

3.4. Recommended Installation Tools







Introduction

This section describes all the recommended tools for installation of **WiBAS™ OSDR-HUB** and **WiBAS™ G5 micro-BS / evo-BS**.

Prerequisites

It is installer responsibility to provide the tools for equipment installation.

Equipment installation tools

Item	Tool / Photo	Description
1		Adjustable torque U-wrench tool (up to 29 mm opening and supporting max tightening torque 40 Nm). Used for tightening screws and nuts.
2		Adjustable torque wrench tool with bits (supporting max tightening torque 20 Nm). Used for tightening screws and nuts.
3		Set of allen keys. Used for: <ul style="list-style-type: none">• WiBAS™ OSDR-HUB radio unit wave guide polarizer (1.5 mm) and cable holder installation (2.5 mm).• WiBAS™ G5 micro-BS / evo-BS screws (2.5 mm) de-installation for installing omnidirectional antenna (HANT28360V).
4		Digital inclinometer with magnetic base. Used for antennas sectoral 90° alignment works.
5		13 mm and 8 mm wrench. Used for antennas sectoral 90° alignment works (13 mm) and OSDR-360-ANT-MNT-KIT (8 mm).
6		Cross head and Flat head slotted tip screwdrivers (PH2 / PH3). Used for general works.










Continued on next page

Recommended Installation Tools, Continued



Termination of cables

Type of cables to be terminated:

- Ethernet (S-FTP) ([ETH-CAB-SFTP](#)).
- Power supply cable ([AC-PWR-CAB](#), [DC-PWR-CAB-1 / 2 / 3](#)).
- Grounding ([GND-CAB6-ID](#), [GND-KIT16-OD](#)).

Item	Tool / Photo	Description
1		Blade.
2		Cable cutter.
3		Pliers (long nose).
4		CRIMP-TOOL-S
5		Ethernet cable tester.
6		Crimping tool for 6 mm ² and 16 mm ² grounding cable.
7		Hot air gun.
8		Soldering iron.
9		Solder.

Specific works

Item	Tool / Photo	Description
1		Drill machine with 5 mm bit. Used for wall installation of power injectors.
2		TOOL-M20 Used for cable gland installation of power injectors (PONE-OD67-AC - POE-HP-OD67-DC).

4. Installation Procedures

Scope

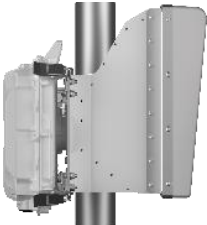
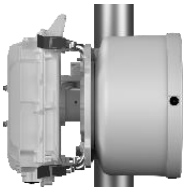

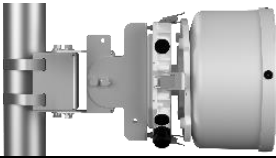
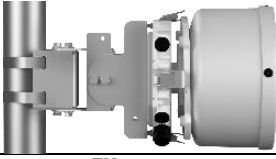
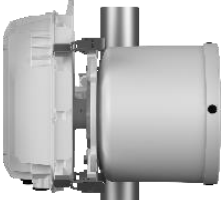
This chapter describes in topics the main installation procedures of the following wireless equipment:

- **WiBAS™ OSDR-HUB**
- **WiBAS™ G5 micro-BS**
- **WiBAS™ G5 evo-BS**
- **WiBAS™ G5 dual-BS**

#	Description	Page
1	Installing Radio Units and Antennas	81
2	Installing External GNSS Module	165
3	Installing Radio Units Cables	176

4.1. Installing Radio Units and Antennas

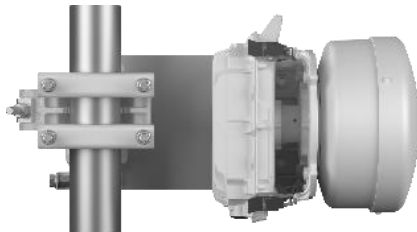
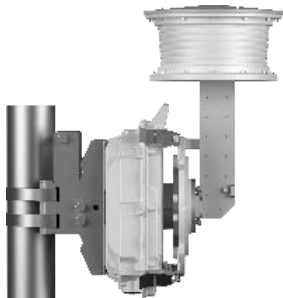

Introduction This section describes the installation procedures for radio unit and antenna, as follows:

Photo	Installation Procedure Description
WiBAS™ OSDR-HUB 	WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna (page 83)
WiBAS™ OSDR-HUB 	
WiBAS™ G5 micro-BS / evo-BS 	WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna (page 97)
WiBAS™ G5 micro-BS / evo-BS 	WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit (page 105)
WiBAS™ G5 micro-BS / evo-BS 	WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit (page 117)
WiBAS™ G5 dual-BS 	WiBAS G5 dual-BS and Dual-Polarization Sectoral 90 Integrated Antenna (page 129)

Continued on next page

Installing Radio Units and Antennas, Continued

Introduction,
continued

Photo	Installation Procedure Description
WiBAS™ OSDR-HUB 	WiBAS OSDR-HUB and Sectoral 180 Integrated Antenna (page 133)
WiBAS™ OSDR-HUB 	WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit (page 139)
WiBAS™ G5 micro-BS / evo-BS 	WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit (page 148)
WiBAS™ G5 evo-BS 	WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m (page 157)

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna

Introduction

This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and sectoral antennas that are listed below:

		Radio Units Frequency (GHz) – Form Factor			
		WiBAS™ OSDR-HUB			
		10.5	26	28	32
Antenna Order Codes	BRA-1090H-I	√(1)	-	-	-
	BRA-1090V-I	√(1)	-	-	-
	HANT2690H-MB	-	√(1)	-	-
	HANT2690V-MB		√(1)	-	-
	HANT2690H-HG-MB		√(1)	-	-
	HANT2690V-HG-MB		√(1)	-	-
	HANT2890H-MB	-	-	√(1)	-
	HANT2890V-MB			√(1)	-
	HANT2890H-HG-MB			√(1)	-
	HANT2890V-HG-MB			√(1)	-
	HANT2628360V	-	-	-	-
	HANT3290H			-	-
	HANT3290V			-	-
				-	-



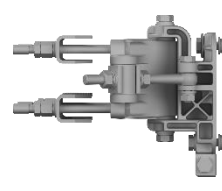

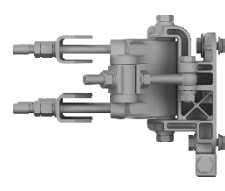
Continued on next page

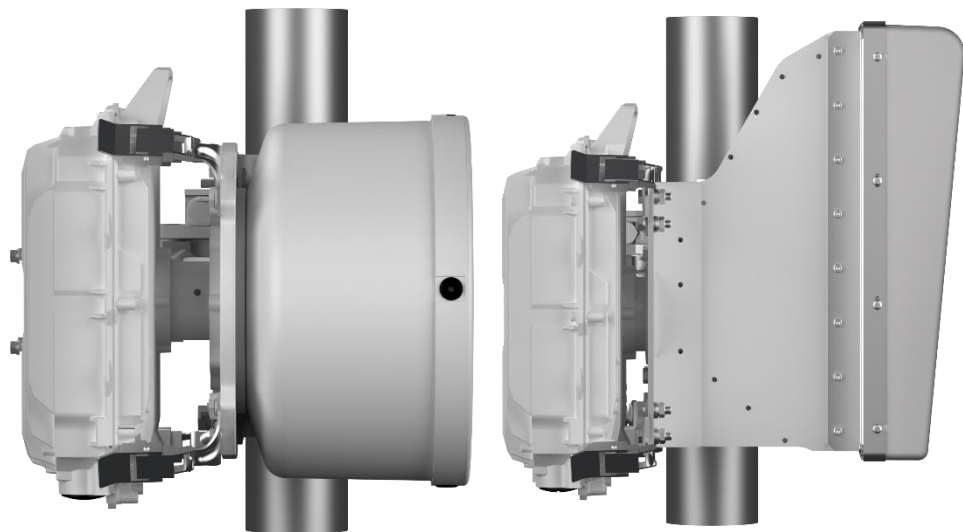
⁽¹⁾ Mounting kit from antenna package.

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

Overview

The following materials table for installation contains indicative order codes:


OSDR-26-H-1008-01		OSDR-10-H-350	
			
HANT2690V-MB		BRA-1090V-I	
			



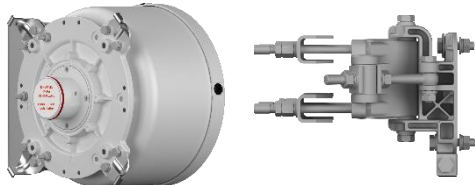
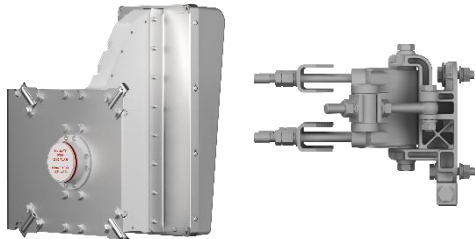
Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued


Radio unit packing materials

OSDR-26-H-1008-01 or OSDR-10-H-350	Details
	<ul style="list-style-type: none"> • Radio unit.

Antenna packing materials

HANT2690V-MB	Details
	<ul style="list-style-type: none"> • Antenna. • Pole mounting kit. • Greasing paste. • Installation leaflet.
BRA-1090V-I	Details
	<ul style="list-style-type: none"> • Antenna. • Pole mounting kit. • Greasing paste. • Installation leaflet.

Tool Kit packing materials

SEC-ANT-XPOL-KIT	Details
	<ul style="list-style-type: none"> • Universal antenna alignment tool. • 4mm ball-ended hexagon socket screw key.

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

Prerequisites

Assembly the antenna as per the installation manual inside the box.

Precautions

This procedure includes antenna adjustment verticality with respect to the ground.

**Installation
tools**

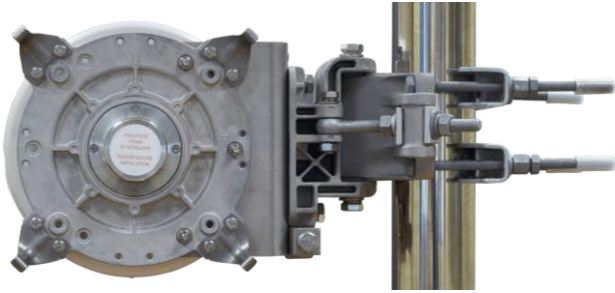
Adjustable torque u-wrench, allen key, digital inclinometer, wrench (13 mm) and screw drivers.

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

Procedure

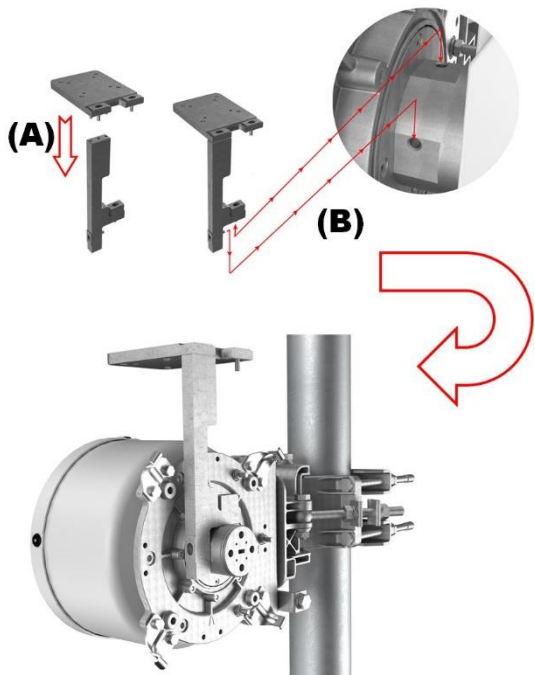
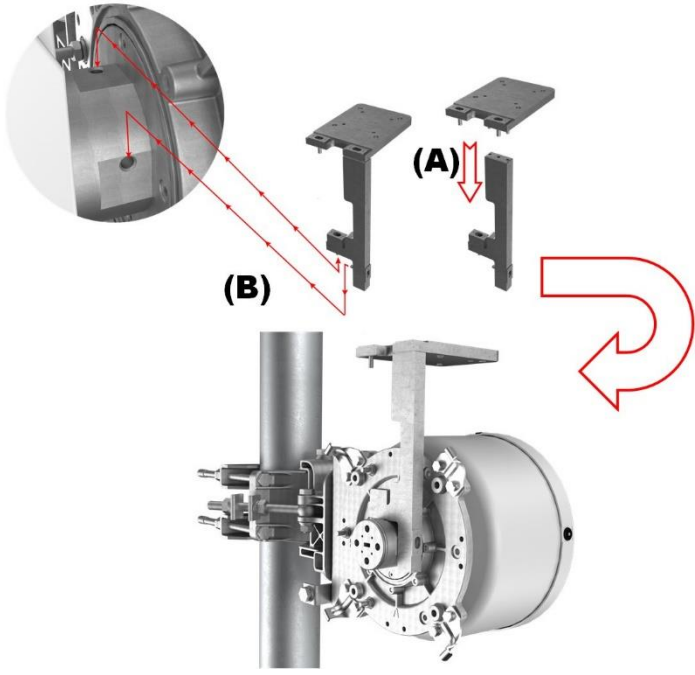
How to install the antenna of 26 or 28 GHz, proceed as follows:

Step	Action
1	<p>Follow the included instructions to assemble the antenna mount and attach it to the antenna.</p> <p>The antenna installation should be as shown below.</p>  <p>Note The antenna is capable to be installed in both side of the pole The photo is indicative of the installation in the right orientation of the antenna model.</p>

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued



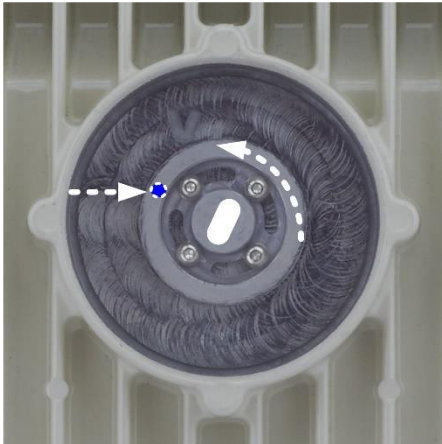



Procedure,
continued

Step	Action
2	<p>Use the allen key (included in package) to install the tool as shown below.</p> <div> <p>Antenna OFFSET RIGHT</p>  </div> <div> <p>Antenna OFFSET LEFT</p>  </div>

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

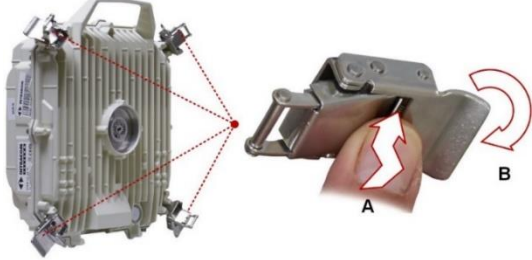
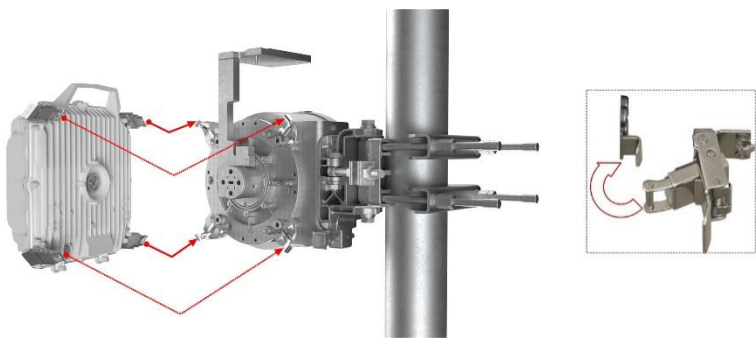
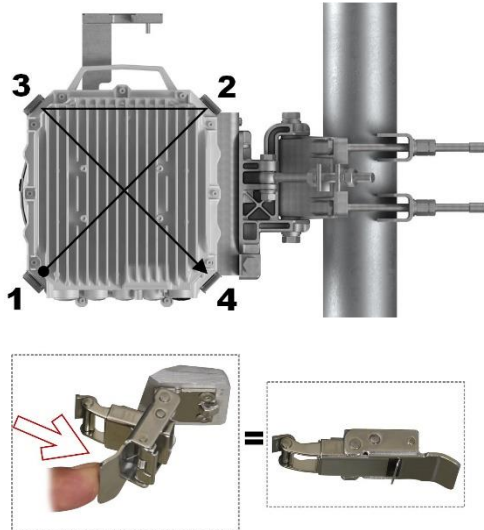
Procedure,
continued

Step	Action
3	<p>Perform radio antenna polarization adjustment, as follows:</p> <ul style="list-style-type: none"> For vertical polarization place antenna (HANT2690V-MB) and radio unit, as shown below: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Radio unit wave guide</p>  </div> <div style="text-align: center;"> <p>Antenna feeder</p>  </div> </div> For horizontal polarization perform the following actions: <ul style="list-style-type: none"> Use the allen key to loosen the four screws at the waveguide port of the radio unit (do not remove the screws) and then TURN the polarizer, as shown below. Place antenna (HANT2690H-MB), as shown below. <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="margin-top: 20px;">  <p>Do not over tighten the screws. Apply maximum tightening torque 0.6 Nm.</p> <p> Note The misalignment of slots between the movable part and the stationary part of the radio waveguide port is intentional and does not indicate a problem.</p> </div>

