2.5.6 Verify normal operation

The LED indicator is located on the side panel of the dLRU.

Figure 70. LED Indicator

Table 27. dLRU Low-Power Remote Unit LED Indicator

LED Indicator	Status	Description
STAT	Green	Power on or chip configuration process
	Green flashes (1 time/second)	Normal operation
	Green flashes (2 times/second)	Identify
	Red flashes (1 time/second)	Over temperature alarm
	Red	Hardware alarm

2.6 dMRU Installation

2.6.1 Verify box Contents

1. Open the package and verify all elements are available.

Table 28. dMRU Packing List

Item	Image	Description	Quantity
Hardware-provided in the box			
dMRU unit-without fan		dMRU-G2-25 dMRU-G2-35 dMRU-FDD	1
Power Cable		4m	1
SFP waterproof connector			2
Hardware-not provided			
Screws		4 screws #8 or 4 mm	4
SFP+ Pluggable Transceivers		Order separately (hot-pluggable optical transceiver module); Support for option 8 line-rate 25 Gbps, single mode	According to actual use
Optical cables		Up to 10 km LC/UPC SM DX	According to actual use
RF Jumper cables			According to actual use
Fan Assembly		Order separately	According to actual use
Required Tools			
Phillips Screwdriver			1

Table 29. dMRU Bracket (dMRU-G2-WM-BRKT) Packing List

NO.	Item		Image	Description	Quantity
1	dMRU-G2-WM-BRKT	dMRU Bracket		dMRU-G2-WM-BRKT	1
2		Upper hanger			4
3		Lower hanger			4
4		Combiner mounting plate			2
5		Expansion bolt		M10×110	8
6		M8x16 screw		M8×16	18
7		M6x15 screw		M6×15	51
8		Rack screw			6
9		Wrench		/	1

Table 30. PDU Packing List

NO.	Item	Image	Description	Quantity
1	PDU-dMRU-Indoor		No accessory	
2	PDU-dMRU-Outdoor		AC power cable *1	1
			Power cable to RU * 4	4

Table 31. dMRU Combiner Packing List

NO.	Item		Image	Description	Quantity
1	Combiner	Combiner			1
2		Cross recessed screw set		M6x10(T)	2
3		Terminal		LCD10-14A-L	1

2.6.2 dMRU Dimensions

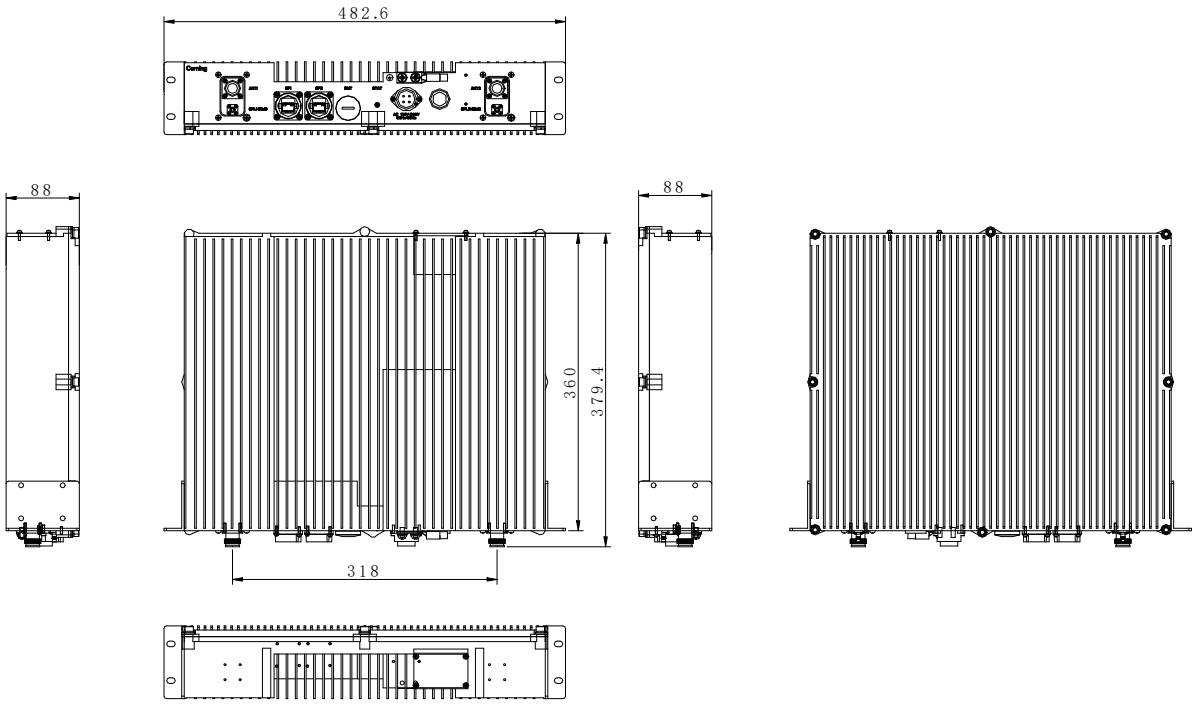


Figure 71. dMRU Dimensions - Without Fan

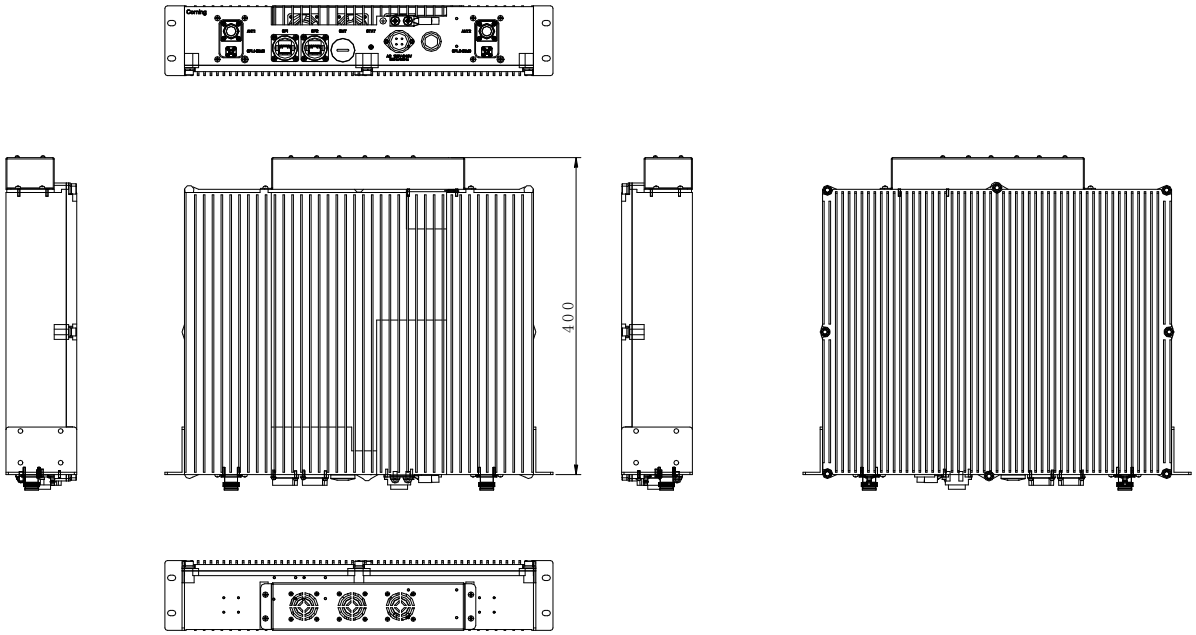


Figure 72. dMRU Dimensions - with Fan

Physical Dimensions		
Dimension (W x H x D) （approx.	Inch(mm)	17 x 3.5 x 14.4 (440 x 88 x 365)
Weight (approx.	Lbs. (Kg)	15 (6.8)

2.6.3 dMRU Interfaces

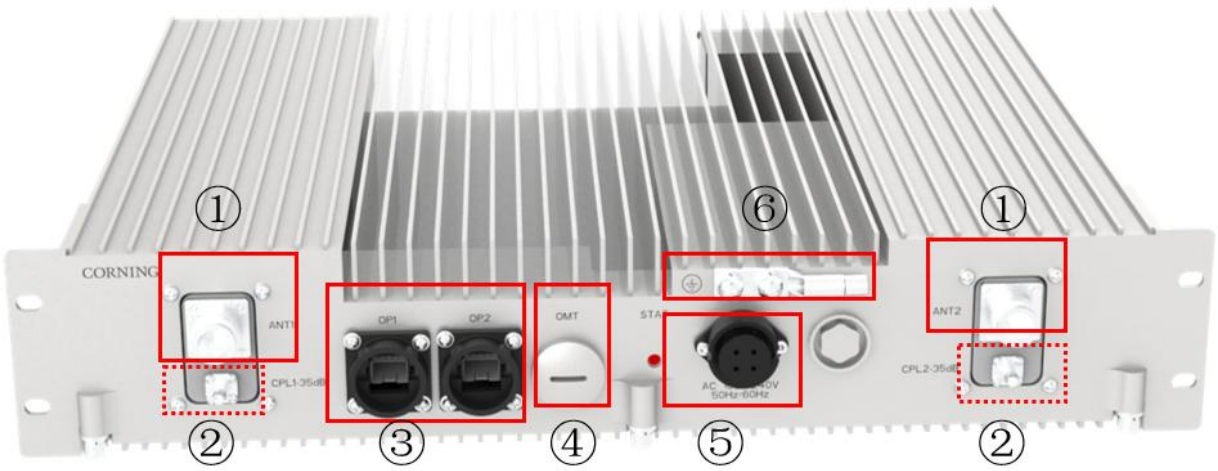


Figure 73. dMRU Front View

SN	Connectors	Description	Quantity
①	Antenna Ports 1-2	4.3-10 female	2
②	Couple Ports 1-2(-35dB)	QMA female	2
③	CPRI Port	SFP+ 24.3Gbps	2
④	Management Ports	RJ45	1
⑤	Power Port	C016 20C003, male	1
⑥	Ground	Two holes M6	1

2.6.4 Cables Connection

For each of the units connect the external cables as follows:

- Power, see 2.6.5
- SFP+, see 2.6.6
- Fan, see 2.6.7

2.6.5 Power

Connect the AC cable to the dMRU connectors panel.

