqvds00026972)

- Similar names can now be added in the Parental Control ToD Filter Policies. (cqvds00026908)

- When the end-user logged in as root, and then re-login as admin; the admin user will only have the one Guest Network. (cqvds00027174)
- Resolved an issue where the SBG6580 would not come up in *partial service* on the BSR 64000 running Rel5.2. Since the BSR 64000 with Rel5.2 does not support DOCSIS 3.0 partial service, the CM will no longer send the *CM-STATUS* to the CMTS while the downstream has lost lock and if the *cmConfigPartialServiceAction* MIB is set to 'docsis20' (cqvds00027285)
- Setting TKIP encryption should not be allowed from an XML config file when 802.11n mode is set to "auto". (cqvds00027175)
- The MIB object "*cmFreqPlanType*" is reset to factory settings when reset-to-defaults is performed via the Hardware Reset button. (cqvds00027139)

10.20. 3.3.1.0-GA-11-070

10.20.1. Features
- None

10.20.2. Defects Fixed
- To resolve a WAN connectivity issue when in "Gateway" mode, the SBG6580 now drops all IPv6 packets in the upstream and downstream directions. IPv6 and Dual eRouter provisioning modes are not supported in this firmware release. In addition, a Service Provider will not be able to provision the eRouter in IPv6 or Dual Modes via a TLV202 setting in the modem configuration file or a CLI command. Any attempt to do so will be ignored. When the modem is upgraded to this firmware release, the eRouter provisioning mode will automatically be switched to IPv4RG (factory default setting) if it was previously set to IPv6 or Dual Mode. (SBG-1332)
- The SBG6580 will no longer reset when an upstream modulation type is changed between ATDMA and TDMA. (SBG-1317)
- A patch has been incorporated that prevents a timing issue, which causes data to stop flowing through the Ethernet interface. (SBG-1243)
- A spelling error has been corrected in an internal HTML warning message generated when a user attempts to change the wireless band from 5 GHz to 2.4 GHz. (SBG-1299)

10.21. 3.3.1.0-GA-10-065

10.21.1. Features
- None

10.21.2. Defects Fixed
- An issue has been resolved, in which a factory reset when executed by the hardware reset button, could cause the Downstream Frequency Plan to change from "Japan" to "North America" in the "Status → Configuration" HTML page. (cqvds27086)
- A Reset to Defaults will now properly restore the correct country wireless domain setting from permanent non-volatile memory. In addition, a pop-up screen has been added to force an "Apply" when changes have been made to the "802.11 n-mode" and "802.11 Band" fields on the "Wireless → Basic" HTML page. (cqvds00026973)
- On units in which the Wireless Country Domain is set for "Worldwide", additional 5 GHz channels are now available. The 5 GHz channels now available are: 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, and 165. Those channels in blue were previously unavailable. (cqvds00027031)

10.22. 3.3.1.0-GA-09-058 (Released to United States Wireless Domain Customers Only)

10.22.1. Features
- The SBG6580 will now support the operational changes as noted in a specific MSO Engineering Change Notice (WAN-side Access Control). (cqvds00026758, cqvds00026392, ECN#0020.3, PI38159)

- TACACS+ Authentication support has been added for Telnet, SSH, and "technician/root" GUI logins via the WAN connection. (cqvds00026611, cqvds00025593, cqvds00024802, cqvds00026366, cqvds00026214, and ECN-002)

10.22.2. Defects Fixed

- Resolved an issue where the SBG6580 was unable to Port Forward to more than one session with multiple sessions configured. (cqvds00026663, PI38897)

- The HFC DHCP Discover message will now have option 43.2 with a value of "ECM" and the WAN MAN DHCP Discover message will have option 43.2 with a value of "EROUTER". Previously, both Discover messages had a value of "ECM" for 43.2, which could cause the WAN MAN port to not get an IP address on certain CMTS environments that parsed option 43 prior to forwarding the Discover message to the DHCP server. (cqvds00026772, cqvds00026816)

- An issue has been resolved, in which Ping Delay's could occur while the SBG6580 is in Motorola Partial Service mode. (cqvds00026583)

- Due to a change in the latest DOCSIS3.0 PHY Specification, the SBG6580 will transmit at DOCSIS 3.0 power levels after registration if MTC (Multiple Transmit Channel) is disabled; i.e.; the SBG6580 is registered on a DOCSIS 2.0 CMTS. (cqvds00026577)

- The "Status → Diagnostics" HTML page containing the "Ping" and "Traceroute" utilities is now available. (cqvds00026578)

- For units with a specific Customer ID setting , the SBG6580 WPS Setup AP functionality was added to the *admin* user's access rights (cqvds00026709, cqvds00026606, PI38791)

- A reporting issue has been resolved where refreshing of the SBG6580 internal HTML pages would cause the Downstream Correctables count to increment. (cqvds00026479)

- Upstream traffic no longer halts during extended TCP bidirectional tests. (cqvds00026476)

- For units with a specific Customer ID setting, the *sysDescr* OID has been modified for consistency across multiple hardware revisions. (cqvds00026423, cqvds00026484)

- The copyright information on the internal HTML screens now displays "2011 Motorola Mobility, LLC.". (cqvds00026414, cqvds00026483)

- The Taiwan country code has been added to the 802.11 wireless support lists. (cqvds00026481, cqvds00026274, and cqvds00026971)

- With L2VPN and DUT configured, downstream CDP packets were wrongly forwarded to IP Stack1 instead of the Ethernet interface causing CDP packets to be lost. (cqvds00025836)

- Corrected the implementation of the *docsDevSTPControl* MIB Object and its ability to filter traffic. Previously with *docsDevSTPControl* set to "2" (NOSTFILTERBPDU) the modem discarded all non-Ethernet II packets including CDP packets. This MIB setting now discards only STP packets (identified by DSAP = SSAP = 0x42). (cqvds00026211)