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued


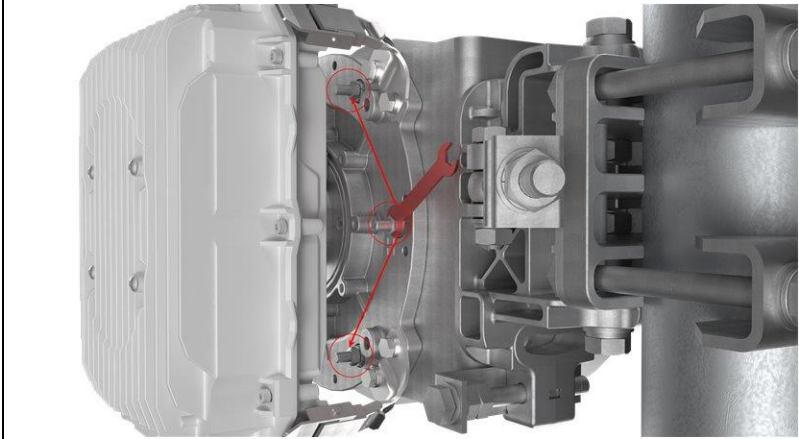
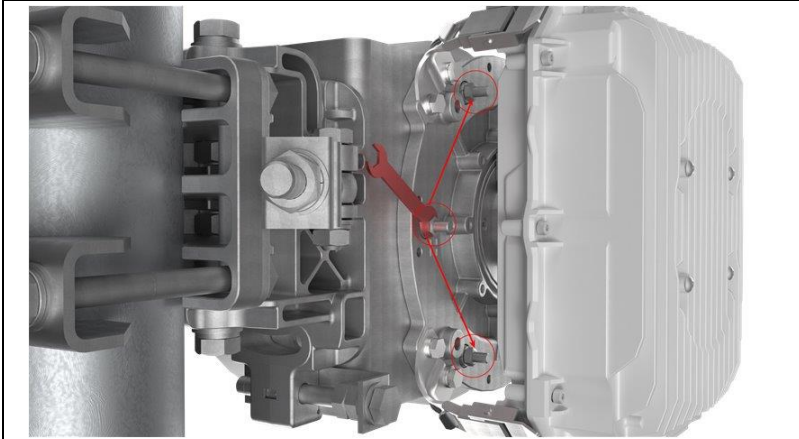
Procedure, continued

Step	Action
4	<p>Perform radio unit installation onto the antenna, as follows:</p> <ul style="list-style-type: none"> • Lubricate the antenna O-ring with silicone grease. • Unlock the four latches of the radio unit, as shown below.  <ul style="list-style-type: none"> • Open the latches to mount the radio into the antenna hooks, as shown below:  <ul style="list-style-type: none"> • Lock and secure all four latches according to the pattern below: 

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

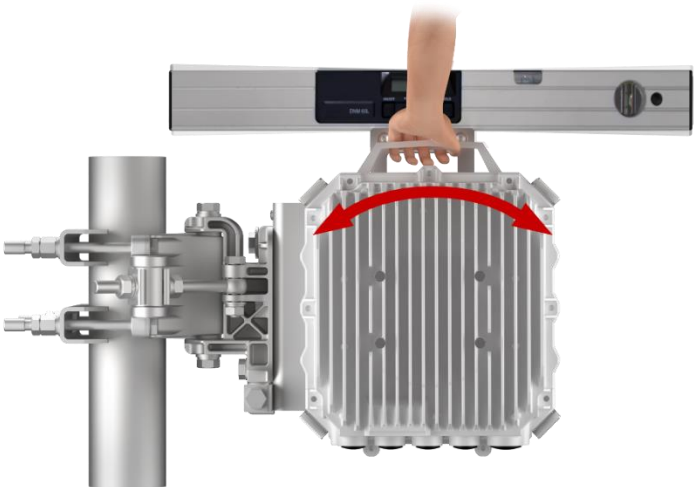
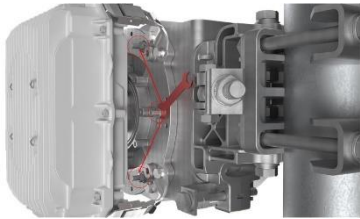
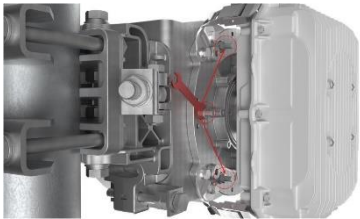

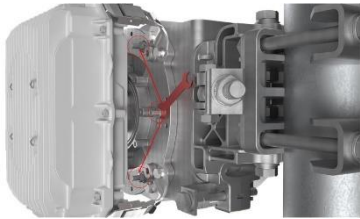
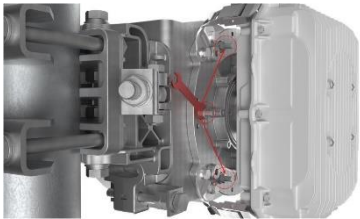
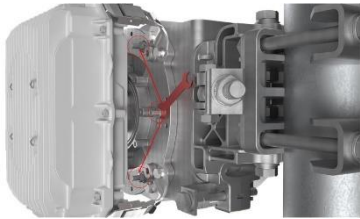
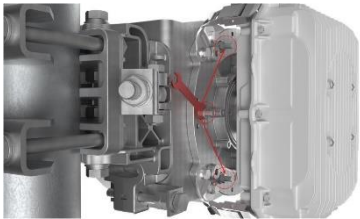
Procedure,
continued

Step	Action
5	<p>Use the wrench key (13 mm) to loosen the 3 nuts, as shown below:</p> <p> Do not remove the nuts.</p> <p>Antenna OFFSET RIGHT</p>  <p>Antenna OFFSET LEFT</p> 

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued


Procedure,
continued

Step	Action				
6	<p>Perform the following actions:</p> <ul style="list-style-type: none">• Place the inclinometer.• Easy rotate (left-right) the radio unit till the inclinometer digital indicator reaches 0 degrees. 				
7	<p>Use the wrench key (13 mm) to fully tighten the 3 nuts, as shown below:</p> <table><tr><th>OFFSET RIGHT</th><th>OFFSET LEFT</th></tr><tr><td></td><td></td></tr></table> <p> Do not over tighten. Use the adjustable u-wrench to apply the final tightening torque (follow the included antenna instructions).</p>	OFFSET RIGHT	OFFSET LEFT		
OFFSET RIGHT	OFFSET LEFT				
					

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

Procedure,
continued

Step	Action
8	<p>Use the u-wrench tool to perform azimuth adjustment, as described to the antenna included instructions.</p> <p>Use the u-wrench tool to perform elevation adjustment, as described to the antenna included instructions.</p> <p>Use the allen key (included in package) to remove the tool.</p> <p> Do not over tighten. Use the adjustable u-wrench to apply the final tightening torque (follow the included antenna instructions).</p>

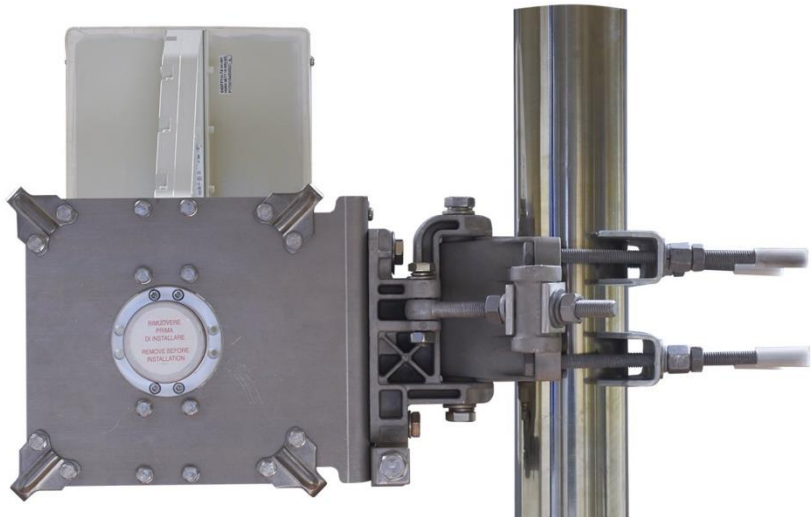
End of procedure.

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

Procedure





How to install the antenna of 10.5 GHz, proceed as follows:

Step	Action
1	<p>Follow the included instructions to assemble the antenna mount and attach it to the antenna.</p> <p>The antenna installation should be as shown below.</p>  <p>Note The antenna is capable to be installed in both side of the pole. The photo is indicative of the installation in the right orientation of the antenna model.</p>

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

Procedure,
continued

Step	Action
3	<p>Perform radio antenna polarization adjustment, as follows:</p> <ul style="list-style-type: none"> For vertical polarization place antenna (BRA-1090V-I) and radio unit, as shown below: <p>Radio unit wave guide Antenna feeder</p>  <ul style="list-style-type: none"> For horizontal polarization perform the following actions: <ul style="list-style-type: none"> Use the allen key to loosen the four screws at the waveguide port of the radio unit (do not remove the screws) and then TURN the polarizer, as shown below. Place antenna (BRA-1090H-I), as shown below.  <p> Do not over tighten the screws. Apply maximum tightening torque 0.6 Nm.</p> <p> Note The misalignment of slots between the movable part and the stationary part of the radio waveguide port is intentional and does not indicate a problem.</p>

Continued on next page

WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna, Continued

Procedure,
continued

Step	Action
4	<p>Perform radio unit installation onto the antenna, as follows:</p> <ul style="list-style-type: none"> • Lubricate the antenna O-ring with silicone grease. • Unlock and open the radio unit latches and mount it to the antenna hooks. • Lock and secure all four latches according to the pattern below: <div data-bbox="794 712 1161 1146"> </div> <div data-bbox="743 1178 1200 1355"> </div>

End of procedure.

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna

Introduction

This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and sectoral antennas that are listed below:

		Radio Units Frequency (GHz) – Form Factor	
		WiBAS™ G5	
		micro-BS 28	evo-BS 24.25-29.50
Antenna Order Codes	HANT2690H-MB	-	√(1)
	HANT2690V-MB		√(1)
	HANT2690H-HG-MB		√(1)
	HANT2690V-HG-MB		√(1)
	HANT2890H-MB	√(1)	√(1)
	HANT2890V-MB	√(1)	√(1)
	HANT2890H-HG-MB	√(1)	√(1)
	HANT2890V-HG-MB	√(1)	√(1)



WiBAS™ G5 evo-BS requires external GNSS module kit installation. Please refer to [Installing External GNSS Module](#).

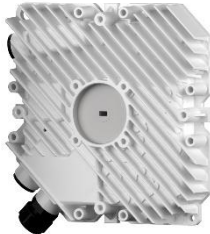
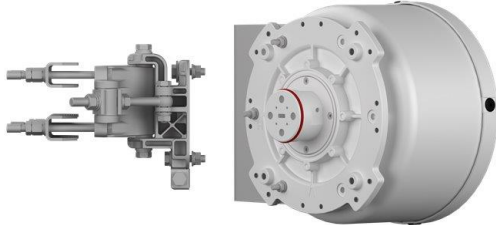
Continued on next page

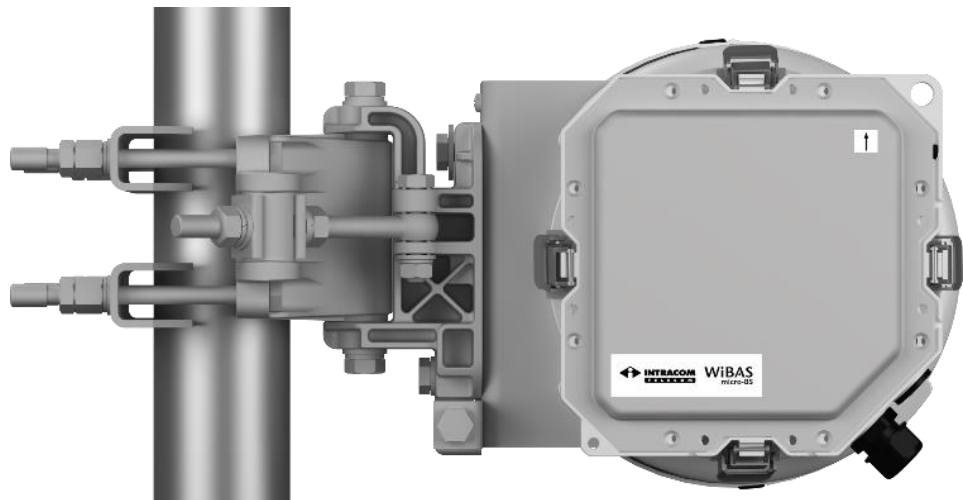
⁽¹⁾ Mounting kit from antenna package.

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna, Continued

Overview

The following materials table for installation contains indicative order codes:

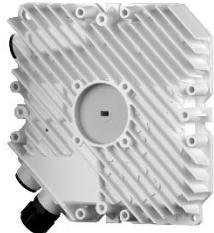
WMBS-28-L-1008-01 or WG5-EVO-BS-27-29	
	
HANT2890V-MB	
	



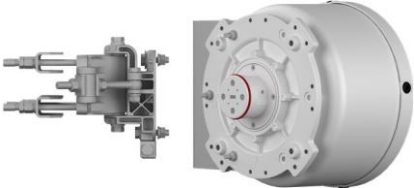
Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna, Continued


Radio unit packing materials

WMBS-28-L-1008-01 or WG5-EVO-BS-27-29	Packing Materials
	<ul style="list-style-type: none"> • Radio unit. • Materials for installing radio unit to HANT2890V antenna: <ul style="list-style-type: none"> – Set of latches (x4) – M6 x 12 mm screws (x8) – M6 lock washers (x8) <p>Note</p> <ul style="list-style-type: none"> • The following materials are not used. Used for installing radio unit to MTK-DMA-BX mounting kit: <ul style="list-style-type: none"> – M5 x 50 mm screws (x4) – M5 washers (x4) – M5 nuts (x4) – Spacers 12 mm (x4) - aluminum

Antenna packing materials


HANT2890V-MB	Details
	<ul style="list-style-type: none"> • Antenna. • Pole mounting kit. • Greasing paste. • Installation leaflet.

Tool Kit packing materials


SEC-ANT-XPOL-KIT	Details
	<ul style="list-style-type: none"> • Universal antenna alignment tool. • 4mm ball-ended hexagon socket screw key.

Continued on next page


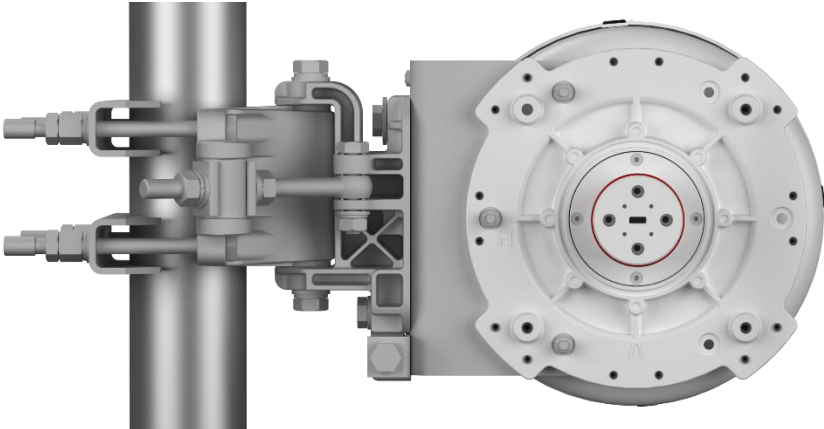
WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna, Continued

Installation tools	Adjustable torque U-wrench, wrench (13 mm) and screw driver.
Prerequisite	Assembly the antenna as per the installation manual inside the box.
	DO NOT INSTALL THE HOOKS.

Procedure

Prerequisite  **Take into account the steps 2, 5, 6, 7 and 8 as described in procedure of [WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna](#) on page 83.**

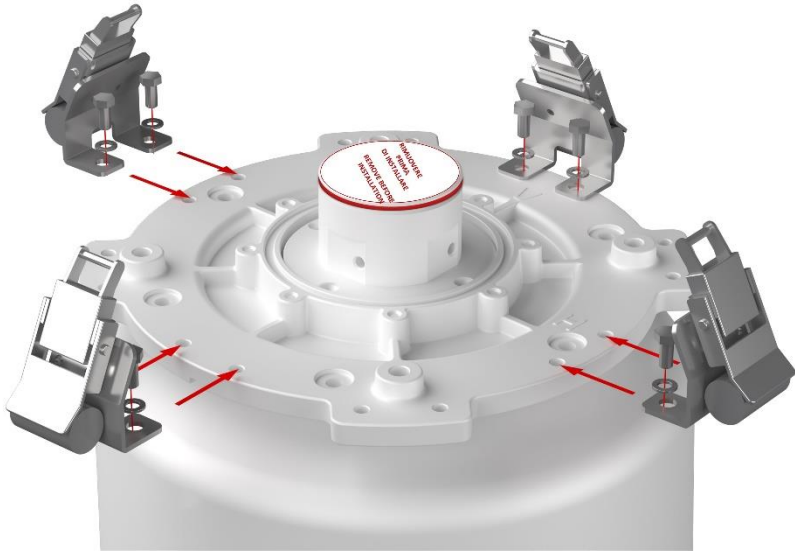
How to install the WiBAS™ G5 micro-BS / evo-BS to **HANT2890V-MB** antenna, proceed as follows:

Step	Action
1	<p>Assembly the antenna as per the installation manual inside the box. The following picture is an assembly preview</p> <p> DO NOT INSTALL THE HOOKS WHICH INCLUDED IN THE ANTENNA PACKAGE.</p> 

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna, Continued

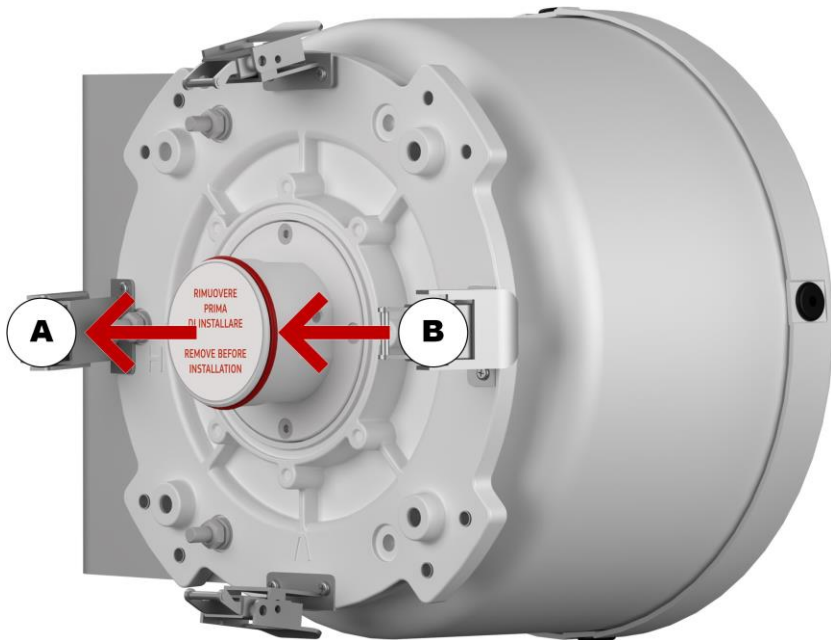
Procedure,
continued

Step	Action
2	<p>Use the u-wrench to install the antenna latches, as shown below:</p> <p>Note</p> <ul style="list-style-type: none"> From order code WMBS-OB-U-DSDS-SB or WG5-EVO-BS-LB-UB use the following materials: <ul style="list-style-type: none"> – Set of latches (x4) – M6 x 12 mm screws (x8) – M6 lock washers (x8)  <p>Do not over tighten. Adjust the tool for applying maximum tightening torque 2.0 Nm.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna, Continued

