



Operating Manual

iANT2xx Series of Antennas



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1 Introduction

The iANT2xx range of rugged antennas provides a comprehensive selection of antennas that can operate in the UHF, GSM, 2.4GHz or 5.8GHz WiFi frequency bands, all of which are suitable for outdoor use as they have an IP rating of IP66 or higher, and are protected against UV damage and corrosion in offshore environments.

Please Note: The iANT2xx range of antennas is classed as “Simple Apparatus” under international intrinsic safety standards. IEC 60079-25 requires that simple apparatus equipment used in an intrinsically safe electrical system is compliant with IEC 60079-0, IEC 60079-11, IEC 60079-14 & IEC 60079-25. Extronics has assessed the iANT2xx antenna range together with our intrinsically safe certified wireless products to provide solutions compliant to all relevant standards. Therefore iANT2xx antennas can be deployed in a hazardous area, as part of an Extronics system, without the need to undergo further assessment. Compliance is also maintained if an iANT2xx antenna is used with the Extronics iSOLATE501 RF galvanic isolator. If the antenna is not to be used with Extronics’ products, then the system designer must assess the hazard and demonstrate compliance to the relevant standards.

2 Safety Information and Notes

2.1 Storage of this Manual

Keep this user manual safe and in the vicinity of the device. All persons who have to work on or with the device should be advised on where the manual is stored.

2.2 List of Notes

The notes supplied in this chapter provide information on the following.

- Danger / Warning.
 - Possible hazard to life or health.
- Caution
 - Possible damage to property.
- Important
 - Possible damage to enclosure, device or associated equipment.
- Information
 - Notes on the optimum use of the device

Warning The iANT2xx series are classified as simple apparatus when used with an Extronics iSOLATE501 galvanic isolator. Do not use an iANT2xx antenna without first contacting Extronics for guidance and recommendations for the use of the iANT2xx with specific hardware.

Important Installation of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (IEC 60079-14).

Important The antennas and associated wiring should be periodically inspected for damage, in accordance with the applicable code of practice (IEC 60079-17)

Warning Antennas which are not marked suitable for Group I in Table 1 must NOT be used in Group I or Zone 0.

Warning Aluminium mounting brackets cannot be used in Group I or Zone 0 hazardous areas.

Warning The iANT2xx antennas are an electrostatic charging hazard; clean only with a damp cloth. The iANT2xx antennas should have a label stating that they are an electrostatic hazard.

Warning Do not exceed the Effective Isotropic Radiated Power (EIRP) for the gas group in which the iANT2xx will be operating. The RF output of the transceiver will vary depending on the hardware and antenna used. The maximum hardware limit of the access point must be used to calculate the EIRP – software control by the user of the RF power is not allowed

- Group IIC – 2W (+33dBm)
- Group IIB – 3.5W (+35.4dBm)
- Group IIA/I/III – 6W (+37.7dBm)

Refer to Table 1 for specific antenna details.

Important iANT2xx are only certified for use in ambient temperatures in the ranges specified in Table 1 and should not be used outside this range.

Important Do not exceed the Effective Isotropic Radiated Power (EIRP) limit for the country / region of operation

Important Repair of the iANT2xx shall only be carried out by the manufacturer. The antennas contain no user-serviceable parts.