- The firmware has been modified to mitigate upstream issues that may occur with upstream modulation changes between TDMA and ATDMA. (cqvds00026320)

- An issue has been resolved where an SBG6580 in Upstream Channel Bonded mode may make large bandwidth requests when there is a small amount of data to transmit causing mini-slot utilization to be artificially high. (cqvds00026273)

- The time to complete a "Restore Wireless Defaults" from the SBG6580 internal HTML page has been improved. (cqvds00026196)

- The default security method for all of the Guest Networks has changed from "WPA2/PSK" to "Disabled". (cqvds00026212)

- The "NAPT" pull-down will no longer be available on the internal HTML page when the SBG6580 is operating in IPv6 mode. In addition, when NAPT is "Disabled" on a unit, the UPnP service will automatically be disabled. (cqvds00026242)

- Performance enhancements have been made to increase upstream throughput under certain throughput test conditions. (cqvds00026218)

- The SBG6580 internal HTML pages are now accessible from the SBG6580's HFC IPv6 address. (cqvds00025590)

10.23. 3.3.0.0-GA-06-022

10.23.1. Features

- None

10.23.2. Defects Fixed

- Packets from attached CPEs that are part of a RIPv2 subnet are now sent with the HFC MAC address as their source address and not the WAN MAC. Previously, in CPR mode the SBG6580 would fail "cable source-verify" on the Arris C4 CMTS. (cqvds00026124, PI37839)
- For units with a specific Customer ID setting, *ifIndex* "5" is assigned to the USB interface. The SBG6580 will no longer reject a modem configuration file in which the i*fAdminStatus* mib is set to "down" for index "5". (cqvds00026111, PI37811)

10.24. 3.3.0.0-GA-05-020

10.24.1. Reference Code Merge

- This newest firmware release includes all fixes and enhancements available in the Broadcom Reference Code merge BFC5.5.3mp1. (cqvds00023993)
  - ☞ Key features in BFC5.5.3 code are listed below.
    - eRouter
    - L2TPv3
    - Routing throughput enhancements
    - Wi-Fi Performance Improvements
    - Wi-Fi Miscellaneous
    - 8 SSIDs
    - Enable 20/40 co-existence
    - Enable AP isolation
    - QoS tie-up to US Service Flow

10.24.2. Features

- The value of the *cmdot11ChannelSetting* can be set to "auto" and the Control Channel can be set to "auto" via the internal HTML page when the unit is configured to operate in 2.4GHz wireless mode. This will also be the default setting when in 2.4GHz wireless mode. (cqvds00025313)
- When reset-to-default, UPnP and Firewall Port Scan are enabled; WAN Blocking and Block Fragmented IP Packets are disabled, for units with a specific Customer ID setting. (cqvds00025668, ECN-0012)
- By default, the Wi-Fi Guest Network security is disabled and the LAN GUI access is disabled for units with a specific Customer ID setting. (cqvds00025362)
- The CLI command "port_stat" in the "Console/ethernet" directory will now display the port status and statistics for each of the Ethernet LAN ports "1-4". (cqvds00025497)
- A "SIP ALG Enable" checkbox has been added to the "Advanced → Options" HTML page. This will allow a user to disable/enable the SIP ALG. A reboot is required for the change to take effect. (cqvds00025649, ECN-0012)
- AckCel® is disabled by default and a Reset-To-Defaults sets AckCel® to disabled for units with a specific Customer ID setting. In addition, AckCel® will be disabled when the SBG6580 is upgraded with this firmware release the first time for units with a specific Customer ID setting. (cqvds00025728)
- In order to prevent interoperability issues with the newest CableLabs MIB Object *docsIf3CmMdCfgIpProvMode* in the *<DOCS-IF3-MIB-110210.mib>*, support for the Motorola Private MIB *cmMotVendorMDDHonorIp* has been removed (Deprecated). (cqvds00025645)

- A mechanism to block the Primary Wireless Network by XML, modem configuration file, or SNMP has been implemented for units with a specific Customer ID setting. (cqvds00024734, cqvds00025311)

- IP Port Forwarding is now supported on all of the configured 192.168.x.x networks. (cqvds00024999)

- The Wireless LED is turned ON and the WPS button is enabled when both the Wireless Interface and the Primary Network are enabled. When either the Wireless Interface or the Primary Network is disabled, then the Wireless LED is turned OFF and the WPS button is disabled. (cqvds00025235, ECN-0006)

- Broadcast video, via Multicast, will now pass to CPE devices when the SBG6580 is running in Gateway mode. The requirement is to run an IP video service using the SBG6580 in conjunction with a Cisco 10k and the Multicast Attribute set to force traffic over a specific bonded group. This feature is also known as Multicast DSID Forwarding (MDF) or Cisco's Video over DOCSIS (VDOC). (cqvds00023527, PI35964)

10.24.3. Defects Fixed

- An issue has been resolved in which lost link was observed every 15 min with 10/100 based firewall products. Now when ARPing for Routed Subnet Addresses the source protocol address changes from 192.168.0.1 to the Routed Subnet Gateway address. (cqvds00025860, cqvds00025768, cqvds00025547, cqvds00025562, PI37691)

- After an SNMP set on the *cmGwPredefinedEnable* MIB, the values will be stored across a power cycle. (cqvds00025850)

- An exception crash will no longer occur when attempting to open the "Configuration File" from the "Basic → Connection" HTML page available when logged in as "root" or "technician". (cqvds00025801, cqvds00025442)

- The SBG6580 eRouter WAN interface no longer modifies the IA_NA IAID when sending a Request message after receiving an Advertise containing a Preference option with a value of 255. (cqvds00025766)

- The Key Values displayed by *cmdot11BssWep128bitKeyValue* are now correct for the Guest Networks. (cqvds00025648)