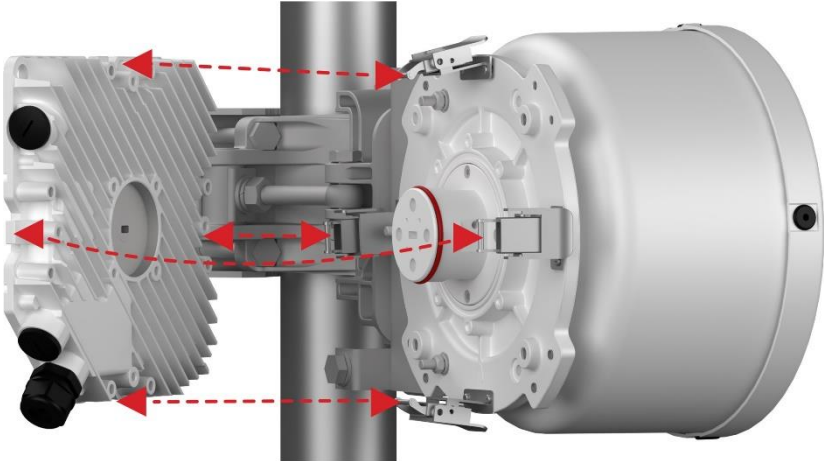
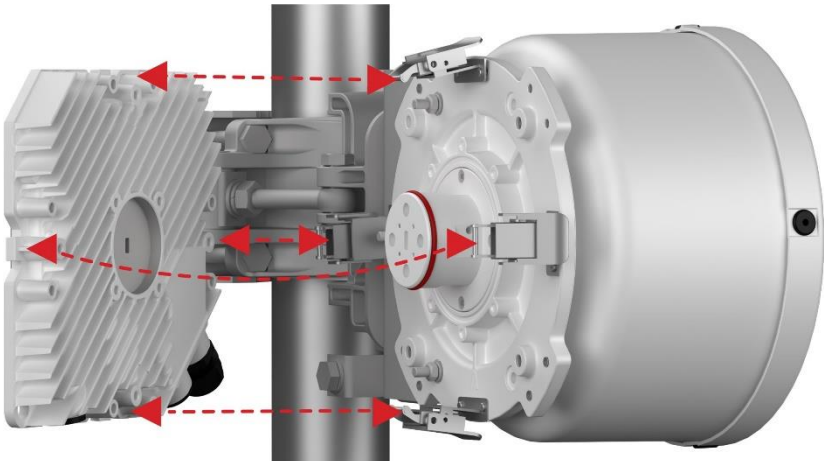
Procedure,
continued

Step	Action
3	<p>Perform the following antenna actions:</p> <ul style="list-style-type: none"> • Remove the plastic sticker (A) • Lubricate the O-ring with silicone grease (B).  <p>The diagram shows the rear flange of the antenna. A red circle labeled 'A' is positioned over a plastic sticker that reads 'RIMUOVERE PRIMA DI INSTALLARE' and 'REMOVE BEFORE INSTALLATION'. A red arrow points from the sticker to the label 'A'. Another red arrow points from the label 'B' to the O-ring on the flange.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna, Continued

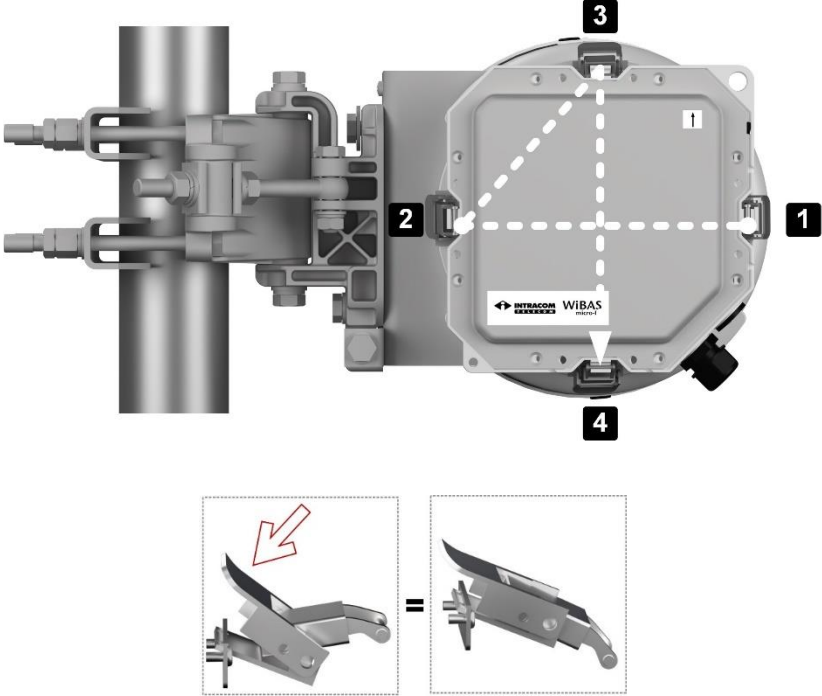
Procedure,
continued

Step	Action
4	<p>Perform radio unit installation into the antenna, as follows:</p> <ul style="list-style-type: none"> • Unlock the four latches of the antenna: • For vertical polarization place radio unit to antenna (HANT2890V) position, as shown below:  <ul style="list-style-type: none"> • For horizontal polarization place radio unit to antenna (HANT2890H) position, as shown below: 

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna, Continued

Procedure,
continued

Step	Action
5	<p>Lock and secure all four latches according to the pattern below:</p> 

End of procedure.

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit

Introduction

This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and sectoral antennas that are listed below:

		Radio Units Frequency (GHz) – Form Factor	
		WiBAS™ G5	
		micro-BS 28	evo-BS 24.25-29.50
Antenna Order Codes	HANT2690H-MB	-	$\sqrt{(2)}$
	HANT2690V-MB		$\sqrt{(2)}$
	HANT2690H-HG-MB		$\sqrt{(2)}$
	HANT2690V-HG-MB		$\sqrt{(2)}$
	HANT2890H-MB	$\sqrt{(2)}$	$\sqrt{(2)}$
	HANT2890V-MB	$\sqrt{(2)}$	$\sqrt{(2)}$
	HANT2890H-HG-MB	$\sqrt{(2)}$	$\sqrt{(2)}$
	HANT2890V-HG-MB	$\sqrt{(2)}$	$\sqrt{(2)}$







WiBAS™ G5 evo-BS requires external GNSS module kit installation. Please refer to [Installing External GNSS Module](#).

Continued on next page

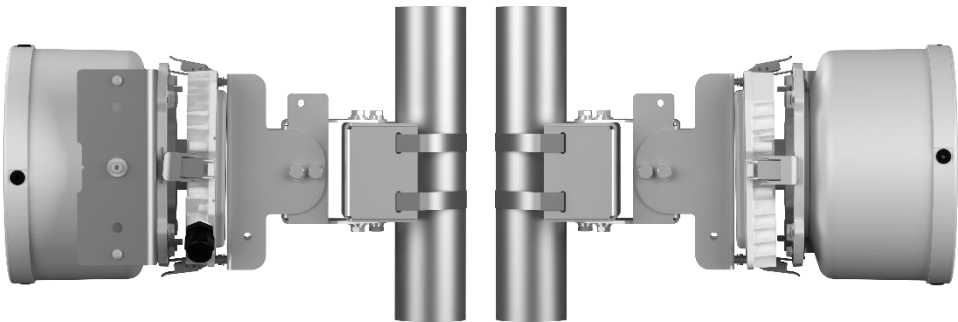
⁽²⁾ Mounting kit with order code **MTK-DMA-BX**.

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

Overview The following materials table for installation contains indicative order codes:

WMBS-28-L-1008-01 or WG5-EVO-BS-27-29	
	
MTK-DMA-BX	HANT2890V-MB
	<div>  DO NOT USE ANTENNA POLE MOUNTING KIT. USE THE MOUNTING KIT WITH ORDER CODE MTK-DMA-BX.</div>

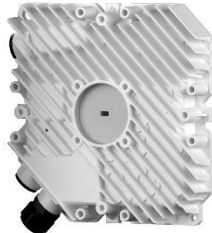
LEFT & RIGHT side view





Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued


Radio unit packing materials

WMBS-28-L-1008-01 or WG5-EVO-BS-27-29	Packing Materials
	<ul style="list-style-type: none"> • Radio unit. • Materials for installing radio unit to MTK-DMA-BX mounting kit: <ul style="list-style-type: none"> – M5 x 50 mm screws (x4) – M5 washers (x4) – M5 nuts (x4) – Spacers 12 mm (x4) - aluminum • Materials for installing radio unit to HANT2890V antenna: <ul style="list-style-type: none"> – Set of latches (x4) – M6 x 12 mm screws (x8) – M6 lock washers (x8)

Antenna packing materials

HANT2890V-MB	Details
	<ul style="list-style-type: none"> • Antenna. • Greasing paste. • Installation leaflet. <div>  <p>DO NOT USE ANTENNA POLE MOUNTING KIT.</p> <p>USE THE MOUNTING KIT WITH ORDER CODE MTK-DMA-BX.</p> </div>

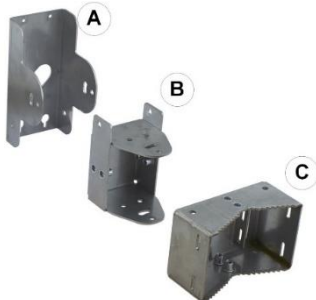

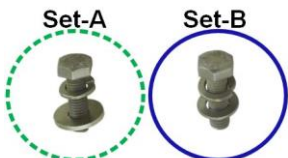
Tool Kit packing materials

SEC-ANT-XPOL-KIT	Details
	<ul style="list-style-type: none"> • Universal antenna alignment tool. • 4mm ball-ended hexagon socket screw key.

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

Pole mounting kit packing materials

MTK-DMA-BX	Packing Materials
	<ul style="list-style-type: none"> Elevation bracket (A). Azimuth bracket (B). Pole bracket (C).
	<ul style="list-style-type: none"> Pole hose clamps (x2): <ul style="list-style-type: none"> Clamp diameter: 64 mm to 140 mm Pole diameter: 48 mm to 100 mm.
	<p>Set-A:</p> <ul style="list-style-type: none"> M8 x 25 mm screws (x4). M8 lock washers (x4). M8 washers stainless steel (x4). <p>Set-B:</p> <ul style="list-style-type: none"> M8 x 25 mm screws (x4). M8 lock washers (x4). M8 washers (x4).



The following set of materials are not used for this product:



- M5 x 40 mm screws (x4).
- M5 washers (x4).
- M5 flange nut serrated (x4).

Installation tools

- Adjustable torque wrench
 - with hexagon female bit
 - U-wrench.

Prerequisites



- For radio/antenna installation using antenna package mounting kit follow the procedure as described in paragraph [WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna](#)
- For radio/antenna installation using **MTK-DMA-BX** follow the procedure in next page (**option-1**).

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

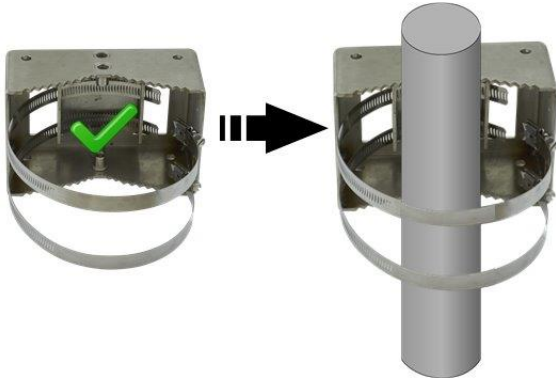
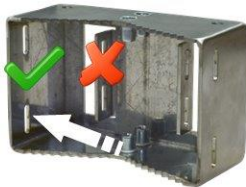

Procedure (option-1)

Prerequisite



Take into account the steps 2, 5, 6, 7 and 8 as described in procedure of [WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna](#) on page 83.

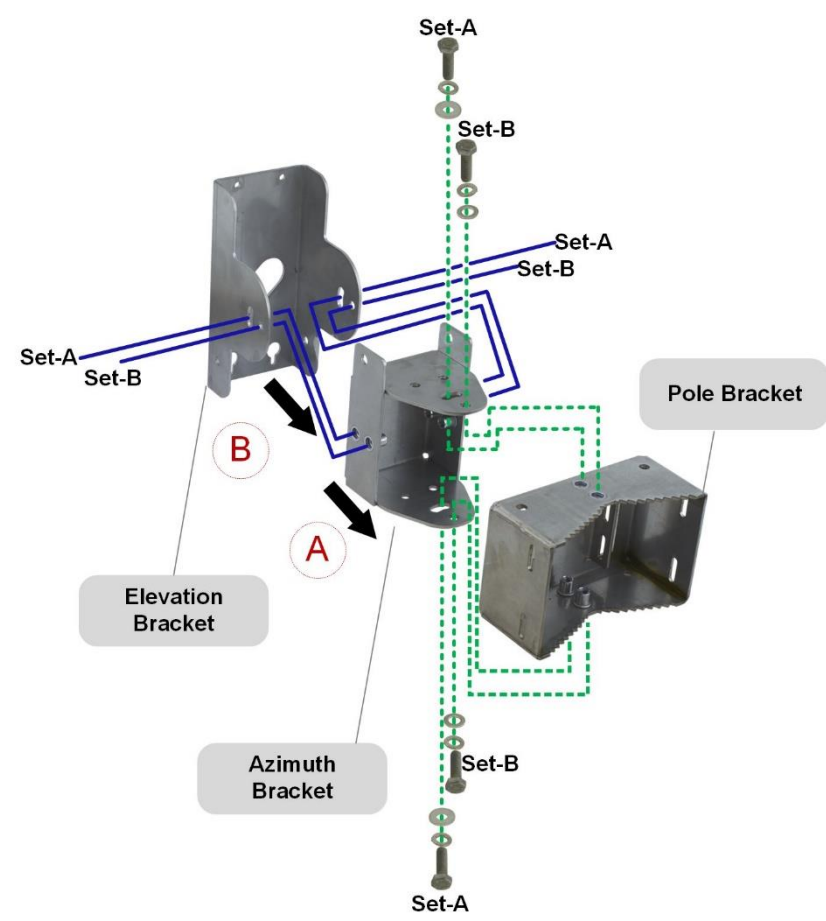

How to install WiBAS™ G5 micro-BS / evo-BS to **HANT2890V** antenna, proceed as follows:

Step	Action
1	<p>Perform the following actions:</p> <ul style="list-style-type: none"> Pass the steel hose clamps through the pole bracket respective openings, as shown below: <p>For pole diameter 48 mm up to 159 mm</p>  <p>For pole diameter 160 mm up to 300 mm</p>  <ul style="list-style-type: none"> Use the tool with M5 hexagon female bit to fully tighten the hose latches worm screws. <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 7 Nm.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued



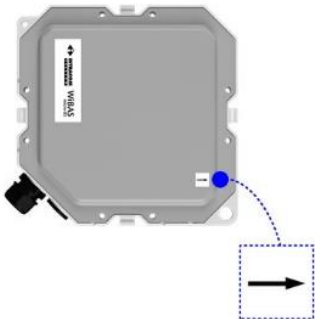

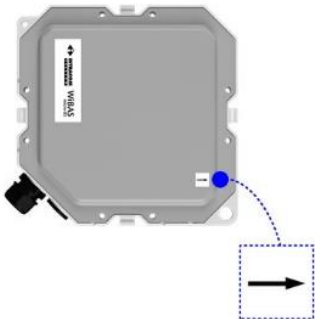

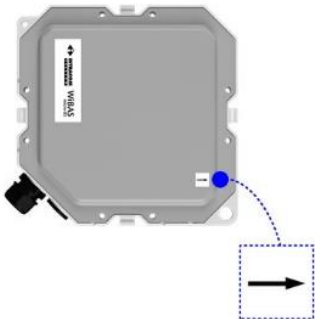
Procedure
(option-1),
continued

Step	Action
2	<p>Perform the following actions:</p> <ul style="list-style-type: none">• Mount azimuth bracket onto the pole bracket (A) and then install Set-A (x 2) and Set-B (x 2), as shown below.• Mount elevation bracket onto the azimuth bracket (B) and then install Set-A (x2) and Set-B (x2), as shown below.  <ul style="list-style-type: none">• Use the tool with M8 hexagon female bit to slightly tighten the screws. <p> The maximum tightening torque is applied to the last step.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

