CORNING

# Everon™ 6000 Gen 2 DAS Solution Specification Sheet

## Features and Benefits

Corning's Everon 6000 Gen 2 DAS Solution is an advanced inbuilding cellular service solution for small, medium, and large size venues, supporting a broad range of cellular generations: 3G,4G and 5G.

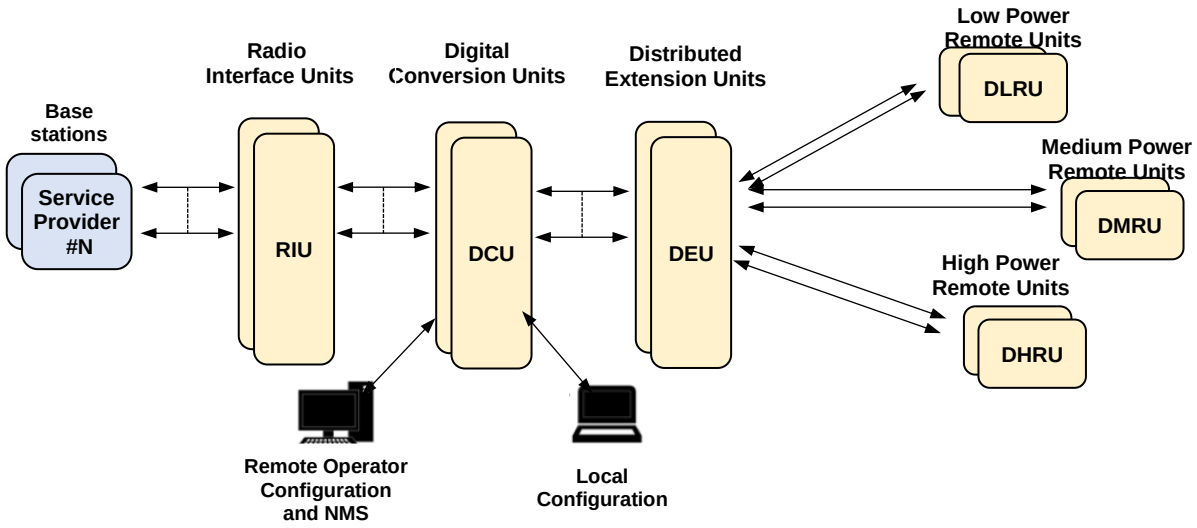
This solution is based on a point-to-multipoint distribution architecture, advanced digital transport and processing, and channelized implementation, enabling efficient utilization of digital links. It is designed to support multi-band, multi-technology, and multi-operator networks over the single fiber-based infrastructure.

The Corning Everon™ 6000 Gen 2 DAS Solution is a high bandwidth distribution architecture that provides preparedness for future radio technologies, broader spectrum, and new frequency bands. Due to its modular design and configuration flexibility, this solution is highly scalable in terms of supported capacity (number of sectors, frequency bands, channels) and remote units (coverage), and can be easily configured to support a large variety of deployment scenarios including single and multi-building ("campus") network topologies.

This solution offers multiple types of digital remote units, supporting a variety of frequency band combinations, with different power levels ranging from 20 dBm per band to 46 dBm per band. Advanced network configuration and management capabilities enable on-site as well as remote end-to-end configuration, system diagnostics, maintenance, and support network operations center (NOC) connectivity.

| Features | Benefits |
|---|---|
| Comprehensive Service Support | 600 MHz, 700 MHz, FirstNet, 800/850 MHz, 1900 MHz (PCS), EAWS, 2300 MHz (WCS), 2500 MHz (TDD), 3500 MHz (TDD). Support of MIMO services, FDD and TDD. Supports 3G, 4G, 5G technologies. |
| Multi-X System | Supports multi-operator, multi-band, multi-technology services over a single infrastructure. Supports single and multi-building ("campus") network solutions. |
| Highly Modular/Highly Scalable | Can be easily expanded to support additional capacity: sectors, frequency bands, channels, and coverage areas, by increasing the number of remotes. |
| Advanced Digital Signal Processing | Provides higher dynamic range, enables per-channel granularity, delivers enhanced overall power efficiency, and improves overall system performance. |
| Digital Common Public Radio Interface (CPRI) based Transport | Provides robust signal distribution with flexible scalability. |
| Digital Service and Capacity Routing | Enables advanced capacity and coverage management through flexible routing configuration management. |
| Carrier-Grade Network Management | Network configuration and management capabilities enable on-site and remote end-to-end configuration, system diagnostics, maintenance, support management and control by network management system. |