Figure 74. dMRU Connectors Panel

2.6.6 SFP+ Cables

Remove the rubber stopper from the SFP+ connector located in the dMRU CPRI port.
Connect the SFP+ LC/UPC SM DX optic cable to the dMRU optic connector.

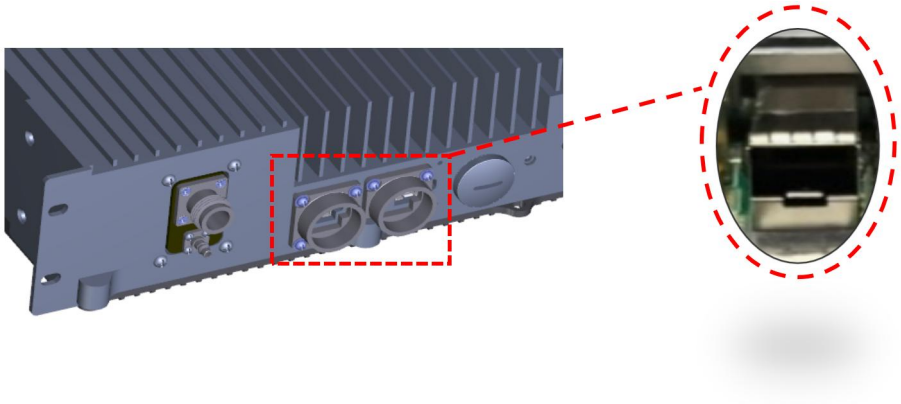


Figure 75. SFP Connector

Figure 76. Fiber

2.6.7 Fan module (optional)

If the upper and lower space of the equipment is less than 2U, a fan shall be added to assist heat dissipation.

Fan connection is shown in the figure below.

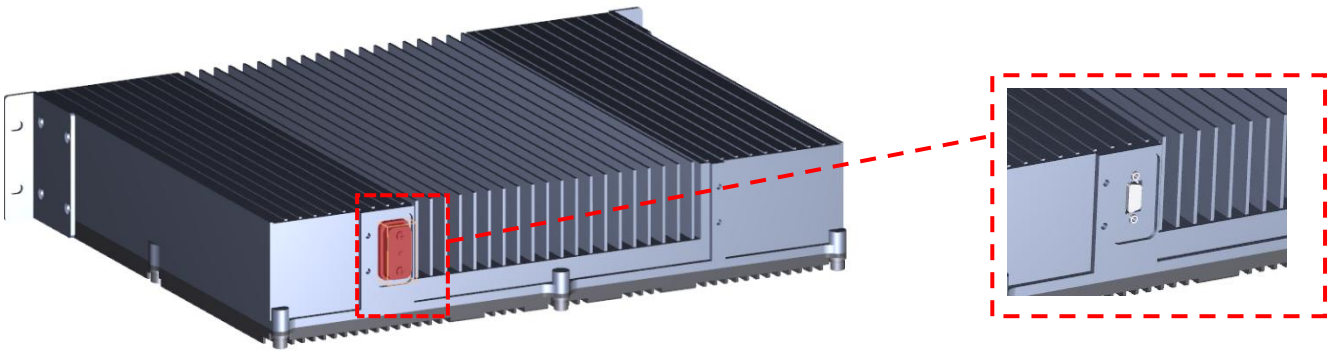


Figure 77. Fan Connection

Remove the cover plate of the end face joint and expose the joint DB15.

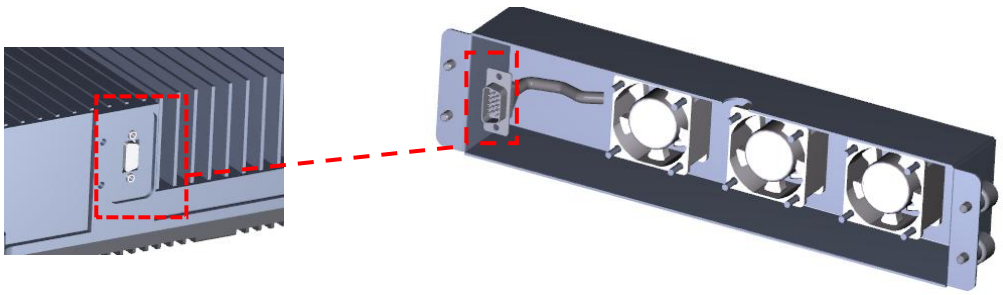


Figure 78. Fan Connection with DB15

Connect DB15.

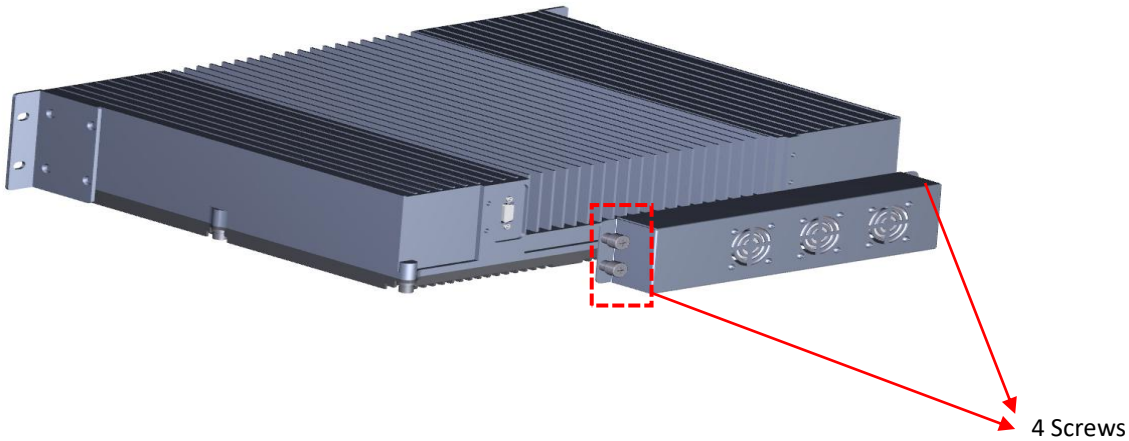


Figure 79. Fan Installation

Use four screws to secure the fan module.

2.6.8 Mount the dMRU

The dMRU may be mounted on cabinet. Push the cabinet into place and secure the four 4 screws.

Without Fan With Fan

Figure 80. Rack Installation

2.6.9 Wall mounted installation

a) dMRU bracket dimensions

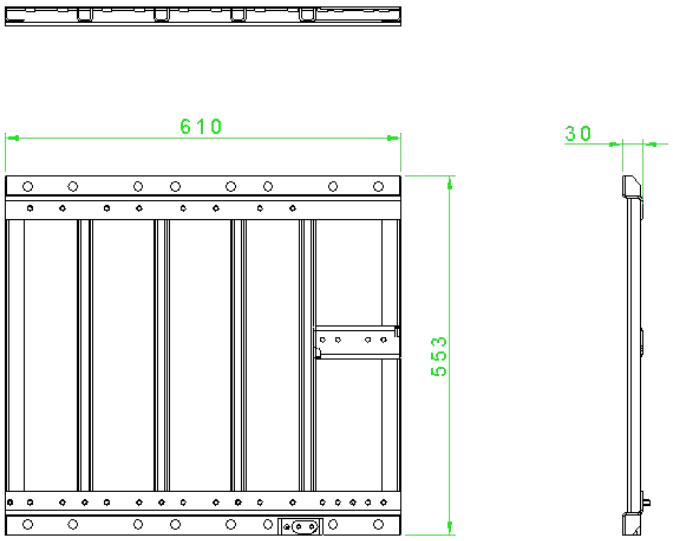


Figure 81.dMRU bracket dimensions

SN	Parameter	Specification
1	Size	610mm x 30mm x 553mm
2	Material	Q235
3	Color	RAL 9003
4	Weight	6.5Kg

b) Wall mounted installation

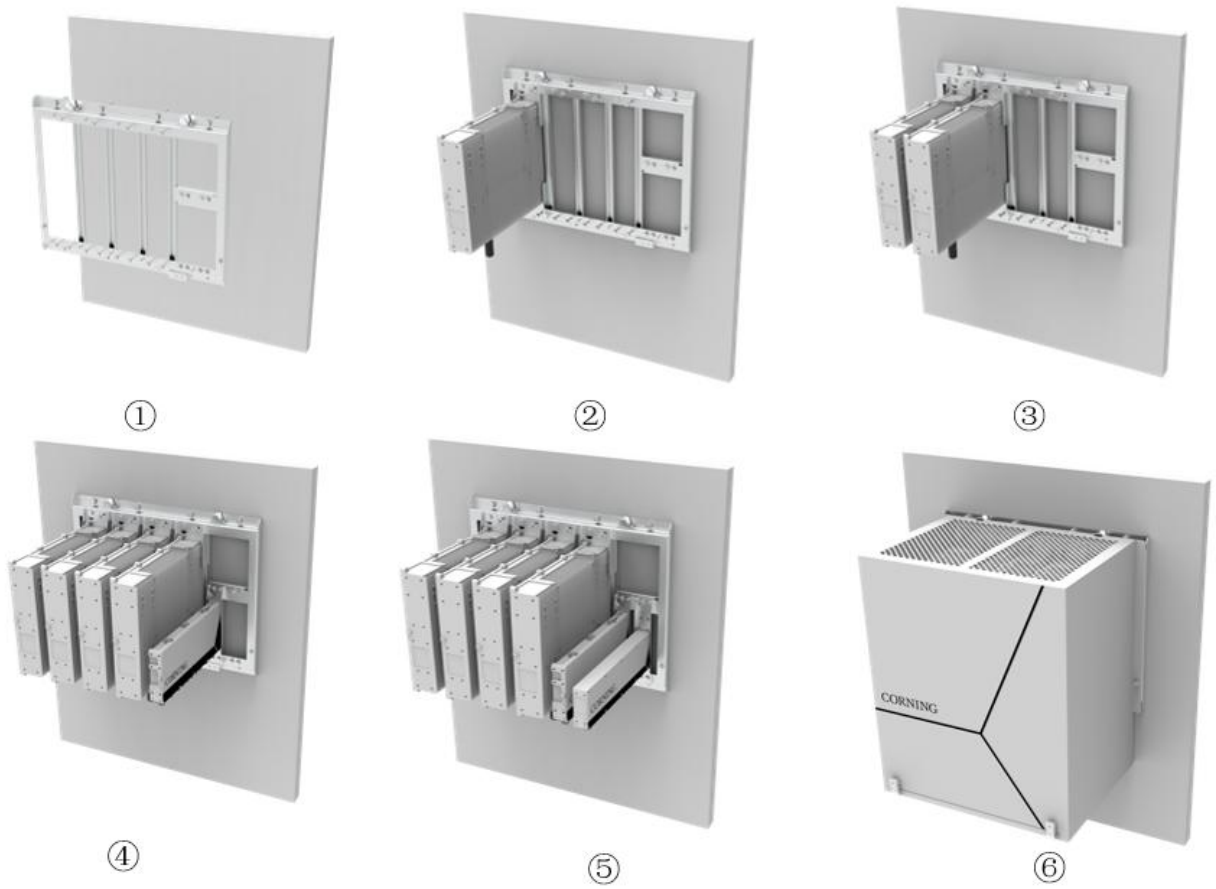


Figure 82. Wall mounted installation

The installation steps are as follows:

1) Step 1: Determine the installation position based on the dimensions of the mounting rack, drill holes in the wall according to the positions of the mounting holes, and prepare to install M10*110 expansion screws.
2) Step 2: Fix the mounting rack on the wall with 8 M10*110 expansion bolts.
3) Step 3: Put the device first on the mounting rack to hang nails, straighten the position;
4) Step 4: Connect the device and the mounting rack with 3 M8x16 bolts. All devices and the mounting rack are connected in the same way.
5) Step 5: If a shelter cover needs to be installed, determine the installation position based on the dimensions of the occlude cover. (The left and right sides of the shelter cover are centred on the left and right sides of the occlude cover, and the top of the occlude cover is as close as possible to the mounting rack to provide enough cable space at the bottom.) Drill holes in the wall according to the positions of the mounting holes, and prepare to install M10*110 expansion screws.
6) Step 6: Fix the cover to the wall with four M10*110 expansion bolts.

2.6.10 Connect the rest of the Cables

For each of the units, connect the cables as follows:

- Ground, see 2.6.11
- Antenna, see 2.6.12

2.6.11 Ground

Note: Ground according to local regulations

The following additional (not supplied) tools and components are required for connecting the system ground:

- Grounding cable - should be sized according to local and national installation requirements. The provided grounding lug supports 6 AWG stranded copper cable conductors.

1. Use a wire-stripping tool to remove approximately 0.4 inch (10.9 mm) of the covering from the end of the grounding wire.
2. Insert the stripped end of the grounding wire into the open end of the grounding lug.
3. Crimp the grounding wire in the barrel of the grounding lug. Verify that the ground wire is securely attached to the ground lug by holding the ground lug and gently pulling on the ground wire.
4. Prepare the other end of the grounding wire and connect it to an appropriate grounding point at the site to ensure adequate earth ground.

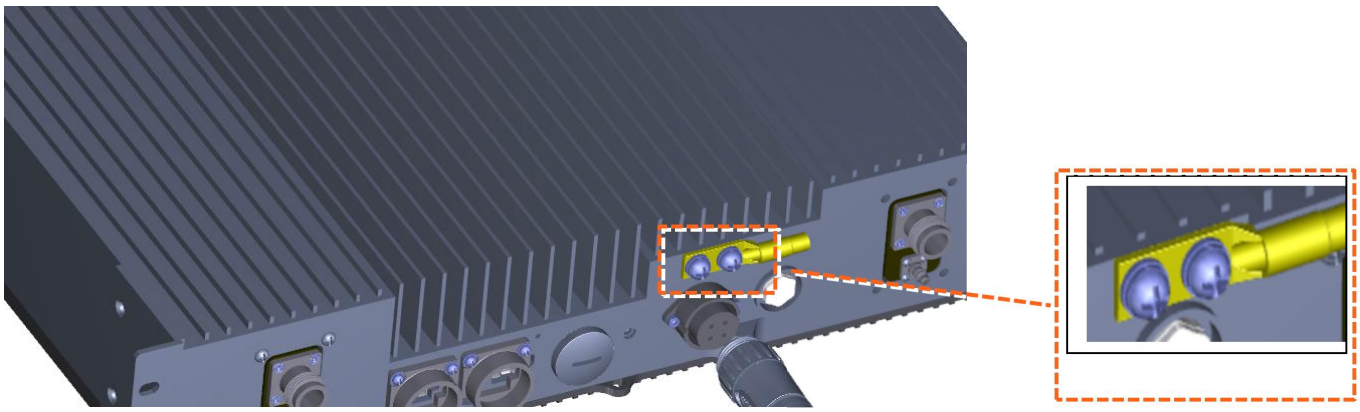


Figure 83. GND Connection

2.6.12 Antenna

Connect the dMRU male 4.3-10 Type duplexed RF “ANTENNA” port to the broadband antenna(s) using appropriate coax cables.

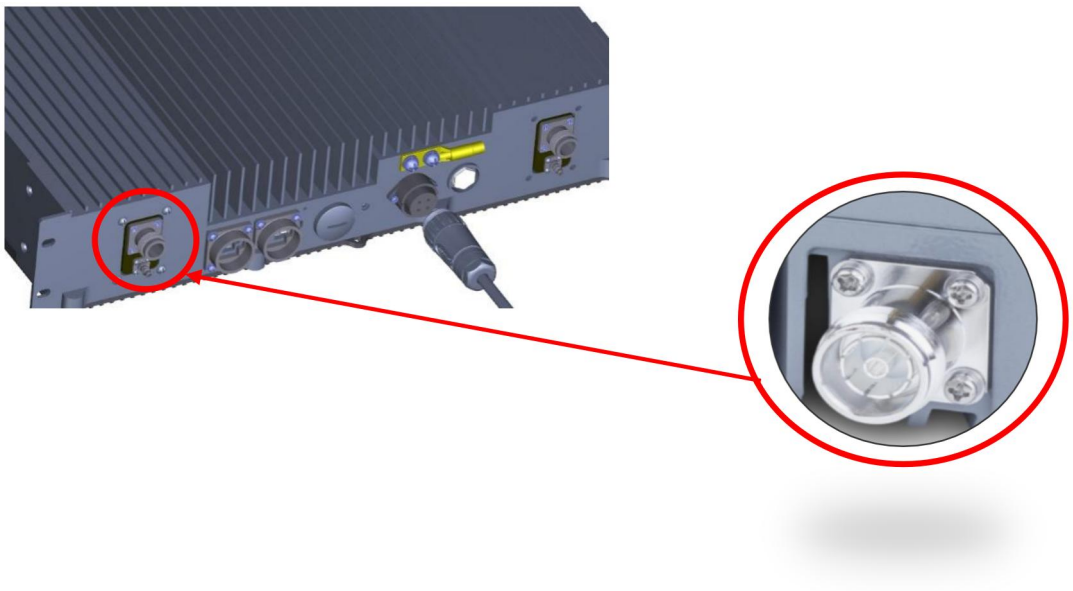


Figure 84. Antenna Connection

2.6.13 Verify normal operation

The following Table describes the dMRU LED behaviour.

MODULE LED	Outside the module		
Status	Description	Color	Status
Power Up	The dMRU was powered up	Green	Solid
RUN	The system is up and running	Green	Blinking (1Hz)
Identify	Identify dMRU was activated	Green	Blinking (2Hz)
Over temperature	The dMRU temperature exceeded the max range	Red	Blinking(1Hz)
Hardware Failure	Hardware failure occurred	Red	Solid

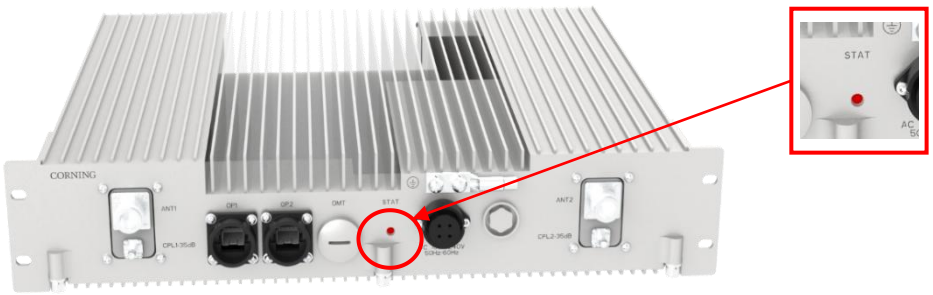


Figure 85. LED on dMRU

2.7 dHRU FDD Installation

2.7.1 Verify box Contents

1. Open the package and verify all elements are available.

Table 32. dHRU-FDD Packing List

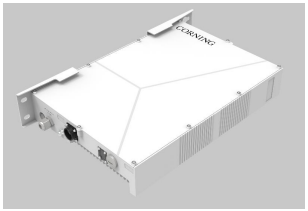
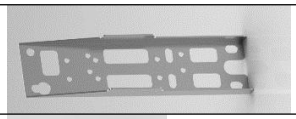
Item	Image	Description	Quantity
Hardware-provided in the box			
dHRU-FDD unit		dHRU-G2-6/7/85/17/19/23	1
Power Cable		4m	1
SFP waterproof connector			1
M8x16 screw		M8×16	3
Rack screw		RX-7W22-5815	1
Hardware- not provided in the box			
SFP+ Pluggable Transceivers		(hot-pluggable optical transceiver module); Support for option 8 line-rate 25 Gbps, single mode	According to actual use
Optical cables		Up to 10 km LC/UPC SM DX	According to actual use
Termination Load		Termination load with 50Ω, 4.3-10 Male connecter; Additional purchase required;	TBD per box
Required tools			
Phillips Screwdriver			1

Table 33.dHRU Bracket (dHRU-G2-BR) Packing List

NO.	Item	Image	Description	Quantity
1	dHRU-G2-BR		dHRU-G2-BR	1
2	Expansion bolt		M10*110	8

Table 34. dHRU-G2-COMB-L Combiner Packing List

NO.	Item	Image	Description	Quantity
1	dHRU-G2-COMB-L unit		Low bands combiner.	1
2	Mounting Panel		Install the combiner to bracket	1
3	Rack screw		Used for Mounting Panel with bracket	1
4	M8x16 screw			3
5	M5x12 screw		Used for combiner with mounting panel	4
6	Cable		RF Jumper cable	6

.

