TARANA

BROADBAND REINVENTED

G1 Device Software Release Notes 3.013.00.00

vRN-G1-2024-11-v2

Table of Contents

Note: For the most-up-to-date manuals, please download the latest version of this document on our customer portal: support.taranawireless.com

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Intended Audience

This document is intended for use by system administrators and engineers interested in the design, daily management, operations, and troubleshooting of a Tarana G1 network including Base Nodes, Remote Nodes, and the Tarana Cloud Suite (TCS).

It is assumed that the reader has a good working knowledge of radio frequency (RF), wireless systems, and networking concepts.

The G1 products are designed for installation and use by trained professionals and require adherence to all relevant regulatory, safety, and telecom industry best practice guidelines for outdoor radios. It is assumed that the Tarana G1 Base Node and Remote Nodes have been installed onsite and are connected to TCS.

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Models Supported by Release 3.013.00.00

Frequency	Device Type	Part Number	Description
5 GHz	BN	30-0134-001	5 GHz Base Node
	RN	30-0128-001 30-0150-001 30-0160-001	5 GHz Residential Node
3.5 GHz	BN	30-0141-001	3.5 GHz CBRS Base Node
	RN	30-0142-001 30-0152-001	3.5 GHz CBRS Residential Node
6 GHz	BN	30-0171-001	6 GHz Base Node
	RN	30-0170-001	6 GHz Residential Node

Software Compatibility

BN ---> / RN	1.205	1.400	2.013	2.201	3.013
1.205	✅	✅	✅	✅	✅
1.400	✅	✅	✅	✅	✅
2.013	✅	✅	✅	✅	✅
2.201	✅	✅	✅	✅	✅
3.013	✅	✅	✅	✅	✅

- Please note that RNs running software older than 1.205 will not be able to connect to BNs running 3.0.13. Upgrade all RNs to one of the compatible versions before upgrading the BNs to 3.0.13.
- Any BN with a current software revision 1.205 or higher can be directly upgraded to 3.013.00.00.
- Any BN with a current software revision lower than 1.205 must be upgraded to 1.205 or 1.400 before upgrading to 3.013.00.00.
- It is recommended that the RNs be upgraded first followed by the BNs.

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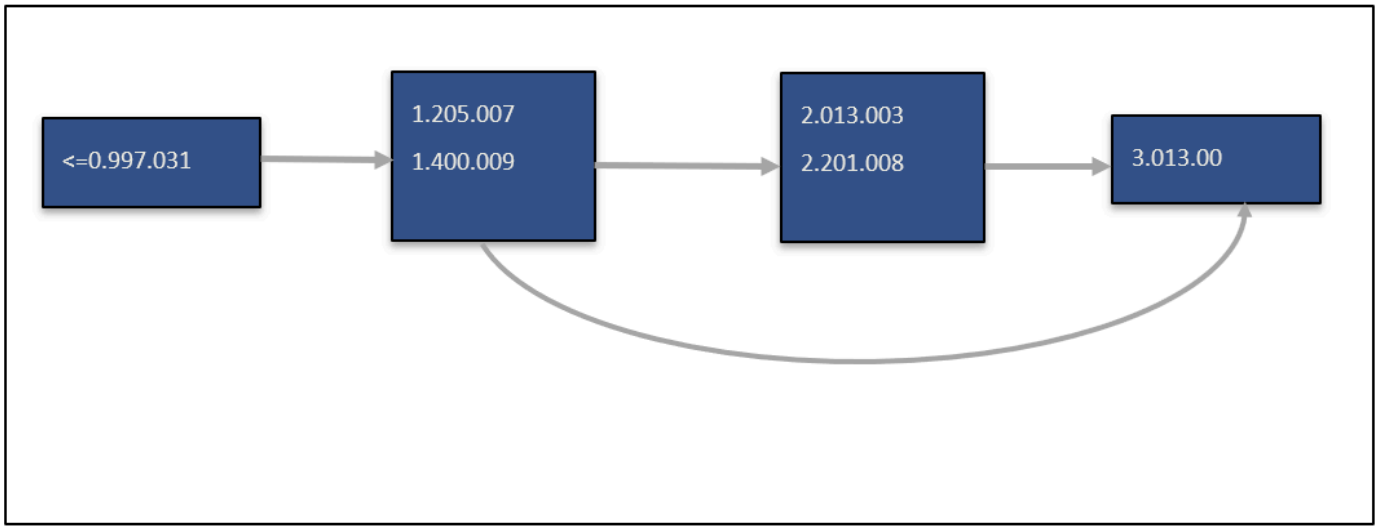
- 1.205.007 is the minimum required software version for 6 GHz devices (30-0171-001 and 30-0170-001). For 6 GHz RNs with part number 30-0170-001, the minimum software version is 2.013.
- Deprecated SW versions: Support and defect fixes for the following versions (and all older versions) will be deprecated
    - 1.205/1.207 - October 31, 2024