## System Architecture: Everon™ 6000 Gen 2 Solution




### RIU—Radio Interface Unit

The RIU provides an interface and signal conditioning to signals coupled between the base station RF antenna ports and the DCU.

### DCU—Digital Conversion Unit

The DCU provides RF to CPRI (Downlink) and CPRI to RF (Uplink) conversion, where the well-known CPRI (Common Public Radio Interface) standard is used for representing the RF signals.

### DEU– Distributed Extension Unit

The DEU is the central Hub and Distribution element for the Everon™ 6000 Gen 2 Solution. The DEU interfaces between the DCU and the remote unit, allowing it to receive the operators service signals in CPRI format, and to route these signals to the remote antenna units. The DEU supports all Corning digital remote antenna units' flavors, for all services, power levels and antenna configurations (SISO or MIMO). Each DEU includes 2 optical ports connected to a DCU, 2 optical ports for cascade, and 24 optical ports for connection to remote units. When more remote antenna units are needed, the system scales up easily by adding additional DEUs.

### dLRU—Digital Low-power Remote Unit

The dLRU is a low-power remote antenna unit with 20~24 dBm per MIMO stream per band output RF power and native support of 2x2 MIMO antenna scheme. There are four types of dLRU:

1. Low band dLRU - supports 600 MHz (band 71), 700 MHz Low (band 12), 700 MHz High (band 13), FirstNet (band 14), 800/850 MHz (band 26) bands via one fiber connection.
2. Medium Band dLRU - supports EAWS (band 66), PCS (band 25), WCS (band 30) and 2.5 GHz TDD (band 41) services via 3 fiber connections.
3. Band 41 dLRU - supports single band 2.5 GHz TDD via single fiber.
4. High Band dLRU - supports 3500 MHz TDD (CBRS/C-Band) services via 2 fiber connections.

The dLRU cooling is natural convection with no fans. Due to its IP66 enclosure design the dLRU can also be installed outdoors.

### dMRU—Digital Medium-power Remote Unit

The dMRU is a medium-power remote antenna unit with 37~40 dBm per MIMO stream per band output RF power and native support of 2x2 MIMO antenna scheme. The dMRU cooling is based on natural convection, requiring no fans. Due to its IP65 enclosure design, the dMRU can also be installed outdoors.

