VANGUARD 5530™

BROADBAND 4G LTE CELLULAR ROUTER

VANGUARD 3000™

MULTICARRIER 3G CELLULAR BROADBAND ROUTER

VANGUARD 600™

BROADBAND 4G LTE CELLULAR ROUTER

VANGUARD 400™

3G INDUSTRIAL CELLULAR ROUTER FOR SERIAL APPLICATIONS

Cal/Amp®

CUMULATIVE SOFTWARE RELEASE NOTES
Covers to firmware revision 1.0.6.276
Revised November 28, 2019

IMPORTANT NOTICE

Because of the nature of wireless communication, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors), or be totally lost. Significant delays or losses of data are rare when wireless devices such as the Vanguard are used in a normal manner. Vanguard should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. CalAmp accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using Vanguard 3000 / Vanguard 5530, or for the failure of Vanguard to transmit or receive such data.

LEGAL NOTICES

RF EXPOSURE COMPLIANCE REQUIREMENTS
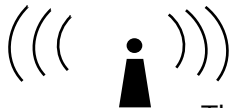

RF Exposure The Vanguard modems are designed and intended for use in fixed and mobile applications. "Fixed" assumes the device is physically secured at one location and not easily moved to another location. Maintain a distance of at least 20 cm (8 inches) between the transmitter's antenna and any person while in use. This modem is designed for use in applications that observe the 20 cm separation distance.

Please read and understand the important regulatory and safety information contained in the Vanguard User Manual (PNs 134732-VG3000, 134732-VG5530) before commissioning.

1 Scope

This document contains the Release Notes associated with the Vanguard firmware.

A description of fixes and enhancements from the previous releases is presented. A description of Known Issues that may affect the latest released version is also presented, along with workarounds, when applicable.

2 Important Notes

Vanguard Security

To protect against known attacks, Vanguard firmware components derived from open-source are frequently updated. "VPNFilter" is the name given to a multi-stage malware that has attacked a number of embedded firmware routers. Vanguard's Busybox component has been updated to receive the latest protections.

Note that CalAmp products were never on the list of devices affected by the VPNFilter attack. The first stage of VPNFilter often gained access to a router due to weak passwords.

Reminder: CalAmp strongly recommends that the default password be changed before the Vanguard is deployed on a public cellular network.

Firmware Package naming

To better identify release packages, both the release number (Rnn) and package format (F/D) are added to the package name. eg. CAVNG-R25-F-v1.0.6.227.tar.gz. Format F = "Full" and contains all files to update the Vanguard; D = "Delta" and contains only those files needed to update from the most recent Full release.

Firmware Update file size

Firmware 1.0.6.110 begins the implementation a new method for installing firmware updates which will allow future upgrade files to contain only the changed components, making them much smaller than previous upgrade packages. Recent firmware will restructure the internal flash memory if necessary for these smaller future upgrades. This restructuring takes time – the Vanguard will take much longer to boot (all LEDs red/amber/green) the first time after the upgrade is loaded. It may take up to 5 minutes before the Vanguard reconnects with the cellular network.

Firmware Update / Configuration Import version restrictions (relaxed)

Beginning with firmware 1.0.6.110, the "no more than 3 versions prior" restriction for Firmware Updates and Configuration Imports has been relaxed to 5 versions prior. Each release in this Release Notes document now shows the corresponding Firmware Release and Configuration Release numbers. Firmware Release can be seen on the *Unit Status > Status* page. Configuration version can be seen on *Admin > Firmware Update > Firmware Status*.

Serial Port

1.0.6.33 and later firmware will detect the Vanguard's hardware revision and will properly enable/disable the 5, 6 & 7-bit, and the 2 stop-bit radio buttons on the COM 1 serial web page.

All hardware revisions support 7-bit serial applications via the 5-pin COM 2 port. See 1.0.6.33 New Features.

Cellular APN

The APN used to connect to the cellular network is ultimately stored in the Vanguard's internal cell module and can be changed in three ways:
1. By an over-the-air "APN push" by the cellular carrier. When the cell module receives a new APN over the air from the carrier that APN will be copied into the Vanguard's configuration;
2. By setting the APN field on the Cell Connection > Carrier web page and clicking Save & Apply. When a new value is entered into the webpage, the value is saved to both the Vanguard's configuration file and into the cell module;
3. Starting in 1.0.6.33, when a new configuration file is Imported from GUI or DeviceOutlook into the Vanguard, the APN from the config file, if non-blank, is also written into the cell module.

Use caution when updating the config over-the-air. Note that a config with a blank APN field will not update the cell module; instead, the value in the cell module will be written to the Vanguard's config so that it will appear on the web pages.

Firmware Update / Configuration Import version restrictions

(Note: See above for changes starting with firmware 1.0.6.110.)

Starting with 1.0.5.78, *Admin > Firmware Update > …/Configuration/… Import*, and configuration files uploaded & scheduled via DeviceOutlook, will only be processed if the files were Exported from a Vanguard running the current or previous 3 configuration releases. (For example, 1.0.5.78 will only accept a configuration created by another Vanguard running 1.0.5.44 or later.) "Partial" configs created by DeviceOutlook Create Router Config are not recommended.

Starting with 1.0.5.78, *Admin > Firmware Update > Firmware/… Import*, and upgrades scheduled via DeviceOutlook, will only upgrade to a new firmware package that is 3 releases or less from the current release, to avoid issues that can arise when upgrading from very old firmware. In the future, if upgrading from very old firmware, CalAmp recommends first upgrading to 1.0.5.78 then to the latest version.

GPS report rate

Starting with 1.0.5.3, GPS reporting has undergone changes in its internal architecture, producing changes in how local GPS reports are delivered. Where previously, GPS reports to local IP addresses were always sent at one report each second, now both local and remote reports follow the AAVL time and distance filters (*Report every …*). To assure that local reports are transmitted each second, edit the GPS Configuration settings to *Report every* 1 *second*, *Report every* 0 *meters*, and *But no less than* 1 *second between reports*.

(Removed extremely old Notes: **ODP / Java** starting in 1.0.5.3, **Firmware Updates over slow WAN** for prior to v1.0.4.21.)

3   Changes in v1.0.6.276 (from v1.0.6.227)

Package checksum: a6dba17d1777bbe814ffa9fe392950a9
Firmware Release: 26
Configuration Release: 19

Note: 1.0.6.276 (R26) is a provided as a smaller Delta package. It can only be installed on a Vanguard running 1.0.6.227 (R25).

3.1   FEATURES

VNG-1483	To aid in technical support, *Diagnostics > Tools > Debug Log* produces an archive containing the system log, configuration and other internal settings.
VNG-1375	The *Admin > Remote Server App > Maintenance Server > Send ID Report at boot* option now sends at any WAN Up event, not just the first after boot.
VNG-2432	In *Admin > Remote Server App*, the *Primary Server* (PEG) and *Maintenance Server* options can now be enabled/disabled independently.
VNG-1608	If a PEG script defines one or more Inbound Servers, these will take precedence over the *Admin > Remote Server App > Primary Server* settings. The list of servers is displayed on the *Remote Server App* page.