2.7.2 dHRU Dimensions

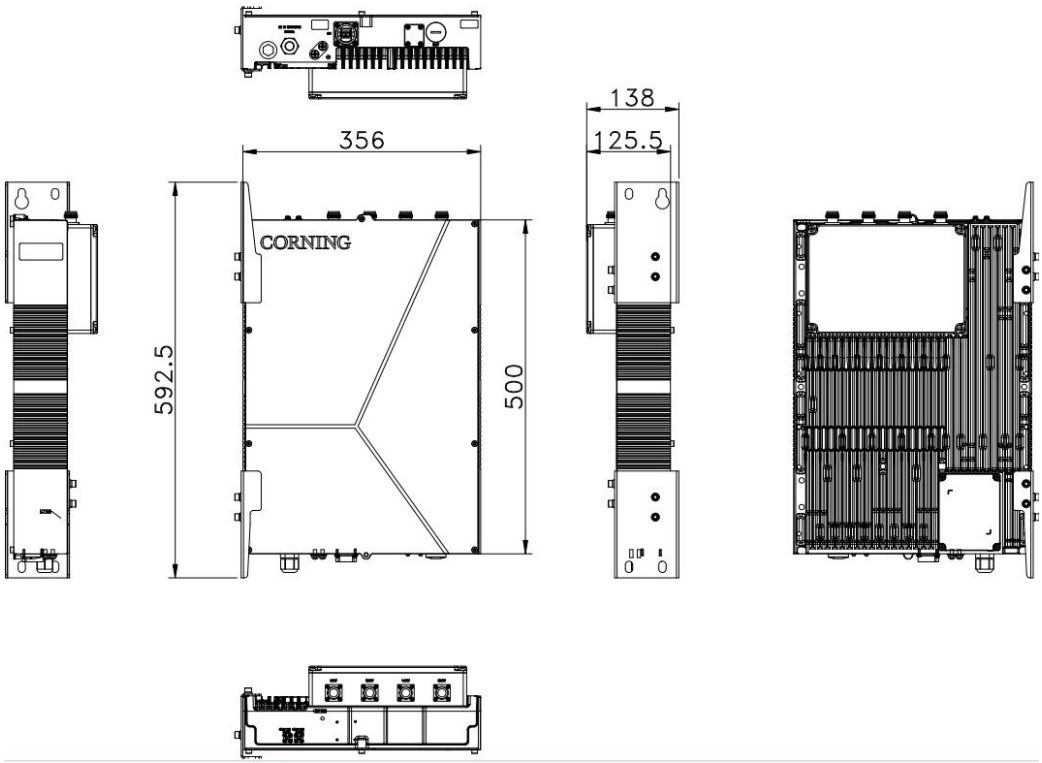


Figure 86.dHRU-700 Dimension

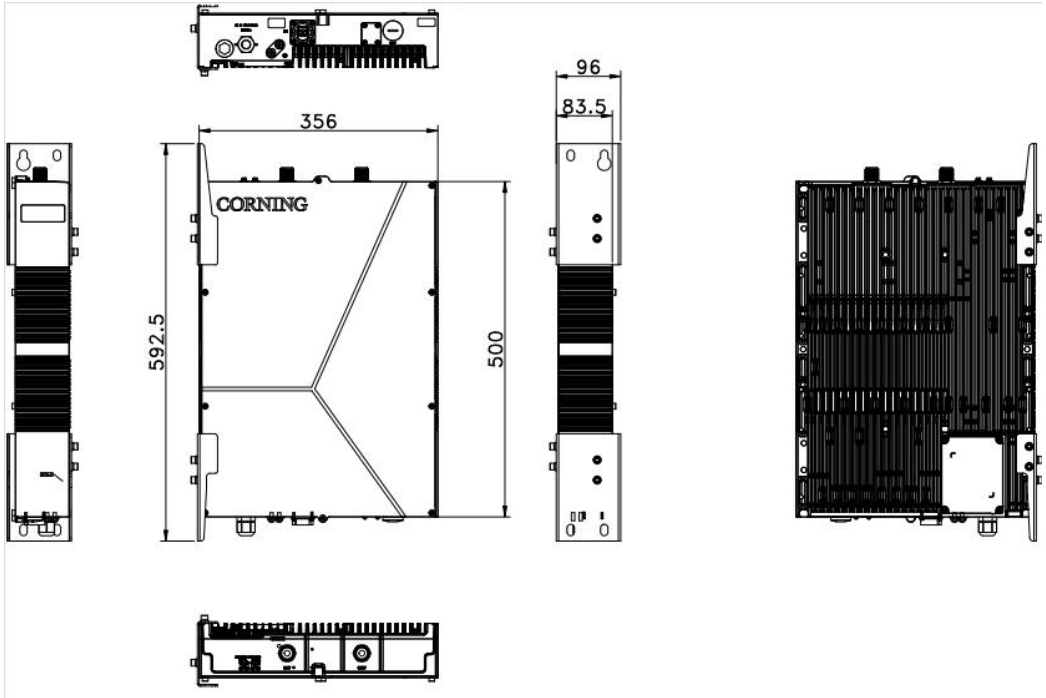


Figure 87. dHRU-600 Dimension

Physical Dimensions		700	600
Dimension (W x H x D) (approx.)	Inch (mm)	19.6x 14 x 4.9 (500 x 356 x 125.5)	19.6x 14 x 3.2 (500 x 356 x 83.5)
Weight (approx.)	Lbs. (Kg)	43.6 (19.8)	40.8 (18.5)

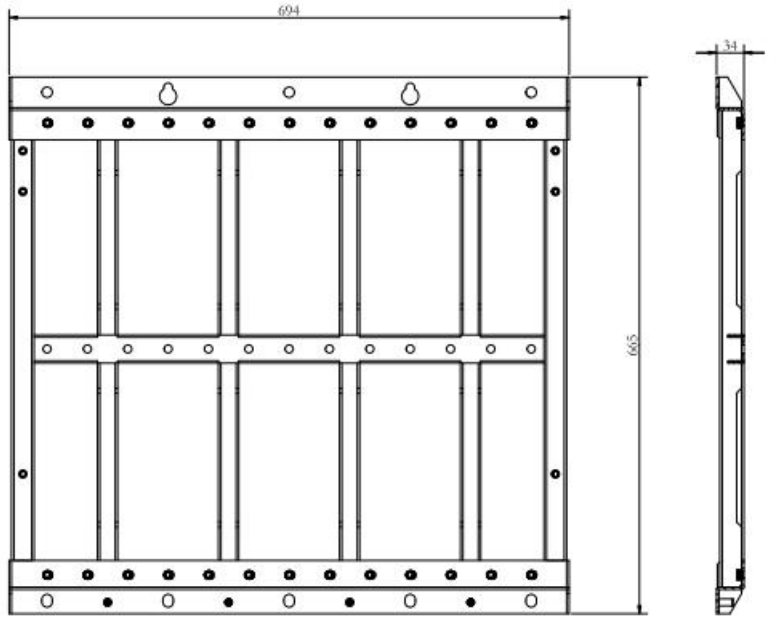


Figure 88.dHRU Bracket Dimension

Physical Dimensions		
Dimension (W x H x D) (approx.)	Inch (mm)	27.3 x26.1 x1.3 (694x 665 x 34)
Weight (approx.)	Lbs. (Kg)	23(10.5)