Antenna	Frequency	Gain	Pattern	Operating Temperature Range	Max Power IIC (W/dbm)	Max Power IIB (W/dBm)	Max Power IIA and III (W/dBm)	Max Power Grp I (W/dBm)	Suitable for Grp I or Zone 0
iANT200-24	2.4GHz	5	Omni	-30°C to 80°C	0.63/28	1.10/30.4	1.90/32.8	1.90/32.8	Y
iANT200-58	5.8GHz	8	Omni	-30°C to 80°C	0.32/25	0.55/27.4	0.95/29.8	0.95/29.8	Y
iANT212	2.4GHz & 5.8GHz	2.5	Omni	-40°C to 85°C	1.12/30.5	1.81/32.6	3.37/35.2	3.37/35.2	Y
iANT213-QB	806-960MHz & 1710-2170MHz	3	Omni	-40°C to 85°C	1.25/31	1.75/32.4	3.00/34.8	3.00/34.8	Y
iANT213-2400	2.4GHz	6	Omni	-40°C to 80°C	0.50/27	0.88/29.4	1.50/31.8	1.50/31.8	Y
iANT213-5000	5.8GHz	5	Omni	-40°C to 70°C	0.63/28	1.10/30.4	1.90/32.8	1.90/32.8	Y
iANT214-2400	2.4GHz	8.5	Sector	-40°C to 80°C	0.28/24.5	0.49/26.9	0.85/29.3	0.85/29.3	Y
iANT214-2400D	2.4GHz	8	Sector	-40°C to 80°C	0.32/25	0.55/27.4	0.95/29.8	0.95/29.8	Y
iANT214-5000	5.8GHz	14	Sector	-40°C to 80°C	0.08/19	0.14/21.4	0.24/23.8	0.24/23.8	Y
iANT215	2.4GHz & 5.8GHz	8	Omni	-40°C to 80°C	0.32/25	0.55/27.4	0.95/29.8	0.95/29.8	Y
iANT216x	2.4GHz & 5.8GHz	6	Omni	-40°C to 85°C	0.50/27	0.88/29.4	1.50/31.8	1.50/31.8	Y
iANT217	860-960MHz	8	Sector	-20°C to 70°C	0.32/25	0.55/27.4	0.95/29.8	0.95/29.8	Y
iANT218	2.4GHz & 5.8GHz	5	Sector	-20°C to 70°C	0.63/28	1.10/30.4	1.90/32.8	N/A	N
iANT219-2400	2.4GHz	12	Sector	-40°C to 70°C	0.13/21	0.22/23.4	0.38/25.8	N/A	N
iANT219-5000	5.8GHz	16	Sector	-55°C to 65°C	0.03/15	0.87/19.5	0.15/21.8	N/A	N
iANT220-2400	2.4GHz	15	Sector	-40°C to 65°C	0.06/18	0.11/20.4	0.19/22.8	N/A	N
iANT220-5000	5.8GHz	19	Sector	-55°C to 65°C	0.02/14	0.04/16.4	0.07/18.8	N/A	N
iANT221	2.4GHz & 5.8GHz	7.5	Sector	-40°C to 70°C	0.35/25.5	0.62/27.9	1.06/30.3	N/A	N
iANT222	2.4GHz	7	Sector	-30°C to 60°C	0.39/26	0.69/28.4	1.19/30.8	1.19/30.8	Y

Table 1: Maximum RF Power Input for iANT2xx for ATEX Groups



2.3 Intended Purpose Usage

Important	Before setting the units to work, read the technical documentation carefully.
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Important	The latest version of the technical documentation or the corresponding technical supplements is valid in each case.
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The iANT2xx series is built using modern components and is extremely reliable in operation; however it must only be used for its intended purpose. Please note that the intended purpose also includes compliance with the instructions issued by the manufacturer for installation, setting up and service.

Any other use is regarded as conflicting with the intended purpose. The manufacturer is not liable for any subsequent damage resulting from such inadmissible use. The user bears the sole risk in such cases.

2.4 Transportation and Storage

All iANT2xx series devices must be so transported and stored that they are not subjected to any excessive mechanical stresses.

2.5 Authorized Persons

Only persons trained for the purpose are authorized to handle the iANT2xx series; they must be familiar with the unit and must be aware of the regulation and provisions required for explosion protection as well as the relevant accident prevention regulations.

2.6 Cleaning and Maintenance

The iANT2xx series and all its components require no maintenance. All work on the iANT2xx series by personnel who are not expressly qualified for such activities will cause the Ex approval and the guarantee to become void.

Warning	The iANT2xx series enclosures are an electrostatic charging hazard; clean only with a damp cloth. The iANT2xx antennas should have a label fixed to the enclosure stating that they are an electrostatic hazard.
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2.7 Safety Precautions

Important	For the installation, maintenance and cleaning of the units, it is absolutely necessary to observe the applicable regulations and provisions concerned with explosion protection (IEC 60079-0, IEC 60079-14) as well as the Accident Prevention Regulations.
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Warning	The maximum radiated power must not exceed that allowed in the area of installation (IEC 60079-0). IIC -2W, IIB – 3.5W, IIA – 6W
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2.8 Cleaning and Maintenance Intervals

The cleaning intervals depend on the environment where the system is installed.

2.9 Aggressive substances and environments

The iANT2xx series is not designed to come into contact with aggressive substances or environments, please be aware that additional protection may be required.

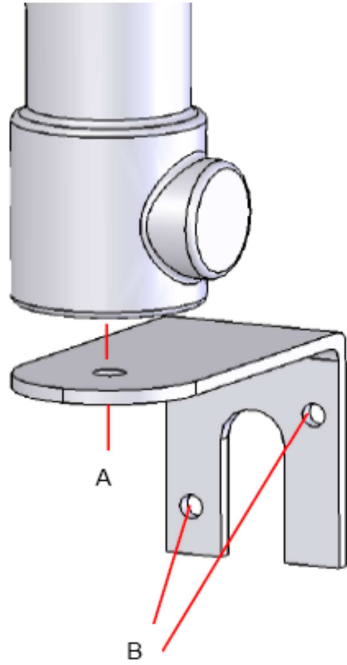
2.10 Exposure to external stresses

The iANT2xx series is not designed to be subjected to excessive stresses e.g. vibration, heat, impact. Additional protection is required to protect against these external stresses.

