

## INTRODUCTION

The GXC G101 is an advanced two-carrier outdoor Access Point compliant with 3GPP LTE TDD technology. This 4x250mW Access Point operates in Carrier Aggregation (CA) mode or Dual Carrier (DC) mode.

In CA mode, G101 supports 2CC (two Component Carriers) DL/UL CA. 2CC DL/UL CA doubles DL/UL peak throughput compared to a single carrier by aggregating two separate spectrum resources into a virtual contiguous spectrum resource.



In DC mode, each carrier is treated as an independent cell, supporting 96+96 users with each cell supporting 5, 10, 15, or 20 MHz bandwidth. Using a G101 in DC mode simplifies and streamlines the deployment of split sectors. This product comes with a standard one-year warranty; an extended warranty is available.

## TECHNOLOGY

<b>Standard</b>	LTE TDD RAN (3GPP Release 15 compliant)
<b>TDD UL/DL Configuration</b>	1, 2, 6 (with Special Subframe Configuration 7)
<b>Frequency Band</b>	B48 (3550 MHz–3700 MHz)
<b>Channel Bandwidth</b>	SC: 5/10/15/20 MHz CA: 40 MHz as maximum aggregated bandwidth
<b>Multiplexing</b>	MIMO: 2x2 (DL)
<b>Security</b>	Radio: SNOW 3G/AES-128 Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)

*\* Planned for a future release*

## INTERFACE

<b>Ethernet Interface</b>	1 RJ-45 Ethernet interface (1 FE/GE)
<b>Power Supply</b>	PoE++ (IEEE 802.3bt compliant)
<b>Protocols Used</b>	IPv4/IPv6 (Dual Stack), UDP, TCP, ICMP, SNMPv2c, NTP, SSH, IPsec, TR-069, HTTP/HTTPS, 1588v2, DHCP
<b>Network Management</b>	IPv4/IPv6, HTTP/HTTPS, SNMPv2c, TR-069, SSH
<b>VLAN/VxLAN</b>	802.IQ/VxLAN
<b>LED Indicators:</b>	4 x status LED CELL1/CELL2/ALM/PWR

## HIGHLIGHTS

- Standard LTE TDD Band 48
- GUI-based local and remote Web management
- Excellent Non-Line-of-Sight (NLOS) coverage
- Peak rate: Up to DL 290 Mbps and UL 70 Mbps with 2x20 MHz bandwidth
- 2CC DL/UL CA improves the spectrum efficiency of fragmented spectrum resources
- Suitable for private and public deployments; any IP-based backhaul can be used, including public transmission protected by Internet Protocol Security (IPsec)
- 96 RRC connected users per carrier (96+96 in DC mode), upgradeable to higher capacity in future releases
- Configured out-of-the-box to work with GXC's Onyx Platform
- Supports transparent Bridge Mode
- Supports Citizens Broadband Radio Service (CBRS)
- Interoperable with standard LTE Evolved Packet Core (EPC)
- Supports TR-069 network management interface
- Lower power consumption, which reduces OPEX

## PERFORMANCE

Peak Data Rate (DC)	2x20 MHz	DL (Mbps)	UL (Mbps)
	UL/DL Config 1	2x105	2x28
	UL/DL Config 2	2x145	2x14
	UL/DL Config 6	2x85	2x35
	2x10 MHz	DL (Mbps)	UL (Mbps)
	UL/DL Config 1	2x51	2x14