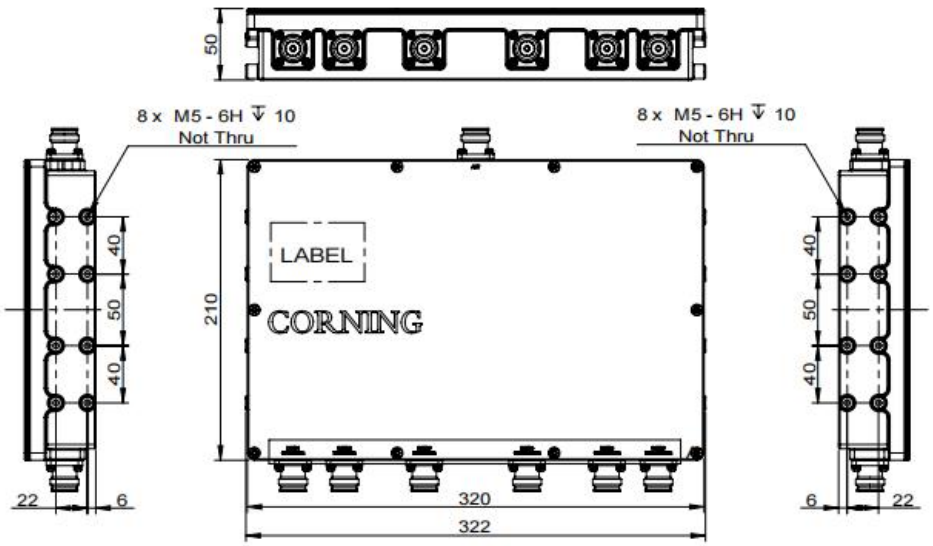


Figure 89.dHRU-G2-COMB-L combiner

2.7.3 dHRU FDD Interfaces

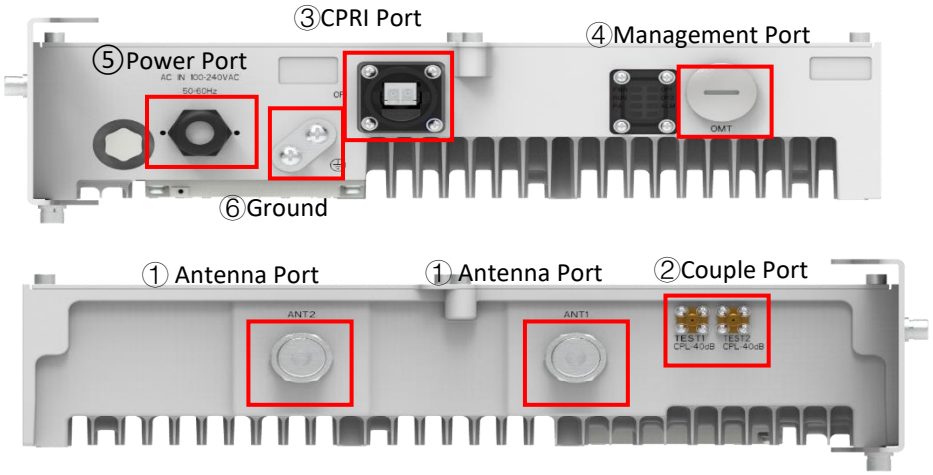


Figure 90. dHRU-FDD Front View

Table 35. dHRU-FDD Interface Introduction

SN	Port Name	Description	Quantity
①	Antenna Ports 1-2	4.3-10 female	2
②	Couple Ports 1-2 (-35dB)	QMA female	2
③	CPRI Port	SFP+ 10 Gbps	2
④	Management Port	RJ45	1
⑤	Power Port	C016 20C003, male	1
⑥	Ground	Two holes M6	1

2.7.4 Cables Connection

For each of the units connect the external cables as follows:

- Power, see 2.7.5
- SFP+, see 2.7.6

2.7.5 Power

Connect the AC wire to the dHRU connectors panel

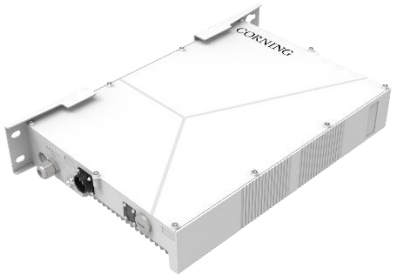


Figure 91. dHRU Connectors Panel

2.7.6 SFP+ Cables

Remove the rubber stopper from the SFP+ connector located in the dHRU CPRI port
Connect the SFP+ LC/UPC SM DX optic cable to the dHRU optic connector.

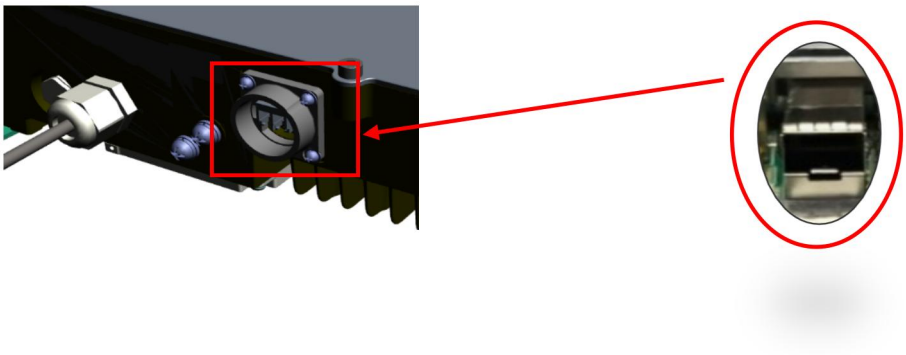


Figure 92. SFP Connector

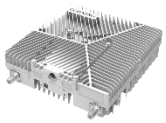


Figure 93. SFP+ Pluggable Transceivers

Figure 94. Fiber

2.7.7 Wall mounted installation

The specific installation steps are as follows:
Step 1: Determine the installation position based on the external dimensions of the mounting bracket, drill holes on the wall according to the position of the mounting bracket fixing holes, and prepare to install M10 * 110 expansion screws;
Step 2: Use 8 M10 * 110 expansion bolts to fix the installation bracket to the wall, as shown in the figure below;

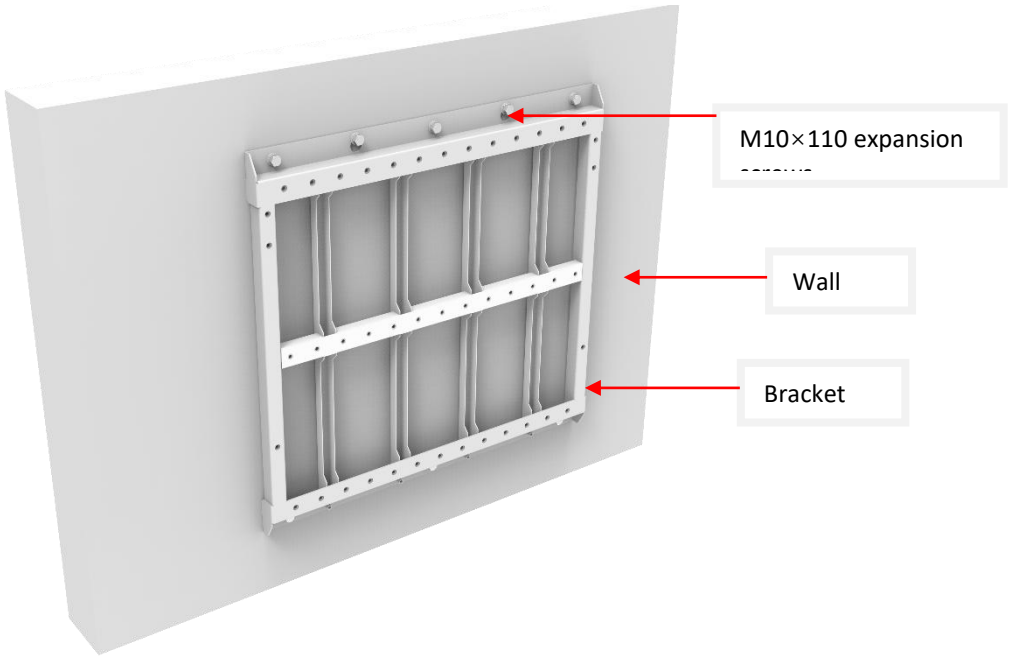


Figure 95. Wall mounted installation

Step 3: Hang the equipment on the mounting bracket and set it in the correct position;

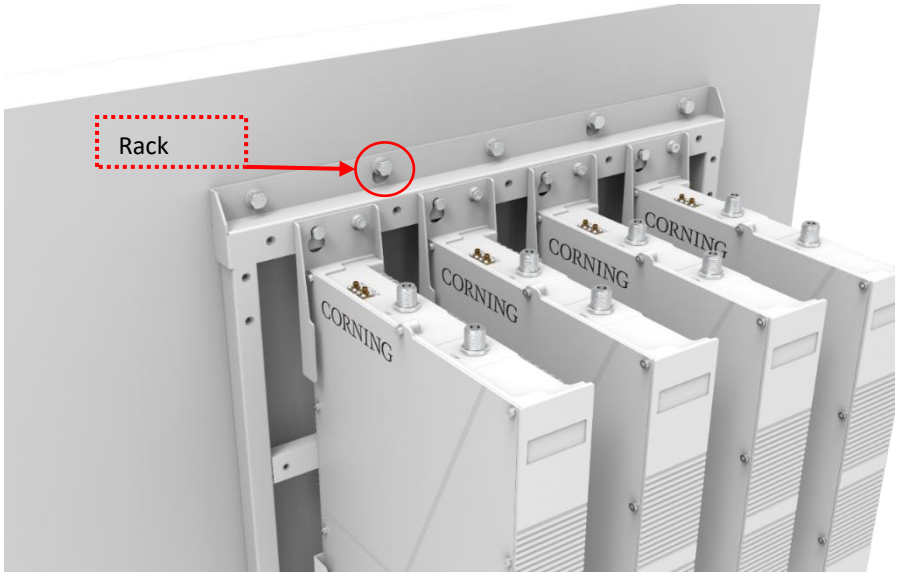


Figure 96. Wall mounted installation

Step 4: Use 3 M8 ×16 combination bolts to fix the dHRU unit up and down. Pay attention to inspection, and the bolts must have corresponding specifications of spring washers and flat washers, and be sure to tighten them, as shown in the figure below;

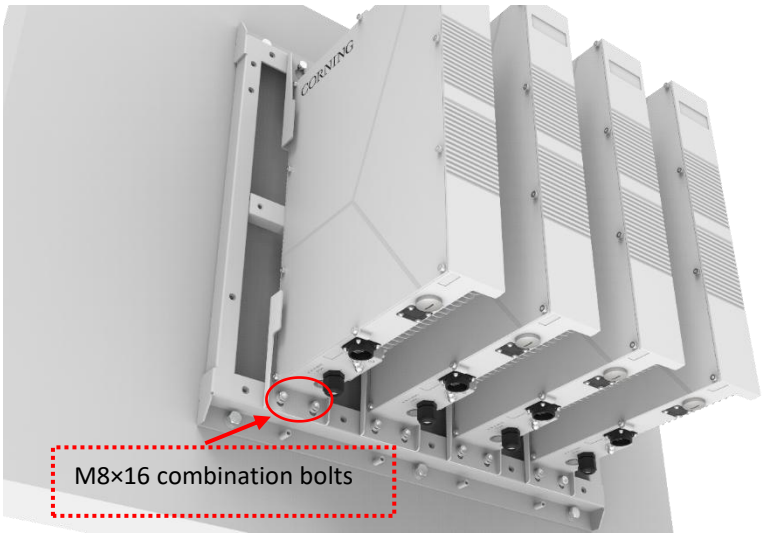


Figure 97. Tighten screw M8×16 combination bolts

Step 5: The installation is completed.