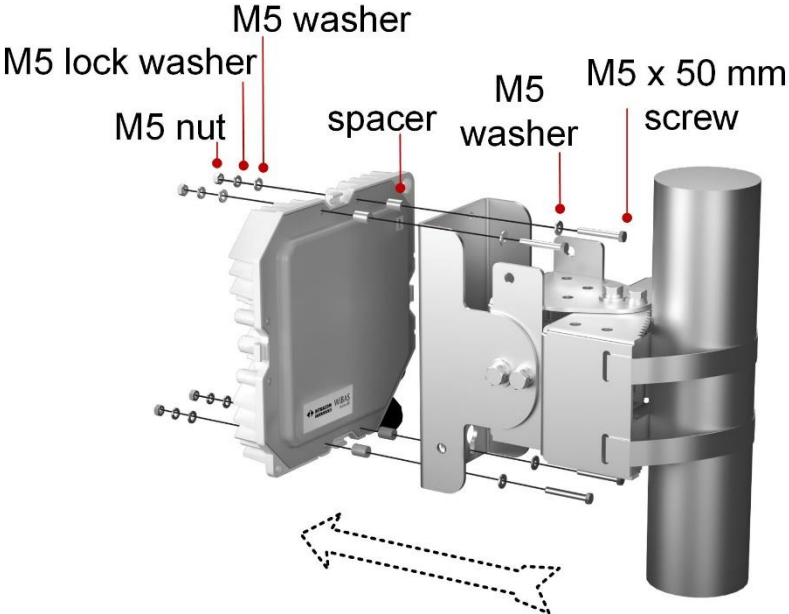

Procedure
(option-1),
continued

Step	Action				
3	<p>Turn the radio unit to reach the desirable polarization, as shown below:</p> <p> For how to turn the radio unit, follow the polarization label.</p> <table border="1"> <thead> <tr> <th>VERTICAL</th><th>HORIZONTAL</th></tr> </thead> <tbody> <tr> <td>  </td><td>  </td></tr> </tbody> </table>	VERTICAL	HORIZONTAL		
VERTICAL	HORIZONTAL				
					

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

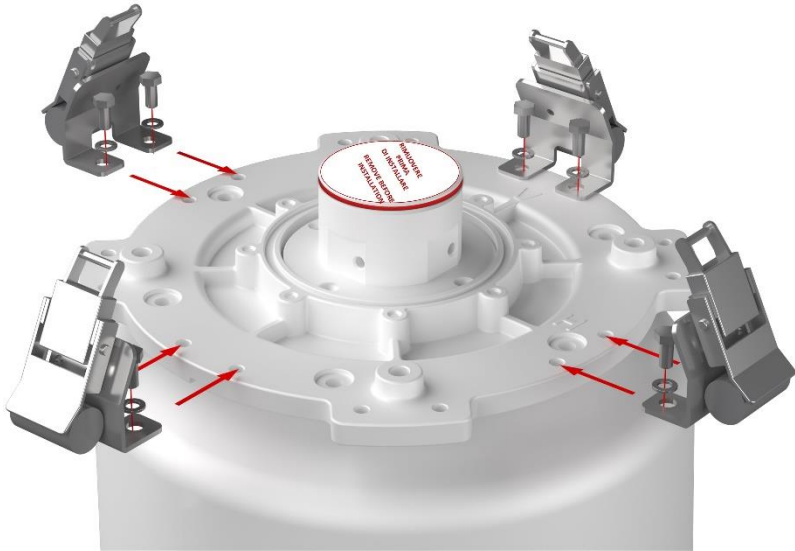
Procedure
(option-1),
continued

Step	Action
4	<p>Perform the following actions:</p> <ul style="list-style-type: none">• Install the radio unit onto the elevation bracket. as shown below: <div><div>Note</div><ul style="list-style-type: none">• From order code WMBS-OB-U-DSDS-SB or WG5-EVO-BS-LB-UB use the following materials:<ul style="list-style-type: none">– M5 x 50 mm screws (x4)– M5 washers (x4)– M5 nuts (x4)– Spacers 12 mm (x4) - aluminum</div> <div></div> <ul style="list-style-type: none">• Use the tool with M5 hexagon female bit to fully tighten the screws. <div><div></div><div>Do not over tighten. Adjust the tool for applying maximum tightening torque 4.2 Nm.</div></div>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

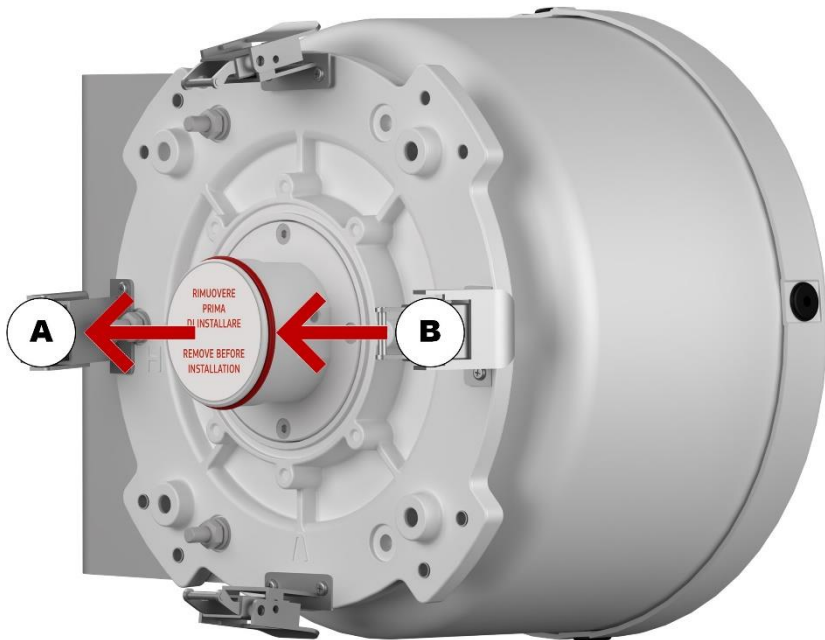
Procedure (option-1), continued

Step	Action
5	<p>Use the u-wrench to install the antenna latches, as shown below:</p> <p>Note</p> <ul style="list-style-type: none">From order code WMBS-OB-U-DSDS-SB or WG5-EVO-BS-LB-UB use the following materials:<ul style="list-style-type: none">– Set of latches (x4)– M6 x 12 mm screws (x8)– M6 lock washers (x8)  <p>Do not over tighten. Adjust the tool for applying maximum tightening torque 2.0 Nm.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

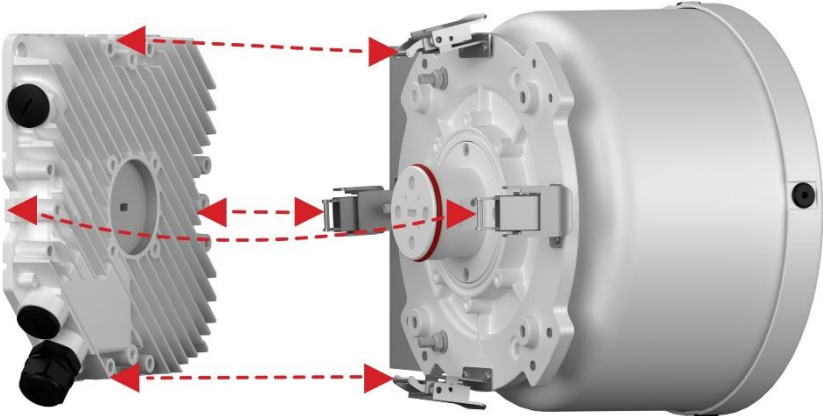
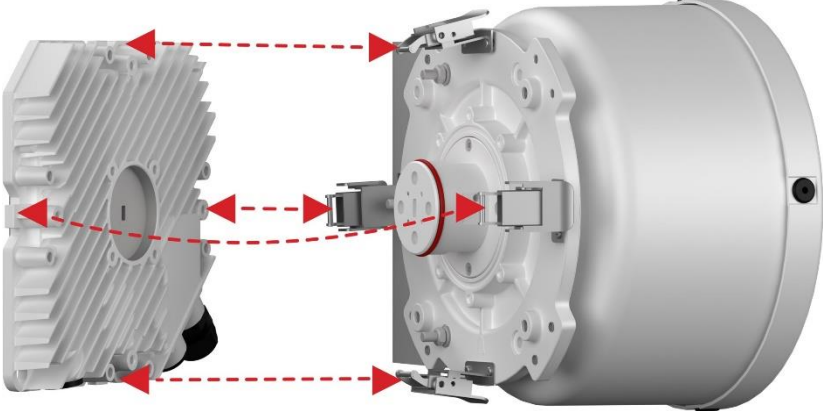
Procedure
(option-1),
continued

Step	Action
6	<p>Perform the following antenna actions:</p> <ul style="list-style-type: none">• Remove the plastic sticker (A)• Lubricate the O-ring with silicone grease (B).  <p>The diagram shows the rear flange of the antenna. A red circle labeled 'A' is positioned over a plastic sticker that reads 'RIMUOVERE PRIMA DI INSTALLARE' and 'REMOVE BEFORE INSTALLATION'. A red arrow points from the sticker to the label 'A'. Another red circle labeled 'B' is positioned over the O-ring. A red arrow points from the label 'B' to the O-ring.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

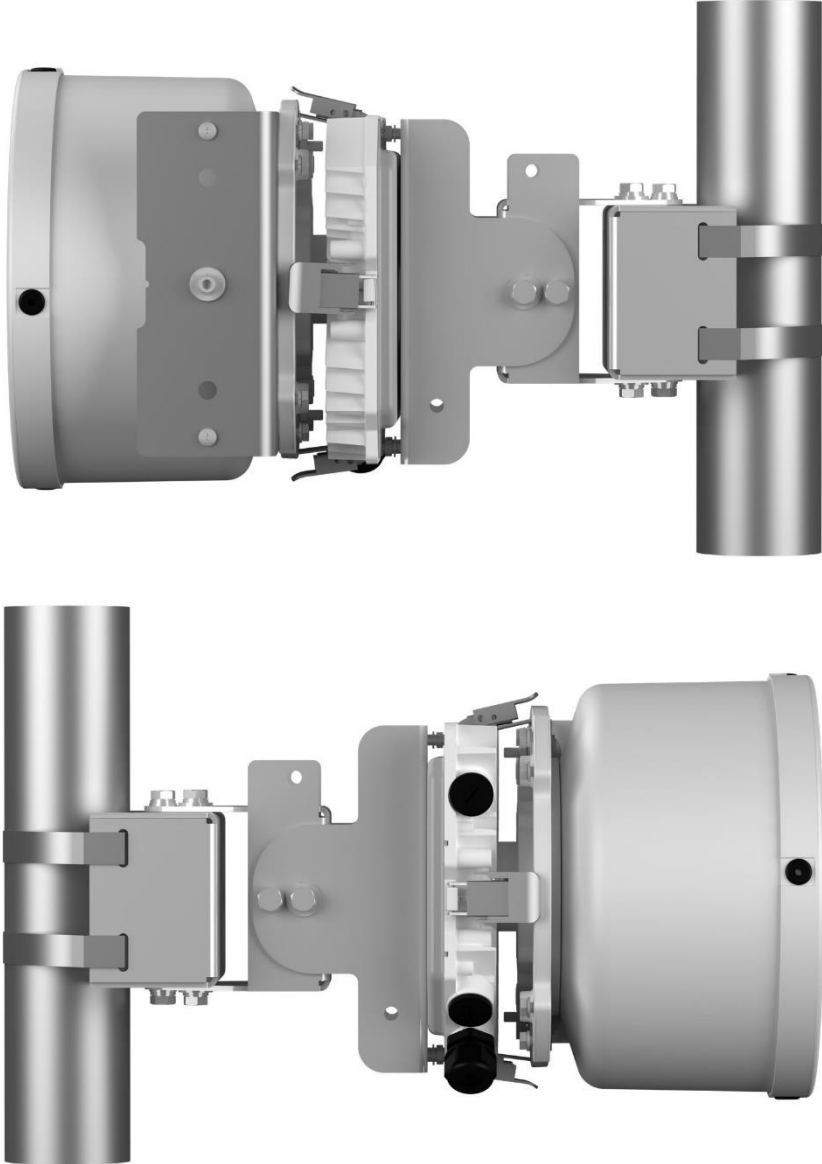

Procedure
(option-1),
continued

Step	Action
7	<p>Perform radio unit installation into the antenna, as follows:</p> <ul style="list-style-type: none"> • Unlock the four latches of the antenna: • For vertical polarization place radio unit to antenna (HANT2890V) position, as shown below:  <ul style="list-style-type: none"> • For horizontal polarization place radio unit to antenna (HANT2890H) position, as shown below: 

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 Integrated Antenna with MTK-DMA-BX Mounting Kit, Continued

Procedure
(option-1),
continued

Step	Action
8	<p>Verify that the installation appears, as follows (vertical) :</p> 
9	<p>Use the U-wrench tool to fully tighten the M8 screws of the mounting kit.</p> <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 17.8 Nm.</p>

End of procedure.

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit

Introduction

This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and sectoral antennas that are listed below:

		Radio Units Frequency (GHz) – Form Factor	
		WiBAS™ G5	
		micro-BS 28	evo-BS 24.25-29.50
Antenna Order Codes	HANT262890H	$\sqrt{(2)}$	$\sqrt{(2)}$
	HANT262890V	$\sqrt{(2)}$	$\sqrt{(2)}$
	HANT28180H	$\sqrt{(2)}$	$\sqrt{(2)}$
	HANT28180V	$\sqrt{(2)}$	$\sqrt{(2)}$



WiBAS™ G5 evo-BS requires external GNSS module kit installation. Please refer to [Installing External GNSS Module](#).

Continued on next page

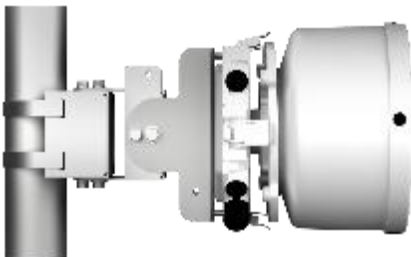
⁽²⁾ Mounting kit with order code **MTK-DMA-BX**.

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

Overview The following materials table for installation contains indicative order codes:

WMBS-28-L-1008-01 or WG5-EVO-BS-24-26 / WG5-EVO-BS-27-29		
		
MTK-DMA-BX	HANT262890V	HANT28180V
		

·WiBAS™ G5 micro-BS / evo-BS and sectoral 90°



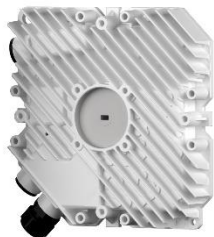
WiBAS™ G5 micro-BS / evo-BS and sectoral 180°




Continued on next page


WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

Radio unit packing materials

WMBS-28-L-1008-01 or WG5-EVO-BS-24-26 / WG5-EVO-BS-27-29	Packing Materials
	<ul style="list-style-type: none"> • Radio unit. • Materials for installing radio unit to MTK-DMA-BX mounting kit: <ul style="list-style-type: none"> – M5 x 50 mm screws (x4) – M5 washers (x4) – M5 nuts (x4) – Spacers 12 mm (x4) - aluminum • Materials for installing radio unit to HANT28180V, HANT28180H, HANT262890V, HANT262890H antennas: <ul style="list-style-type: none"> – Set of latches (x4) – M6 x 12 mm screws (x8) – M6 lock washers (x8)

Antenna packing materials


HANT262890V	Packing Materials
	<ul style="list-style-type: none"> • Antenna. • Greasing paste. • Installation leaflet.

HANT28180V	Packing Materials
	<ul style="list-style-type: none"> • Antenna. • Greasing paste. • Installation leaflet.

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

Tool Kit
packing
materials

SEC-ANT-XPOL-KIT	Details
	<ul style="list-style-type: none">• Universal antenna alignment tool.• 4mm ball-ended hexagon socket screw key.

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

Pole mounting kit packing materials

MTK-DMA-BX	Packing Materials
	<ul style="list-style-type: none"> • Elevation bracket (A). • Azimuth bracket (B). • Pole bracket (C).
	<ul style="list-style-type: none"> • Pole hose clamps (x2): <ul style="list-style-type: none"> – Clamp diameter: 64 mm to 140 mm – Pole diameter: 48 mm to 100 mm.
	<p>Set-A:</p> <ul style="list-style-type: none"> • M8 x 25 mm screws (x4). • M8 lock washers (x4). • M8 washers stainless steel (x4). <p>Set-B:</p> <ul style="list-style-type: none"> • M8 x 25 mm screws (x4). • M8 lock washers (x4). • M8 washers (x4).



The following set of materials are not used for this product:



- M5 x 40 mm screws (x4).
- M5 washers (x4).
- M5 flange nut serrated (x4).


Installation tools

- Adjustable torque wrench
 - with hexagon female bit
 - U-wrench.