Upgrade Paths



Security Fixes

#	Description
G1-26931	CWE 829 - Inclusion of Functionality from Untrusted Control Sphere. This has been remediated.

Features

#	Description
1	**CBRS 2.0 Support: Per-carrier Transmit Expiry Time** The WinnForum and FCC specifications now permit longer heartbeat intervals of up to 24 hours (dependent on SAS implementation) for non-DPA grants. The per-carrier transmit expiry will help to keep the radios enabled for an extended period (when operating on at least 1 non-DPA grant) when TCS or SAS connectivity is lost.
2	**RN Installer Guidance** The RN Device UI now provides live feedback to walk the installer through the network entry process. The step-by-step guidance is intended to provide real-time updates and minimize install times and errors.
3	**BN Spectrum Analyzer** The BN Spectrum Analyzer is designed to help BN installers assess interference levels across operational frequency bands. This feature offers a detailed scan of the RF environment, allowing users to choose the least interfered or best-performing channel based on real-time scan results. Note that this is a service-impacting feature and can be performed only in 2-carrier mode.
4	**Custom DL/UL SLA** This feature adds the capability for operators to configure custom SLAs tailored to their specific business needs. The SLA configuration allows for rate-limiting the downlink and uplink directions independently. Operators can define and apply the custom SLAs from the TCS portal and/or the API.
5	**Dynamic Frequency Selection (DFS) ETSI/UK** With the 3.0 software, the Tarana 5 GHz devices support dynamic frequency selection (DFS) in the U-NII-3 band and are compliant with the ETSI/UK regulatory requirements for this band. The 5 GHz BNs and RNs can operate in any 2 of the 5745 MHz,5795 MHz, and 5855 MHz channels and will vacate/move on radar detection. BNs running pre-3.0 software and configured with the ETSI/UK domain and country will be auto-muted from TCS to maintain regulatory compliance.
6	**Radio Control Tx based on BN Backhaul Availability** This feature enables RNs to failover to alternate BNs in applicable scenarios. In situations where a BN loses data connection, but remains connected to the RNs, the end-users are not able to access the internet. This feature allows operators to choose a configurable time, after which the BN will be auto-mute on loss of data connectivity. This will cause the RNs to search and connect to alternate BNs that might be able to serve the data.