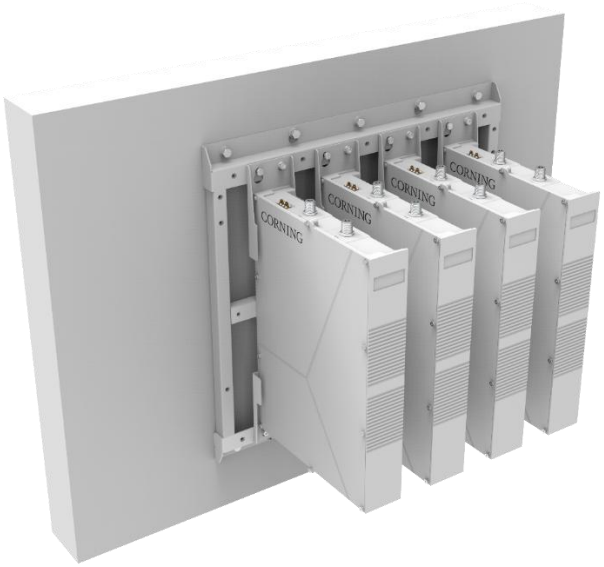


Figure 98. Complete the installation

2.7.8 Connect the rest of the Cables

For each of the units, connect the cables as follows:

- Ground, see 2.7.9
- Antenna, see 2.7.10

2.7.9 Ground

Note: Ground according to local regulations

The following additional (not supplied) tools and components are required for connecting the system ground:

- Grounding wire - grounding wire should be sized according to local and national installation requirements. The provided grounding lug supports 6 AWG stranded copper wire conductors.

1. Use a wire-stripping tool to remove approximately 0.4 inch (10.9 mm) of the covering from the end of the grounding wire
2. Insert the stripped end of the grounding wire into the open end of the grounding lug
3. Crimp the grounding wire in the barrel of the grounding lug. Verify that the ground wire is securely attached to the ground lug by holding the ground lug and gently pulling on the ground wire
4. Prepare the other end of the grounding wire and connect it to an appropriate grounding point at the site to ensure adequate earth ground

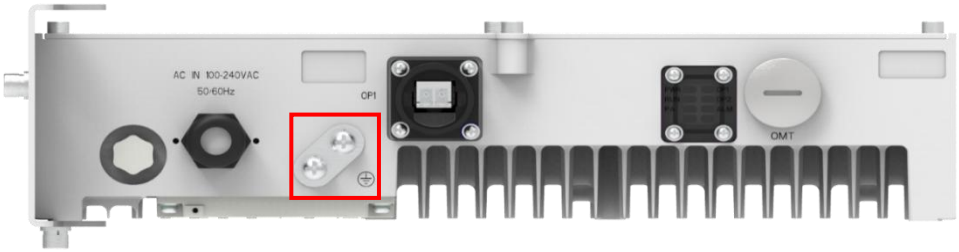


Figure 99. GND Connection

2.7.10 Antenna

Connect the dHRU male 4.3-10 Type duplexed RF “ANTENNA” port to the broadband antenna(s) using appropriate coax cables.

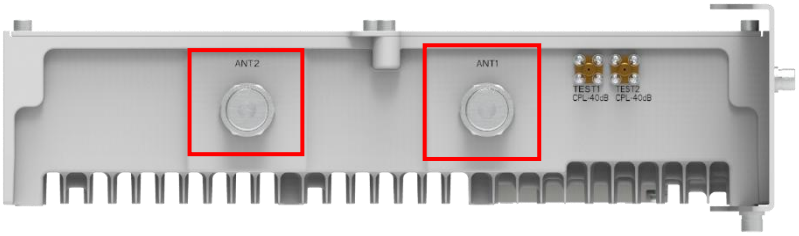


Figure 100. Antenna Connection

2.7.11 Verify normal operation

The following Table describes the dHRU LED behaviour.

MODULE LED	Outside the module		
Status	Description	Color	Status
Power Up	The dHRU was powered up	Green	Solid
RUN	The system is up and running	Green	Blinking (1Hz)
Identify	Identify dHRU was activated	Green	Blinking (2Hz)
Over temperature	The dHRU temperature exceeded the max range	Red	Blinking(1Hz)
Hardware Failure	Hardware failure occurred	Red	Solid

Figure 101. LED on dHRU

2.8 dHRU TDD Installation

2.8.1 Verify box contents

Open the package and verify all elements are available.

Table 36. dHRU TDD Packing List

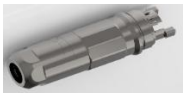
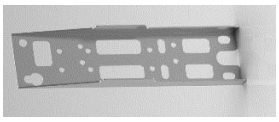
Item	Image	Description	Quantity
Hardware – provided in the box			
dHRU-TDD unit		dHRU-G2-25/35	1
Power Cable			1
SFP waterproof connector			2
M8x16 screw		M8×16	4
Rack screw		RX-7W22-5815	1
Hardware – not provided			
SFP+ Pluggable Transceivers		(hot-pluggable optical transceiver module); Support for option 8 line-rate 25 Gbps, single mode	2
Optical cables		Up to 10 km LC/UPC SM DX	
Termination load		Additional purchase required; Termination load with 50Ω, 4.3-10 Male connecter.	TBD per box
Required tools			
Phillips Screwdriver			1

Table 37. dHRU-G2-COMB-H1/H2 Combiner Packing List

NO.	Item	Image	Description	Quantity
1	dHRU-G2-COMB-unit		High bands combiner.	1
2	Mounting Panel		Install the combiner to bracket	1
3	Rack screw		Used for mounting panel with bracket	1
4	M8x16 screw			3
5	M5x12 screw		Used for combiner with Mounting Panel	4
6	Cable		RF Jumper Cable: dHRU-G2-COMB-H1 or H2	4 or 6

2.8.2 dHRU TDD Dimensions

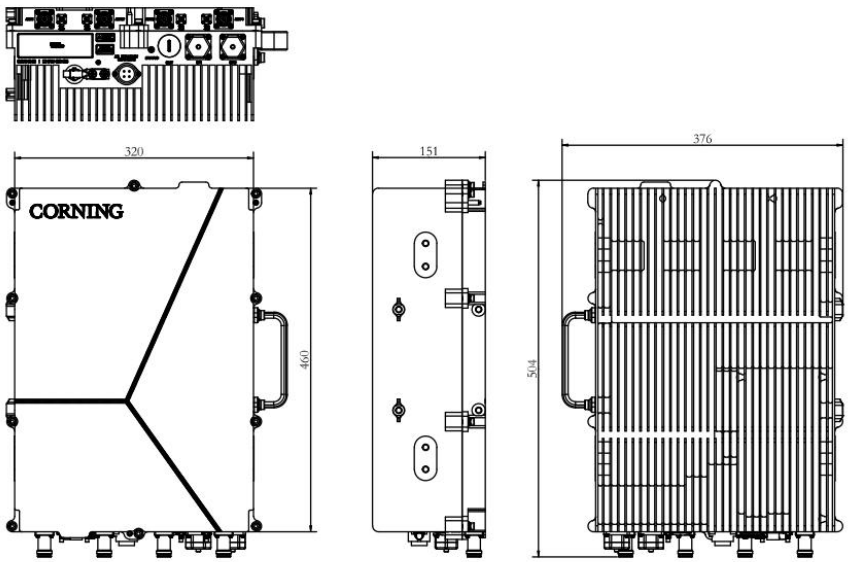


Figure 102. dHRU TDD Dimensions

Table 38. dHRU TDD Dimensions

Physical Dimensions		
Dimension (W x H x D) (approx.)	Inch (mm)	17.3’ x 11.8’ x 5.9’ (460 x 320 x 151)
Weight (approx.)	Lbs. (Kg)	50.7(23)

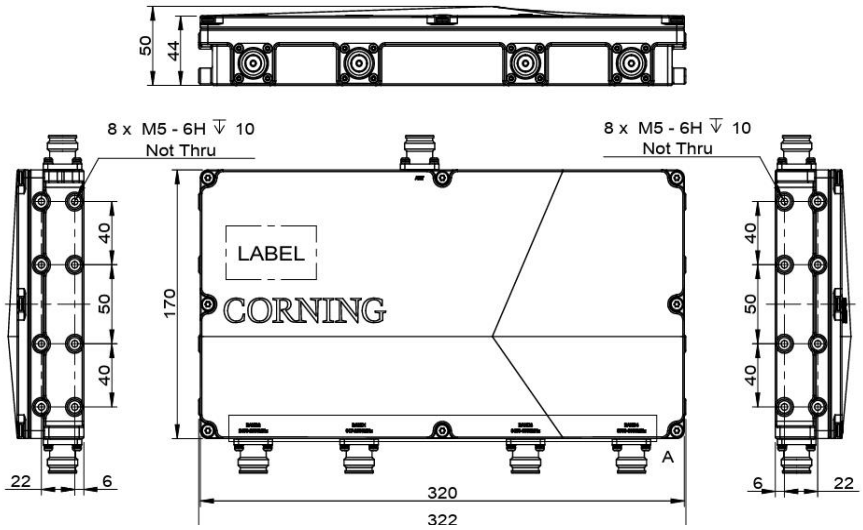


Figure 103. dHRU TDD Combiner Dimensions

Table 39. dHRU TDD Combiner Dimensions

Physical Dimensions		
Dimension (W x H x D) (approx.)	Inch (mm)	12.6’ x 6.6’ x 1.9’ (322x170x50)
Weight (approx.)	Lbs. (Kg)	50.7(2.7kg)