The iANT2xx series will require additional protection if it is installed in a location where it may be subjected to damage.

3 Mounting Details

3.1 iANT200



Place the antenna bracket into desired location as stipulated in the report and mark the “B” holes.

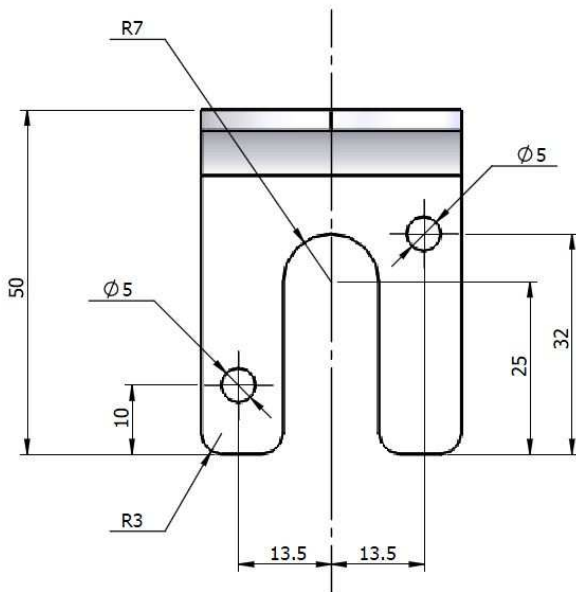
Remove the bracket and drill two holes using a 6mm drill approximately 30mm deep.

Plug the holes using the red rawl plugs.

Re-align the bracket and fix using suitable screws.

Place the antenna onto the bracket and fix through “A” using M6 lock washer & M6 x10 slotted machine screw.

Attach connector to RF equipment and tidily secure excess cable.