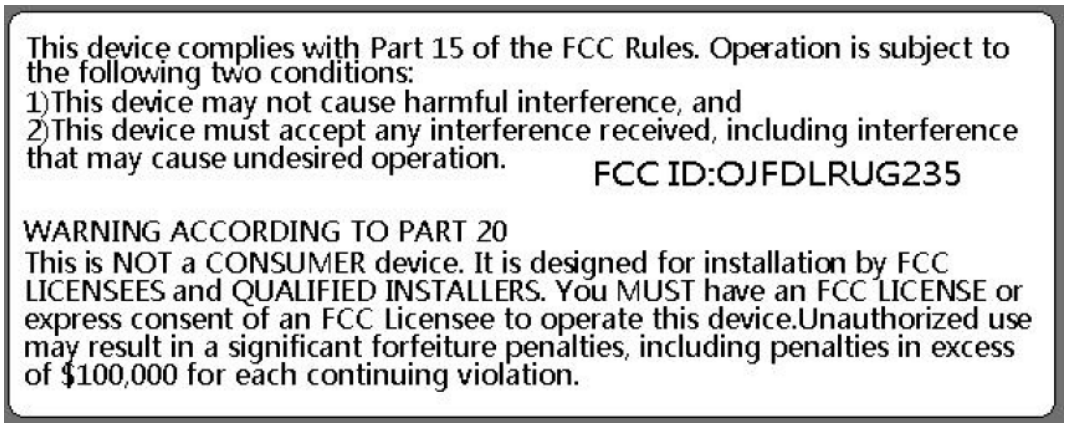
### dHRU—Digital High-power Remote Unit

The dHRU is a high-power modular remote antenna unit which provides 43~46 dBm output RF power per service module, and native support of 2x2 MIMO antenna scheme. The dHRU modular structure enables set ups of up to 8 service modules in 600 MHz, 700 MHz Low/700 MHz High/FirstNet, 800/850 MHz, EAWS, PCS, WCS, 2.5 GHz TDD and 3.5 GHz TDD. The dHRU cooling is based on natural convection, requiring no fans. Due to its IP65 enclosure design the dHRU can also be installed outdoors.

Caution： for use of unauthorized antennas, cables, and/or coupling devices not conforming with ERP/EIRP restrictions is not permitted.

Antenna type and permitted max antenna gain: External Dedicated Antenna with gain 0dBi or less.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 10.2cm between the radiator and your body.



# Specifications

**Digital Conversion Unit (DCU-G2)**

RF donor connection: 600 MHz ~ 4000 MHz

14 x 25Gbps Optical Interface for extension/cascading

Integrated OMT & remote management system

| RF Specification | | |
|---|---|---|
| Bands | Technologies | Frequency Range (MHz) |
| 3500 MHz | LTE/NR | TDD:3400~4000 |
| 2500 MHz | LTE/NR | TDD:2496~2690 |
| WCS | LTE/NR | UL:2305~2315, DL:2350~2360 |
| EAWS | LTE/NR | UL:1695~1780, DL:2110~2200 |
| PCS | LTE/NR | UL:1850~1915, DL:1930~2020 |
| 850A | LTE/NR | UL:817~849, DL:862~894 |
| 700U | LTE/NR | UL:776~798, DL:746~768 |
| 700L | LTE/NR | UL:698~716, DL:728~746 |
| 600 MHz | LTE/NR | UL:663~698, DL:617~652 |
| **Electrical Specification** | | |
| Operation Frequency | MHz | RF Cluster 1~2: 2300~4200 MHz, TDD/FDD<br>RF Cluster 3~4: 600~2700 MHz, TDD/FDD |
| Input power range | dBm | -7~ +3 |
| Maximum Instantaneous Bandwidth | MHz | RF Cluster 1~2:  300 MHz<br>RF Cluster 3~4: 200 MHz |
| VSWR | | <1.8 |
| **Interfaces and Mechanical** | | |
| CPRI ports | | 8 x SFP+ (25 Gbps) to DEU |
| CPRI ports | | 6 x SFP+ (25 Gbps) to secondary DCU |
| Ethernet Ports | | 2 x RJ45 - local monitor, remote monitor |
| Ethernet Ports | | 2 x RJ45 - to RIU, PSU |
| RF ports | | 4 x Cluster RF connectors to donor radio head<br>Each Cluster RF connector contains 8 simplex ports to RIU |
| External synchronization | | 2 x QMA, 10 MHz In/Out |

| | | |
|---|---|---|
| Dimensions (H x W x D) | Inch (mm) | 3.46 x 19.09 x 15.75 (88 x 485 x 400) |
| Weight (approx.) | Lbs (kg) | 33 (15) |
| Powering | | 48V DC or AC 220/110V |
| Power Consumption | Watt | 250 |
| Operating Temperature | | -10°C to +45°C (14°F to 113°F) |
| Operating Humidity | | ≤ 85% |
| Ingress Protection | | IP30 |
| Cooling | | Fan |
| Mounting and Installation | | 19-in Rack mount |
| Regulation | | |
| EMC | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | UL62368-1 |