- Two simultaneous SIP calls using the same RTP port will now have a voice path for the second call. (cqvds00025639, PI36799)

- The SBG6580 will now respond to DHCPv6 Reconfigure messages. (cqvds00022883)

- The L2TPv3 implementation has been updated so that when an L2TPv3 tunnel is configured specifying an Ethernet interface, traffic from all Ethernet ports is forwarded through the tunnel. In addition, the "l2tp_tunnel_enable" CLI command has been added to configure the L2TPv3 tunnel. (cqvds00025688)

- The DHCPv6 Reply message sent by the SBG6580 now includes the Server ID information resolving Windows 7 IPv6 interoperability issues. (cqvds00025600)

- If the "SW Upgrade IPv6 TFTP Server" (TLV58) is configured to be all zeros (all 128-bit settings are zeros) in the modem configuration file, the SBG6580 will use the same TFTP server that was designated for the configuration file download (obtained from the DHCP Offer) for the firmware download process. (cqvds00025587)

- The SIP ALG can be disabled using the *cmGwAlgPredefinedEnable* OID found in the *cmGw* Motorola MIB branch. (cqvds00025488)

- The SBG6580 will no longer lock up when the restore feature is used. (cqvds00025473)

- Changing the *cmdot11BssSecurityMode* to "wpapsk" will no longer change the *cmDot11BssWpaAlgorithm* to "tkip" even though *cmdot11NMode* was set to "auto". (cqvds00025472)

- Wireless Guest Networks are now disabled when the SBG6580 is in RG Passthrough mode or with NAT Disabled. (cqvds00025471)

- The SBG6580 eRouter will now always advertise a 64 bit prefix to CPEs on the LAN interface, regardless of whether the Delegated Prefix it receives via DHCP is 64 bits, or less than 64 bits. (cqvds00025356)

- The SBG6580 DHCPv6 Client will now properly renew the Delegated Prefix lease. (cqvds00025355)

- The maximum number of characters for the Primary and Guest Network SSID is now 31 to resolve an issue where if the Wireless SSID is 32 characters long and a client is connected to the SBG6580 via wireless, the "Wireless →Access Control" HTML page does not show "Connected Clients" information. The "Help" text has also been changed to state a maximum number of characters to 31. (cqvds00025320)

- The SBG6580 internal Upstream and Downstream Throughput tests will now work using a Sun-OS ftp server. (cqvds00025287)

- The SBG6580 will now respond to pings from the WAN to the Routed Subnet Gateway Address. (cqvds00025000)

- MAC OS/hardware will no longer cause the SBG6580 to lose IP connectivity when it enters sleep mode. (cqvds00024866, PI34796)

- Multiple Xbox game consoles are now able to connect to Xbox LIVE with full capability when the SBG6580 in NAPT/DHCP mode. (cqvds00023573, PI36965)

- The Cable Modem FTP Downstream Speed Test using a very large file will now execute properly. (cqvds00025097)

- Wireless Guest Networks are no longer available when the SBG6580 is placed in RG Passthrough mode or with NAPT disabled. (cqvds00024522)

- The NAPT mode will now only change to "Disabled" when RIP is enabled and the "Enable DHCP" option is set to "Enabled" on the "Advanced → RIP" HTML page, and not when applying other features on the RIP page. (cqvds00025006)

- The "Parental Control → User Setup → Trusted Computers" now states that there is a maximum of 3 entries allowed. (cqvds00025112)

- Help text is now available on the "VPN" HTML page. (cqvds00025092)

- With NAPT enabled and RIP enabled and configured with a Static IP, the SBG6580 will no longer crash. (cqvds00025019)

- The "Show Key" option for "WPA Pre-Shared Key" is now available on the Guest Network HTML page. (cqvds00025141)

- An issue has been resolved that caused a user that had logged into the SBG6580 HTML page via the HFC IP address was unable to login again if they closed the browser or left the SBG6580 internal HTML page without logging off of the screen previously. (cqvds00025137)

- The unit will now do a full reset instead of just a re-init of the MAC layer on a T4 timeout if *cmConfigFullResetOnT4* is set to "true". (cqvds00025204)

- If the SBG6580 is switched to "DOCSIS" mode via SNMP and IP Flood Detection was previously enabled in "Gateway" mode, IP Flood Detection will now be disabled automatically. (cqvds00025096)

- The "Generate WEP Key" button on the internal SBG6580 Wireless pages will now properly generate a network keys for the Primary and/or Guest Wireless Networks. (cqvds00025142)

- The Parental Control HTML pages no longer appear when the SBG6580 is in "DOCSIS" mode, or "RG-Passthrough" mode. (cqvds00025163)

- The "Basic → DHCP → Reserve new IP address" box will only accept a maximum of 16 reserved DHCP leases. (cqvds00025093)

- The SBG6580 internal Upstream and Downstream Throughput tests now will show the correct Transfer Status after canceling the Speed Test. (cqvds00024852)

- The unit will no longer allow a user to configure WEP or TKIP using SNMP when the SBG6580 wireless is in 802.11n mode. (cqvds00024786)

- An attached CPE will no longer be able to renew its DHCP address if "Basic → DHCP → DHCP Server" is set to "No" or if the MIB *cmDhcpServerEnable* is set to "2" (false). (cqvds00025049)

- RIPv2 Advertisements will now be properly transmitted by the SBG6580 when the units WanMan IP address is statically assigned. (cqvds00025024, cqvds00025139, cqvds00024910)

- An issue has been resolved in which the SBG6580 lost sync resulting in lost MDD messages causing the unit to be unable to recover. Changes have been made to the firmware to ensure added RF robustness when encountering certain RF anomalies that caused the lost MDD messages. In addition, a mechanism has been put in place to have the SBG6580 reset instead of re-initializing mac if the modem encounters a re-init MAC condition because of "T1 NO UCD timeout" before the modem comes back online. (cqvds00024970, cqvds00025806, PI35891)