<b>Peak Data Rate (CA)</b>	UL/DL Config 2	2x70	2x7
	UL/DL Config 6	2x42	2x17
	<b>2x20 MHz</b>	<b>DL (Mbps)</b>	<b>UL (Mbps)</b>
	UL/DL Config 1	210	56
	UL/DL Config 2	290	28
	UL/DL Config 6	170	70
	<b>2x10 MHz</b>	<b>DL (Mbps)</b>	<b>UL (Mbps)</b>
	UL/DL Config 1	102	28
	UL/DL Config 2	140	14
	UL/DL Config 6	84	34
	<b>20 MHz + 10 MHz</b>	<b>DL (Mbps)</b>	<b>UL (Mbps)</b>
	UL/DL Config 1	156	42
	UL/DL Config 2	215	21
	UL/DL Config 6	127	52
	<b>20 MHz + 15 MHz</b>	<b>DL (Mbps)</b>	<b>UL (Mbps)</b>
	UL/DL Config 1	182	49
	UL/DL Config 2	250	24
	UL/DL Config 6	148	61
<b>User Capacity</b>	Up to 96 RRC connected users per cell (4 users per TTI) <ul style="list-style-type: none"> <li>• SC/CA: 96 RRC connected users</li> <li>• DC: 96+96 RRC connected users</li> </ul>		
<b>Maximum Deployment Range</b>	5 kilometers		
<b>Latency</b>	30 milliseconds		
<b>Receive Sensitivity</b>	-100 dBm (per channel)		
<b>Modulation</b>	MCS0 (QPSK) to MCS27 (256 QAM) DL: QPSK, 16 QAM, 64 QAM, 256 QAM UL: QPSK, 16 QAM, 64 QAM		
<b>Transmit Power Range</b>	0 to 24 dBm per channel (combined +30 dBm, configurable) (1 dB interval)		
<b>Quality of Service</b>	Nine-level priority indicated by QoS Class Identifiers (QCI)		
<b>ARQ/HARQ</b>	Yes		
<b>Synchronization</b>	GPS, 1588v2		

## MODULATION LEVELS (ADAPTIVE)

MCS	Modulation Scheme	RSRP (dBm)	Coverage Distance (km)
0-4	QPSK	-120 ≤ RSRP < -110	4 < D ≤ 5
5-9	16 QAM	-110 ≤ RSRP < -100	3 < D ≤ 4
10-19	64 QAM	-100 ≤ RSRP < -85	2 < D ≤ 3
20-27	256 QAM	RSRP ≥ -85	D ≤ 2

*NOTE: The information provided is for reference only as the environment can impact modulation levels.  
Scenario: Base Station height is 30 meters; Customer User Equipment (CPE) height is two meters.*

## FEATURES

<b>Voice NSA</b>	VoLTE* Supported
<b>Traffic Offload</b>	Local breakout
<b>Layer 2 Support</b>	Transparent Bridge Mode
<b>Maintenance</b>	<ul style="list-style-type: none"> <li>• Local/Remote Web maintenance</li> <li>• Online status management</li> <li>• Performance statistics</li> <li>• Fault management</li> <li>• Local/Remote software upgrade</li> <li>• Logging</li> <li>• Connectivity diagnosis</li> <li>• Automatic start and configuration</li> <li>• Alarm reporting</li> <li>• User information tracing</li> <li>• Signaling trace</li> </ul>

\* Planned for future release

## LINK BUDGET

<b>Antenna Connection</b>	N-Type connector for external high-gain antenna
<b>GPS Antenna</b>	External GPS antenna, N-Type connector
<b>Power Control</b>	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)

## PHYSICAL

<b>Surge Suppression</b>	Yes
<b>Power Interface Lightning Protection</b>	Differential mode: ±10 KA Common mode: ±20 KA
<b>MTBF</b>	≥ 150000 hours
<b>MTTR</b>	≤ 1 hour
<b>Ingress Protection Rating</b>	IP65
<b>Operating Temperature</b>	-40°F to 131°F / -40°C to 55°C
<b>Storage Temperature</b>	-58°F to 149°F / -50°C to 65°C
<b>Humidity</b>	5% to 95% RH
<b>Atmospheric Pressure</b>	70 kPa to 106 kPa
<b>Power Consumption</b>	Typical 20 W, maximum 25 W
<b>Weight</b>	With pre-installed bracket: 10.5 lb/4.75 kg Without bracket: 9.6 lb/4.35 kg
<b>Dimensions (HxWxD)</b>	With joint: <ul style="list-style-type: none"> <li>• 15.0 x 8.9 x 3.0 inches</li> <li>• 381 x 227 x 75 millimeters</li> </ul> Without joint and handle: <ul style="list-style-type: none"> <li>• 12.2 x 8.9 x 3.0 inches</li> <li>• 311 x 227 x 75 millimeters</li> </ul>
<b>Installation</b>	Pole or wall mount

## GLOBAL PART NUMBERS

<b>GXC-API-100</b>	G101 Outdoor TDD Access Point - LTE Release 15, 4x250mW (24 dBm), 1FE/GE, PoE++, 3.5 GHz (3550 MHz-3700 MHz), B48, external antenna <ul style="list-style-type: none"> <li>• FCC certification: 2AG32PBS3101SE</li> <li>• IC certification: 20982-PBS3101SE</li> </ul>
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