**Distributed Extension Unit (DEU-G2)**

Radio hub/router for system extension

28 x 25 Gbps Optical Interface

Support DEU cascading

| Interfaces and Mechanical | | |
|---|---|---|
| CPRI Ports | | 4 x SFP+ (25 Gbps) for DEU cascading |
| CPRI Ports | | 24 x SFP+ (25 Gbps) for dLRU/dMRU/dHRU connection |
| Ethernet Ports | | 1 x RJ45 - local & remote monitor |
| Dimensions (H x W x D) | Inch (mm) | 1.73 x 19.09 x 14.17 (44 x 485 x 360) |
| Weight (approx.) | Lbs (kg) | 13.23 (6) |
| Power Supply | | 48V DC or AC 220/110V |
| Power Consumption | Watt | 200 |
| Operating Temperature | | -10°C to +45°C (14°F to 113°F) |
| Operating Humidity | | ≤ 85% |
| Ingress Protection | | IP30 |
| Cooling | | Fan |
| Mounting and Installation | | 19-in Rack mount |
| **Regulation** | | |
| EMC | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | UL62368-1 |

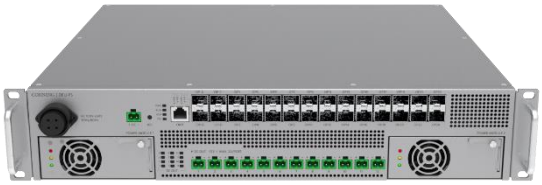
**Distributed Extension Unit (DEU-G2-PS)**

Radio hub/router for system extension

28 x 25 Gbps Optical Interface

Support DEU cascading

PSU for dLRU



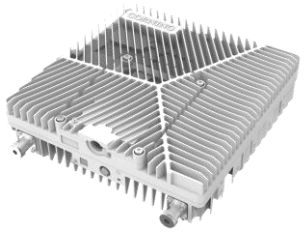
| Interfaces and Mechanical | | |
|---|---|---|
| CPRI Ports | | 4 x SFP+ (25 Gbps) for DEU cascading |
| CPRI Ports | | 24 x SFP+ (25 Gbps) for dLRU/dMRU/dHRU connection |
| Ethernet Ports | | 1 x RJ45 - local & remote monitor |
| Dimensions (H x W x D) | Inch (mm) | 3.46 x 19.09 x 14.17 (88 x 485 x 360) |
| Weight (approx.) | Lbs (kg) | 26.46 (12) |
| Power Supply | | Input 48V DC or AC 220/110V<br>PSU output : 48V DC (works with AC 220/110V input) |
| Power Consumption | Watt | 1500 |
| Operating Temperature | | -10°C to +45°C (14°F to 113°F) |
| Operating Humidity | | ≤ 85% |
| Ingress Protection | | IP30 |
| Cooling | | Fan |
| Mounting and Installation | | 19-in Rack mount |
| **Regulation** | | |
| EMC | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | UL62368-1 |

**digital Low-power Remote Units-2.5G (dLRU-G2-25)**

194 MHz IBW with 2T2R MIMO

1 x 25 Gbps Optical Interface to DEU

Compact design for easy installation



| RF Specification | | |
|---|---|---|
| Frequency Range | MHz | 2496-2690 |
| Max. Operating Bandwidth-Noncontiguous | | Full band |
| Unit Configuration | | 2T2R |
| Instantaneous Bandwidth | MHz | 194 |
| Downlink Output Power | dBm | 23 |
| Attenuator Adjustable Range (1dB step) | dB | 0-20 |
| Channel Bandwidth | MHz | 10/20/40/60/80/100 |
| Uplink Noise Figure (typical) | dB | 8 |
| Uplink IIP3 (typical) | dBm | -12 |
| VSWR | | ≤ 1.8 |
| EVM (256 QAM) (TM3.1A @ Rated power) | % | < 3.5 |
| Spurious Emission | | 3GPP TS 36.106; 3GPP TS 38.104 V15.5.0 (sections 6; 7) |
| **Interfaces and Mechanical** | | |
| CPRI Port | | 1 x SFP+ (25 Gbps) to DEU |
| Antenna Ports | | 2 x 4.3-10 female to external antenna |
| Dimensions (W x H x D) | Inch (mm) | 10.6 x 10.6 x 2.95 (270 x 270 x 75) |
| Weight (approx.) | Lbs (kg) | 11 (5) |
| Powering | | 48V DC |
| Power Consumption | Watt | 65 |
| Operating Temperature | | -40°C to +55°C (-40°F to 131°F) |
| Operating Humidity | | ≤ 95% |
| Ingress Protection | | IP66 |
| Cooling | | Convection |
| Mounting and Installation | | Ceiling/Wall/Shell |