3.2   FIXES

VNG-2514	A DHCP renew of the WAN IP address (that returns the same address) will no longer cause IPsec tunnels to be unnecessarily torn-down and rebuilt.
VNG-2484 VNG-2463	An issue on the VG5530-LEU model where the WAN would not come up when trying to connect in 3G has been resolved.
VNG-2418 VNG-2417	A bug where *Serial > COM1* and *COM2* settings would not always open the specified WAN port has been fixed.
VNG-1347	Improvements to the firewall build/update process to prevent an incomplete firewall from blocking WAN access.
VNG-1047	Non-WiFi Vanguards no longer prevent the *LAN Settings* page from using the 192.168.6.x subnet.

4   Changes in v1.0.6.227 (from v1.0.6.177)

Package checksum: c746efe947c840c1497b10fc57b5a582
Firmware Release: 25
Configuration Release: 18

4.1   FEATURES

A number of improvements have been made in Vanguard's PEG support, especially to the handling of VPod & JPod accessories. Also see the document *Converting LMU PEG Scripts to Vanguard* for more information on supported PEG capabilities.

VNG-1936	DeviceOutlook and *Admin > Firmware Update > Firmware/Configuration/Script Import* now supports Importing of JPod2 firmware & configuration files. Files will be loaded onto the Vanguard but will not be applied until the next Engine Off event.
VNG-2269 VNG-1803 VNG-1802 VNG-1733 VNG-1645	The handling of JPod1 & VPod2 firmware updates from the Vanguard web pages has been improved. Similar to JPod2, updates wait for an Ignition Off to be applied.

VNG-2215	More PEG SMS commands are supported.
VNG-860	PEG access to the Vanguard serial ports has been improved.

Other features:

VNG-2282	The value from Unit Status > Basic Settings > Unit ID, if non-blank, is transmitted in the Admin > Remote Server App > Maintenance Server > ID Report and automatically populates DeviceOutlook's Asset Name field.
VNG-2002	Update Busybox component to protect against known attacks (VPNFilter).
VNG-1972 VNG-1743	Firmware Updates or Imports that do not complete (for example, due to the Vanguard being reset) may leave behind temporary files that prevent future Updates/Imports. *Admin > Firmware Update > Firmware/Configuration/Script Import* now provides a "cleanup" button – only enabled if temporary files exist – that can be clicked to remove these files.

VNG-1649
VNG-1516
	To better support 4G/LTE installations, the following SNMP metrics and traps have been added to the Vanguard MIB:
	.cellular:
	    .vanguard-b:
	        .vanguard-bConnection:
	            .vanguard-bConnECIO
	            .vanguard-bConnRSRP
	            .vanguard-bConnRSRQ
	        .vanguard-bDiagSettings:
	            .vanguard-bRSRPSettings:
	                .vanguard-bRSRPTrapEnable
	                .vanguard-bRSRPThresholdLow
	                .vanguard-bRSRPThresholdHigh
	                .vanguard-bRSRPPeriod
	        .vanguard-bTraps
	            .vanguard-bTrapsRSRPFault
	            .vanguard-bTrapsRSRPNotify

VNG-1649	The current state of the Ignition input can be queried in SNMP at:
	.cellular.
	    .vanguard-b
	        .vanguard-bInpOutp
	            .vanguard-bStatusIgnition

VNG-1559	Improvements to Location information in SNMP: .vanguard-bLocQuality has a new value 6 ("LKP") to indicate that other LocationData fields apply to the Vanguard's Last Known Position. .vanguard-bLocTimeUTC indicates the time at which the LocationData fields were updated.
	.cellular.
	    .vanguard-b
	        .vanguard-bLocationData
	            .vanguard-bLocQuality
	            .vanguard-bLocTimeUTC

VNG-1637 VNG-1332	To better pass traffic through carrier networks that have limits on maximum packet size, Vanguard sets the WAN MTU (Maximum Transmission Unit) size to the carriers' recommended values, typically 1428. As well, a new setting, *Router > Other > Clamp TCP MSS to PMTU* (clamp Maximum Segment Size to Path MTU) is available.
VNG-1380	A new *Diagnostics > Tools* page contains a *Ping Tool* to facilitate connectivity testing.

4.2 FIXES

Fixes for issues found in 1.0.6.110 (R23) & 1.0.6.177 (R24):

VNG-2334 VNG-2111 VNG-1989 VNG-1915	Firmware and Config Importing may pause for a very long time (20 minutes or more) when the LAN IP Address is different from 192.168.1.x. This has been corrected.
VNG-2324	A settings conflict where Importing a config that contains *WiFi disabled* doesn't disable WiFi has been corrected.
VNG-2274	A change in NTP driver that prevented the NTP server from being contacted has been fixed.
VNG-1998	An internal interaction on Mobile models that prevented RSSI LED from flashing when the RESET button was used to apply factory defaults has been corrected.

Fixes for other issues:

VNG-2330	The System Time is now re-updated as more accurate GPS time reports are received, so that PEG Event reports with "future dates" soon after GPS start should no longer occur.
VNG-2304	An issue, typically for Vanguards on Verizon, that would cause an IPsec tunnel to be continually dropped & reconnected has been resolved.
VNG-2077	An issue where switching a VG5530-LVZ-VZAT into Verizon mode and then it does not connect at 4G/LTE has been resolved.
VNG-1958	The *Cell Connection > Carrier > Data Session Type > 2G* option, removed because North American carriers have deprecated 2G support, has been reinstated in the VG5530-LEU (European/International) model.
VNG-1642	Vanguard SMS support now copes with very short phone numbers, as can occur in private cellular networks.

5   Changes in v1.0.6.177 (from v1.0.6.110)

Package checksum: d5759cfe6f0f36cbc3b71bc3a4ca712a
Firmware Release: 24
Configuration Release: 17

5.1 FEATURES

VNG-2011	*Cell Connection > Other Settings > Mobile to Mobile*. In applications that require modems to communicate directly with each other, as compared to communicating only with Hosts or having a Host relaying communications between two modems, carriers might assign "nearby" IP addresses to the other modems which overlap with the network defined by *Unit Status > WAN > WAN IP Address* and *WAN Subnet Mask*. Set this to Enable to force the WAN Subnet Mask to 255.255.255.255 to work around this. Important: This setting may not resolve this issue in all cases. It may be necessary to request that the carrier reassign IP addresses of some modems.
VNG-1565	*Cell Connection > Other Settings > DHCP Option 252*. Some Carrier DHCP servers provide an automatic proxy configuration URL. This feature enables the Vanguard's internal WAN DHCP Client to explicitly request the proxy URL, starting with the next WAN reconnection.
VNG-1822	*Router > MAC Filtering*. The MAC Filter Table is no longer limited to 5 each LAN & WLAN MAC addresses.
VNG-1337	Press-and-hold the RESET button and *Apply Package Config* during a firmware update now also clear any PEG scripts and ODP apps, in order to return the Vanguard as closely as possible to factory defaults. (Where possible, Primary Carrier (AT&T/Verizon) and Carrier APN are recovered from the cell module to facilitate

