INTRODUCTION

The GXC G501 is an advanced two-carrier outdoor Access Point compliant with 3GPP LTE TDD technology. This 4x1W Access Point operates in Carrier Aggregation (CA) mode or Dual Carrier (DC) mode.

In CA mode, G501 supports 2CC (2 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 G501 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

Standard	LTE TDD RAN (3GPP Release 15 compliant)
TDD UL/DL Configuration	1, 2, 6 (with Special Subframe Configuration 7)
Frequency Band	B48 (3550 MHz–3700 MHz) B42 (3400 MHz-3600 MHz)
Channel Bandwidth	SC: 5/10/15/20 MHz CA: 40 MHz as maximum aggregated bandwidth
Multiplexing	MIMO: 2x2 (DL)
Security	Radio: SNOW 3G/AES-128 Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)

INTERFACE

Ethernet Interface	1 optical (SFP) and 1 RJ-45 Ethernet interface (1 GE)
Power Supply	-40 VDC to -57 VDC, nominal -48 VDC AC adaptor (multi-national standards)
Protocols Used	IPv4/IPv6 (Dual Stack), UDP, TCP, ICMP, SNMPv2c, NTP, SSH, IPsec, TR-069, HTTP/HTTPs, 1588v2, DHCP
Network Management	IPv4/IPv6, HTTP/HTTPs, SNMPv2c, TR-069, SSH
VLAN/VxLAN	802.IQ/VxLAN
LED Indicators:	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
- Supports 4-port antenna or 2 antennas with 2 ports
- Configured out-of-the-box to work with GXC's Onyx Platform
- Supports transparent Bridge Mode
- Supports Citizens Broadband Radio Service (CBRS)
- Supports mobility between different Access Points
- 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
	UL/DL Config 2	2x70	2x7

	UL/DL Config 6	2x42	2x17
Peak Data Rate (CA)	**2x20 MHz**	**DL (Mbps)**	**UL (Mbps)**
	UL/DL Config 1	210	56
	UL/DL Config 2	290	28
	UL/DL Config 6	170	70
	2x10 MHz	**DL (Mbps)**	**UL (Mbps)**
	UL/DL Config 1	102	28
	UL/DL Config 2	140	14
	UL/DL Config 6	84	34
	20 MHz + 10 MHz	**DL (Mbps)**	**UL (Mbps)**
	UL/DL Config 1	156	42
	UL/DL Config 2	215	21
	UL/DL Config 6	127	52
	20 MHz + 15 MHz	**DL (Mbps)**	**UL (Mbps)**
	UL/DL Config 1	182	49
	UL/DL Config 2	250	24
	UL/DL Config 6	148	61
User Capacity	Up to 96 RRC connected users per cell (4 users per TTI) • SC/CA: 96 RRC connected users • DC: 96+96 RRC connected users		
Maximum Deployment Range	12 kilometers		
Latency	30 milliseconds		
Receive Sensitivity	-100 dBm (per channel)		
Modulation	MCS0 (QPSK) to MCS27 (256 QAM) DL: QPSK, 16 QAM, 64 QAM, 256 QAM UL: QPSK, 16 QAM, 64 QAM		
Transmit Power Range	0 to 30 dBm per channel (combined +36 dBm, configurable) (1 dB interval)		
Quality of Service	Nine-level priority indicated by QoS Class Identifiers (QCI)		
ARQ/HARQ	Supported		
Synchronization	GPS, 1588v2		

MODULATION LEVELS (ADAPTIVE)

MCS	Modulation Scheme	RSRP (dBm)	Coverage Distance (km)
0–4	QPSK	-120 ≤ RSRP < -110	9 < D ≤ 12
5–9	16 QAM	-110 ≤ RSRP < -100	4 < D ≤ 9
10–19	64 QAM	-100 ≤ RSRP < -85	2 < D ≤ 4
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

Voice	VoLTE*
NSA	Supported
Traffic Offload	Local breakout
Layer 2 Support	Transparent Bridge Mode
Maintenance	• Local/Remote Web maintenance • Online status management • Performance statistics • Fault management • Local/Remote software upgrade • Logging • Connectivity diagnosis • Automatic start and configuration • Alarm reporting • User information tracing • Signaling trace

** Planned for future release*

LINK BUDGET

Antenna Connection	External high-gain antenna with N-Type connectors, either (2) 2-port antennas or (1) 4-port antenna
GPS Antenna	External GPS antenna, N-Type connector
Power Control	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)

PHYSICAL

Surge Suppression	Yes
Power Interface Lightning Protection	Differential mode: ±10 KA Common mode: ±20 KA
MTBF	≥ 150000 hours
MTTR	≤ 1 hour
Ingress Protection Rating	IP66
Operating Temperature	-40°F to 131°F / -40°C to 55°C
Storage Temperature	-49°F to 158°F / -45°C to 70°C
Humidity	5% to 95% RH
Atmospheric Pressure	70 kPa to 106 kPa
Power Consumption	Typical 60 W, maximum 100 W
Weight	16.5 lb/7.5 kg
Dimensions (HxWxD)	With joint: • 13.1 x 9.4 x 4.1 inches • 333 x 240 x 105 millimeters Without joint and handle: • 11.8 x 9.4 x 4.1 inches • 300 x 240 x 105 millimeters
Installation	Pole or wall mount

GLOBAL PART NUMBERS

GXC-APO-501	G501 Outdoor TDD Access Point – LTE Release 15, 4x1W (30 dBm), 1GE+1OPT, 3.5 GHz (3550 MHz–3700 MHz), B42/43/48, external antenna • FCC certification: 2AG32MBS3100196N • IC certification: 20982-MBS31001 • UL certified – Ordinary location • UL certified – HazLoc C1D2