Continued on next page

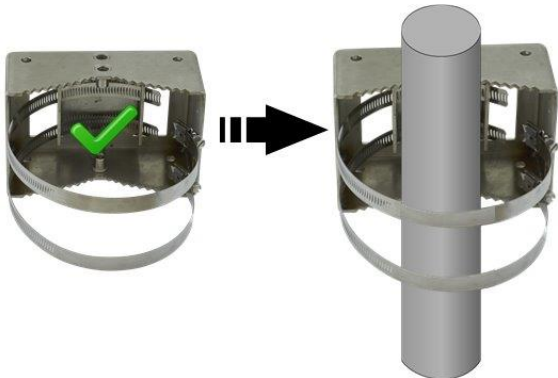
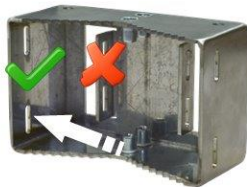

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

Procedure

Prerequisite  **Take into account the steps 2, 5, 6, 7 and 8 as described in procedure of [WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna](#) on page 83.**

How to install WiBAS™ G5 micro-BS / evo-BS to **HANT28180V** or **HANT28180H** antenna, proceed as follows:

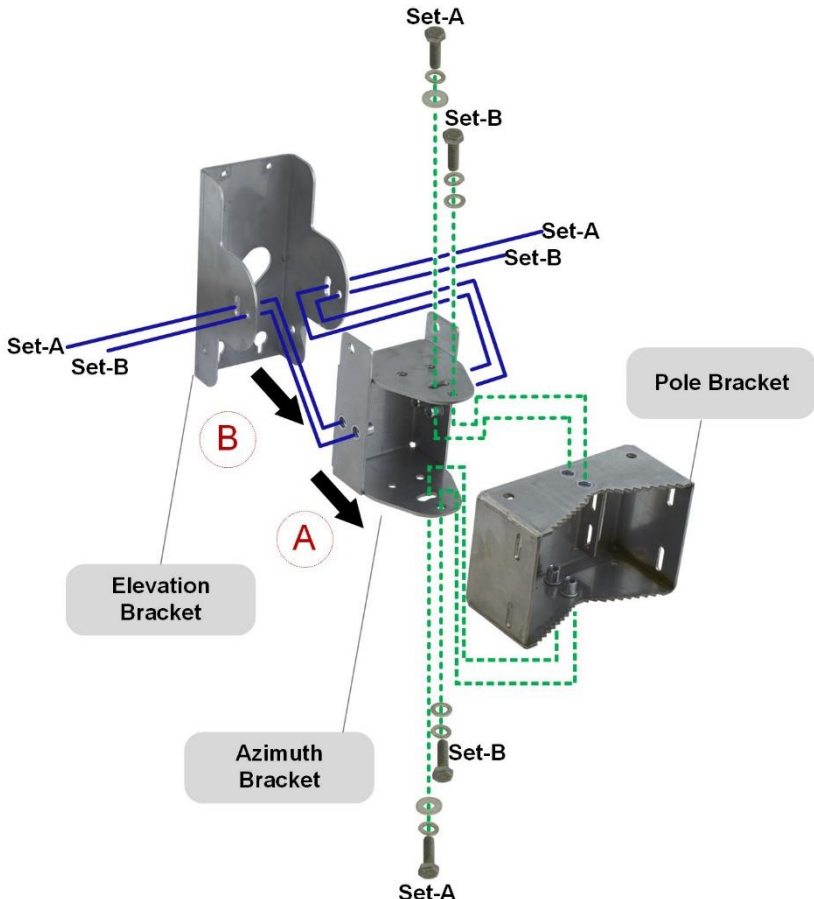

 **The installation procedure for sectoral 90° or 180° is common.**

Step	Action
1	<p>Perform the following actions:</p> <ul style="list-style-type: none">• Pass the steel hose clamps through the pole bracket respective openings, as shown below: <p>For pole diameter 48 mm up to 159 mm</p>  <p>For pole diameter 160 mm up to 300 mm</p>  <ul style="list-style-type: none">• Use the tool with M5 hexagon female bit to fully tighten the hose clamps worm screws. <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 7 Nm.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued








Procedure,
continued

Step	Action
2	<p>Perform the following actions:</p> <ul style="list-style-type: none"> • Mount azimuth bracket onto the pole bracket (A) and then install Set-A (x 2) and Set-B (x 2), as shown below. • Mount elevation bracket onto the azimuth bracket (B) and then install Set-A (x2) and Set-B (x2), as shown below.  <ul style="list-style-type: none"> • Use the tool with M8 hexagon female bit to slightly tighten the screws. <p> The maximum tightening torque is applied to the last step.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

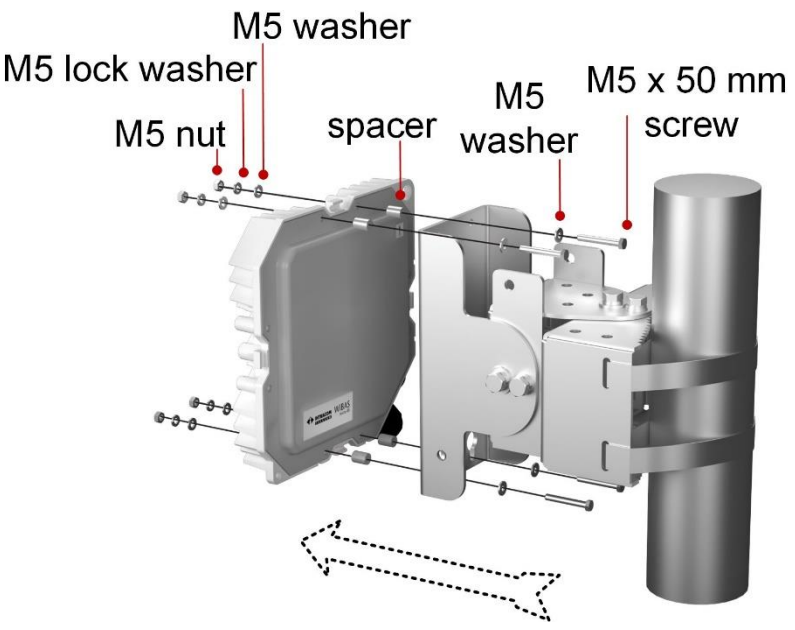
Procedure,
continued

Step	Action				
3	<p>Turn the radio unit to reach the desirable polarization, as shown below:</p> <p> For how to turn the radio unit, follow the polarization label.</p> <table border="1"> <thead> <tr> <th>VERTICAL</th><th>HORIZONTAL</th></tr> </thead> <tbody> <tr> <td>  </td><td>  </td></tr> </tbody> </table>	VERTICAL	HORIZONTAL		
VERTICAL	HORIZONTAL				
					

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

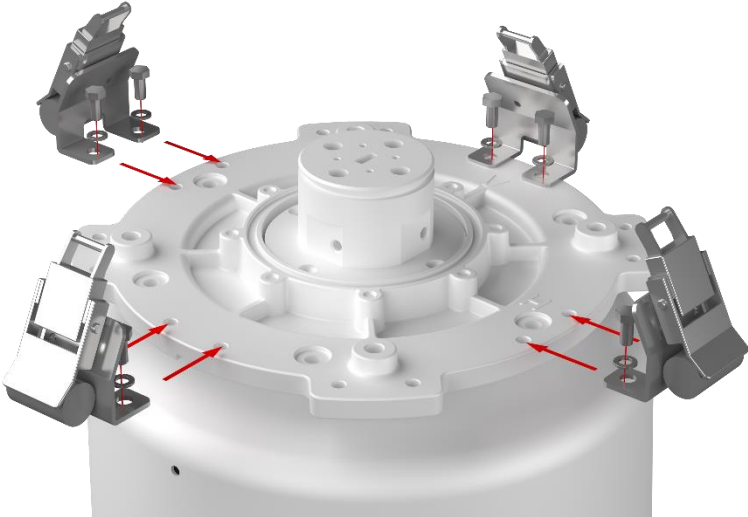

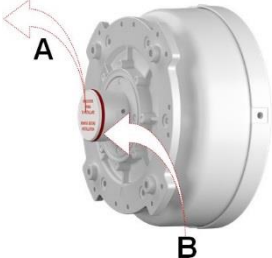
Procedure,
continued

Step	Action
4	<p>Perform the following actions:</p> <ul style="list-style-type: none"> Install the radio unit onto the elevation bracket. as shown below: <p>Note</p> <ul style="list-style-type: none"> From order code WMBS-OB-U-DSDS-SB or WG5-EVO-BS-LB-UB use the following materials: <ul style="list-style-type: none"> M5 x 50 mm screws (x4) M5 washers (x4) M5 nuts (x4) Spacers 12 mm (x4) - aluminum  <ul style="list-style-type: none"> Use the tool with M5 hexagon female bit to fully tighten the screws. <p>Warning: Do not over tighten. Adjust the tool for applying maximum tightening torque 4.2 Nm.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180
Antenna with MTK-DMA-BX Mounting Kit, Continued

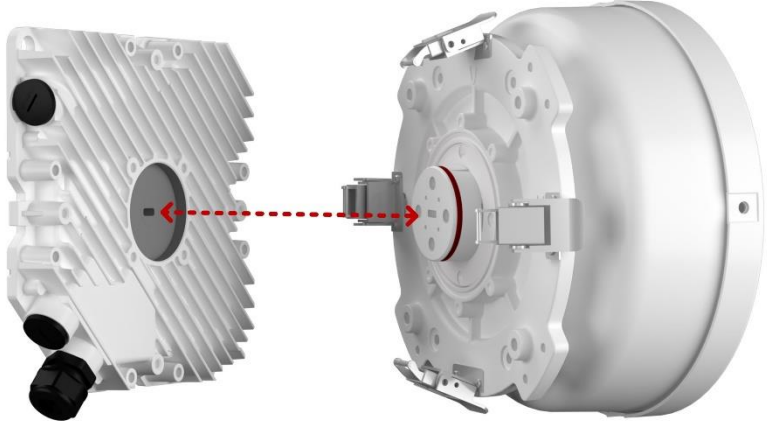
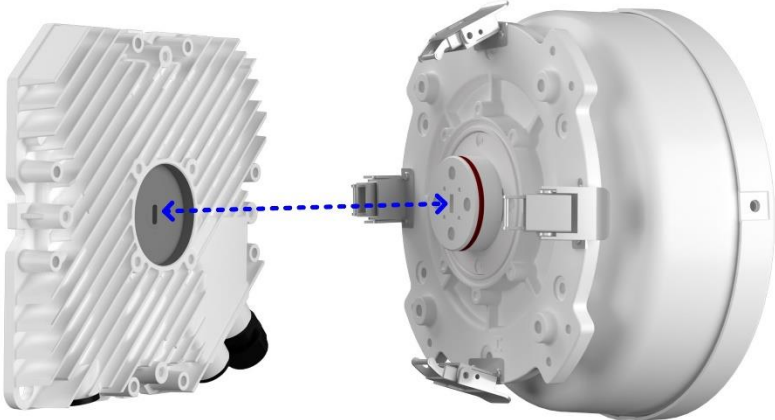
Procedure,
continued

Step	Action
5	<p>Use the u-wrench to install the antenna latches, as shown below:</p> <div><div>Note</div><ul style="list-style-type: none">From order code WMBS-OB-U-DSDS-SB or WG5-EVO-BS-LB-UB use the following materials:<ul style="list-style-type: none">Set of latches (x4)M6 x 12 mm screws (x8)M6 lock washers (x8)</div> <div></div> <div><div></div><div>Do not over tighten. Adjust the tool for applying maximum tightening torque 2.0 Nm.</div></div>
6	<p>Perform the following antenna actions:</p> <ul style="list-style-type: none">Remove the plastic sticker (A)Lubricate the O-ring with silicone grease (B). <div></div>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

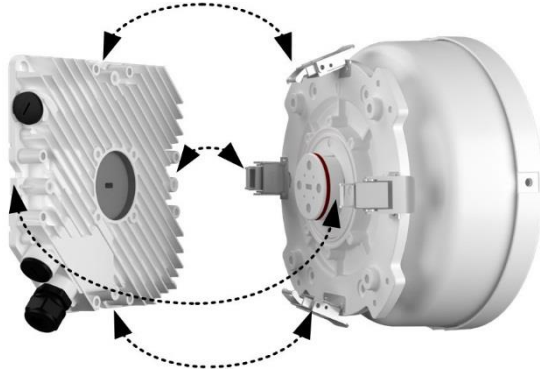


Procedure,
continued

Step	Action
7	<p>For vertical polarization place antenna (HANT28180V) and radio unit, as shown below:</p>  <p>For horizontal polarization place antenna (HANT28180H) and radio unit, as shown below:</p> 

Continued on next page

WiBAS G5 micro-BS / evo-BS and Sectoral 90 or 180 Antenna with MTK-DMA-BX Mounting Kit, Continued

Procedure,
continued

Step	Action
8	<p>Open antenna latches and then mount the antenna onto the radio as shown below (the following picture shows vertical polarization):</p>  <p>Lock and secure all antenna latches.</p>
9	<p>Verify that the installation appears, as follows:</p> 
10	<p>Use the U-wrench tool to fully tighten the M8 screws of the mounting kit.</p> <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 17.8 Nm.</p>



End of procedure.

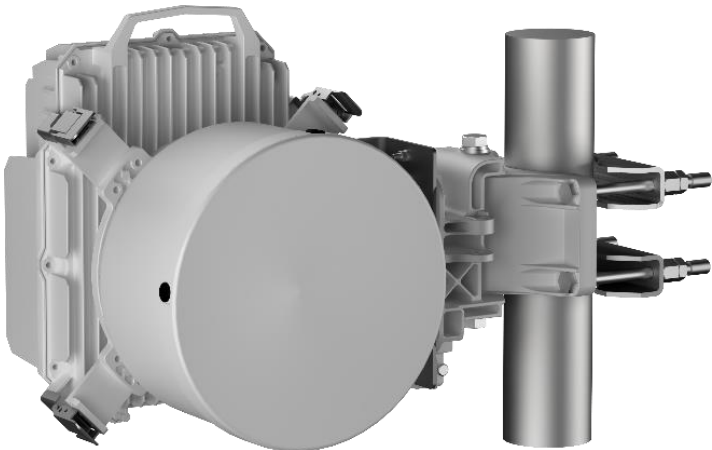
WiBAS G5 dual-BS and Dual-Polarization Sectoral 90 Integrated Antenna

Introduction This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and sectoral antennas that are listed below:

		Radio Units Frequency (GHz) – Form Factor
		WiBAS™ G5
		dual-BS 28
Antenna Order Code	HANT262890-DP-MB	√(1)

Overview The following materials table for installation contains indicative order codes:

WG5-DUAL-BS-L-1008-SB	HANT262890-DP-MB
	




Continued on next page

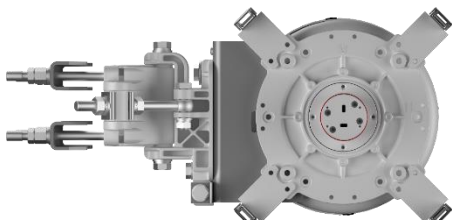
(1) Mounting kit from antenna package.

WiBAS G5 dual-BS and Dual-Polarization Sectoral 90 Integrated Antenna, Continued


Radio unit packing materials

WG5-DUAL-BS-L-1008-SB	Details
 <p>The image shows the radio unit (A) and its packing materials. (A) is a large, silver, rectangular radio unit with a handle on top. (B) is a blue seal. (C) is a DC power supply connector. (D) is a terminal lug. (E) is an extruder.</p>	<ul style="list-style-type: none"> • WiBAS™ G5 dual-BS radio unit (A). • M20 Gland for the SFP interfaces for cable diameter range 4.5 mm to 7.5 mm (blue seal) (B). • DC power supply connector, 2 sockets, solder type, IP68, UV rated, industrial (PWR-CONN-GX) (C). <p>Note Applicable cable diameters range is 6.8 mm to 9.5 mm.</p> <ul style="list-style-type: none"> • 2 x terminal lugs (1 x M5 x 16 mm² & 1 x M5 x 6 mm²) for grounding cable (D). • Extruder (to unplug SFP module) (E).

Antenna packing materials

HANT262890-DP-MB	Details
 <p>The image shows the antenna (HANT262890-DP-MB) and its packing materials. It is a large, silver, rectangular antenna with a mounting bracket on the side.</p>	<ul style="list-style-type: none"> • Antenna. • Pole mounting kit. • Greasing paste. • Installation leaflet.

Tool Kit packing materials

SEC-ANT-XPOL-KIT	Details
 <p>The image shows the tool kit (SEC-ANT-XPOL-KIT) and its packing materials. It is a black, L-shaped tool with a hexagonal socket at the end.</p>	<ul style="list-style-type: none"> • Universal antenna alignment tool. • 4mm ball-ended hexagon socket screw key.

Continued on next page

WiBAS G5 dual-BS and Dual-Polarization Sectoral 90 Integrated Antenna, Continued

Prerequisites



Assembly the antenna as per the installation manual inside the box.

Precautions



This procedure includes antenna adjustment verticality with respect to the ground.

Installation tools

Adjustable torque U-wrench, digital inclinometer, wrench (13 mm) and screw drivers.

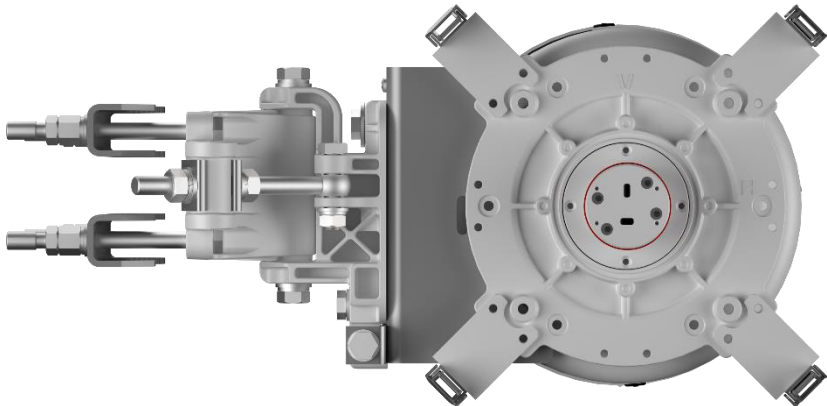
Procedure

Prerequisite



Take into account the steps 2, 5, 6, 7 and 8 as described in procedure of [WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna](#) on page 83.

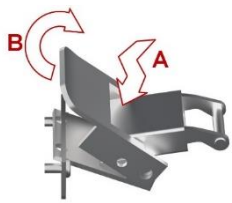
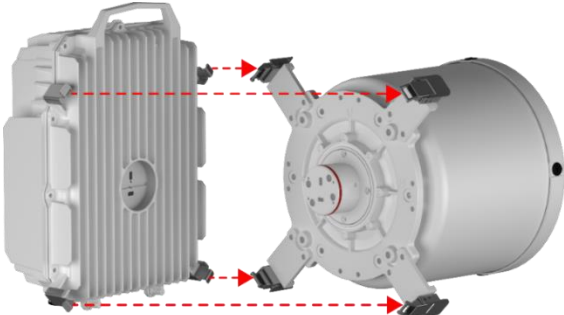
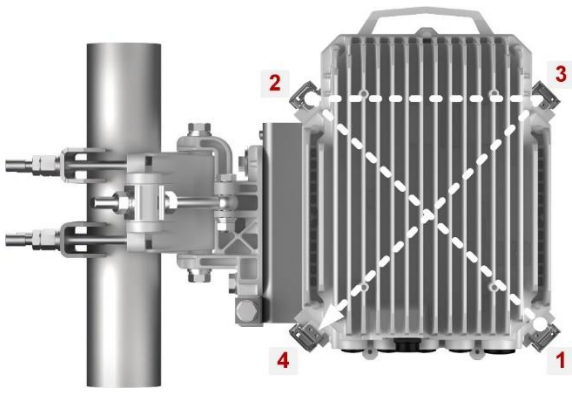


How to install radio unit with antenna, proceed as follows:

Step	Action
1	<p>Assembly the antenna as per the installation manual inside the box. The following picture is an assembly preview</p> 

Continued on next page

WiBAS G5 dual-BS and Dual-Polarization Sectoral 90 Integrated Antenna, Continued

Procedure,
continued

Step	Action
2	<p>Perform radio unit installation into the antenna, as follows:</p> <ul style="list-style-type: none"> • Remove antenna feeder plastic protection sticker. • Lubricate the antenna O-ring with silicone grease. • Unlock the four latches of the antenna, as shown below:  <ul style="list-style-type: none"> • Mount the radio unit onto the antenna as shown below  <ul style="list-style-type: none"> • Lock and secure all four latches according to the pattern below:   


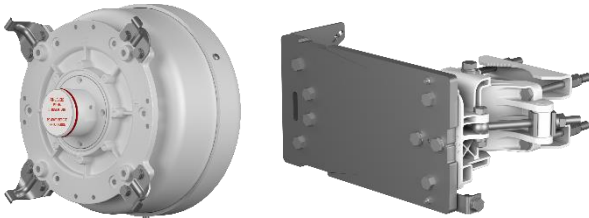
End of procedure.