- Fixed a NAT SIP header address translation problem which caused a SIP ATA call leg to drop after 30 seconds due to a "keepalive" message being blocked on an outgoing call. (cqvds00025131)

- Due to reported connection, browser and speed related CPE performance issues; the default setting for "IP Flood Detection" is changed to 'Disabled'. A Reset to Defaults will also disable IP Flood Detection. Once the unit is upgraded to this firmware version, IP Flood Detection will get disabled once the unit boots up for the first time. (cqvds00025095, PI36388, PI36619)

- The Wi-Fi LED will no longer turn off when the Motorola MIB *cmdot11ApplySettings* is set to "1" when the SBG6580 is in DOCSIS mode. (cqvds00025140)

- The Wi-Fi LED will no longer remain off after enabling the wireless from a previously disabled state. (cqvds00025154)

- The SBG6580 will now accept a RIP Network of "xxx.xxx.255.xxx" via the internal HTML page. The first three partial Subnet Gateway IP Addresses can accept the value 0~255, and the fourth can accept the value 0~254. (cqvds00024763)

- The WPS button is now disabled when Wi-Fi is disabled. (cqvds00024842)

- The "Basic → DHCP" HTML page correctly displays the correct Public Subnet IP addresses. (cqvds00024850)

- The precedence order when a domain is present in the "Blocked" and "Allowed" lists in the "Parental Control Policy" is checked to generate an error message. (cqvds00018623)

- Correct error messages will now be displayed on the GUI for incorrect parameters entered by the end user. (cqvds00024849)

- The XML Configurator Module has been modified to extend the number of Guest Networks supported from 3 to 7. (cqvds00024839)

10.25. SBG6580-3.2.1.0-GA-06-007 (Released to Targeted Customers Only)

10.25.1. Features and Enhancements

- This firmware release does not contain the Dual-Forwarder and Multicast DSID Forwarding (MDF) enhancements introduced in the SBG650-3.2.1.0-GA-05-6 firmware release. The following Customer issue is not present in this build:

  ☞ PI35964: The Motorola SBG6580 is advertising the wrong IP address with firmware release SBG6580-3.2.1.0-GA-05-6.

10.25.2. Defects Fixed

- None

10.26. SBG6580-3.2.1.0-GA-05-6

10.26.1. Features and Enhancements

- Implemented an FTP client based application for upstream throughput measurement testing. This localized FTP test mechanism is configured and executed through the cmTestFtpUpstreamSpeed MIB. (cqvds00021761)

  ☞ *cmTestFtpUpstreamSpeed* (Sample Configuration)
    - Set cmTestFtpUpstreamServerAddressType to 1   *<ipv4>*

- Set cmTestFtpUpstreamServerAddress to 10.17.0.50   *<Server IP Address>*
- Set cmTestFtpUpstreamServerPort to 21   *<Server Port>*
- Set cmTestFtpUpstreamUserName to admin   *<FTP Username>*
- Set cmTestFtpUpstreamPassword to motorola   *<FTP Password>*
- Set cmTestFtpUpstreamFilename to tftpboot/file70m   *<Filename of File to Transfer>*
- Set cmTestFtpUpstreamFileSize   *<Size of file to be created in MB>*
- Set cmTestFtpUpstreamCommand to 1   *<Start the FTP Transfer (put)>*
  - cmTestFtpUpstreamTransferStatus   <Status of the file transfer>
  - cmTestFtpUpstreamTransferPayloadBytes   <Payload data bytes transferred>
  - cmTestFtpUpstreamTransferTotalBytes   <Total data and control Bytes>
  - cmTestFtpUpstreamTransferElapsedTime   <Transfer elapsed time>
  - cmTestFtpUpstreamTransferThroughput   <Calculated throughput>

- The SBG6580 will implement a proprietary algorithm that detects when the Standard RCP is issued and the channel spacing exceeds the allowable range of the capture bandwidth per the Standard RCP. Since the SBG6580 is actually capable of handling this scenario, the CM will simply "override" the issuance of the Standard RCP and configure the device based on the Manufacturer RCP. (cqvds00023460)

  - ☞ Channels in the bonding group MUST be grouped within two subsets of channels, and the channels within a subset MUST be within 32MHz (edge-to-edge) of one another. Meaning, each receive module is only capable of a maximum capture bandwidth of 32MHz, but each receive module can be spaced. Spacing between Receive Modules must be in increments of 6MHz (DOCSIS) and 8MHz (EuroDOCSIS).

    - Examples of valid channel spacing are:

      411, 435, 645 and 669 MHz (The first two channels are on one RM and the last two are on another RM)

      453, 465, 471 and 603 MHz (The first three channels are on one RM and the last one is on another RM)

    - An example of invalid channel spacing is:

      411, 441, 549, and 561 MHz (The first and second channels are greater than 32 MHz edge-to-edge and the second and third channels are greater than 32 MHz edge-to-edge as well)

- If the Remote Config Management checkbox is enabled in the Advanced Tab, the SBG6580 now provides a warning message. (cqvds00023086)

- The SBG6580 now has additional/updated drop-down options to change the username and password. Actions to change the username and/or password are no longer grouped into one section. (cqvds00023780)

- The SBG6580 Parental Control → Basic → Override Duration data entry box now indicates the duration in minutes. (cqvds00022409)

- For specifically configured customer units, the SBG6580 will now reboot instead of re-init the MAC while the modem continuously has T1 timeouts. (cqvds00024882)

10.26.2. Defects Fixed

- Resolved an issue where upstreams other than the first are reported as TDMA instead of ATDMA in upstream bonded mode. (cqvds00023992)

- Resolved an issue preventing the SBG6580 from accepting various RIP Network or Sub-Network IP address schemes via the CLI Configuration Toolkit. (cqvds00024763)