	network reconnection without further configuration.)
VNG-1791	Vanguard firmware components are reported in more detail on both *Unit Status > System* and *Admin > Firmware Update* web pages. **Important:** This affects the string returned by the SNMP OID vanguard-bIdentFWVersion (iso.3.6.1.4.1.3732.7.2.2.3.0).
VNG-1921 VNG-1558 VNG-1523 VNG-1582 VNG-1623	A number of improvements in Vanguard's PEG engine have been made: • The PEG engine has been brought to parity with LMU5530 firmware 3.2h. • *WPAN Settings > Bluetooth* handling has been improved. Especially, each Vanguard now by default advertises a *Bluetooth Device Name* based on its Bluetooth MAC Address, though a *Manual Name* can be set if desired. Contact your CalAmp FAE for further information.
VNG-1752	*Admin > Firmware Update > Attached Device Status* now provides information on a connected VPOD or JPOD device.

5.2 FIXES

VNG-1592	*WLAN Settings > Access Point > No. of Clients Supported*. Vanguard can now select between two WiFi drivers: • 10 Clients: Provides a robust connection to a smaller number of clients. • 25 Clients: Supports applications that require more client connections but may not be compatible with all WiFi clients – clients may stop detecting Vanguard's SSID. *Access Point Recovery Threshold* controls a monitor that identifies and corrects this situation.
VNG-1230	The Vanguard now performs a progressive series of recovery actions when it detects errors when communicating with its internal I/O coprocessor (as seen by *Unit Status > Main Voltage* being reported as "0.9V").
VNG-1798	On the Dual_SIM model, Auto-switching has been improved, especially to handle cases where one SIM has been removed.
VNG-2106 VNG-1927	Some small issues related to IPv6 addressing & routing have been corrected.
VNG-1730	*WLAN Settings > Access Point*. Some issues with the handling of multiple WEP keys have been addressed. **Note:** Many WiFi clients only support a single WEP key, and the use of WEP is discouraged in favor of more secure protocols such as WPA.
VNG-1699	The handling of PEG and NMEA reporting when recovering from the loss of GPS signal has been improved.
VNG-1933	The 1.0.6.110 package was missing the *mib.zip* file so *I/O Settings > SNMP > Export MIB > Export* would disappear when clicked.

6 Changes in v1.0.6.110 (from v1.0.6.51)

Package checksum: ecfd5c8756c70e6be19e22def7ddb2f3
Firmware Release: 23
Configuration Release: 16

6.1 FEATURES

VNG-1657	WiFi drivers have been updated to mitigate the KRACK WPA2 vulnerability.
VNG-1636	Bluetooth drivers have been updated to mitigate the BlueBorne vulnerability.

VNG-1314	Bluetooth Low Energy (BLE) now supports 128-bit UUIDs as recommended by the Bluetooth Special Interest Group (SIG):
	    Service UUID: 8ffff862-c8e3-4557-9090-7ad658e8f735
	    Characteristic UUID: 9d0f24bf-e143-49d2-a97d-70b0d5097df9

VNG-1569	Setting the PEG Debug stream to AUX2 now allows debugging via the 9-pin serial connector. (Previously, only AUX1 for the 5-pin connector was available.)

6.2 FIXES

VNG-1705	The *Unit Status* page now displays the APN in use, which may be different from the APN requested on the Cell Connection page. (This is especially important for carriers such as Verizon that can use OMADM to remotely change the APN.)
VNG-1391	If *Cell Connection > Carrier APN* is blank, the Vanguard will try to use the APN currently in the cell module or fallback to BROADBAND (AT&T mode) or VZWINTERNET (Verizon mode).
VNG-1339 VNG-1632	APN changes for the active carrier, whether entered manually via the web pages or Imported from a config file, are applied immediately on all Vanguard models. When a private APN is entered in AT&T mode, the Vanguard no longer loses time attempting a connection with the APN BROADBAND.
VNG-1738	An issue where setting the APN was ignored on older VG5530-LVZ-GEN models (prior to the release of the VG5530-LVZ-VZAT) has been fixed.
VNG-1583 VNG-1538	An issue where a temporary loss of WAN connectivity would prevent subsequent SMS messages from being received has been corrected.
VNG-1681 VNG-1717	More conditions have been added to detect loss of WiFi SSID, and WiFi recovery no longer suppresses PEG's *wake on external input* capability.
VNG-1572	PEG S145=6 now correctly reports the Vanguard's WAN IP address as the MobileID field in any transmitted LMDirect messages.
VNG-1635	Failure to make an OpenVPN connection (reports "TLS error: cannot locate HMAC in incoming packet from [AF_INET]") when a TLS Auth Key is specified has been corrected.
VNG-1570	*Cell Connection > System Monitor > Periodic Ping* now auto-enables *Router > IP Passthrough > Pinholes Services > ICMP* so that Periodic Ping does not repeatedly fail and reboot the Vanguard.
VNG-1568	A WAN-down event in IP Passthrough mode now always tries to reestablish the connection.
VNG-1532	Entering invalid addresses in certain IP Address fields no longer crash the page.
VNG-1476	In *Router > IP Filtering*, changing the Direction field of any Edited filter no longer attempts an automatic Save & Apply.
VNG-1237	*Router > MAC Filtering > LAN MAC Filtering* now correctly saves the Name field.

7 Changes in v1.0.6.51 (from v1.0.6.33)

Package checksum: aadb1793d0d9a2590d1b87923c9dcb78
Firmware Release: 22
Configuration Release: 15

7.1 FEATURES

VNG-1458	IPv6: To support Verizon's announcement of "No more public static IPv4 addresses" in the coming months, *Cell Connection > Carrier Settings > WAN Protocol* can be used to select IPv6 when Verizon is the Carrier. • IPv6 support can be enabled on both *LAN Settings* and *WLAN Settings* pages. These options expose IPv6 address fields with default addresses derived from the corresponding MAC address (as per SLAAC "Stateless Address Auto-Configuration") and also exposes DHCPv6 options. • Selecting *WAN Protocol* IPv6 adds an *IPv6 Router* entry to the left-side menu with *IPv6 Tunnel*, *Filtering*, *Static Routes* and *Neighbor Discovery* tabs. • *Unit Status > Basic Settings > Network Time*, *Serial*, *Security > IPsec*, *GPS*, *Diagnostics > Syslog*, *I/O > SNMP*, *I/O > NMEA* and *Admin > RADIUS* all support IPv6 addresses/subnets. • *Admin > Remote Server > Primary Server* (PEG) does not support IPv6 at this time.
VNG-1342	*WLAN Settings > Hotspot > Mode* now supports *WiSPR/UAM* (Wireless ISP Roaming/Universal Access Method), a method for allowing an external provider to authenticate the users wishing access via WiFi. Currently, only HotspotSystem (hotspotsystem.com) is supported.
VNG-1428 VNG-1493	On the *Unit Status* page, depending on *Connection Status > Service Type*, a selection of different metrics (RSSI, EC/IO, RSRP & RSRQ) are displayed to indicate the quality of the cellular connection. As well, the ranges for the colors of the RSSI LED have been adjusted to more consistent across the different Service Types.
VNG-838	To allow for PEG debugging when the COM2 serial port is being used for JPod, PEG debug output is now available on TCP port 5662. Note that although there can be many streams receiving debug output, only one stream can input PEG AT commands: the COM2 serial port if enabled or the first connection to port 5662.