2.8.3 dHRU TDD Interfaces

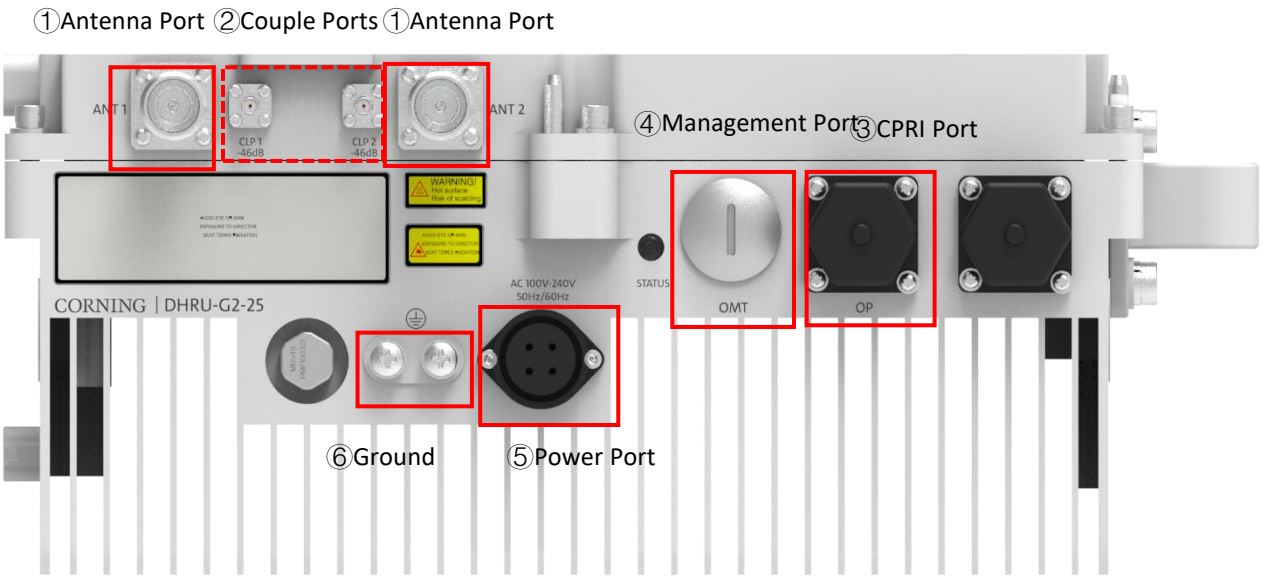


Figure 104. dHRU TDD-25 Front View

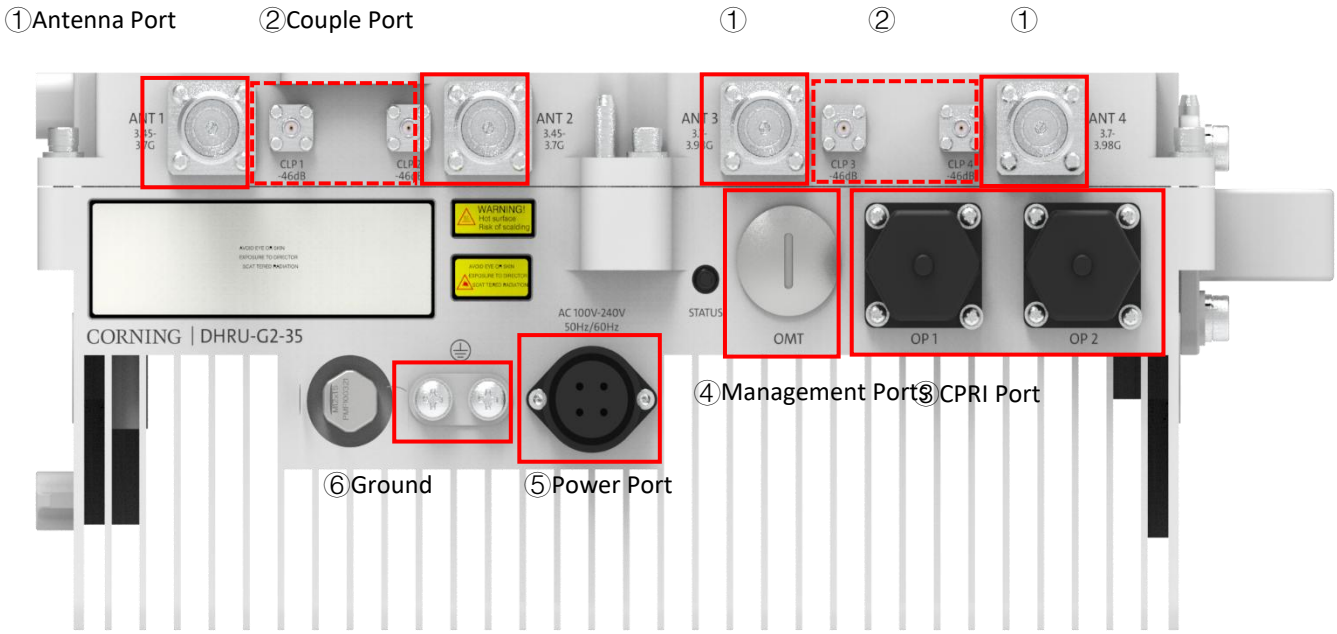


Figure 105. dHRU TDD-35 Front View

Table 40.dHRU-TDD Interface Introduction

NO.	Connectors	Description	Quantity	
①	Antenna Ports	4.3-10 female	dHRU-G2-25	2
			dHRU-G2-35	4
②	Couple Ports 1-2	QMA female	dHRU-G2-25	2
			dHRU-G2-35	4
③	CPRI Port	SFP+ 24.3Gbps	2	
④	Management Ports	RJ45	1	
⑤	Power Port	C016 20C003, male	1	
⑥	Ground	Two holes M6	1	

2.8.4 Cables Connection

For each of the units connect the external cables as follows:

- Power, see 2.8.5
- SFP+, see 2.8.6

2.8.5 Power

Connect the AC wire to the dHRU TDD connectors panel.

Figure 106. dHRU TDD Connectors Panel

Remove the rubber stopper from the SFP+ connector located in the dHRU TDD CPRI port
Connect the SFP+ LC/UPC SM DX optic cable to the dHRU TDD optical connector.

Figure 107. SFP Connector

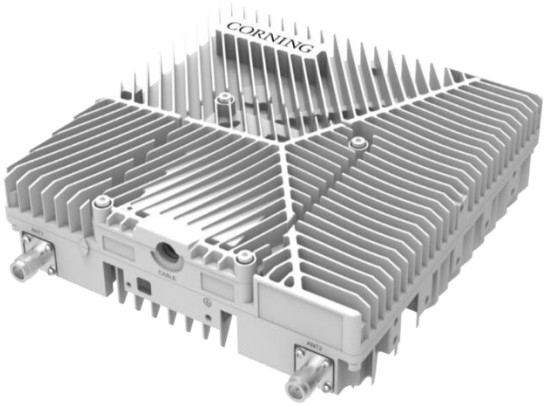


Figure 108. SFP+ Pluggable Transceivers

Figure 109. Fibre

2.8.6 Wall mounted installation

The specific installation steps are as follows:

Step 1: Determine the installation position based on the external dimensions of the mounting bracket, drill holes on the wall according to the position of the mounting bracket fixing holes, and prepare to install M10 * 110 expansion screws;

Step 2: Use 8 M10 * 110 expansion bolts to fix the installation bracket to the wall, as shown in the figure below;

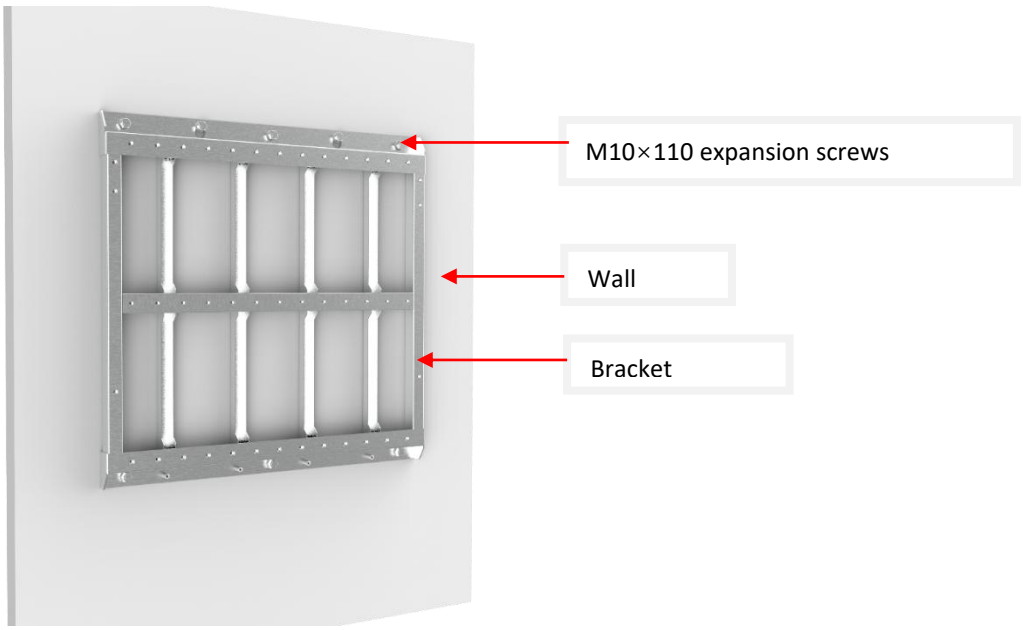


Figure 110.Wall mounted installation

Step 3: Hang the equipment on the mounting bracket and set it in the correct position;

Figure 111. Wall mounted installation

Step 4: Use 3 M8 ×16 combination bolts to fix the dHRU TDD unit up and down. Pay attention to inspection, and the bolts must have corresponding specifications of spring washers and flat washers, and be sure to fasten them.