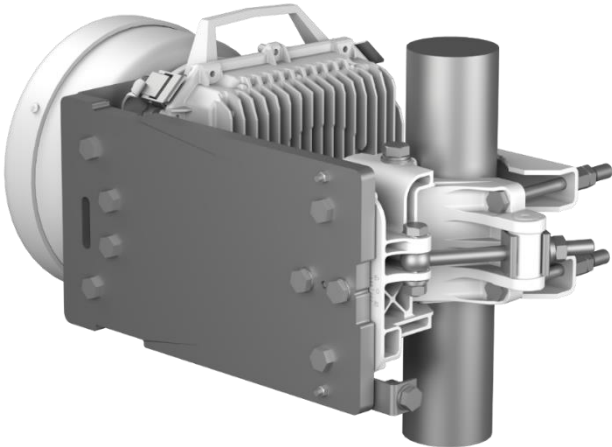
WiBAS OSDR-HUB and Sectoral 180 Integrated Antenna

Introduction This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and sectoral antennas that are listed below:

		Radio Units Frequency (GHz) – Form Factor
		WiBAS™ OSDR-HUB
		28
Antenna Order Code	HANT28180H-MB	√ ⁽¹⁾
	HANT28180V-MB	√ ⁽¹⁾

Overview The following materials table for installation contains indicative order codes:

OSDR-28-H-1008-01	HANT28180V-MB
	




Continued on next page


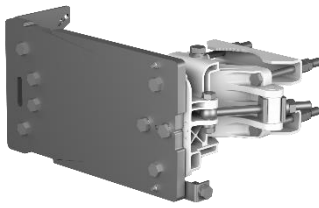
⁽¹⁾ Mounting kit from antenna package.

WiBAS OSDR-HUB and Sectoral 180 Integrated Antenna, Continued


Radio unit packing materials

OSDR-28-H-1008-01	Details
	<ul style="list-style-type: none"> • Radio unit.

Antenna packing materials

HANT28180V-MB	Details
 	<ul style="list-style-type: none"> • Antenna • Pole mounting kit. • Greasing paste. • Installation leaflet.

Tool Kit packing materials

SEC-ANT-XPOL-KIT	Details
	<ul style="list-style-type: none"> • Universal antenna alignment tool. • 4mm ball-ended hexagon socket screw key.

Continued on next page

WiBAS OSDR-HUB and Sectoral 180 Integrated Antenna,

Continued

Prerequisites



Assembly the antenna as per the installation manual inside the box.

Precautions



This procedure includes antenna adjustment verticality with respect to the ground.


Installation tools

Adjustable torque U-wrench, allen key and screw drivers.

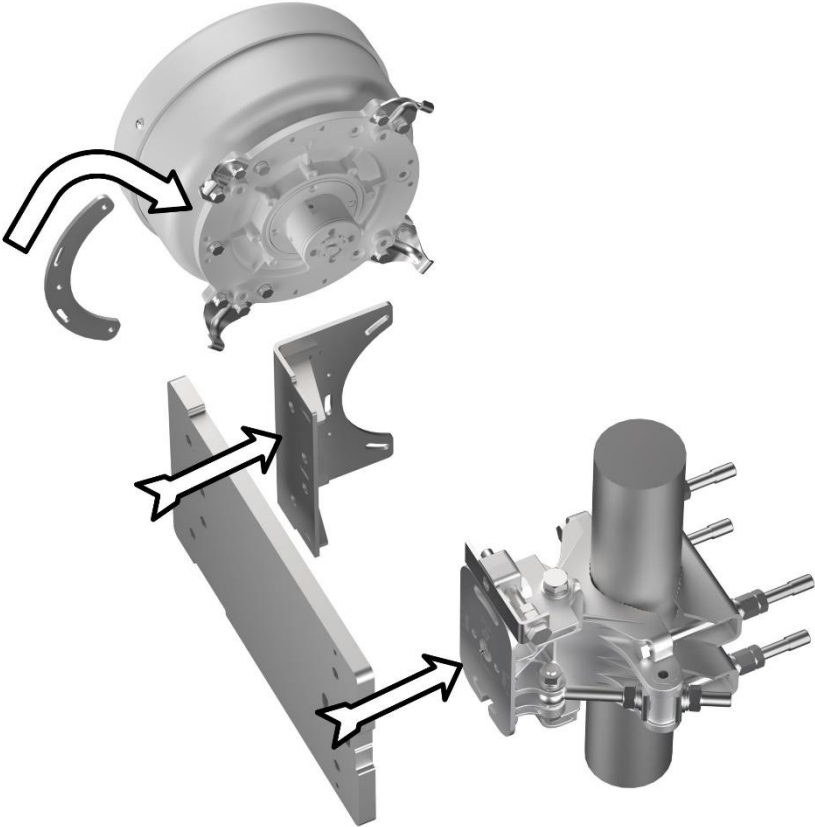
Continued on next page

WiBAS OSDR-HUB and Sectoral 180 Integrated Antenna, Continued

Procedure

Prerequisite  Take into account the steps 2, 5, 6, 7 and 8 as described in procedure of [WiBAS OSDR-HUB and Sectoral 90 Integrated Antenna](#) on page 83.

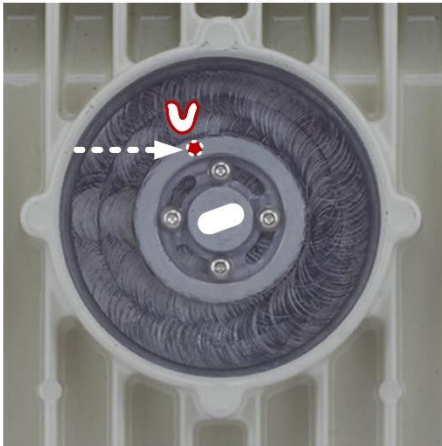

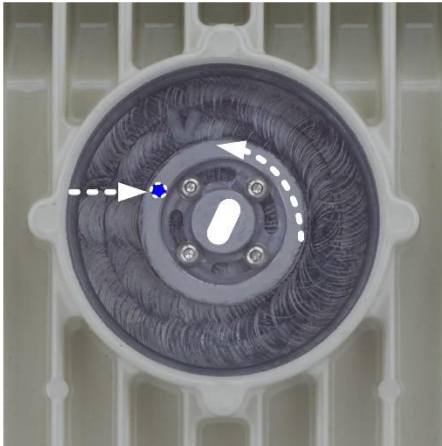



How to install the WiBAS™ OSDR-HUB to **HANT28180V-MB** antenna, proceed as follows:

Step	Action
1	<p>Assembly the antenna as per the installation manual inside the box. The following picture is an assembly preview:</p> 

Continued on next page

WiBAS OSDR-HUB and Sectoral 180 Integrated Antenna, Continued

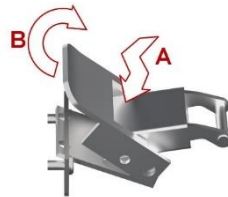
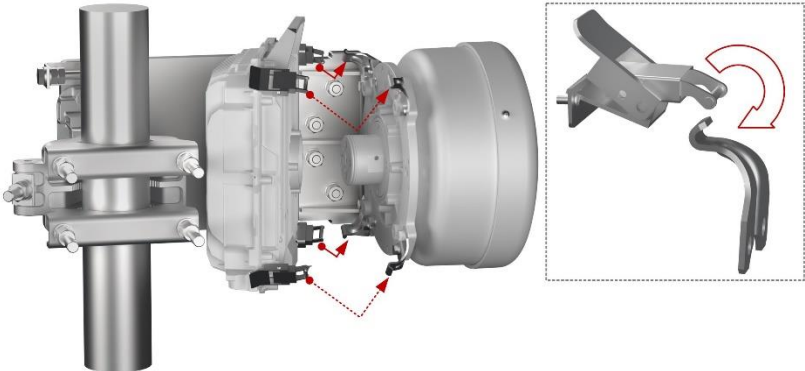
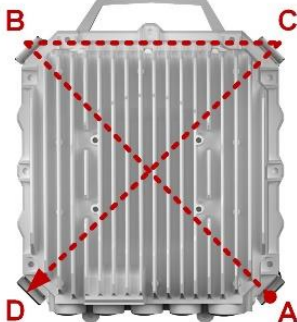
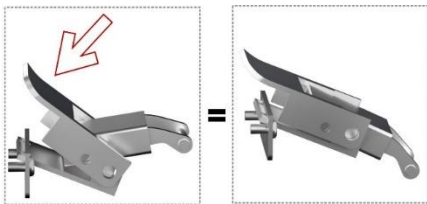
Procedure,
continued

Step	Action
2	<p>Perform radio antenna polarization adjustment, as follows:</p> <ul style="list-style-type: none"> For vertical polarization place antenna (HANT28180V-MB) and radio unit, as shown below: <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Radio unit wave guide</p>  </div> <div style="text-align: center;"> <p>Antenna feeder</p>  </div> </div> For horizontal polarization perform the following actions: <ul style="list-style-type: none"> Use the allen key to loosen the four screws at the waveguide port of the radio unit (do not remove the screws) and then TURN the polarizer, as shown below. Place antenna (HANT28180H-MB), as shown below. <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="margin-top: 20px;">  <p>Do not over tighten the screws. Apply maximum tightening torque 0.6 Nm.</p> <p> Note The misalignment of slots between the movable part and the stationary part of the radio waveguide port is intentional and does not indicate a problem.</p> </div>

Continued on next page

WiBAS OSDR-HUB and Sectoral 180 Integrated Antenna, Continued

Procedure, continued

Step	Action
5	<p>Perform radio unit installation into the antenna, as follows:</p> <ul style="list-style-type: none"> • Lubricate the antenna O-ring with silicone grease. • Unlock the four latches of the radio unit, as shown below:  <ul style="list-style-type: none"> • Pass the latches to antenna hooks, as shown below:  <ul style="list-style-type: none"> • Lock and secure all four latches according to the pattern below:  

End of procedure.

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit

Introduction

This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and sectoral antennas that are listed below:





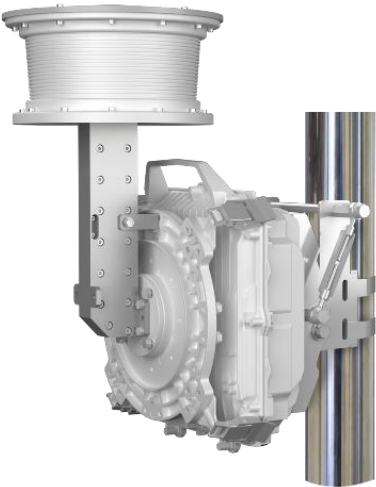
		Radio Units Frequency (GHz) – Form Factor	
		WiBAS™ OSDR-HUB	
		26	28
Antenna Order Code	HANT2628360V	√ ⁽³⁾	√ ⁽³⁾

Continued on next page

⁽³⁾ Mounting kit with order code **OSDR-360-ANT-MNT-KIT** and adaptation plate with order code **OSDR26-360-ANT-ADAPT-KIT** or **OSDR28-360-ANT-ADAPT-KIT**.

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit, Continued


Overview The following materials table for installation contains indicative order codes:

OSDR-28-H-1008-01 	
HANT2628360V 	OSDR-360-ANT-MNT-KIT 
OSDR26-360-ANT-ADAPT-KIT OSDR28-360-ANT-ADAPT-KIT 	


Continued on next page

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit, Continued

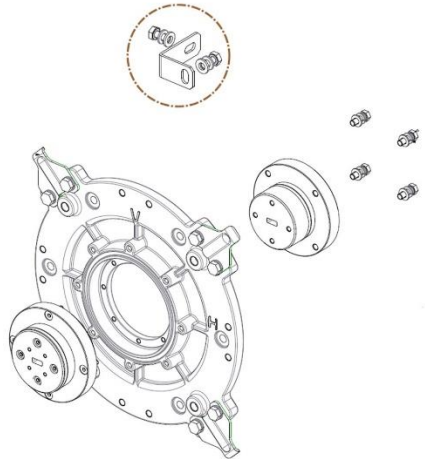
Radio unit
packing
material

OSDR-28-H-1008-01	Packing Materials
	<ul style="list-style-type: none"> • Radio unit.

Antenna
packing
materials

HANT2628360V	Packing Materials
	<ul style="list-style-type: none"> • Antenna. • Installation leaflet. • Greasing paste.

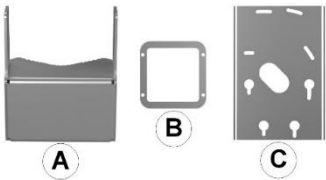



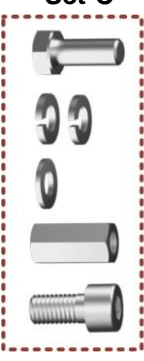


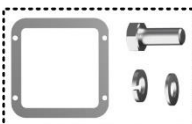
Antenna
adaptation kit
packing
materials

OSDR26-360-ANT-ADAPT-KIT OSDR28-360-ANT-ADAPT-KIT	Packing Materials
	<ul style="list-style-type: none"> • Antenna adaptation kit. • Installation leaflet.

Continued on next page

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit, Continued

Pole mounting kit packing materials

OSDR-360-ANT-MNT-KIT		Packing Materials
		<ul style="list-style-type: none"> • Omni pillar bracket (A). • Spacer plate (B). • Mounting bracket (C).
		<ul style="list-style-type: none"> • Pole hose clamps (x2): <ul style="list-style-type: none"> – Clamp diameter: 64 mm to 140 mm – Pole diameter: 48 mm to 100 mm.
Set-A 	Set-B 	<ul style="list-style-type: none"> • Set-A: <ul style="list-style-type: none"> – M8 x 25 mm screws (x2). – M8 lock washers (x2). – M8 washers stainless steel (x2). • Set-B: <ul style="list-style-type: none"> – M8 x 25 mm screws (x2). – M8 lock washers (x2). – M8 washers (x2).
Set-C 	Set-D 	<ul style="list-style-type: none"> • Set-C: <ul style="list-style-type: none"> – M8 x 20 mm screw (x1). – M8 lock washer (x2). – M8 washer (x1). – M8 hexagon spacer L=17 mm (x1). – M8 x 16 mm screw (x1). • Set-D: <ul style="list-style-type: none"> – M8 x 20 mm screw (x1). – M8 lock washer (x2). – M8 washer (x1). – M8 hexagon spacer L=17 mm (x1). – Round tube (x1). – M8 washers stainless steel (x1). – M8 x 150 mm screw (x1).
Set-C & D 		<ul style="list-style-type: none"> • Set-C & D: <ul style="list-style-type: none"> – M5 turnbuckle (x1)
Set-E 		<ul style="list-style-type: none"> • Set-E: <ul style="list-style-type: none"> – Spacer plate (x1). – M5 washer (x4). – M5 lock washer (x4). – M5 x 20 mm screw (x1).

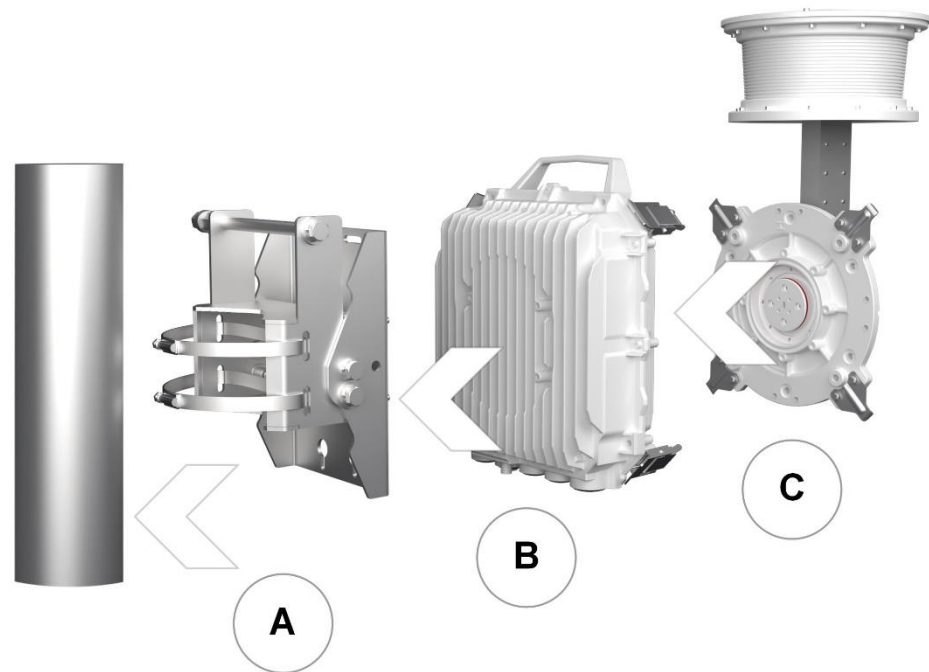
Continued on next page

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit, Continued

Installation tools

- Adjustable torque wrench
 - with hexagon female bit
 - U-wrench.
- Allen key (1.5 and 2.5 mm).
- Spanner key for M5 screw.

