



## VIPER SC+™ IP ROUTER FOR LICENSED SPECTRUM



CUMULATIVE SOFTWARE RELEASE NOTES  
Covers PN 039-5008-304 up to revision V3.17  
Revised July 2022

## 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 Viper SC+ are used in a normal manner with a well-constructed network. Viper SC+ 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. NextGen RF Design accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using Viper SC+, or for the failure of Viper SC+ to transmit or receive such data.

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## RF EXPOSURE COMPLIANCE REQUIREMENTS



The Viper SC+ radio is intended for use in the Industrial Monitoring and Control and SCADA markets. The Viper SC+ unit must be professionally installed and must ensure a minimum separation distance listed in the table below between the radiating structure and any person. An antenna mounted on a pole or tower is the typical installation and in rare instances, a 1/2-wave whip antenna is used.

**Please read and understand the important regulatory and safety information contained in the Viper SC+ user manual (PN 001-5008-000) before commissioning Viper SC+ radios.**

## 1 Scope

This document contains the cumulative Viper SC+ release notes associated with the Viper SC+ firmware (NextGen RF Design PN 039-5008-304) up to revision V3.17 (build PROD V3\_17\_R202207071100).

A description of fixes and enhancements is presented for each revision. A description of known issues that may affect the latest released version is also presented, along with workarounds (when applicable).

## 2 Release V3.17 (PROD V3\_17\_R202207071100)

### 2.1 FIXES

n/a	Corrected some (2) compiler warnings.
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### 2.2 ENHANCEMENTS

n/a	Encrypted password support. <ul style="list-style-type: none"><li>The SNMP community strings are not displayed in clear text anymore.</li><li>The Radius secret string is not displayed in clear text anymore.</li><li>The OIP encryption phrase is not not displayed in clear text anymore.</li><li>Removal of the oip.encryption.key parameter from the parameter file.</li></ul>
n/a	Extra flight recorder logs in radio parameter update code to report any failures.
n/a	Support for new Ethernet PHY chip (TLK111).
VIP-1	Add "Limit to interface" to the VTS section (web pages and command shell).
n/a	Extra Flight recorder logs if the DSP firmware load fails.

## 3 Release V3.16 (PROD V3\_16\_R202105261300)

### 3.1 FIXES

n/a	Web page shows wrong logo (seeing ViperSC+ logo on a ViperSC).
n/a	Internal build cleanup.

### 3.2 ENHANCEMENTS

...	None
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## 4 Release V3.15 (PROD V3\_15\_R202104290901)

### 4.1 FIXES

n/a	Re-branded to NextGen RF Design
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## 4.2 ENHANCEMENTS

n/a	None
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## 5 Release V3.14 (PROD V3.14\_R201708140800)

### 5.1 FIXES

VSF-81	HTTPS server is slow.
n/a	SSH thread leak (causing SSH server to become unavailable).

### 5.2 ENHANCEMENTS

...	None
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## 6 Release V3.13 (PROD V3.13\_R201706061300)

### 6.1 FIXES

VSF-20	Importing neighbor table from older configuration merges tables rather than replacing table.
VSF-35	Neighbor table hop count should be set to 2 instead of 1
VSF-53	VLAN affect the MTU of virtual interfaces.
n/a	Web page stretched to prevent some fields to wrap around a second line.

### 6.2 ENHANCEMENTS

n/a	MTU configurable on virtual interfaces.
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## 7 Release V3.12 (PROD V3.12\_R201703030800)

### 7.1 FIXES

n/a	Decrement FAMA retries even on DSP errors.
n/a	Start firmware reassembly with "SC+" fragments on a "SC" platform and "SC" fragments on a "SC+" platform.
VSF-24	DO command to clean up Viper WCP files before and after a schedule download sometimes fails.
VSF-60	Predefined VTS entry for WCP with wrong values.
VSF-62	Vipers running V3.11 firmware went offline during FW upgrade.
VSF-63	WCP file system error message during MD5 calculation.
VSF-64	Continuous reboot during install of SC+ only firmware on an SC platform.