- The WPS button is now disabled when Wi-Fi is disabled. (cqvds00024842)

- If you reset the modem while SmartBits is still sending both downstream and upstream traffic, SBG6580 will come up online and U/S traffic is passing through, but downstream traffic will completely stop. The downstream will not recover without a reboot. (cqvds00023645)

- The *Basic* → *DHCP* page does not clear/update the entry for DHCP clients when the client's IP is changed. Information about static (manually configured IP addresses) was removed from the DHCP Clients section of the GUI in order to avoid confusion. (cqvds00021371)

- Telnet/SSH connection(s) via the HFC IP address are disabled by default, unless preconfigured in the factory for specific customers. (cqvds00023768)

- The SBG6580 will not perform bonding recovery until the traffic on the LAN/WLAN interfaces is less than the specified value of *cmConfigBondingRecoveryTrafficPacketCountThreshold* in the interval specified on *cmConfigBondingRecoveryTrafficIdlePeriod*. (cqvds00023524)

- Updated and enhanced the SBG6580 Parental Controls for URL Filtering, Blocked Keywords, Blocked Domains, and White List Only Access. (cqvds00023103)

- Fixed an issue where the SBG6580 could lose connectivity if a passthrough CPE had an active SIP client running. (cqvds00022383)

- Fixed an issue where the SBG6580 does not recover properly when a downstream frequency is muted on an EQAM and then is restored. (cqvds23764)

- The SBG6580 should not allow setting of wireless security settings via SNMP for WEP or WPA/WPA2 TKIP when in 802.11 N mode. (cqvds00023512)

- A reset to factory defaults is no longer needed to enable Telnet/SSH or the *Technician* account. (cqvds00024248)

  ☞ If Telnet/SSH have not been enabled, Telnet/SSH will be enabled when the new firmware is loaded to the SBG6580 without need to implement reset-to-default. The admin GUI username/password and Telnet/SSH username/password will be defaulted to the customer specific default username/password.

- The default settings were modified for the Wi-Fi primary network; Encryption is set to AES and Authentication set to WPA2-PSK when 802.11n mode is set via CLI. (cqvds00024223)

- Resolved an issue preventing the request for an XML Configuration File download after loss of RF and subsequent recovery. (cqvds00024227)

- Fixed an issue where the SBG6580 did not reboot after a Downstream Modulation (256QAM → 64QAM or 64QAM → 256QAM) change on the Arris C4 CMTS. (cqvds00024433)

- Broadcasted video, via Multicast, will not pass to CPE devices when the SBG6580 is running in Gateway mode. This setup is to run an IP video service using the SBG6580 with the Cisco 10k and the Multicast Attribute to force traffic over a specific bonded group. This feature is also known as Multicast DSID Forwarding (MDF) or Cisco's Video over DOCSIS (VDOC). (cqvds00023527, PI35964)

  Note: This implementation has been removed from the SBG6580-3.3.0.0-GA-05-020 firmware release.

- SSH access through the LAN IP Address 192.168.0.1 is now allowed. (cqvds00023588)

- An issue was corrected that allowed a Windows Vista PC to create a wireless connection without initiating pairing mode from SBG6580. (cqvds00023772)

- The following GUI settings are not overwritten by the XML Configurator, once the end user has made a change to any parameter for Primary Network SSID 0: (cqvds00024594, Customer Bug #PI35417)

  ☞ Control Channel

  ☞ Primary Enable/Disable

  ☞ Primary SSID Name

  ☞ Primary Close Network

  ☞ Any Primary Security Value, i.e. WEP, WPA, WPA-PSK

    - *Note:* There is an exception with Primary Enable/Disable. This setting can be *Disabled* by the MSO, in which case the user cannot re-enable it again until MSO enables it.

10.27. SBG6580-3.2.1.0-GA-03-249

10.27.1. Features

- None

10.27.2. Defects Fixed

- After performing a firmware update on the SBG6580 to enable the change of the "root" user level login to "*technician*" for a specific Customer ID, a reset-to-defaults is no longer required to initialize these changes. (cqvds00024248)

  ☞ The above fix also enables Telnet/SSH functionality by default without requiring a reset-to-defaults.

- Fixed an issue where users were unable to connect to AOL sponsored Chat rooms when ports 6666-6669 were used for the chat communications. (cqvds00023575)

- An issue was resolved where the SBG6580 did not attempt to download the XML Configuration File after a loss of RF and subsequent recovery of the RF. (cqvds00024227)

10.28. SBG6580-3.2.1.0-GA-02-249

10.28.1. Features

- Partial Service Workaround for Motorola SBG6580 modems as documented in SURFboard® Technical Bulletin STB# 09-003 has now been implemented. (cqvds00022796)

- The *sysDescr* MIB will now be prefixed with additional MSO specific information when the unit is configured with a unique Customer ID. (cqvds00023483)

- Support for three Routed Subnets has been added to the RIP configuration feature. In addition, support for RIP/Routed Subnets in Pass-through mode (NAPT disabled) has also been added. (cqvds00023338, cqvds00023273)

- A "Help" link is now available on the "Status->Configuration" HTML page. (cqvds00021960)

- A GUI Web Page Hiding feature providing a method to hide designated pages, show only a predefined Splash Page or to let the GUI behave as usual has been implemented. Each GUI page has been assigned a unique page ID and two new MIB objects *cmConfigGuiAdminList* and *cmConfigGuiRootList* have been added in order to control this feature. The *cmConfigGuiAdminList* and *cmConfigGuiRootList* MIB objects control the exposure of GUI pages for the "admin" and "root" user logins respectively. These MIB objects can be configured to display all pages, hide all pages, or hide a list of pages. (cqvds00022482)

- The *cmdot11WpsEnable* MIB object has been implemented in order to enable/disable WPS via SNMP or a configuration file TLV11 statement. (cqvds00022733, cqvds00023475)