7.2 FIXES

VNG-1460	The time for the Vanguard to detect "WAN Down" status has been markedly improved.
VNG-1507	The issue where IP Passthough mode could stop exchanging data with the carrier after a few hours (firewall was preventing DHCP from refreshing the WAN lease) has been corrected.
VNG-1496 VNG-1344	More conditions have been added to improve the detection of loss of WiFi SSID.
VNG-1453	Correct the display of Carrier information when *Cell Connection > Auto Switching* is enabled/disabled.
VNG-1518	Correct a situation where the PEG engine could cause the system to run out of resources (syslog "Too many open files").
VNG-1468	Importing a config taken from another Vanguard with a different PEG script no longer corrupts the receiving Vanguard's PEG settings.

8 Changes in v1.0.6.33 (from v1.0.6.17)

Package checksum: 74dfcaacb168d33b1cd1581942ba3217
Firmware Release: 21
Configuration Release: 14

8.1 FEATURES

VNG-1334	The 5-pin COM2 serial port is now available to the end-user. Note that a *134364-SER/B1* 5-to-9-pin serial adapter cable is required and that the cable only supplies the TXD, RXD & GND pins; the CTS and DCD outputs are not connected. New *Serial > COM2* and *Serial > COM2* Log web pages are available to support the serial port.
VNG-1349	*Security > OpenVPN > Security Management > Add* now supports the uploading of a TLS Authentication key.
VNG-1367	On Dual SIM models, manual selection of the *Primary SIM* is prevented if Auto-Switching is currently enabled.

8.2 FIXES

VNG-1401 VNG-1377 VNG-1365 VNG-1361 VNG-1326	A number of improvements have been made in the handling of Dual SIM and Auto-Switching to provide greater stability and more accurate status reporting on the web pages. Cell Connection > Carrier web page fields will be temporarily disabled if the cell module is busy processing a switch. The Dual SIM VG5530-LEU model no longer displays an error when trying to switch SIMs.
VNG-1273	As seen on the *Unit Status* web page, the Vanguard is now much faster at detecting a loss of connection with the cell tower and reporting a WAN Down status.
VNG-1313	The handling of Cellular APNs has been improved. See Important Notes above.
VNG-1220	More improvements have been made to WiFi Access Point mode to detect the apparent loss of WiFi SSID.
VNG-1338	For improved compatibility with older IPsec peers, IKEv1/IKEv2 can now be explicitly selected on the Security > IPsec web page.
VNG-1311	The processing of SMS messages from DeviceOutlook on certain carriers, notably AT&T, has been improved.
VNG-1387	The X-UA-Compatible header has been added to web pages to prevent IE Compatibility Mode (enabled by default in Windows 10/IE11, or manually in other versions) from mis-rendering the web pages.

9 Changes in v1.0.6.17 (from v1.0.6.5)

Package checksum: 4811dbe220215b8ebf1b1bce45f3a5af
Firmware Release: 20
Configuration Release: 13

9.1 FEATURES

VNG-1229	Support for the Dual SIM (European) model. Since a firmware switch is not required compared to the Verizon/AT&T model), reconnection time is under 1 minute.
VNG-1217	*Auto SIM Switching:* Dual SIM models (both -VZAT and -LEU) can switch cellular connections based on a number of criteria that can be set on the *Cell Connection > Carrier* web page.
VNG-1280	On the Dual SIM (Verizon / AT&T) model, a reboot is no longer required when switching carriers. An internal firmware switch is still required so reconnection time

	may exceed 3 minutes.
VNG-1211	Support for the VG600 & VG400 "LTE Category 1" models has been added.
VNG-1144 VNG-1193	On mobiles model running CalAmp's PEG engine, a JPOD1 adapter connected to the real-panel COM2 port is now supported. Also, basic Bluetooth pairing support is available in a new *WPAN Settings* menu, in preparation for integration with PEG in a future firmware release.
VNG-1252	*Admin > Firmware Update > Firmware and Configuration Restore* allows the last upgrade to be reversed to the firmware and configuration that was active at the time of the upgrade. (This feature may not be available depending on the firmware release at the time of last upgrade.)
VNG-1306	Support for OpenVPN Router mode has been added.
VNG-914	The SMS Manager from the legacy Vanguard 3000 has been ported to all models of the Vanguard product line.

9.2 FIXES

VNG-1220	WiFi drivers have been upgraded and a watchdog implemented to prevent the problem experienced by a few customers of WiFi SSID stopping transmitting.
VNG-972	Issues related to updating the Serial hardware after settings are changed in the web pages have been addressed. Uncommon Data, Stop & Parity selections should now work as expected.
VNG-1072 VNG-1320	Reverting to factory defaults via the front panel RESET button now reverts all settings, except the Carrier selection on the VG5530 MultiCarrier (single SIM) model which is set according to the carrier firmware currently active in the cell module. (See Known Issues regarding the Dual SIM model.)
VNG-1242	An issue where the Verizon APN in the cell module would override an explicit APN entered into the web pages has been resolved.
VNG-1304	The VG5530MC now correctly refreshes various cell module information fields, such as Modem Module Version, after a Carrier switch.
VNG-1252 VNG-1253	Changing *Cell Connection > Auto Connect* to Disabled no longer drops the WAN connection. The exposed *Disconnec*t button must be clicked to do that. And clicking Disconnect a second time while a disconnection is in progress is now handled gracefully.
VNG-1085 VNG-1119	The handling of upgrade status back to DeviceOutlook has been improved in various cases. For example, sending the wrong type of cell module firmware will be reported as a successful upgrade to prevent DeviceOutlook from wastefully trying the upgrade.
VNG-834	Integration between the Vanguard and the PEG engine has been improved: PEG sleep actions are ignored if the Vanguard is performing a download or upgrade; PEG power control of the GPS module is ignored.
VNG-1003	Radio Band 1 is now correctly enabled on the VG5530-LEU.

10 Changes in v1.0.6.5 (from v1.0.5.78)

Package checksum: 673abbd6ebde0684edcab91708eae76f
Firmware Release: 19
Configuration Release: 12

10.1 FEATURES

VNG-1103	Support for the new Dual SIM (Verizon / AT&T) model. The *Cell Connection > Carrier* page provides settings for two carriers (Primary SIM / Secondary SIM) and the ability to select the Active SIM from the web pages. Switching the Active SIM requires a reboot and may require reprogramming firmware in the cell module which will extend the boot time by about 3 minutes.