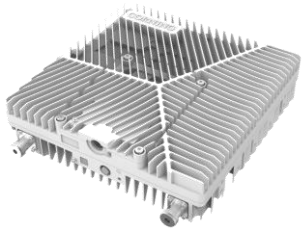
| Regulation | | |
|---|---|---|
| EMC | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | UL62368-1 |
| Radio | | FCC CFR 47, Part 27 |

**digital Low-power Remote Units High Band (dLRU-G2-35)**

530 MHz IBW with 2T2R MIMO

2 x 25 Gbps Optical Interface to DEU

Compact design for easy installation



| RF Specification | | |
|---|---|---|
| Frequency Range | MHz | 3450-3980 |
| Max. Operating Bandwidth-Noncontiguous | | Full band |
| Unit Configuration | | 2T2R |
| Instantaneous Bandwidth | MHz | 530 |
| Downlink Output Power | dBm | 24 |
| Attenuator Adjustable Range (1dB step) | dB | 0-20 |
| Channel Bandwidth | MHz | 10/20/40/50/60/80/100 |
| Uplink Noise Figure (typical) | dB | 8 |
| Uplink IIP3 (typical) | dBm | -12 |
| VSWR | | ≤ 1.8 |
| EVM (256 QAM) (TM3.1A @ Rated power) | % | < 3.5 |
| Spurious Emission | | 3GPP TS 36.106; 3GPP TS 38.104 V15.5.0 (sections 6; 7) |
| **Interfaces and Mechanical** | | |
| CPRI Port | | 2 x SFP+ (25 Gbps) to DEU |
| Antenna Ports | | 2 x 4.3-10 female to external antenna |
| Dimensions (W x H x D) | Inch (mm) | 10.6 x 10.6 x 2.95 (270 x 270 x 75) |
| Weight (approx.) | Lbs (kg) | 11 (5) |
| Powering | | 48V DC |
| Power Consumption | Watt | 75 |
| Operating Temperature | | -40°C to +55°C (-40°F to 131°F) |
| Operating Humidity | | ≤ 95% |
| Ingress Protection | | IP66 |
| Cooling | | Convection |
| Mounting and Installation | | Ceiling/Wall/Shell |

| Regulation | | |
|---|---|---|
| EMC | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | UL62368-1 |
| Radio | | FCC CFR 47, Part 27 |

**digital Medium-power Remote Unit-2.5GHz (dMRU-G2-25)**

194 MHz IBW with 2T2R MIMO

1 x 25 Gbps Optical Interface to DEU

Compact design for easy installation

| RF Specification | | |
|---|---|---|
| Frequency Range | MHz | 2496-2690 |
| Max. Operating Bandwidth-Noncontiguous | | Full band |
| Unit Configuration | | 2T2R |
| Instantaneous Bandwidth | MHz | 194 |
| Downlink Output Power | dBm | 39 |
| Attenuator Adjustable Range (1dB step) | dB | 0-20 |
| Channel Bandwidth | MHz | 10/20/40/60/80/100 |
| Uplink Noise Figure (typical) | dB | 6 |
| Uplink IIP3 (typical) | dBm | -12 |
| VSWR | | ≤1.5 |
| EVM (256 QAM) (TM3.1A @ Rated power) | % | < 3.5 |
| Spurious Emission | | 3GPP TS 36.106; 3GPP TS 38.104 V15.5.0 (sections 6; 7) |
| Coupling value | dB | 35 |
| **Interfaces and Mechanical** | | |
| CPRI Port | | 1 x SFP+ (25 Gbps) to DEU |
| Antenna Ports | | 2 x 4.3-10 female to external antenna |
| Coupling port | | 2 x QMA for testing |
| Dimensions (W x H x D) | Inch (mm) | 17.3 x 3.5 x 14.6 (440 x 88 x 370) |
| Weight (approx.) | Lbs (kg) | 30.8 (14) |
| Powering | | AC 220/110V |
| Power Consumption | Watt | 140 |
| Operating Temperature | | -40°C to +55°C (-40°F to 131°F) |
| Operating Humidity | | ≤ 95% |
| Ingress Protection | | IP65 |