## 7.2 ENHANCEMENTS

VSF-75	Channel selection using external pin state (RI pin of COM port).
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## 8 Release V3.11 (PROD V3.11\_R201608050800)

### 8.1 FIXES

VSF-44	Memory allocation failure during the "WCP Prepare file" step.
VSF-47 VSF-48	TCP retransmit issue in VLAN router mode with TCP proxy enabled.
VSF-52	Neighbor scan issue when VLAN mode is enabled and no virtual interfaces are defined.
VSF-58	The command "ifconfig" does not report properly the Ethernet VLAN settings.
n/a	Corrected the "User Name" field availability in the web page when toggling the "Any" checkbox.

### 8.2 ENHANCEMENTS

n/a	SSH.
n/a	HTTPS.

## 9 Release V3.10 (PROD V3.10\_R201603230800)

### 9.1 FIXES

VSF-33	Prevent ODM (V3) from sending a RSSI/SNR report without having first received a packet.
VSF-34	Discard unhandled NVT sequence sent to the command shell instead of echoing it.
VSF-37	Added protection against entering invalid entries in the remote Viper table (entries with a RF MAC address using the fourth byte).
VSF-38	Corrected a serial port block (was occurring when the terminal server module operates in TCP server mode).
VSF-40	The terminal server module could only go up to 109 TCP clients; it now goes all the way up to 256 TCP clients (256 is the documented amount).

### 9.2 ENHANCEMENTS

n/a	Added extra debug logs in the WCP module to show the WCP header content.
n/a	The user can now delete entries in the "remote statistics" web page through the GUI.

## 10 Release V3.9 (PROD V3.9\_R201511250800)

### 10.1 FIXES

VSF-16	Typo in help text of the "Serial Port" web page.
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VSF-29	VLAN help text needs to be adjusted.
n/a	Improved return code checking between the OIP module and the FAMA module.

## 10.2 ENHANCEMENTS

VSF-19	Added capability to mask any alarms. ("DSP RX Proc Overflow alarm" is now disabled by default) The new command shell commands to handle alarm masking: <ul style="list-style-type: none"> <li>- fault.exception.add</li> <li>- fault.exception.del</li> <li>- fault.exception.clear</li> <li>- fault.exception.show</li> </ul>
VSF-23	Added a new PER algorithm based on recent packets, rather than all packets. User can now select between the new PER algorithm (called "recent packets") or the old PER algorithm (called "all packets (infinite)") through the web page settings.
n/a	Added extra debug commands to the trecos.cmd file.
n/a	Added new command shell commands to help troubleshooting. <ul style="list-style-type: none"> <li>- mac.queue.show</li> <li>- qos.llc.status</li> </ul>
n/a	Improved some statistics to help troubleshooting. <ul style="list-style-type: none"> <li>- qos.stat.show</li> </ul>

## 11 Release V3.8 (PROD V3.8\_R201412101600)

### 11.1 FIXES

n/a	The ODM interval field in the web page could only be 3 digits wide; it now can be up to 10 digits wide.
6063	WCP parameters using wrong flags caused issues with parameter export and import.
6069	Viper-SC+ default command blocked (this is a pointer issue in the Ethernet PHY driver).
6076	Web page "network latency" VPN field range check issue.
6071	Viper hangs under certain multicast settings.
6073	Viper WC page doesn't flag error for Data Key length.
6078	Encryption Key Saves blank password by Default.
6086	ODM QoS Diags are Sometimes Blank.
6150	MTU range check issue.
6155	Integrays ARP (Viper VLAN in bridge mode).
n/a	Completed support for WCP generic target command with very large responses.
6136	WCP Encryption Key Requires StationReset.
6171	Management VLAN tab affects Unit reset interval.
6180	OIP deadlock under ping flood.
6183	OIP decryption errors (bridge mode).