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7	**DHCP Option 82 Enhancements** The DHCP option 82 enhancements now allow full flexibility for the operators to choose the appropriate 'circuit ID' and 'remote ID' values. In addition to this, support has been added for both 'hex' and 'ASCII' formats to increase the interoperability with the different DHCP servers. • BN MAC Address (ASCII) • BN MAC Address (HEX) • BN Serial Number (ASCII) • CPE MAC Address (ASCII) • CPE MAC Address (HEX) • RN MAC Address (ASCII) • RN MAC Address (HEX) • RN Serial Number (ASCII)
8	**Improved Disconnect Reasons** The disconnect reasons have been updated to provide more accurate information on the cause of an RN disconnect. The 3.0 software coupled with the already implemented TCS changes, will improve the users' ability to troubleshoot and diagnose link disconnects.
9	**Uganda support** Customers in Uganda can now use the Tarana G1 5 GHz devices in the U-NII-3 band. In addition, 6 GHz devices can be used in the U-NII-3, U-NII-5, and U-NII-7 bands. Customers can configure country settings from TCS.
10	**Other Enhancements** • When the BN recovers from a temporary loss of GPS signal, it will attempt to correct for the timing drift using a non-service impacting mechanism. If unsuccessful, a radio reset will be performed. • Scheduler Enhancements to improve unloaded latency and sector performance for some loaded BNs (> 100 RNs) during busy hours. • Faster RN calibration time for Network entry (up to 50% faster) • The network entry times now account for spectrum acquisition time for devices needing spectrum authorization from SAS/AFC. • Streaming Telemetry: New metrics have been added. If streaming telemetry is being used, please refer to the latest application note. • Centralized configuration of DHCP Relay agent and Remote/Circuit Identifier from TCS. Removed DHCP Relay Agent and Remote/Circuit Identifier from BN device UI to avoid misconfigurations. • Added option to clear RN MAC table from RN device UI. This will be helpful in debugging data path problems.

	• A new alarm 'SFP Rx power out of range(sfp-rx-power-oor)' with severity level Warning has been introduced. The description will indicate whether it is a Low Rx power alarm or a High Rx power alarm.

Defects Fixed

#	Description
G1-22898	In some cases, the BNs and RNs would sometimes automatically reboot or degrade the system performance if the temperature varied more than 45 deg C since boot up.
G1-26371	In very rare scenarios, the INR metric reported was out of range.
G1-27080	In rare conditions, one of the carriers on some 6 GHz BNs would stay disabled after a reboot due to PLL tuning failure.
G1-27435	Some 5 GHz RNs were not able to connect to BNs with a carrier at 5870 MHz.
G1-27449	In rare cases, when a 6 GHz BN with more than 64 links rebooted, a small number of links took a long time (~ 30 mins) to reconnect.
G1-28043	In very rare scenarios, the BN switch would become unresponsive and RF utilization showing very high numbers leading to an auto reboot of the BN.
G1-28053	In some rare cases, RN operations like upgrade and configuration from TCS would fail.
G1-28184	Some CBRS BNs operating in high-interference environments would undergo a radio reset due to calibration failure.
G1-28646	Support for double tagged VLAN from CPE with BN on untagged VLAN for data traffic.
G1-29128	When the SAS provider failed to provide grants to the RN for 15 minutes, the BN would disconnect the RN and the reason message sent to TCS was blank.
G1-29140	In rare scenarios, upgrading the BN software would fail due to an out-of-memory issue. This was seen more often in the 3.012.006.00 (early access) version.

Known Limitations

#	Description
G1-20784	Updating configuration parameters on BN/RN web UI spawned through TCS might result in inconsistent behavior. The recommended way is to use TCS UI to configure the parameters.
G1-23837	When an RN is configured with a primary BN, it will be selected for connection even if the search metric (signal strength) to this BN is low. There could be other BNs that have a better search metric to this RN. Please choose a different primary BN or remove the primary BN which will result in the RN connecting to the best available BN.
G1-27358	RN UI connection history page might show the disconnect reason for RN as None.
G1-27627	Device UI logs the user out upon refreshing the browser. Please login again.

G1-27628	While asymmetric grant allows RNs to have partial spectrum relative to the BN spectrum, in some cases there might be a brief (< 5 mins) link disruption.
G1-27629	ARP broadcast feature is not supported in case of untagged data VLAN.
G1-28185	In heavy-interference environments, if a speed test is executed to characterize link performance, the initial results might show lower than expected speeds. Please re-run the test multiple (4 to 5) times.
G1-28235	For SLA profiles configured with DL rates greater than 500 Mbps, the actual rates might exceed more than the configured rates.