| | | |
|---|---|---|
| Cooling | | Convection<br>Fan (Optional for extreme cases) |
| Mounting and Installation | | Wall/19-in Rack mount |
| **Regulation** | | |
| EMC | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | UL62368-1 |
| Radio | | FCC CFR 47, Part 27 |

**digital Medium-power Remote Unit High Band (dMRU-G2-35)**

530 MHz IBW with 2T2R MIMO

2 x 25 Gbps Optical Interface to DEU

Compact design for easy installation

| RF Specification | | |
|---|---|---|
| Frequency Range | MHz | 3450-3980 |
| Max. Operating Bandwidth-Noncontiguous | | Full band |
| Unit Configuration | | 2T2R |
| Instantaneous Bandwidth | MHz | 530 |
| Downlink Output Power | dBm | 40 |
| Attenuator Adjustable Range (1dB step) | dB | 0-20 |
| Channel Bandwidth | MHz | 10/20/40/50/60/80/100 |
| Uplink Noise Figure (typical) | dB | 8 |
| Uplink IIP3 (typical) | dBm | -12 |
| VSWR | | ≤1.5 |
| EVM (256 QAM) (TM3.1A @ Rated power) | % | < 3.5 |
| Spurious Emission | | 3GPP TS 36.106; 3GPP TS 38.104 V15.5.0 (sections 6; 7) |
| Coupling value | dB | 35 |
| **Interfaces and Mechanical** | | |
| CPRI Port | | 1 x SFP+ (25 Gbps) to DEU |
| Antenna Ports | | 2 x 4.3-10 female to external antenna |
| Coupling port | | 2 x QMA for testing |
| Dimensions (W x H x D) | Inch (mm) | 17.3 x 3.5 x 14.6 (440 x 88 x 370) |
| Weight (approx.) | Lbs (kg) | 33 (15) |
| Powering | | AC 220/110V |
| Power Consumption | Watt | 250 |
| Operating Temperature | | -40°C to +55°C (-40°F to 131°F) |
| Operating Humidity | | ≤ 95% |
| Ingress Protection | | IP65 |
| Cooling | | Convection |

| | | |
|---|---|---|
| | | Fan (Optional for extreme cases) |
| Mounting and Installation | | Wall/19-in Rack mount |
| Regulation | | |
| EMC | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | UL62368-1 |
| Radio | | FCC CFR 47, Part 27 |

**Radio Interface Unit-2.5 GHz (RIU-G2-25)**

8 input ports for donor RF signal connection

Active ATT, input power detection & ALC protection for RF module

Max. input power of 37 dBm/port

| RF Specification | | | |
|---|---|---|---|
| Frequency Range | | MHz | 2496-2690 (LTE/NR) |
| Downlink Input Power | | dBm | -10~37 |
| Insert Loss | Downlink | dB | 30 |
| | Uplink | dB | 40 |
| ATT Adjustable Range (1dB step) | | dB | 0-25 |
| Return Loss | | dB | ≤ -15 |
| **Interfaces and Mechanical** | | | |
| RF input ports | | | 8 x QMA (Duplexer) to donor signal |
| RF Output ports | | | 8 x QMA (Simplex) to DCU |
| Ethernet Ports | | | 2 x RJ45 - Upper cascade / Lower cascade |
| Dimensions, H x W x D | | Inch (mm) | 1.73 x 19.09 x 14.2 (44 x 485x 360) |
| Weight (approx.) | | Lbs (kg) | 13.2 (6) |
| Powering | | | 48V DC |
| Power Consumption | | Watt | 20 |
| Operating Temperature | | | -10°C to +45°C (14°F to 113°F) |
| Operating Humidity | | | ≤ 85% |
| Ingress Protection | | | IP30 |
| Cooling | | | Fan |
| Mounting and Installation | | | 19-in Rack mount |
| **Regulation** | | | |
| EMC | | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | | UL62368-1 |