Procedure steps overview



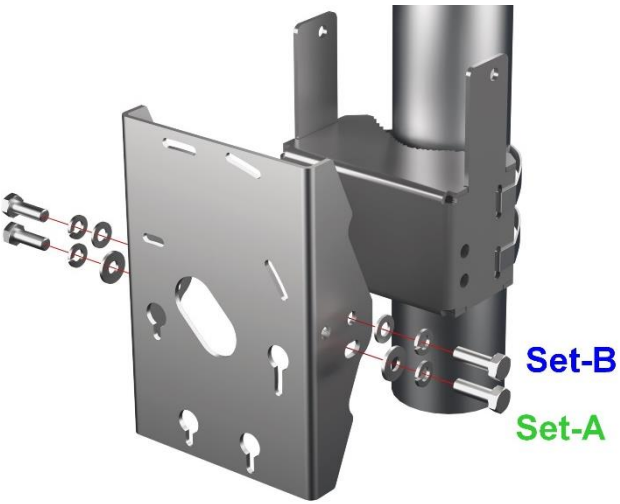



Continued on next page

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit, Continued

Procedure

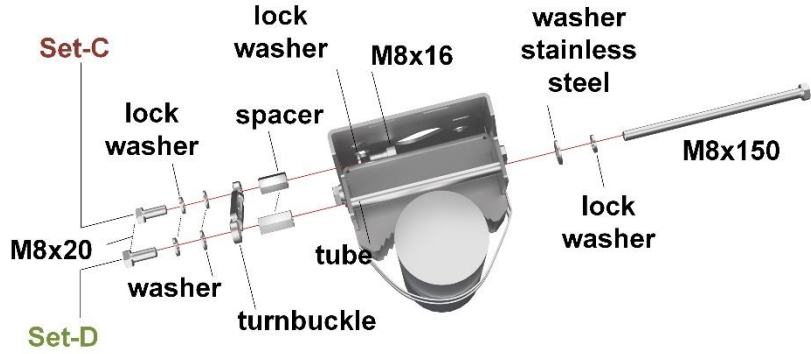


How to install the [HANT2628360V](#) antenna with adaptation plate ([OSDR26-360-ANT-ADAPT-KIT](#) or [OSDR28-360-ANT-ADAPT-KIT](#)) to WiBAS™ OSDR-HUB 26 / 28 GHz and then to mounting kit ([OSDR-360-ANT-MNT-KIT](#)), proceed as follows:

Step	Action
1	<p>Perform the following actions:</p> <ul style="list-style-type: none"> Pass the steel hose clamps through the pillar bracket respective openings, as shown below:  <ul style="list-style-type: none"> Use the tool with M5 hexagon female bit to fully tighten the hose clamps worm screws. <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 7 Nm.</p>
2	<p>Perform the following actions:</p> <ul style="list-style-type: none"> Place mounting bracket onto the pillar bracket (A) and then install the set of pole mounting kit packing list materials, as shown below:  <ul style="list-style-type: none"> Use the tool with M8 hexagon female bit to slightly tighten the screws. <p> The maximum tightening torque is applied to the last step.</p>

Continued on next page

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit, Continued

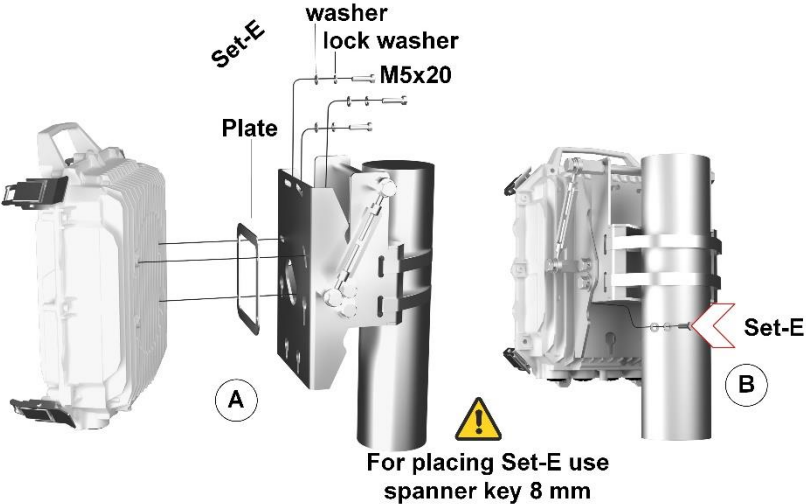
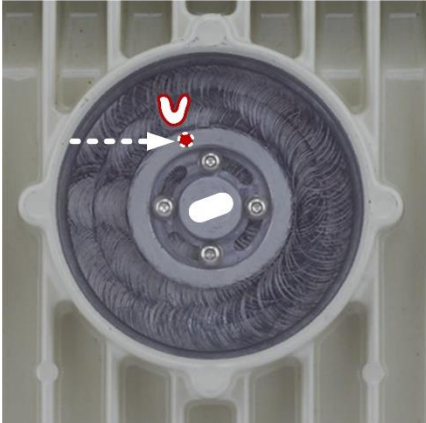

Procedure,
continued

Step	Action
3	<p>Install the set of pole mounting kit packing list materials, as shown below:</p>  <ul style="list-style-type: none"> • Use the tool with M8 hexagon female bit to fully tighten the screws. <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 19.3 Nm.</p>
4	<p>Use the allen key (2.5 mm) to remove the radio unit screws, as shown below:</p> 

Continued on next page

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit, Continued

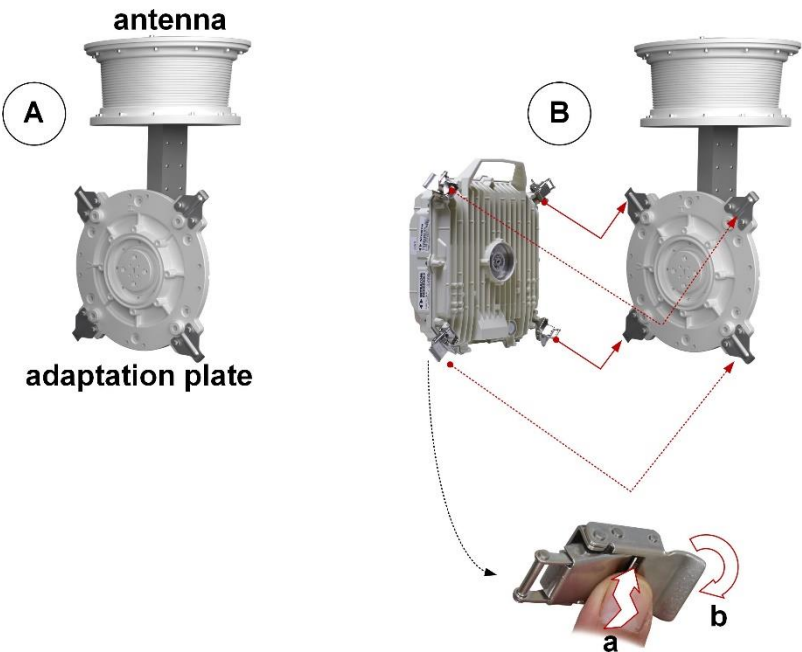
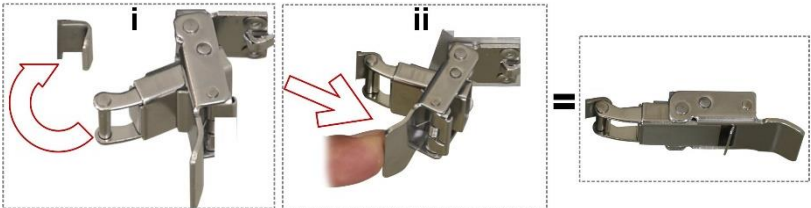

Procedure,
continued

Step	Action
5	<p>Install the set-E of pole mounting kit packing list materials, as shown below:</p>  <p>For placing Set-E use spanner key 8 mm</p>
6	<p>For vertical polarization place antenna (HANT2628360V) and radio unit, as shown below:</p> <div><div><p>Radio unit wave guide</p></div><div><p>Antenna feeder</p></div></div>

Continued on next page

WiBAS OSDR-HUB and Omnidirectional 360 Antenna with OSDR-360-ANT-MNT-KIT Mounting Kit, Continued

Procedure,
continued

Step	Action
7	<p>Perform the following actions:</p> <ul style="list-style-type: none"> • Install the adaptation plate onto the antenna (A), as described to INSTALLATION INSTRUCTION leaflet (included in adaptation kit package). • Install antenna to radio unit (B), as shown below: <div style="text-align: center;">  </div> <ul style="list-style-type: none"> • Lock and secure the radio latches, as shown below: <div style="text-align: center;">  </div>
8	<p>Use the tool with M8 hexagon female bit to fully tighten the set-A and set-B screws of the pole mounting kit.</p> <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 19.3 Nm.</p>

End of procedure.

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit

Introduction

This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and sectoral antennas that are listed below:

		Radio Units Frequency (GHz) – Form Factor	
		WiBAS™ G5	
		micro-BS 28	evo-BS 24.25-29.50
Antenna Order Code	HANT2628360V	√(2)	√(2)



WiBAS™ G5 evo-BS requires external GNSS module kit installation. Please refer to [Installing External GNSS Module](#).

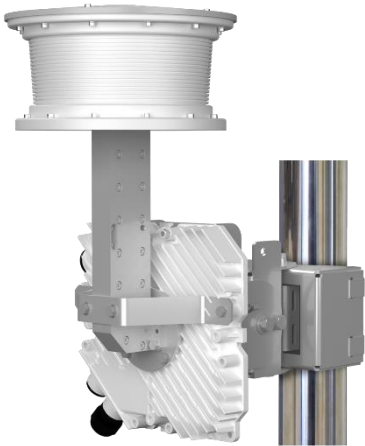
Continued on next page

⁽²⁾ Mounting kit with order code **MTK-DMA-BX**.

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit, Continued

Overview The following materials table for installation contains indicative order codes:

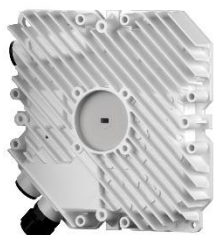

WMBS-28-L-1008-01 or WG5-EVO-BS-24-26	
	
MTK-DMA-BX	HANT2628360V
	




Continued on next page

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit, Continued

Radio unit packing materials

WMBS-28-L-1008-01 or WG5-EVO-BS-26-28	Packing Materials
	<ul style="list-style-type: none"> • Radio unit. • Materials for installing radio unit to MTK-DMA-BX mounting kit: <ul style="list-style-type: none"> – M5 x 50 mm screws (x4) – M5 washers (x4) – M5 nuts (x4) – Spacers 12 mm (x4) - aluminum  <ul style="list-style-type: none"> • DO NOT USE the following materials (used for installing radio unit to HANT28180H antenna): <ul style="list-style-type: none"> – Set of latches (x4) – M6 x 12 mm screws (x8) – M6 lock washers (x8)

Antenna packing materials

HANT2628360V	Packing Materials
	<ul style="list-style-type: none"> • Antenna. • Safety collar and materials for installing antenna to WMBS-OB-U-DSDS-SB or WG5-EVO-BS-LB-UB radio unit. • Installation leaflet. • Greasing paste.

Continued on next page

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit, Continued

Pole mounting kit packing materials

MTK-DMA-BX	Packing Materials
	<ul style="list-style-type: none"> • Elevation bracket (A). • Azimuth bracket (B). • Pole bracket (C).
	<ul style="list-style-type: none"> • Pole hose clamps (x2): <ul style="list-style-type: none"> – Clamp diameter: 64 mm to 140 mm – Pole diameter: 48 mm to 100 mm.
	<p>Set-A:</p> <ul style="list-style-type: none"> • M8 x 25 mm screws (x4). • M8 lock washers (x4). • M8 washers stainless steel (x4). <p>Set-B:</p> <ul style="list-style-type: none"> • M8 x 25 mm screws (x4). • M8 lock washers (x4). • M8 washers (x4).



The following set of materials are not used for this product:



- M5 x 40 mm screws (x4).
- M5 washers (x4).
- M5 flange nut serrated (x4).

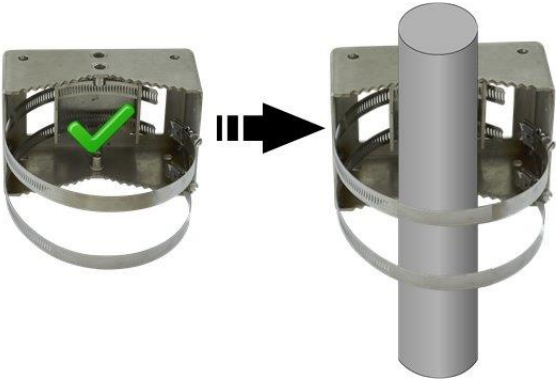
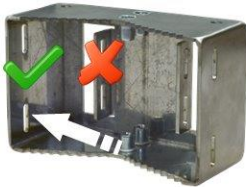

Installation tools

Adjustable torque wrench with hexagon female bit.

Continued on next page

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit, Continued

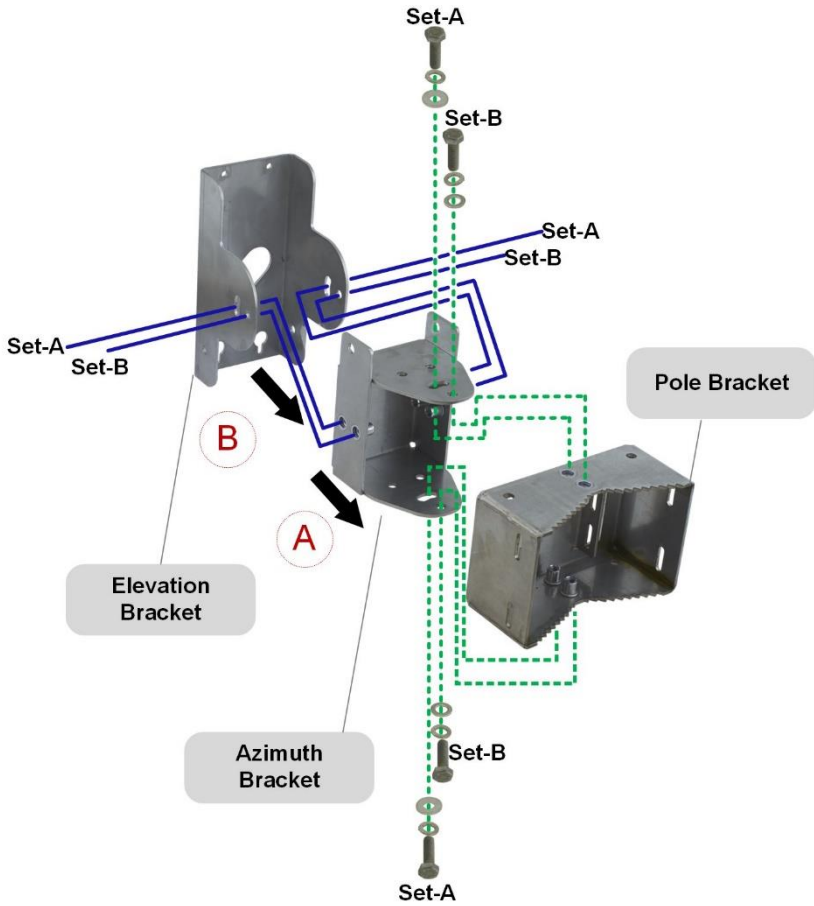

Procedure How to install the WiBAS™ G5 micro-BS / evo-BS to [HANT2628360V](#) antenna, proceed as follows:

Step	Action
1	<p>Perform the following actions:</p> <ul style="list-style-type: none">• Pass the steel hose clamps through the pole bracket respective openings, as shown below: <p>For pole diameter 48 mm up to 159 mm</p>  <p>For pole diameter 160 mm up to 300 mm</p>  <ul style="list-style-type: none">• Use the tool with M5 hexagon female bit to fully tighten the hose clamps worm screws. <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 7 Nm.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit, Continued

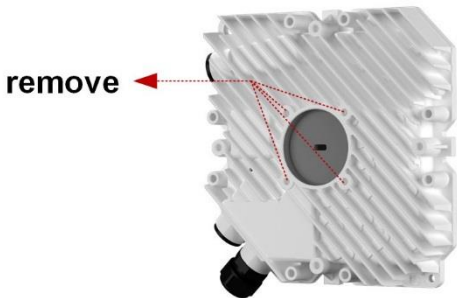
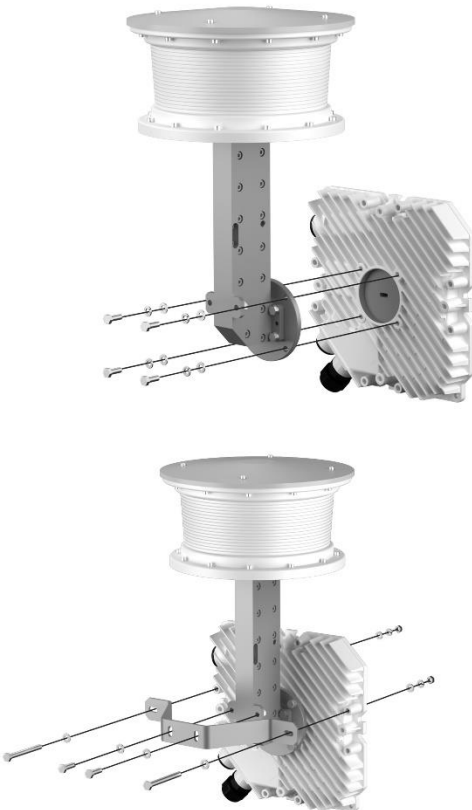
Procedure,
continued

Step	Action
2	<p>Perform the following actions:</p> <ul style="list-style-type: none"> • Mount azimuth bracket onto the pole bracket (A) and then install Set-A (x 2) and Set-B (x 2), as shown below. • Mount elevation bracket onto the azimuth bracket (B) and then install Set-A (x2) and Set-B (x2), as shown below.  <ul style="list-style-type: none"> • Use the tool with M8 hexagon female bit to slightly tighten the screws. <p> The maximum tightening torque is applied to the last step.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit, Continued