10.2 FIXES

VNG-1159	In order to prevent a Firmware Update or Config Import, etc. from being interrupted, access to other Vanguard web pages is blocked while the update is in progress.
VNG-1198	An implementation error that stopped delivery of GPS/GNSS UDP reports to local LAN addresses when the WAN was down has been corrected.
VNG-1201 VNG-1216	Some issues with clients connecting to the Hotspot (if WAN is down at boot or if WiFi is disabled/enabled from the web pages) have been corrected.
VNG-1232	An issue that caused the *Router > MAC Filtering* page to generate an error on Save & Apply has been fixed.
VNG-1208	Firmware/Config updates via DeviceOutlook (Admin > Remote Server App > Maintenance Server) no longer fail when IP Passthough mode is active.

11 Changes in v1.0.5.78 (from v1.0.5.65)

Package checksum: 9c02fecb1d0f27be0ccc7248ff61f1cf
Firmware Release: 18
Configuration Release: 11

11.1 FEATURES

VNG-752	On mobile models, a new *WLAN Settings > Hotspot* feature is available. This feature, also known as *Captive Portal*, can be enabled when Access Point mode is active. It can be used independently (Open) or in conjunction with *Access Point > Authentication/Encryption* (all other choices). Hotspot requires end-users to agree to configurable Terms & Conditions text and to authenticate themselves with a username & password before being allowed to route packets. (Embedded Mode is currently supported. RADIUS/UAM mode will be available in a future release.)
VNG-877	noip.com has been added to the list *Cell Connection > Dynamic DNS > DDNS Service* providers. The workaround of entering a complex --*custom*-- URL is no longer required.
VNG-1141	The rate at which *I/O Settings > Settings > NMEA Notifications* are retried until acknowledged has been changed: on mobile (with GPS) models, retries are sent according to *GPS/GNSS > Settings > GPS Configuration Table > Client Index 1 > Report every X seconds*. On fixed (no GPS) models, retries are sent every 10 seconds.

11.2 FIXES

VNG-1142 VNG-1139	Issues with IPsec encryption of packets terminating inside the Vanguard (web server, ICMP pings, etc.) have been resolved.
VNG-1147	Remote connections to the Vanguard web server coming from RFC1918 "private" addresses (eg. 10.x.x.x) were interpreted as attacks and always rejected by the web server. Since closed cellular networks can validly use private address on the WAN, *Admin > Access > Web Access > Private IP Address Filter* can be set to Disable to remove this protection.
VNG-1149	A setting that prevented the VG5530-LEU model from receiving SMS messages has been corrected.
VNG-1157	Fix the display of *Unit Status > Connection Status > Frequency* on the VG5530-LVZ-VZAT model when in AT&T mode.

12 Changes in v1.0.5.65 (from v1.0.5.56)

Package checksum: b0e84d28998d8951c7953593e64a08c4
Firmware Release: 17
Configuration Release: 10

12.1 FEATURES

VNG-1129	*Security > PPTP > User Configuration* now supports *Client IP Address*. Each PAP/CHAP Username can now be allocated a specific IP address from the Client IP Range. This facilitates matching a client Vanguard's LAN with a specific tunnel IP address when creating Static Routes (See next).
VNG-1129	For PPTP "LAN to LAN" setups, *Router > Static Routes* on the PPTP Server can now use the Gateway option and specify a client's tunnel IP address to reach a client's LAN as the Destination. The static route is created when the Client connects to the Server.
VNG-1129	*Security > PPTP > PPTP Client* now has a *Masquerade* option. This rewrites all traffic through the PPTP tunnel to the client's tunnel IP address. The Host does not have to have routes for all of the clients' LANs but also the Host cannot ping LAN addresses nor initiate connections to LAN devices – all connections must be initiated from the client LAN.

12.2 FIXES

VNG-1125	Issues where Cell Connection > Carrier > Authentication Protocols would fail to authenticate or would authenticate with the wrong protocol have been corrected.
VNG-1109	Changing *LAN Settings > Ethernet IP Address* when connected to the web pages via the WAN now correctly updates the address (rebooting is no longer required).
VNG-1105	The situation when both *I/O Settings > Settings > NMEA Notification* and *GPS/GNSS > Settings > GPS Configuration* specified the same destination UDP IP Address and Port would cause the web server to complain has been fixed.
VNG-1136	The internal handling of international SMS
VNG-1133	A case where IPsec might miss an interface state-change and so fail to bring up a tunnel has been corrected.
VNG-1117	An interface naming issue that prevented IPsec and OpenVPN from interoperating has been corrected.
VNG-1056	Multiline *User Consent Notification* text, with line breaks, is now supported, and the dimensions of the input field and scroll buttons has been improved.
VNG-1118	A number of small IP Passthrough fixes, including the correct handling of the LEDs in IPP mode, have been implemented.

13 Changes in v1.0.5.56 (from v1.0.5.44)

Package checksum: fb3a0d899316c75c13b7e4cc3d1e3c46
Firmware Release: 16
Configuration Release: 9

13.1 FEATURES

VNG-1048	A new *Router > IP Passthrough* feature supports applications where a single device on the Ethernet LAN must appear as if it is <u>directly</u> connected to the cellular network -- the device acquires the IP address that the cellular network has assigned to the Vanguard. When enabled, IP PASSTHROUGH MODE is displayed on every web page.

	A number of web page tabs disappear or fields become unchangeable (grayed-out) for features that do not apply in this mode. Individual Vanguard services, eg. response to pings, SNMP, etc., also called "Pinhole Services" can be individually enabled/disabled. See the User Manual for a complete description. **IMPORTANT NOTE:** When IP Passthrough mode is changed, the Vanguard automatically reboots to apply the changes. The LAN device must reacquire a new address and gateway in order to reach the Vanguard web pages.
VNG-1056	For installations that have legal requirements for restricting access to devices, *Admin > Access > User Consent Notification* displays a definable message and requires that the user click "AGREE" before the Login web page is presented. NOTE: The long input field can accept a very long paragraph that will word-wrap as needed. Currently only the text up until the first carriage-return will be stored and displayed.