- Implementation of MSO specific private MIBs have been added for a unique Customer ID setting. (cqvds00022802)

- The following MIB objects have been implemented to control Telnet & SSH access via the HFC & CPE interfaces. A reset-to-defaults is required to initialize the default Telnet/SSH settings based upon a Customer ID setting. (cqvds00022800, cqvds00023447)

  ☞ *cmConfigHfcInterfaceEnable*

  ☞ *cmConfigCpeInterfaceEnable*

- CLI commands have been added for configuring miscellaneous Gateway, Wireless, Ethernet port control, and RIP/Routed Subnet functions. (cqvds00022865, cqvds00022801, cqvds00023201, cqvds00023181, cqvds00023453, cqvds00023454, cqvds00023431, cqvds00023541)

- A new Motorola Private MIB object has been developed to enable/disable Broadcom's TCP ACK suppression algorithm. This object enables/disables the AckCel® feature that implements TCP ACK suppression as described in RFC3449. (cqvds00022867)

  ☞ Added the MIB Object *cmAckCelEnable*

    • DESCRIPTION

      Setting this object to true(1) enables TCP ACK suppression which will reduce the number of TCP ACKs sent on the upstream link. *(Default)*

Setting this object to false(2) disables TCP ACK suppression.

- The SBG6580 will only allow LAN side HTML access for the "admin" user for a specific Customer ID setting. (cqvds00022850)
- The "root" user level login has been changed to "*technician*" for a specific Customer ID setting. A reset-to-defaults is required to initialize this change. (cqvds00022851)
- The MAC Filter list on the "Advanced->MAC Filtering" HTML page has been moved under the 'root' login for a specific Customer ID setting. (cqvds00022937)

10.28.2. Defects Fixed

- When the LAN IP address is changed, the DHCP starting and ending addresses are changed accordingly. (cqvds00023494)
- The code has been modified so that public DHCP and NAPT cannot be enabled at the same time. (cqvds00023584)
- An issue where poor downstream throughput was reported when tested using IXIA's IxLoad FTP or HTTP Layer 7 traffic generator has been resolved. (cqvds00022247)
- A Channel ID of "0" will be displayed in the "Downstream Bonded Channels" and "Upstream Bonded Channels" tables for "Not Locked" channels on the "Status->Connection" GUI page. (cqvds00023491)
- The SBG6580 will no longer get stuck in init(o) when parsing a config file which contains a TLV11 statement setting the *cmStandbyCapable* OID. (cqvds00023397)
- An issue was resolved where the SBG6580 modem may crash when configured for a specific Customer ID and toggling between NAPT disabled/enabled on "Basic->Setup" GUI page took place. (cqvds00023498)
- A message "Warning - root user is already connected." will display if a user attempts to log in via the HFC while another user is currently logged in. (cqvds00021962)
- Enhancements were made to the Motorola Partial Service feature to address interoperability issues with the Motorola BSR 64000 code release v5.2. (cqvds00023497, cqvds00023467)
  - ☞ The SBG6580 will now reinitialize the MAC instead of a full reboot when the modem loses secondary channels in DOCSIS 3.0 mode. In this mode, the CM will not lose its previous bonding information and will not rely on the bonding information updates sent from CMTS to recover from DOCSIS 2.0 to DOCSIS 3.0 mode.
  - ☞ There is a counter used by the Motorola Partial Service feature that is increased while the CM checks MDD Alive Status every 6 seconds. The CM would re-init MAC if the counter reached "4" (lost signal for 24 seconds). This counter was reset to "0" when BSR64K Rel5.3.0.P17 is used but not reset to "0" when BSR64K Rel5.3.0.P10 is used. Modifications to the CM firmware were made to allow for a more robust interaction and make sure the counter only gets reset if the lost downstream is available.
- SBG6580 binary file backed up by an end-user will no longer display the Wireless SSID's and passwords in clear text when viewed by certain editors. (cqvds00022910)
- Primary SSID settings changed by an end user will no longer be overwritten by a downloaded XML file. (cqvds00022825)
- The "SES" option has been removed from the "Automatic Security Configuration" pull-down on the "Wireless -> Primary Network" HTML page. (cqvds00022872)
- A "pop up" box has been added, warning a user that a reboot of the SBG6580 is required for any RIP configuration changes to take effect. (cqvds00021650)
- For an SBG6580 configured to download an XML configuration file, an XML request will only occur upon a reboot, and not during every IP binding. (cqvds00021664)
- A Wi-Fi LED issue has been resolved where the LED would remain "off" if the SBG6580 Wi-Fi capability was set from "disabled" to "enabled" via a TLV11 statement in the modem's configuration file. (cqvds00022379)

- The IPSec VPN end-point configuration option has been removed from the "VPN" tab on the SBG6580 GUI. (cqvds00022680)

- The "VPN" HTML tab for configuration of L2TP and PPTP VPN end-point support is now only available when logged in at the "root" level. (cqvds00022681)

- Static DNS entries may now be configured via TLV11 statements in modem configuration file. (cqvds00022704)

- WEP encryption is no longer allowed on the Guest Networks when the SBG6580 is operating in 802.11n mode. (cqvds00022728)

- A patch has been added which sets any IP Filters designated in the cable modem configuration file correctly based upon the UDC capability of a CMTS. (cqvds00022746)

- North America frequencies have been eliminated from the scanning plan if *cmFreqPlanType* is set to "Japan". (cqvds00022578)

- On the "Firewall->Local Log" page, the user will now have to enter a "alphanumeric@alphanumeric.alphanumeric" formatted address to be accepted as the email string for 'Contact Email Address'. (cqvds00018710)

- An issue has been resolved allowing the modem to now support up to 300 varbinds from an SNMP Get-Bulk request. (cqvds00017984)