**Radio Interface Unit-3.5 GHz (RIU-G2-35)**

8 input ports for donor RF signal connection

Active ATT, input power detection & ALC protection for RF module

Max. input power of 37 dBm/port

| RF Specification | | | |
|---|---|---|---|
| Frequency Range | | MHz | 3400-4000 (LTE/NR) |
| Downlink Input Power | | dBm | -10~37 |
| Insert Loss | Downlink | dB | 30 |
| | Uplink | dB | 40 |
| ATT Adjustable Range (1dB step) | | dB | 0-25 |
| Return Loss | | dB | ≤ -15 |
| **Interfaces and Mechanical** | | | |
| RF input ports | | | 8 x QMA (Duplexer) to donor signal |
| RF Output ports | | | 8 x QMA (Simplex) to DCU |
| Ethernet Ports | | | 2 x RJ45 - Upper cascade / Lower cascade |
| Dimensions, H x W x D | | Inch (mm) | 1.73 x 19.09 x 14.2 (44 x 485x 360) |
| Weight (approx.) | | Lbs (kg) | 13.2 (6) |
| Powering | | | 48V DC |
| Power Consumption | | Watt | 20 |
| Operating Temperature | | | -10°C to +45°C (14°F to 113°F) |
| Operating Humidity | | | ≤ 85% |
| Ingress Protection | | | IP30 |
| Cooling | | | Fan |
| Mounting and Installation | | | 19-in Rack mount |
| **Regulation** | | | |
| EMC | | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | | UL62368-1 |

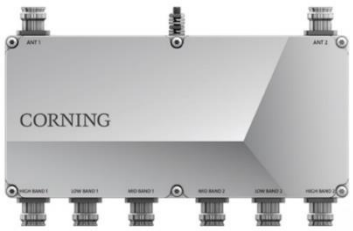
**Antenna Multiplexer(COMB-G2-FDD-25-35)**

6-in/2-out multiplexer for 2X2 MIMO

6 input ports for low, medium, and high band remote radio unit connection

2 output ports for antenna connection

Compatible with both low- and medium-power remote radio unit




| Electrical Characteristics | | | | |
|---|---|---|---|---|
| Port | | Port1, Port4 (FDD Bands) | Port2, Port5 (2.5 Band) | Port3, Port6 (3.5 Band) |
| Frequency Range | MHz | 617-2360 | 2496-2690 | 3450-4000 |
| Bandwidth | MHz | 1743 | 194 | 550 |
| Insert Loss | dB | ≤0.6(25℃)<br>≤1(-40 to +85℃) | ≤0.6(25℃)<br>≤1(-40 to +85℃) | ≤0.6(25℃)<br>≤1(-40 to +85℃) |
| Pass Band Ripple | dB | ≤0.5 | ≤0.5 | ≤0.5 |
| Out of Band Attenuation | dB | ≥50@2496-2690<br>≥50@3450-4000 | ≥50@617-2360<br>≥50@3450-4000 | ≥50@617-2360<br>≥50@2496-2690 |
| Maximum Input Power (Per Port, Average) | W | 50 | 15 | 15 |
| PIM | dBc | -155 (@ 2x10W) | | |
| Return Loss | dB | ≥18 | | |
| Isolation | dB | ≥40 | | |
| Port Type | | 4.3-10 F | | |
| Impedance | Ω | 50 | | |

| Mechanical Characteristics | | |
|---|---|---|
| Dimensions, H x W x D | Inch (mm) | 10.6 x 6.6 x 1.6 (270 x 168 x 41) |
| Weight (approx.) | Lbs (kg) | 4.8 (2.2) |
| Operating Temperature | | -40°C to +85°C (-40°F to 185°F) |
| Ingress Protection | | ≤ 95% |
| Environmental | | IP66 |

| Regulation | | |
|---|---|---|
| EMC | | EMC FCC 47 CFR Part 15 sub part B |
| Safety | | UL62368-1 |