



Introducing ... **GIGABIT 1**

Large portions of both developed and especially developing economies remain underserved in an ongoing pandemic that makes real broadband more essential than ever. Copper-based fixed access networks are increasingly exhausted. Efforts to improve supply with fiber have been throttled by prohibitively high costs and installation complications. Wireless alternatives continue to fail in the face of the significant technical challenges in fiber class fixed access, including pervasive obstructions, spectrum scarcity, interference, changing conditions, and unworkable deployment models.

Tarana innovation has solved all these problems. Our Gigabit 1 platform (G1) is powered by the results of more than ten years of focused R&D, and crafted from its custom silicon up to its cloud-based service automation with a completely fresh approach to fixed wireless. Extensively validated by tier-1 operators and well proven in mass-scale networks, our fundamental advances in multi-radio performance completely transform the economics of delivering gigabit-class access.

**Fast broadband
is more essential than ever.
Getting it to the home is hard.
We've made it easy.**

- › **Fiber quality**
- › **In free, unlicensed spectrum**
- › **At massive scale**



Tarana G1 System Specifications

Radio Network Elements		BN: Base Node RN: Residential Node
Topology		Scheduled, concentrated multi-point
Maximum # of Users	Per BN	256
	Per Site	1024 (4BNs)
Channel Bandwidth	BN	80 MHz (2 x 40MHz)
	RN	80 MHz (2 x 40MHz)
Aggregate Throughput (UL + DL)	Per Link	800 Mbps
	Per BN	2.4 Gbps
	Per Site	9.6 Gbps (4 BNs)
Duplexing		TDD
Downlink/ Uplink Ratio		Configurable 2:1 or 4.5:1 (network-wide)
Modulation		QPSK 1/2 to 256 QAM 7.35/8 UL/DL
MIMO Streams Per Link		1x1, 2x2
MU-MIMO Streams at Aggregation Point		6 MU-MIMO streams per BN 24 MU-MIMO streams per site
Spectral Efficiency		30 bps/Hz per BN75 - 90 bps/Hz per band, configuration dependent
Range (full rate, frequency dependent)	NLoS	up to 3 km (Note. This depends on vertical asset height, frequency band, morphology, and target cell-edge data rate.)
	LoS	up to 15 km (likewise)
Recommended Frequency Reuse Factor		Universal frequency reuse (k = 1)
		Enabled by advanced self-interference cancellation
Form Factor	BN	Outdoor micro enclosure (fully-integrated antenna, RF, and baseband) 4 BNs for 360° coverage
	RN	Outdoor, single enclosure (fully-integrated antenna, RF, and baseband)
Beamforming		Auto-convergent, retro-directive
Interference Management		Self-interference cancellation, Advanced Burst Interference Cancellation (ABIC)
Scheduler		Advanced 4D frame-based scheduling
Frequency Support		3.550-3.700 GHz (US CBRS)
		5.150-5.250 GHz (FCC/ISED)
		5.725-5.850 GHz (FCC/ISED)
Latency (1-way avg)		< 5 msec
Model Number	BN 5GHz	G1-BN5AS1002
	BN CBRS (Cat B)	G1-BN3AS1001
	RN 5GHz	G1-RN5AS1002
	RN CBRS (Cat B)	G1-RN3AS1001
Compliance		RSS-247, FCC 15E, FCC Part 96, WINFF-TS-0122
Safety		IEC 62368-1, IEC 60529, IEC 60950-1, IEC 60950-22
Tarana Cloud Suite		Scalable Microservices based multi-tenant network management
		Zero-touch provisioning and control of radios with streaming telemetry
		Firmware and configuration management
		24x7x365 KPI monitoring and management
		Fault management and historical events
		Network Analytics
		SAS-Domain Proxy
Interfaces	BN	Dual 10-Gbps SFP+ and one 1-Gbps data interfaces Additional 1 Gbps mgmt Ethernet interface. -48V DC Power
	RN	1 Gbps Ethernet interface, with PoE support
HxWxD (inches)	BN	16.4 x 21.2 x 4.6 in.
	RN	11 x 12.5 x 3 in.
Weight (lb.)	BN	42 lbs.
	RN	7 lbs.
Power Consumption (Typical)	BN	275W
	RN	35W
Mounting	BN	Saddle clamp, band clamps for pole mount (2-3/8" - 5" OD)
	RN	Band clamp for pole mount (1.5" - 2.5" OD)