VNG-1066	A new */iostatus* command has been added to the SMS CLI and the */status* command on the Vanguard 5530 now only displays the first two of each analog and digital I/O values, to avoid issues with receiving long (more than 160 character) SMS messages on various carriers.
	`/status pw=xxxxx`
	`status: WAN=25.106.254.224 RSSI=-71 ECIO=N/A PPTP=DOWN IPSEC=0/0/0`
	`GPS=45.11111,-73.11111 V=11.74 T=36C D1=1 D2=1 A1=0.0 A2=0.0 R1=1 R2=1`
	`/iostatus pw=xxxxx`
	`iostatus:  D1=1 D2=1 D3=1 D4=1 D5=1 D6=1 D7=1 A1=0.0 A2=0.0 A3=0.0`
	`A4=0.0 R1=1 R2=1 R3=1 R4=1 R5=1 R6=1 R7=1`

VNG-748	Support for 802.11n has been added to *WLAN Settings > Access Point* and options for 802.11g-only and 802.11n-only operation are available.
VNG-1057	To support fleets of Vanguards that may all be powered-on in the same area, *WLAN Settings > Access Point > Active SSID* now allows each Vanguard to have a unique SSID built from "VG" plus the last 6 digits of the WiFi MAC address. "Automatic" SSID is the default from the factory or if settings are reverted to default. Upgrading from previous firmware or importing a config from previous firmware will be treated as "Manual" SSID. NOTE: For convenience, the WiFi SSID on new Vanguards shipped from the factory will be printed on the bottom label.
VNG-919	To facilitate Exporting a "master" config that is then Imported or scheduled by DeviceOutlook to all other Vanguards, *Admin > Firmware Update > Configuration Export > Force Unit ID when Importing*, when unchecked, will not overwrite the *Unit Status > Basic Settings > Unit ID* field. This allows the Unit ID to be a unique identifier for each Vanguard and safe from configuration changes.
VNG-1069	The restriction that the subnets listed in *Security > IPsec > Remote Subnet(s)* and … *> Local Subnet(s)* do not overlap has been removed.

13.2 FIXES

VNG-952	Issues with *Security > PPTP > Set Default Route to PPTP* have been corrected. Also, *Router > Static Routes* has a new field *Next Hop* that allows routes to be directed to the *PPTP Client Interface*.
VNG-1091	*Cell Connection > Other Settings > Special Address Filtering* will drop packets with RFC1918 "special" IP destination addresses from reaching the cell network. (Verizon has been known to leave the cell connection UP but ignore packets once they detect special IP addresses.) LAN devices with correct routing tables should not be routing packets with special IP addresses toward the Vanguard.
VNG-1041	On the Vanguard 5530MC, Importing/scheduling a config with a different *Cell Connection > Carrier > Primary Carrier* now correctly reconfigures the cell module for the new carrier. Previously, only a manual change via the web pages performed the reconfiguration. (Use caution when Importing/scheduling remotely: the SIM in the 5530MC must still be changed manually.)

VNG-1067	An issue where the Vanguard had to be rebooted to apply changes made to *I/O Settings > Settings > NMEA Notification* has been fixed.

14 Changes in v1.0.5.44 (from v1.0.5.34)

Package checksum: a31a778e1802546006bcdbe94c63f3b2
Firmware Release: 15
Configuration Release: 8

14.1 FEATURES

VNG-671	The SNMP MIB files can now be downloaded directly from the Vanguard via the Export button on the *I/O Settings > SNMP > Export MIB* web page.
VNG-800	Cell Module firmware upgrades for the Vanguard 5530 MultiCarrier can now be scheduled through DeviceOutlook.

14.2 FIXES

VNG-936	The SMS /status command, which on the VG5530-LAT model produced a response greater than 160 characters that was quietly rejected, now works correctly.
VNG-971	Correct serial connection failures that could happen because *Serial > External PAD > Log* was Enabled and the logfile had become full. (CalAmp recommends that logging should only be enabled as needed to troubleshoot serial communication and should be disabled for normal operation.)
VNG-1059	Fix an issue where a report created by GPS/GNSS > Settings > GPS Configuration was not delivered because the Client Index was 8.
VNG-1034	*Serial > GPS* reporting now works when RS-485 mode is selected.

15 Changes in v1.0.5.34 (from v1.0.5.33)

Package checksum: dd899aafbb717506add5cf6b2c3f9527
Firmware Release: 14
Configuration Release: 7

15.1 FEATURES

No new features in this release.

15.2 FIXES

VNG-972	RS-485 support froze RS-232 *Flow Control* at *Hardware Control*, affecting 3-wire connections. Also Even/Odd Parity didn't match web page selection. Both fixed.

16 Changes in v1.0.5.33 (from v1.0.5.21)

Package checksum: 112d7899439eda6719380125e2eb8043
Firmware Release: 14
Configuration Release: 7

16.1 FEATURES

VNG-779	Introduce Vanguard 5530 MultiCarrier (Models VG5530-LVZ-F-VZAT and VG5530-LVZ-M-VZAT). *Cell Connection > Carrier* provides a new "Primary Carrier" dropdown to select the active carrier. On a carrier change, the Vanguard will reboot and take approximately 3 minutes to update the cell module.
VNG-962	*Security > GRE > Remote User Subnet* 1 and 2 fields now accept a list of comma-separated subnets so extra remote subnets, beyond the two supported by previous firmware, can be specified here instead of adding them via *Router > Static Routes*. (Tests have been performed with 32 subnets in each field, for a total of 64 routes.)
VNG-961	Add support for RS-485 Half Duplex (2 wire) mode on motherboards that support it.

16.2 FIXES

VNG-996	Correct the OID in SNMP RSSI trap packets.
VNG-849	Remove "Vanguard5530" shell banner that was printed even on non-5530 models.
VNG-732	Remove *WLAN > Access Point > Channel* = Auto option.
VNG-269	Add information missing from *Diagnostics > SMS* online HELP.

17 Changes in v1.0.5.21 (from v1.0.5.7)

Package checksum: 18f3dd5d448e3d114f37a8c20fbcbca5
Firmware Release: 13
Configuration Release: 6

17.1 FEATURES

VNG-830	Add support for OpenVPN tunneling. See *Security > OpenVPN*.
VNG-803	ODP apps can now also be installed via DeviceOutlook.
VNG-929	WiFi Access Point mode now supports Hidden SSID.
VNG-918	The number of concurrent clients supported by WiFi Access Point mode has been expanded to 25 (from 12).

17.2 FIXES

VNG-687	When using RADIUS to authenticate web page logins, any Username/Password pair accepted by the RADIUS server will give access to the web pages.
VNG-889	On VG5530-LVZ-M-GEN (Mobile model on Verizon), correct an issue where WiFi state changes would affect the WAN connection.
VNG-966	Detect and correct a non-volatile storage issue which truncated the display of the *Cell Connection > Settings* page and prevented Verizon activation via the OTASP button.
VNG-955	Fix process-contention that prevented DeviceOutlook from being notified of a successful firmware/config update.
VNG-953	A request from DeviceOutlook to upgrade to the same firmware version now reports as Success, even though nothing was done, so that DeviceOutlook doesn't retry.
VNG-942	To support PEG and future modem options, the ODP partition is reduced from 100Mb to 32Mb. When upgrading, the existing contents of the ODP partition is preserved if less than 32Mb.
VNG-923	*Security > PPTP > Set Default Route* now correctly updates the default route on Save.

18 Changes in v1.0.5.7 (from v1.0.5.5)

Package checksum: 01fb28a8d04eaaf00b5402aab08b9083
Firmware Release: 12
Configuration Release: 5

18.1 FEATURES

No new features in this release.

