TARANA

BROADBAND REINVENTED

G1 Device Software Release Notes 0.997.031

vRN-G1-2023-08

PN: 10-0035-001 Rev. 1.0

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

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 the TCS.

Models Supported by Release 0.997.031

Frequency	Device Type	Part Number	Description
5.8 GHz	BN	30-0134-001	5.8 GHz Base Node
	RN	30-0128-001 30-0150-001 30-0160-001	5.8 GHz Residential Node
3.5 GHz	BN	30-0141-001	3.5 GHz CBRS Base Node
	RN	30-0142-001	3.5 GHz CBRS Residential Node

Backward Compatibility

BN ---> / RN	0.977	0.988	0.989	0.997
0.977	✅	✅	✅	✅
0.988	✅	✅	✅	✅
0.989	✅	✅	✅	✅
0.997	✅	✅	✅	✅

- Any device with current software revision 0.967 or higher can be directly upgraded to 0.997.030.
- Deprecated SW versions : Support / Defect fixes for the following versions will be deprecated:
    - 0.977 - September 30, 2023
    - 0.988 - December 31, 2023

Security Fixes

Ticket #	Description
G1-18079	Devices connected to the RN could access the management traffic with certain IP addresses.

The defect mentioned above exposed a security loophole. If a user configured their CPE with an IP address that was on the same subnet as the RN's local management subnet, they would get access to the internet without going through the authentication mechanism of the operator. Given the potential unauthorized access to service, Tarana highly recommends upgrading all RNs to 0.997.

Key Features

#	Description
1	**Dynamic Carrier** Enables hitless handling of grant suspension on any of the carriers on BN. This feature is for CBRS radios and is enabled for all customers. When a BN is operating with two carriers and one of these carriers loses its spectrum grant, the system will automatically disable this carrier after migrating all active links (i.e. RNs) to the other active carrier. Once the SAS and domain-proxy is able to get new spectrum for the BN's disabled carrier then the BN and all its connected RNs will be able to operate in the dual-carrier mode.
2	**Asymmetric Grant** Enables RNs to operate on just a single carrier in case its other carrier grant gets suspended by the SAS and the BN is operating on dual carrier. This feature is for CBRS radios and is enabled for all customers. The RN link will be established within 5 mins. Once the suspended grant gets re-authorized by SAS the RN will work in dual-carrier mode within 5 mins.
3	**Telemetry Streaming from BN** Allows customers to stream select metrics for BN and all its connected RNs from the BN via telemetry streaming over the gNMI interface. The endpoint for the gNMI streaming receiver can be configured via TCS along with the streaming interval of 1,5,15,30,60 mins
4	**Untagged Data Plane Traffic** Enables customers to support untagged data-plane traffic along with untagged or tagged inband management. BN defaults to data-vlan of 2000, customers can change to untagged from BN device web interface during BN installation. [Please see known limitation #G1-21096]
5	**Uplink SLA Enforcement** Currently when customers configure the SLA from TCS per RN, only the downlink (DL) SLA is enforced and the uplink (UL) SLA is unlimited which leads to misuse in certain cases. This feature rate limits the UL SLA to its proportional share of the configured DL SLA based on the network profile (NP) configuration.

Other Enhancements

#	Description
G1-17963	The 'Search for BNs' button now has a pop-up warning to indicate the radio link will be disrupted.
G1-16788	Downlink ARP broadcast is now supported. This is not enabled by default. Please contact Tarana Support if this needs to be enabled.
G1-17901	The scheduler has been updated to improve average sector data rates during peak hours.
G1-19238	The Diagnostics tab of the RN UI now shows the BNs detected by the RN.
G1-19680	The RN and BN UIs now show the RN MAC table.
G1-18945	The BN UI has the azimuth input as a mandatory field.
G1-18723	The BN UI now allows overriding the tilt value.
G1-17252	The Connections tab of the BN UI now reports the latency for each of the RNs.
G1-14886	Minor improvements have been made to the BN and RN radio calibration.
G1-16469	Added support for Jabil Photonics JPSP10LRLCE000L13 and Apex9 APX-SFP-IND-10G SFP+ modules.
G1-14966	Added support for Galileo GNSS for timing and localization.
G1-15546	Regulatory support included for Nigeria and Malaysia.

Defects Fixed

Ticket #	Description
G1-19467	Malformed IPv4 DHCP packets caused BNs to reboot.
G1-19424	Unable to fix an incorrect CPI-ID on the RN UI.
G1-19384	In some cases, the BN was not able to handle new RNs and needed a reboot.
G1-19238	The Diagnostics tab of the RN UI now shows the BNs detected by the RN.
G1-18202	Incorrect memory utilization caused BNs to reboot.
G1-18060	Changing the static IP address from the BN UI to another value in the same subnet was failing.
G1-17342	In some cases, the CPI info on the RN was lost when the RN initiated a 'Search for BNs'.
G1-16950	In some cases, updating non-installation parameters prompted the user to enter CPI credentials.
G1-16479	The BN fan alarms were not getting cleared when the fan was operational.
G1-20294	On some loaded sectors, high CPU utilization caused the BNs to reboot.
G1-20311	In rare situations, the switch module on the BN would crash, causing the BN to reboot.
G1-20200	On the BN UI, it was not possible to set the azimuth to 0.
G1-21537	In some situations, network outage on the management plane caused the BNs to stay disconnected even after the network connectivity was restored.
G1-21858	A calibration issue caused a very small number of BNs to reboot.

Updates since 0.997.028

1. While this was fixed in 0.997.028, it was omitted from the release notes.
2. If this issue has been encountered previously, Tarana recommends upgrading the BN to 0.997.030.
3. This only applies to some BNs manufactured prior to week 46 of 2021. Please contact Tarana support if needed.

Known Limitations

Ticket #	Description
G1-19774	In rare situations, the certificate refresh could fail. Tarana will proactively monitor and refresh the certificates.
G1-19650	Device UI does not load on browser refresh. Please login again.
G1-19069	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.
G1-18934	If one of the carriers is disabled due to lack of grant, the reported aggregate bandwidth could be incorrect.
G1-19700	The RFC2544 tests will report lower than expected throughput for smaller packet sizes.
G1-21096	If the DHCP server sends broadcast offer packets, this might cause a broadcast storm when the data-plane traffic is untagged. Tarana recommends using tagged data-plane traffic in these situations.