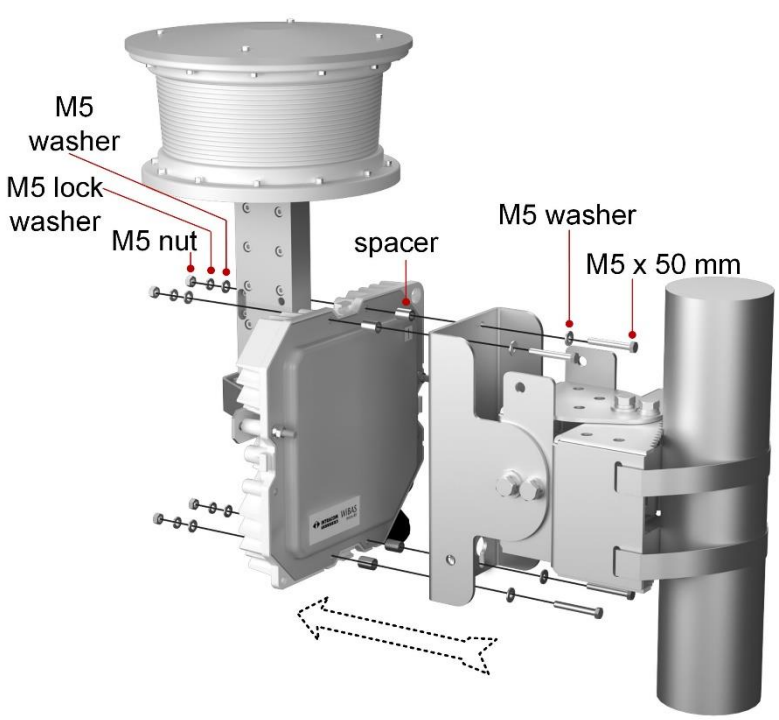
Procedure,
continued

Step	Action
3	<p>Use the allen key (2.5 mm) to remove the following M5 x 6 mm screws (x4) from radio unit:</p> 
4	<p>Install the antenna to radio unit as described in the installation leaflet of antenna package.</p> <p>The following pictures is an installation preview:</p> 

Continued on next page

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit, Continued

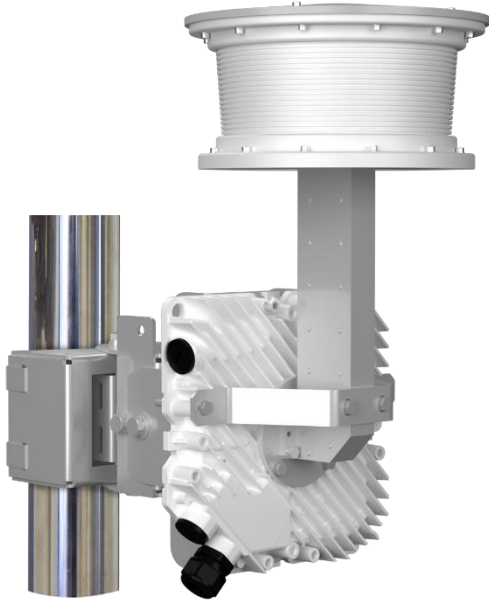

Procedure,
continued

Step	Action
5	<p>Perform the following actions:</p> <ul style="list-style-type: none"> Install the radio unit onto the elevation bracket. as shown below: <p>Note</p> <ul style="list-style-type: none"> From order code WMBS-28-L-1008-SB or WG5-EVO-BS-LB-UB use the following materials: <ul style="list-style-type: none"> M5 x 50 mm screws (x4) M5 washers (x4) M5 nuts (x4) Spacers 12 mm (x4) - aluminum  <ul style="list-style-type: none"> Use the tool with M5 hexagon female bit to fully tighten the screws. <p>! Do not over tighten. Adjust the tool for applying maximum tightening torque 4.2 Nm.</p>

Continued on next page

WiBAS G5 micro-BS / evo-BS and Omnidirectional 360 Antenna with MTK-DMA-BX Mounting Kit, Continued

Procedure,
continued

Step	Action
6	<p>Verify that the installation appears, as follows (the following picture shows vertical polarization installation example):</p> 
7	<p>Use the tool with M8 hexagon female bit to fully tighten the screws.</p> <p> Do not over tighten. Adjust the tool for applying maximum tightening torque 17.8 Nm.</p>

End of procedure.

WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m

This paragraph describes the installation procedures that needs to be followed when combining the Base Station radios and parabolic antenna that are listed below:

		Radio Units Frequency (GHz) – Form Factor
		WiBAS™ G5 evo-BS
		24.25-29.50
Antenna Order Code	ANT-IS-2628-2F-C	√ ⁽¹⁾



Parabolic antenna is used with WiBAS™ G5 evo-BS only for Point-to-Point operation.





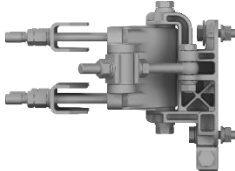
WiBAS™ G5 evo-BS requires external GNSS module kit installation. Please refer to [Installing External GNSS Module](#).

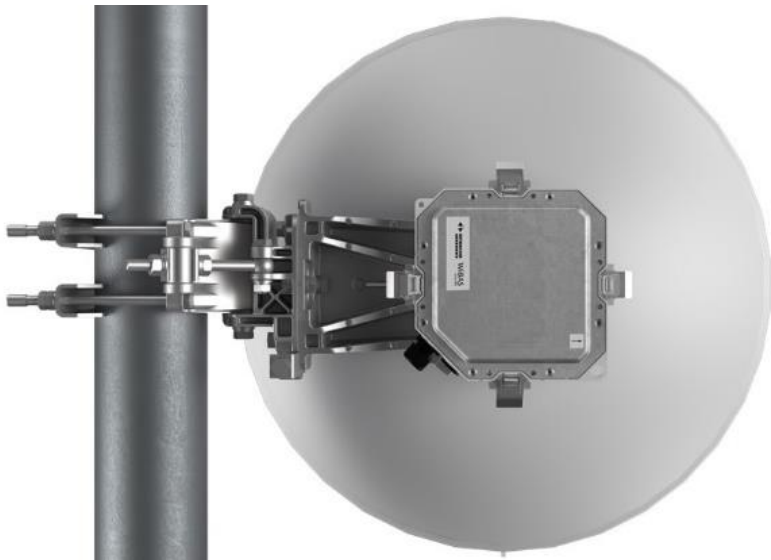
Continued on next page

⁽¹⁾ Mounting kit from antenna package.

WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m, Continued

The following materials table for installation contains indicative order codes:

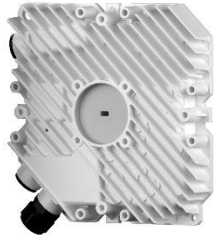
WG5-EVO-BS-27-29	
	
ANT-IS-2628-2F-C	
	



Continued on next page

WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m, Continued

Radio unit packing materials

WG5-EVO-BS-27-29	Packing Materials
	<ul style="list-style-type: none"> • Radio unit. • Materials for installing radio unit to ANT-IS-2628-2F-C antenna: <ul style="list-style-type: none"> – Set of latches (x4) – M6 x 12 mm screws (x8) – M6 lock washers (x8) <p>Note</p> <ul style="list-style-type: none"> • The following materials are not used. Used for installing radio unit to MTK-DMA-BX mounting kit: <ul style="list-style-type: none"> – M5 x 50 mm screws (x4) – M5 washers (x4) – M5 nuts (x4) – Spacers 12 mm (x4) - aluminum

Antenna packing materials

ANT-IS-28-1F	Details
	<ul style="list-style-type: none"> • Parabolic antenna, 0.6 m. • 4 x latches. • Pole mounting kit. • Greasing paste. • Installation Instructions.

Installation tools

Adjustable torque U-wrench and cross-headed screw driver.

Continued on next page

WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m, Continued

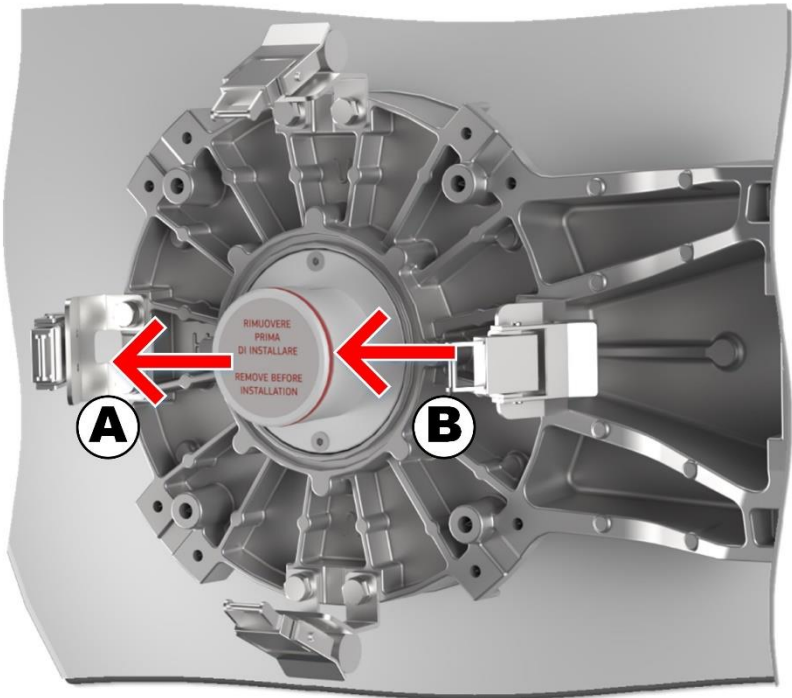
Procedure How to install the WiBAS™ G5 evo-BS to [ANT-IS-2628-2F-C](#) antenna, proceed as follows:

Step	Action
1	<p>Follow the included instructions to assemble the antenna mount and attach it to the antenna.</p> <p>The antenna installation should be as shown below.</p> <div data-bbox="616 696 1353 1256"></div> <div data-bbox="580 1305 668 1355"></div> <p>The antenna is capable to be installed in both side of the pole The above photo is indicative of the installation in the right offset orientation of the ANT-IS-2628-2F-C model.</p>

Continued on next page

WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m, Continued

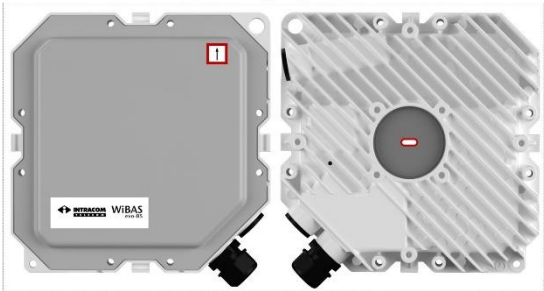

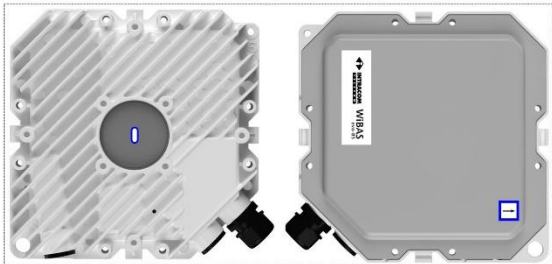
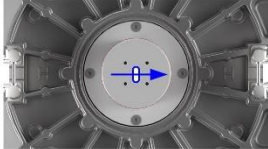

Procedure,
continued

Step	Action
2	<p>Perform the following antenna actions:</p> <ul style="list-style-type: none">• Remove the plastic sticker (A)• Lubricate the O-ring with silicone grease (B).  <p>The diagram shows a top-down view of the antenna's internal structure. A central circular component has a red circle around it with the text 'RIMUOVERE PRIMA DI INSTALLARE' and 'REMOVE BEFORE INSTALLATION'. Two red arrows point to this central area, labeled 'A' and 'B'. Arrow 'A' points to the left side of the central area, and arrow 'B' points to the right side. The central area is surrounded by a complex, multi-ported structure.</p>

Continued on next page

WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m, Continued

Procedure,
continued

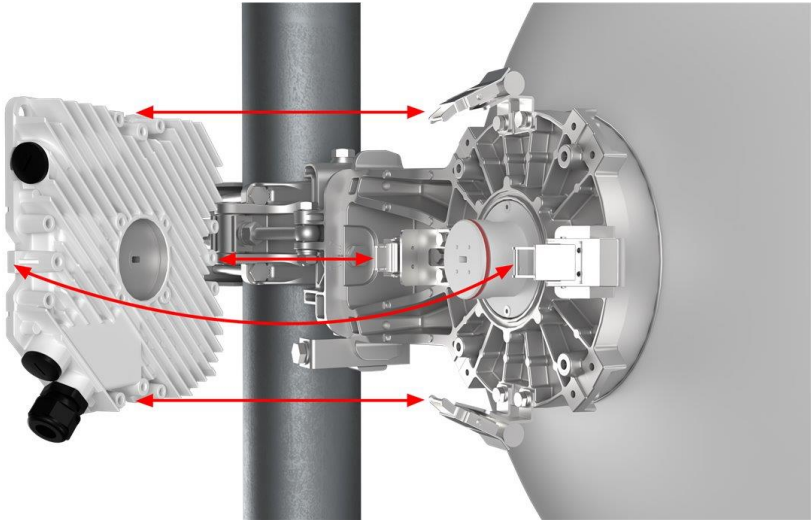
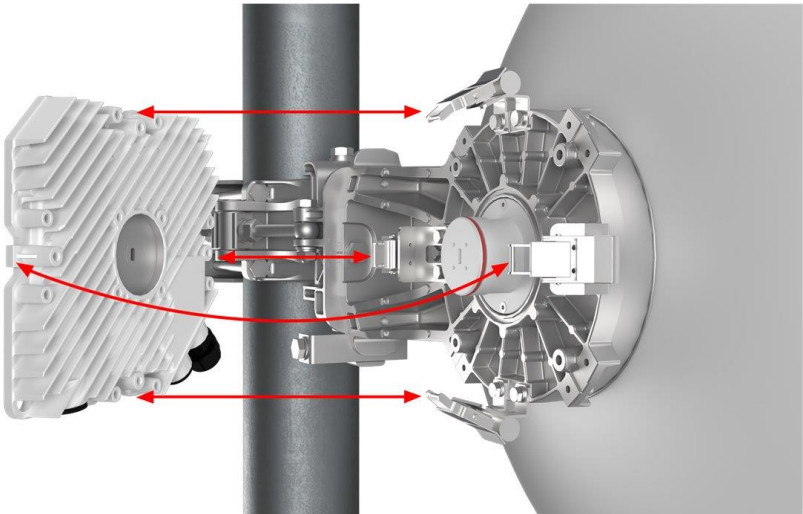
Step	Action
3a	<p>Radio unit and antenna should be adjusted for common polarization, as shown below. If the LINK polarization is VERTICAL then the feeders should be remained, as shown below (radio unit – both sides view):</p> <div><div><p>RADIO UNIT</p></div><div><p>ANTENNA</p></div></div> <p>If the LINK polarization is HORIZONTAL, rotate the radio unit and antenna feeder⁽¹⁾, as shown below (radio unit – both sides view):</p> <div><div><p>RADIO UNIT</p></div><div><p>ANTENNA</p></div></div> <div><div>Note</div><div>How to change antenna polarization refer to antenna installation leaflet.</div></div>

Continued on next page

⁽¹⁾ How to rotate antenna feeder for changing polarization refer to antenna installation leaflet.

WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m, Continued

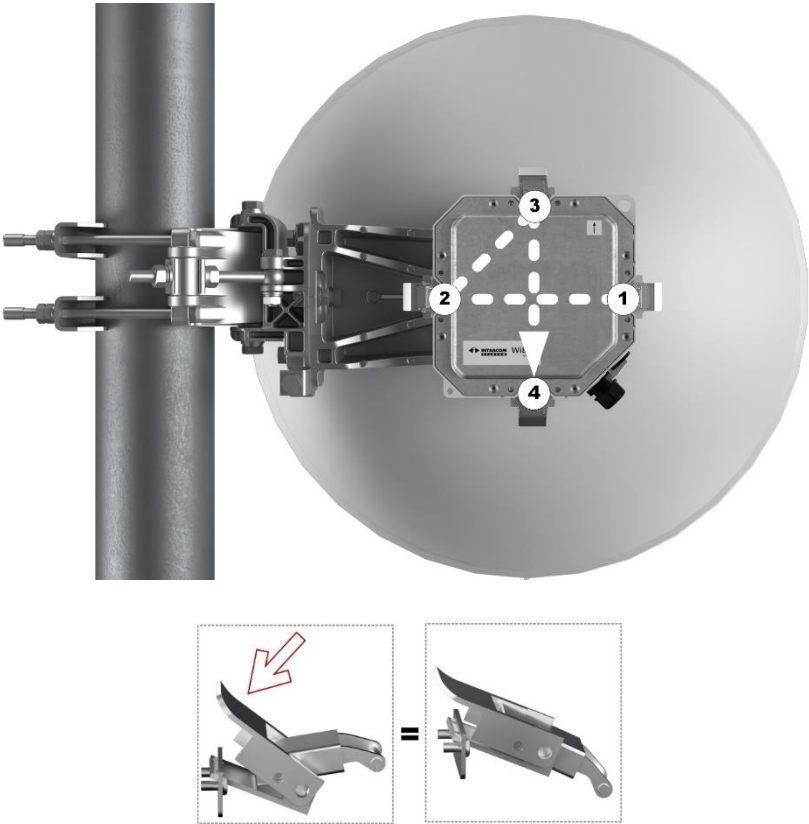
Procedure,
continued

Step	Action
3b	<p>Perform radio unit installation into the antenna, as follows:</p> <ul style="list-style-type: none"> • Unlock the four latches of the antenna: • For vertical polarization mount the radio unit to antenna, as shown below:  <ul style="list-style-type: none"> • For horizontal polarization mount the radio unit to antenna position, as shown below: 

Continued on next page

WiBAS G5 evo-BS and Parabolic Integrated Antenna, 0.6 m, Continued

Procedure,
continued

Step	Action
4	<div>Lock and secure all four latches according to the pattern below:</div> <div></div>

End of procedure.