### 11.2 ENHANCEMENTS

n/a	Up to 5 virtual IP interfaces.
n/a	VLAN in router mode (VRF: virtual route forwarding)

n/a	Added file system statistics and a cleanup button in the web pages.
n/a	The Viper automatic reset timer's lowest possible value is now 1 minute (instead of 10 minutes).
n/a	Created the "debug.otafs" parameter to be able to do more troubleshooting when using the WCP protocol.
n/a	Added the "Ethernet Type" field to the QoS filtering capability.
n/a	One shot delayed reset parameter.
n/a	"One TCP client" mode in the terminal server.
n/a	RIPv2 updates are configurable per interface.
n/a	Serial port maximum receive buffer length is now configurable

## 12 Release V3.7 (PROD V3.7\_R201311181700)

### 12.1 FIXES

6056	Good and Bad radios .parameters files QNSI (SC+).
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### 12.2 ENHANCEMENTS

...	None
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## 13 Release V3.7 (PROD V3.7\_R201310291100)

### 13.1 FIXES

6023	Viper SC+ SNMP Local IP Address issue in bridge mode
6022	Help page update
n/a	The VTS enable parameter requires a reset indication in the web pages
6035	Add SNMP trap community parameter
n/a	Corrected issue with viper_scx.mib
n/a	Remove "Flags" field from the ODM web page
6040	Difficulty executing a WCP script
n/a	Corrected internal log issue (otafs_log, otafs_flr)
n/a	Completed the WCP generic command function

### 13.2 ENHANCEMENTS

n/a	A single firmware package to support SC/SC+ platforms
n/a	VTS auto-configuration for WCP
n/a	Added support for WCP general purpose command
n/a	Added a button in the WCP web page to remove WCP files

n/a	Added the command "odm.timer.reset". This command forces the ODM periodic timer to trigger letting online diagnostic pass right away
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## 14 Release V3.6 (PROD V3.6\_R201309090900)

### 14.1 FIXES

5280	Add WCP missing commands ("Execute script" and "Import parameters").
5999	"Remote statistic web page display issue".
6002	Viper web page issue when setting the RF "Data Retries" parameter.
6007	Viper SNMP add read/write community fields instead of using the password.
6010	Erroneous (false positive) address match with SCOPE address type UNIQUE ID (0x40).
6012	ODM V3 should not report RSSI and SNR for units 2 rf hops away.
6018	Complete WCP utcTimestamp !=0 support (amount of seconds to wait before applying command).
6019	Change RF speed palette deviation from 8500 to 7000 (palette id = 26)
6021	Importing old drp file makes setup port not work.
n/a	DSP v412: increased the number of large buffers in pool2 used for the data transfer
n/a	Added support for viper_scx prototype revision 3

### 14.2 ENHANCEMENTS

...	None
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## 15 Release V3.6 (PROD V3.6\_R201308011000)

### 15.1 FIXES

...	....First release of the SC+ product.....no fixes
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### 15.2 ENHANCEMENTS

n/a	VLAN
n/a	VTs (socket to socket relay)
n/a	QoS version 2 (filters, ceiling, 5 RF transmit queues, use % instead of kbps)
n/a	ODM version 3 (device manager support)
5833	Option to filter out OTA terminal server packets from being fwd to LAN
5735	Add supply voltage back to the web pages
5876	Display a message in web pages when the viper is inside a Linux base
5878	Added "any" option for username



n/a	The WCP module now offers the "Autoresponse" mode
n/a	Remote statistics improvements: <ul style="list-style-type: none"> <li>- Display ? instead of 0.0.0.0 in the RF IP address field.</li> <li>- Improved help text (web pages).</li> <li>- Clear the "Relay point" attribute when receiving a packet from a remote unit directly connected.</li> </ul>
n/a	Automatic file system cleanup when upgrading system through WCP.
n/a	The firmware package now contains a platform identifier preventing WCP to install it on a wrong platform.

## 16 Known Issues with Latest Release

<b>Latest Release</b>	<b>V3.17 (PROD V3_17_R202207071100)</b>
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Issue	(4906) Viper to resume transmission quicker when carrier sense is dropped.
Symptom	Currently the Viper backoffs' transmission when the RF is busy. This backoff time is long. When the RF becomes free shortly after it doesn't enter transmission state until the timer expired or the DSP sends noise detect message. When carrier sense is raised and dropped, the Viper should re-enter transmission state much quicker. There maybe should be some minimum time after carrier sense is dropped before transmission. This applies to listen to data only and noise and data modes.
Workaround	None

Issue	(5455) Unable to ping locally after a reset.
Symptom	The Ethernet interface sometimes will not send packets (although reception of packets is ok).
Workaround	The unit will reset itself if this problem persists. The user can always perform a manual reset of the unit.

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