18.2 FIXES

VNG-865	Further improve modem recovery after a persistent connection loss.
VNG-832	Make sure that the reboot that occurs after installing 1.0.5.7 cannot itself experience the reboot failure that subsequent operation of 1.0.5.5 corrects.
VNG-917	When the Vanguard is being used as a PPTP Server, fix an issue with internal handling of username & password in the PPTP User Configuration Table that prevented login.
VNG-923	When the Vanguard is being used as a PPTP Client or client mode is being disabled, correct the handling of the Set Default Route to PPTP option.

19 Changes in v1.0.5.5 (from v1.0.5.3)

Package checksum: 0359c9bbd3b2b0ed8bffb95434af9644
Firmware Release: 12
Configuration Release: 5

19.1 FEATURES

No new features in this release.

19.2 FIXES

VNG-905	DMZ no longer takes precedence over Serial and GPS/GNSS services. (Port Forwarding rules are no longer required as a workaround.)
VNG-893	Packets that are whitelisted by MAC Filtering are now also inspected by the IP Filtering rules.
VNG-865	Improve modem recovery, up to and including rebooting the Vanguard, if the modem repeatedly fails to register with the cell tower.
VNG-883	Fix issues related to entering and editing configurations on the *GPS/GNSS > Settings* page.
VNG-832	Recover from scenarios where the Vanguard might fail to boot ("all LEDs off") after being rebooted by operations such as *Cell Connection > System Monitor > Periodic Ping*.
VNG-730	Correct the handling of *Serial > DSR* and *> DCD* when set to "On when Connected".

20 Changes in v1.0.5.3 (from v1.0.4.28)

Package checksum: 79d80ce8271cb4c23eab0d6f935a5a32
Firmware Release: 12
Configuration Release: 5

20.1 FEATURES

VNG-842	Allow longer input for *Unit Status > Basic Settings > Unit ID* (32 characters) and *I/O Settings > Labels* (64 characters). Also allow more special characters in these fields. Unit ID can consist of letters, digits and an underscore _ I/O Labels can consist of letters, digits, space and the characters #%().=+-_$:;/?
VNG-842	Allow more special characters to be used in various password fields. Passwords can consist of any printable characters except '&"<>
VNG-754	When *Unit Status > Basic Settings > Network Time* is disabled, try setting *Unit Status > System Information > Date* from the GPS, if installed, or from the cell tower.
VNG-623	Radio buttons to globally enable/disable IPsec have been added.

20.2 FIXES

VNG-827	Fix an issue where upgrading prior firmware to 1.0.4.28 could prevent Port Forwarding rules from forwarding data.
VNG-869	Fix an issue in 1.0.4.28 where DMZ would override any Port Forwarding rules.
VNG-865	Improve reporting of *Unit Status > Connection Status > Roaming*, so fewer occurrences of status "Unknown".
VNG-859	*GPS/GNSS > Settings > Report every … seconds* can now enter a value up 86400.
VNG-853	Correct a calculation that suppressed GPS remote reports by distance.
VNG-831	Correct issues with *Cell Connection > System Monitor > Periodic Ping* which could send pings more often than necessary and trigger a reboot sooner than expected.
VNG-828	Correct a situation when IPsec could miss creating a tunnel when the WAN first comes up after boot.
VNG-825	The WAN coming Up before the GPS has finished initializing no longer prevents remote delivery reports from being generated.
VNG-641	Improve the detection and recovery from WiFi Client disassociate events.

21 Changes in v1.0.4.28 (from v1.0.4.21)

Package checksum: 7398fbaa325d36e701d59fef107272ba
Firmware Release: 11
Configuration Release: 5

21.1 FEATURES

VNG-735	*LAN Settings > DHCP Configuration > Sequential IP* now provides the option of assigning DHCP addresses sequentially from the start of DHCP range, as was done by the legacy Vanguard 3000. When checked, swapping-out the single LAN device will supply the new LAN device with the same IP address which can be important if DMZ or Port Forwarding points to that address. If unchecked, a "random" IP address in the DHCP range based on the LAN device's MAC address is assigned, which tends to give multiple LAN devices the same IP addresses across reboots of the Vanguard.
VNG-730	Support for control of DSR and DCD outputs has been added to the *Serial* page.
	Router > Port Forwards no longer have Source or Destination dropdowns and labels have been updated to clarify that Port Forwarding always takes packets that arrive from the WAN and forwards them to the LAN (or WLAN).
VNG-623	Improved IPsec Phase 2 support (multi-subnet support; add optional filters to prevent

VNG-808	private IP addresses outside the tunnels). The status of each tunnel is now available via a link in each tunnel's entry.
VNG-639	Filters in *Router > IP Filtering* can now be enabled/disabled individually.
VNG-300	Improved selection and download of *Diagnostics > Syslog* and *> Kernel Log*
VNG-782	RESET-to-defaults is now indicated on the RSSI LED when the RESET button is held during boot (previously on the AUX LED but the Vanguard 400 doesn't have an AUX LED).

21.2 FIXES

VNG-811	The limit for *GPS/GNSS > Settings > Report every … meters* has been increased from 120 meters to 5000 meters.
VNG-798	Leading zeros in GPS/GNSS > Status > UTC are now preserved.
VNG-798	Errors in the format of TAIP GPS messages have been corrected.
VNG-787	Fix web page display when setting the SIM PIN on the Vanguard 5530 on Verizon.
VNG-785	Correct an issue where Router > MAC Filtering would allow more than the whitelisted addresses to access the device.
VNG-774	In *Serial > External PAD*, *Remote Port* can now specify any valid port number in *TCP Client* mode.
VNG-769	In *Serial > External PAD > TCP Server* mode, new connections force an existing connection to be closed and the new connection to be immediately accepted.
VNG-763	The display of EC/IO on the Unit Status page has been clarified.
VNG-645	A momentary press of the RESET button now reboots the modem (on newer boards).
VNG-734	Issues entering IP addresses and subnets containing ".0." in the host portion have been resolved.
VNG-240	Correct the directing of packets over a GRE tunnel (especially, a Legacy Vanguard 3000 and a new Vanguard 3000/5530 could not communicate over GRE).
	Fix issue that prevented some web page settings from including whitespace.
	Many HELP pages have been updated.