10.29. SBG6580-3.2.0.0-GA-02-201

10.29.1. Features
- None

10.29.2. Defects Fixed
- Modified the code to make sure that permanent non-volatile values are initialized first before they are used by dynamic non-vol. (cqvds00022938)

10.30. SBG6580-3.2.0.0-GA-01-201

10.30.1. Features
- Support for special characters (*&#$@-) in the RIP Authentication Key based upon the SBG6580 Customer ID setting has now been added. (cqvds00022265)

- Syslog messages have been implemented for the most relevant modules that constitute the XML Configurator feature. (cqvds00020867)

10.30.2. Defects Fixed
- When logged into the SBG6580 HTML pages as the "admin" user, changes to the "Wireless->Basic" page will now take effect after the "Apply" box is clicked. (cqvds00022266)

- *cmPasswordOfDaySeed* is no longer allowed to be set via SNMP. The "Password of the Day" feature is only allowed to be enabled/set from the SBG6580 configuration file. (cqvds00022347)

- An issue has been resolved wherein configuration control of the Wireless settings was lost if the SBG6580 was configured in passthrough/DOCSIS mode. (cqvds00022380)

- The SBG6580 will now support TKIP+AES with 802.11n wireless enabled. (cqvds00022090)

- The *cmFreqCustomList* settings will now return to their default factory values after a "reset-to-default" has occurred. (cqvds00020590)

- Execution of an Upstream DCC with init tech 1 through 4 will no longer fail in the presence of upstream traffic. (cqvds00022120)

- The XML Configurator has been modified to accept only specified protocols in URL. If the protocol is not acceptable, an error code corresponding to unsupported protocol is sent through syslog and a retry will take place. (cqvds00022408)

10.31. SBG6580-3.1.0.0-GA-08-184 (Released to Targeted Customers Only)

10.31.1. Features

- The ability to remove the "Restore Wireless Defaults" button from the Wireless->Basic page based upon the SBG6580 Customer ID setting has now been added. (cqvds00021373)

10.31.2. Defects Fixed

- None

10.32. SBG6580-3.1.0.0-GA-07-180

10.32.1. Features

- Xpress™ Technology, which improves the efficiency of data traveling over a wireless network to increase overall throughput, is now enabled by default. (cqvds00021254)

10.32.2. Defects Fixed

- An issue was resolved where the *cmdot11plus* MIB objects did not show the updated values after an XML configuration file download. (cqvds00021441)

- The SBG6580 internal DHCP Server functionality has been modified to ensure wireless clients receive an IP Address from the correct address pool. (cqvds00021448)

- Text is now highlighted for deletion/over-writing when moving between "IP Address Fields" using the "." key. Previously, existing text was not cleared and could lead to inaccurate field entries. (cqvds00021651)

- The SBG6580 now has the ability to disable UDC processing based upon a specific Co-signed CVC in the configuration file downloaded during the modem registration process. (cqvds00021680)

- The SBG6580 Favorite Frequencies *(cmConfigFreq1, cmConfigFreq2 and cmConfigFreq3)* can now be set to values up to 999Mhz. (cqvds00021748)

- The GUI no longer locks up after selecting 'Restore Wireless Defaults' on the 'Wireless Basic' page (cqvds00021870)

10.33. SBG6580-3.1.0.0-GA-05-165

10.33.1. Features

- Introduced a new MAC addressing schema were in the MAC address for the Gateway WAN Management interface is one number higher that the MAC address for the HFC interface. (cqvds00021153)

- Added support for the *cmCfgMulticastPromiscuous* MIB Object. (cqvds00017214)

- Added the MIB Object *cmConfigGwMsoManagementType*, allowing the MSO to define configuration parameters that are controlled via configuration file vs. the end-user. (cqvds00019999)

- All the SBG6580 Ethernet ports will be controlled via one "index value" if the *cmConfigGwMsoManagementType* MIB Object is enabled for support of specific MSO configurations. When enabled, the *ifAdminStatus.1* modifies the status of all Ethernet interfaces. (cqvds00020895)

- In support of specific MSO requirements, the Primary Wi-Fi Network will be listed as ifIndex=12 instead of its default value and will only impact these specific units. The default for all other units ifIndex=32. (cqvds00020727)

- Enhanced the MIB Object *cmdot11Plus* to include support for 802.11n Wi-Fi control. (cqvds00020744, cqvds00018618)

- In support of specific MSO requirements, the Guest Networks page and references to Guest Networks in the GUI can be hidden. (cqvds00020896)

- In the current SBG6580 implementation, Wireless->Basic->Wireless [Enabled/Disabled] setting will enable or disable the entire access point, including all four SSIDs. In support of specific MSO requirements, end-users will not be able to turn *OFF* the Guest (or MSO Managed) SSIDs on MSO Managed units. (cqvds00020916)

- Access to GUI via HFC interface is disabled by default for MSO managed units. (cqvds00020953)

- Enhancements were made to the Wireless-Access Control page to only display clients associated with the selected SSID. For MSO specific units, only allow Primary SSID related information to be displayed. For a MSO managed unit, the SBG6580 will only display clients associated with the Primary SSID on the Wireless Access Control page on the GUI. (cqvds00020990, cqvds00021331)

- The SBG6580 now supports setting up to "64" Favorite Frequencies. Enhancements have been made to add *three new banks of 16* addresses each. The favorite frequencies can be configured using the following MIBs. Values can be added as a factory configuration option. (cqvds00013530)
  - ☞ *cmFreqCustomList*
  - ☞ *cmFreqCustomListBank2*
  - ☞ *cmFreqCustomListBank3*
  - ☞ *cmFreqCustomListBank4*

- The Wireless Basic Page will not display Wireless Interfaces associated with Guest SSIDs when the unit is managed by the MSO. (cqvds00021120)