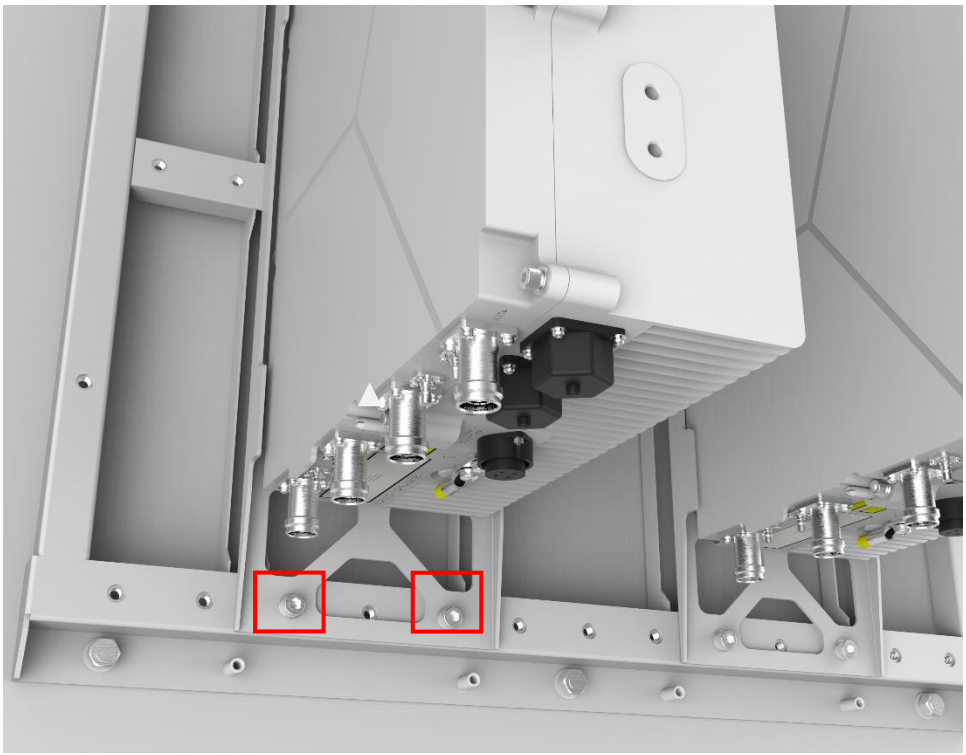


Figure 112. Fasten screws M8×16 combination bolts

Step 5: The installation is completed.

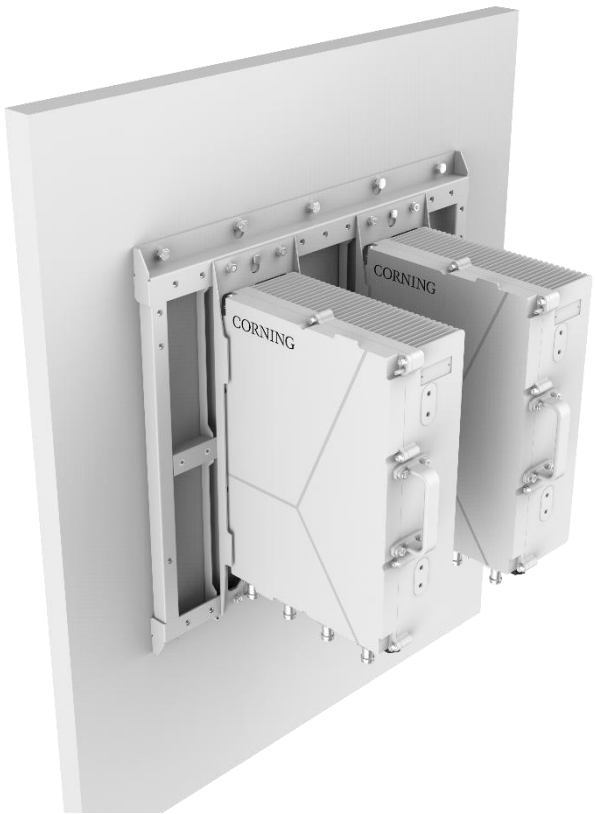
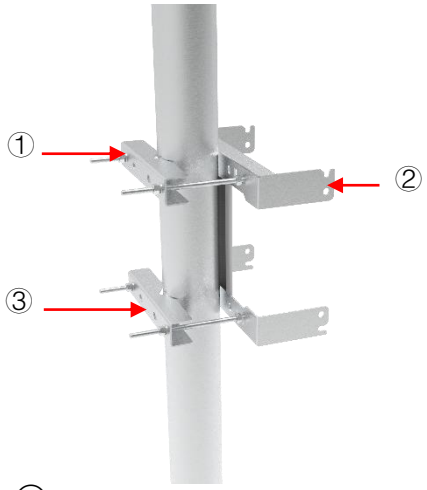
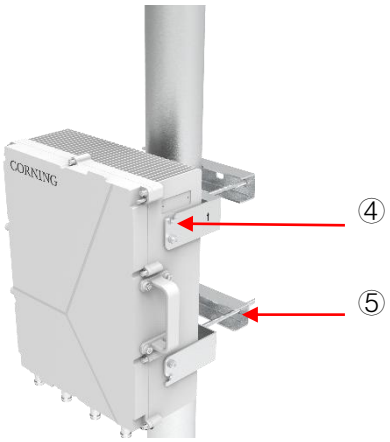


Figure 113.Complete the installation

2.8.7 Pole installation



①M10 screw &nut spring washer assembly
②I-shaped bracket
③Clip

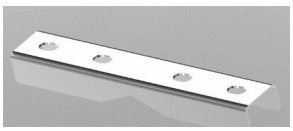
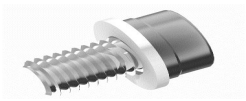


④ Rack screws
⑤Tighten M8 fastening screws

Step 1: Install the I- shaped mounting bracket on the pole with clip and M10 screw & nut spring washer assembly.

Step 2: Put the rack screws to the screw holes at the top and bottom on the left and right sides of the device.

Step 3: Hang the device with rack screws on the I-shaped bracket, then tighten the M8 fastening screws.

NO.	Image	Description	Quantity
1		I- shaped mounting bracket	1
2		Clip	1
3		M10 screw & nut spring washer assembly	1
4		Rack screws	4
5		M8 fastening screw	4

2.8.8 Ground

Note: Ground according to local regulations

The following additional (not supplied) tools and components are required for connecting the system ground:

- Grounding wire - grounding wire should be sized according to local and national installation requirements. The provided grounding lug supports 6 AWG stranded copper wire conductors.

1. Use a wire-stripping tool to remove approximately 0.4 inch (10.9 mm) of the covering from the end of the grounding wire
2. Insert the stripped end of the grounding wire into the open end of the grounding lug
3. Crimp the grounding wire in the barrel of the grounding lug. Verify that the ground wire is securely attached to the ground lug by holding the ground lug and gently pulling on the ground wire
4. Prepare the other end of the grounding wire and connect it to an appropriate grounding point at the site to ensure adequate earth ground

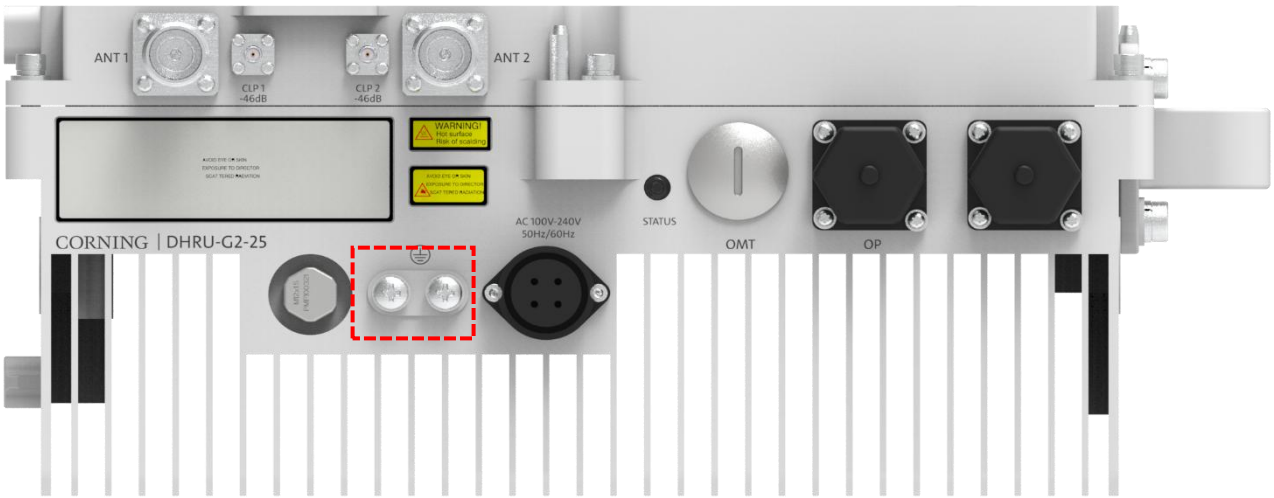


Figure 114.GND Connection

2.8.9 Connect the rest of the Cables

For each of the units, connect the cables as follows:

- Ground, see 2.8.9
- Antenna, see 2.8.11

2.8.10 Antenna

Connect the dHRU TDD male 4.3-10 Type duplexed RF “ANTENNA” port to the broadband antenna(s) using appropriate coax cables.

Figure 115.Antenna Connection

2.8.11 Verify normal operation

The following Table describes the dHRU TDD LED behavior.

MODULE LED	Outside the module		
Status	Description	Colour	Status
Power Up	The dHRU TDD is powered up	Green	Solid
RUN	The system is up and running	Green	Blinking (1Hz)
Identify	Identify dHRU TDD is activated	Green	Blinking (2Hz)
Over temperature	The dHRU TDD temperature exceeds the max range	Red	Blinking(1Hz)
Hardware Failure	Hardware failure occurs	Red	Solid

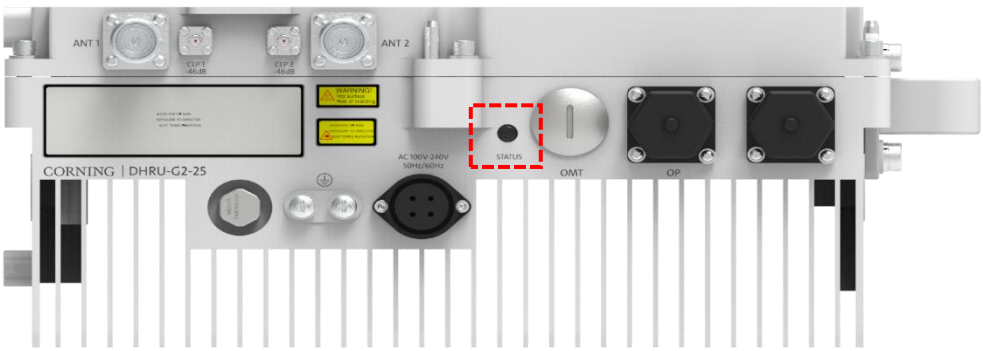


Figure 116.LED on dHRU