22 Changes in v1.0.4.21 (from v1.0.4.17)

Package checksum: abd985958eb76caf5844b5c2df851ceb
Firmware Release: 10
Configuration Release: 5

22.1 FEATURES

VNG-597	The *Serial* port now supports 3 Modes:	
	TCP Server	The Vanguard listens for connections on the Service Port. Connections will only be accepted from the specified Friendly IP Address (or subnet).
	TCP Client	Upon WAN connection, the Vanguard will establish a connection to the specified Remote IP Address and Remote Port.
	UDP	The Vanguard will listen on the Service Port for UDP packets from the specified Address (or subnet). Once a packet is received and transmitted out the serial port, characters received at the serial port will be returned to the originating IP address & port.
	When enabled, the log of traffic received & transmitted over the serial port can be stored in ASCII or Hex and displayed via the new *PAD Log* tab.	
VNG-693	*Admin > DeviceOutlook* has been renamed to *Remote Server* to better reflect future capabilities to connect to more than just one remote management service.	
VNG-571	*WAN Up Time* and *Default Route Information* are now displayed on the Unit Status	

	page.
VNG-681	Importing an exported config now automatically checks the "Apply package config" checkbox.
VNG-617	Add configurable ID report on boot-up to Device Outlook

22.2 FIXES

VNG-756	Increase CGI timeout required for uploading firmware over slow (< 2Mbps) WAN connection
VNG-741	Fix determination of Local/Remote server for AAVL reporting
VNG-736	Fix PDP authentication on PLS8 and ALS3 models initially observed on U.K. carrier
VNG-647	The SVC LED now switches from blinking to solid only once the data connection with the carrier has been fully established.
VNG-589	SMS features now work on the Vanguard 5530 on Verizon.
VNG-728	*LAN Settings > DHCP start range* and *DHCP end range* can now specify the same address, allowing for a range of 1 device.
VNG-698	GPS reports for *GPS/GNSS > Settings > Host IP Address* to the LAN broadcast address are now correctly transmitted.
VNG-650	The *Unit Status > Basic Settings > Unit ID* is now blank by default.
VNG-729	*ping* and *traceroute* commands are now permitted in the admin shell.
VNG-685	Setting the Vanguard's LAN IP address to 0.0.0.0 (or blank) is now correctly rejected.
VNG-657	*Admin > Firmware Update > Import Image … Cancel* now correctly cancels the operation.

23 Changes in v1.0.4.17 (from v1.0.4.14)

Package checksum: 85a4c21b28612325a660cfacac01dd6d
Firmware Release: 9
Configuration Release: 4

23.1 FEATURES

	Security > Status > IPsec Tunnels now display the status (Disabled, Down, Connecting, Up) of each tunnel when at least one tunnel is enabled. If all tunnels are disabled or no tunnels are defined then *Status* and *Tunnels* both display DISABLED.
	The RESET button can be used to return the Vanguard to factory default settings by following this procedure: Apply power. While the LEDs are "all red", press and hold the RESET button. The LEDs will proceed to go all off, then all amber, then all green. During the period when the LEDs are all green, if the RESET button is still being held, the AUX LED will turn red and the configuration will be returned to factory defaults. After the LEDs flash all green 3 times, release the button and connect to the Vanguard at its default IP address.

23.2 FIXES

VNG-615	After a successful OTASP, a refresh of the Cell Connection > Settings web page no longer reverts to "Not Activated".
VNG-615	After OTASP is complete, the original Cell Connection > Carrier > Auto Connect setting is restored.
VNG-642	On Verizon, the firmware now disables a cell module setting that could prevent data traffic, or lead to a "Tethering/Hotspot" warning if you tried to web-browse.
VNG-618	The *Unit Status > Basic Settings > Network Time > Update Interval* is now honored,

	instead of polling every 30 seconds.
VNG-638	*Admin > Firmware Update* section and button names have been improved to show that the Import section is used to load both firmware and previously exported configs. On the confirmation page, the checkbox now states "Apply package config" (which will be the default settings when importing a firmware package, or the exported settings when importing a configuration.)
VNG-633	DMZ is now prioritized below all *Admin > Remote Admin* and *Router > Port Forwards* services.
VNG-636	Diagnostics > Syslog Settings now has an Enabled option and is disabled by default.
VNG-648	Pressing and holding the RESET button during boot now correctly reverts the Ethernet IP Address to the default 192.168.1.50.
VNG-629	An issue with IPsec tunnels not starting (only on the VG3000-PXS-F model) has been fixed.
VNG-593	An issue on 1.0.4.14 where "Port already in use" would be displayed when saving the Serial web page has been resolved.
VNG-662	I/O Settings > Settings > SMS Notification now correctly honors the Disable radio buttons.

24 Changes in v1.0.4.14 (from v1.0.4.9)

Package checksum: 415979cd56a81f7bc89e53666bf1841e
Firmware Release: 8
Configuration Release: 3

24.1 FEATURES

VNG-444	*Admin > Firmware Update > Configuration Image* allows all settings to be exported/saved to a file. The default name for the file is CAVNG-config.tar.gz. For convenience, the "CAVNG-config" portion of the filename can be renamed but the ".tar.gz" extension must be maintained. To import a configuration into the same or another Vanguard, use *Flash release package* and choose *Apply default settings*.
VNG-593	The TCP Port field of *Serial > External PAD Configuration* is no longer restricted to ports 3334-3400.
VNG-460	For improved security, *Security > IPsec > Pre-shared Key* is now hidden by default while being entered.
VNG-460	The *Security > Status* page provides the status of each individual tunnel (Disabled, Down, Connecting, Up). If all tunnels are disabled, *Status* and *Tunnels* both show DISABLED and the individual tunnels are not displayed.

24.2 FIXES

VNG-605	Leading zeros in System > Serial Number are no longer displayed. The serial number now matches the value printed on the sticker on the bottom cover.
VNG-604	An issue where choosing Verizon as the Primary Carrier caused a web page error has been fixed.
VNG-594	The Firmware Update web page now displays correctly when the LAN IP Address has been moved away from the 192.168.1.x network.
VNG-588 VNG-583	Changes in PPTP or WiFi mode or state no longer remove the DNS server addresses.
VNG-472	Incorrect values returned by the SMS /status command have been fixed.

25 Known Issues

Issue	Factory-defaulting a VG5530MC Dual SIM in Verizon mode reports AT&T mode
Symptom	In v1.0.6.17, applying factory defaults to a VG5530 MultiCarrier Dual SIM model in Verizon mode (with a Verizon SIM installed) may, after reboot, report *Cell Connection > SIM 1 Carrier* at AT&T.
Workaround	Set *SIM 1 Carrier* to Verizon then *Save & Apply*.

Issue	Some web page controls don't work on Internet Explorer 11.
Symptom	The [Edit] button for table entries, such as I/O Settings > SNMP > SNMP v3 User Table, does not populate the data entry section. Some grayed-out fields may still accept data entry. These issues have only been reported on Internet Explorer (current version IE11).
Workaround	Use an alternate web browser. Firefox, Chrome, Safari have all been tested to work correctly.

Issue	Issues affecting only first generation Vanguard motherboards:
Symptom	The RESET button immediately resets so cannot be used to return to defaults. The board may not display a correct value for *Unit Status > Main Voltage*.
Workaround	To reset a Vanguard to factory defaults, upgrade the Vanguard to the same firmware version via the *Admin > Firmware Update* web page, and choose "Apply package config".

About CalAmp

CalAmp is a leading provider of wireless communications products that enable anytime/anywhere access to critical information, data and entertainment content. With comprehensive capabilities ranging from product design and development through volume production, CalAmp delivers cost-effective high quality solutions to a broad array of customers and end markets. CalAmp is the leading supplier of Direct Broadcast Satellite (DBS) outdoor customer premise equipment to the U.S. satellite television market. The Company also provides wireless data communication solutions for the telemetry and asset tracking markets, private wireless networks, public safety communications and critical infrastructure and process control applications. For additional information, please visit the Company's website at www.CalAmp.com.