10.33.2. Defects Fixed

- When the SBG6580 is setup for specific MSO configurations, modifying any settings on the Basic Page disables wireless interface. (cqvds00021305)

- For some specific MSO configurations, the default wireless settings were modified to match the Product Requirements Documentation (PRD). (cqvds00021347)
  - ☞ Closed Network – *disabled*
  - ☞ WPS – *enabled*

- Fixed an issue where the SBG6580 GUI Connection Page failed to show all eight downstream channels. The Downstream Channel Table will now show all eight rows, whether the channels are locked or not. (cqvds00020847)

- The SBG6580 incorrectly displayed the upstream modulation type in GUI Connection page. The Upstream Table will no longer display the modulation type, but will display the correct channel type. (cqvds00021258)

- The SBG6580 Favorite Frequencies *(cmConfigFreq1, cmConfigFreq2 and cmConfigFreq3)* need to be able to be set to values over 860Mhz. (cqvds00031204)

- The SBG6580 will parse a TLV21 = 0.0.0.0 in the modem configuration file, allowing secure code download from provisioning server, even when TFTP server (TLV21) is set to"0.0.0.0" in CM config file. (cqvds00020626)

- Fixed an issue where the Power LED did not come on at the appropriate time. (cqvds00019787)

- Fixed an issue where the *Xpress Technology* available within the Gateway, operating 802.11n mode, cannot be enabled. (cqvds00020831)

- Resolved and issue where the SBG6580 GUI Connection Page did not correctly display the downstream lock status. Previously, the downstream lock would be shown on the root login and not on the admin login. (cqvds00020832)

10.34. SBG6580-3.1.0.0-GA-02-125

10.34.1. Features
- None

10.34.2. Defects Fixed

- Resolved an issue where the SBG6580 can not come up in bonding mode when registered on the Cisco 10k CMTS (with Cisco IOS - BC7). (cqvds00020626)

10.35. SBG6580-3.1.0.0-GA-01-125

10.35.1. Features
- XML processing modified to allow SSID tags without Security settings. (cqvds00020412)

10.35.2. Defects Fixed

- The 'Wireless->Advanced' internal HTML page is modified to gray out/disable the following settings when the SBG6580 Wireless is in 802.11n mode: (cqvds00020441)
  - ☞ Basic rate set
  - ☞ 54g protection
  - ☞ b/g rate

  Similarly when the device in not in 802.11n mode, the following setting is disabled:
  - ☞ 802.11n Protection

- Changed defaults for Guest Networks to have the DHCP Server enabled and use WPA2-PSK with AES encryption. (cqvds00020431)

- Modified the firmware in order to disable 802.11n mode when TKIP, AES+TKIP or WEP is enabled by the XML Configurator. (cqvds00020393)

- Resolved an issue with the Time-of-Day Filter on the 'Parental Control' page. (cqvds00018627)

- Outbound traffic on TCP/UDP ports 137 to 139 and TCP port 445 have been blocked by adding Port Filters for a specific customer id. (cqvds00020355)

- The 'Help' page for the RIPv2 setup in the 'Advanced' tab has been updated. (cqvds00018714)

- Customized support for IPv6/IPv4 stack on the SBG6580. (cqvds00020237)
  - ☞ Added the MIB Object *cmMotVendorMDDHonorIp cmConfigGwMsoManagementType MIB*
    - • DESCRIPTION
      0 – indicates that the device MUST honor the IP Mode MDD TLV transmitted by the CMTS on the access network.
      1 – indicates that the device MUST only attempt initialization IPv4 mode.
      2 – indicates that the device MUST only attempt initialization in IPv6 mode.
      3 – indicates that the device MUST attempt initialization using APM.
      4 – indicates that the device MUST attempt initialization using DPM.
      The default value for the MddIpModeOverride TLV is not specified. This value is stored in NVRAM

- Change Primary Network defaults to WPA2-PSK authentication with AES encryption. (cqvds00019707)
  - ☞ Disallow WEP from the internal 'Wireless' HTML page when configured for 802.11n mode.
  - ☞ Switch to 802.11 a/b/g mode when TKIP is selected.

- Allow the ability to enable/disable Wireless Networks via tags not containing security configuration tags in the XML configuration file. (cqvds00020412)

10.36. SBG6580-3.0.0.0-GA-00-113

10.36.1. Features

- XML Configurator support for a specific MSO environment. (cqvds00019402)

- Static Lease Reservation for LAN Clients has been added. This feature allows fixed IP addresses to be assigned on the local LAN. A pair of MAC addresses can be reserved and/or deleted through the SBG6580 GUI (Basic->DHCP web page). (cqvds00018756)

10.36.2. Defects Fixed

- The Parental Control Policy Name has been increased from 17 characters to 32 characters.. (cqvds00018626)

- An issue has been resolved where the SBG6580 could not register with a DOCSIS 1.0 Configuration file. (cqvds00019334)

- The SBG6580 will now scan the upper frequencies from 858MHz to 999 MHz when configured for the "*North American Standard/HRC/IRC*" Channel Plan. (cqvds00019786)

- Changes were made to the Motorola Private MIBs and Internal HTML pages to ensure DFS related wireless channels are no longer shown. (cqvds00019553)

- Upstream offset tables updated. (cqvds00020044)
- Support for a specific MSO's SSID and WPA-PSK factory default settings has now been added. (cqvds00019751)
- Reset Button functionality has been restored on the SBG6580E. (cqvds00019785)

10.37. SBG6580-3.0.0.0-BETA-02-95

10.37.1. Features

- None

10.37.2. Defects Fixed

- Resolved an issue where a user was unable to change 802.11n wireless mode to "off" from the 'Wireless Basic' HTML page. (cqvds00019726)
- On the SBG6580 'Status/Security' GUI page the text has been changed to be compatible with the current Motorola DOCSIS 2.0 Gateway devices. (cqvds00019236)