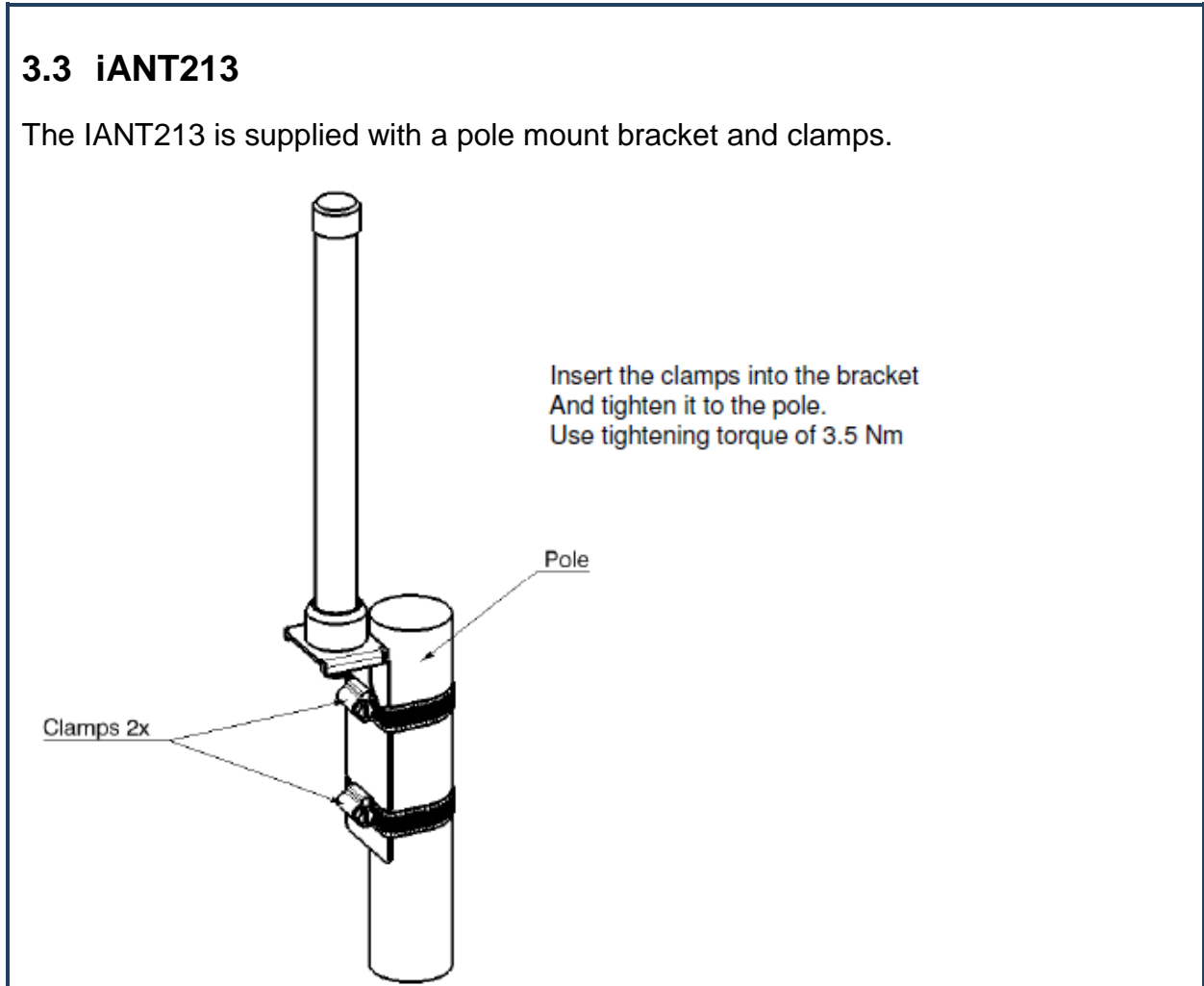


3.2 iANT212

The iANT212 is designed to be mounted directly to wireless devices; therefore no mounting bracket is supplied with this antenna.

3.3 iANT213

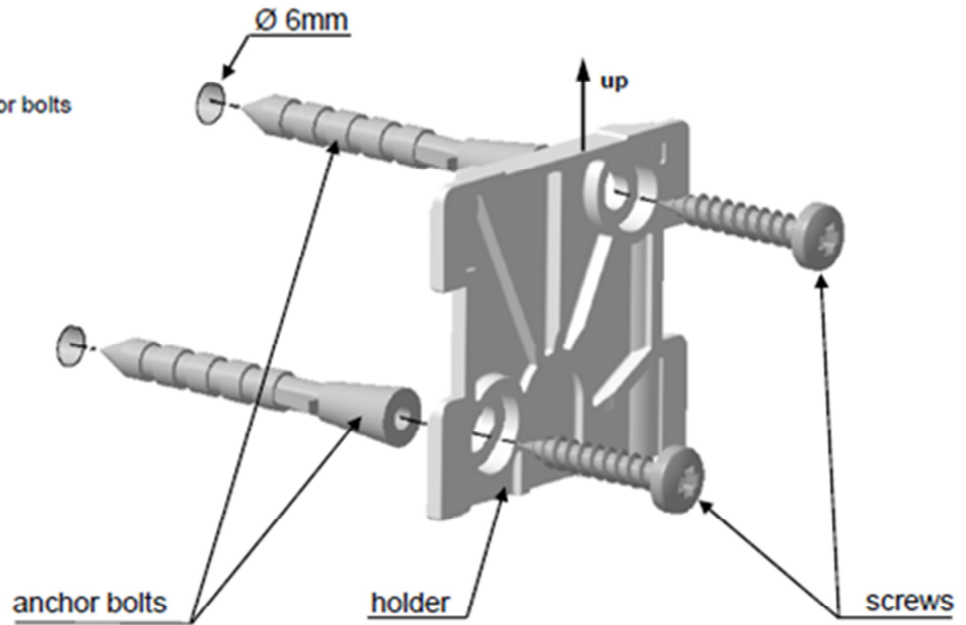
The IANT213 is supplied with a pole mount bracket and clamps.



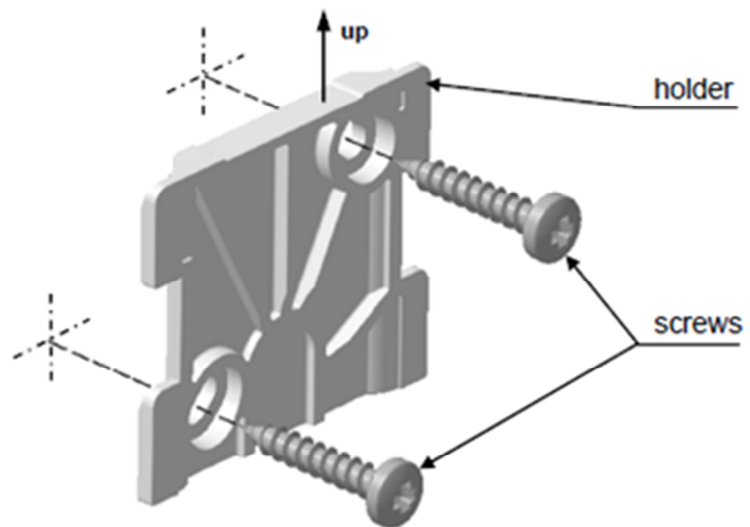
3.4 iANT214

Step 1:
Mount the holder at the wall
(screws and plugs are included)

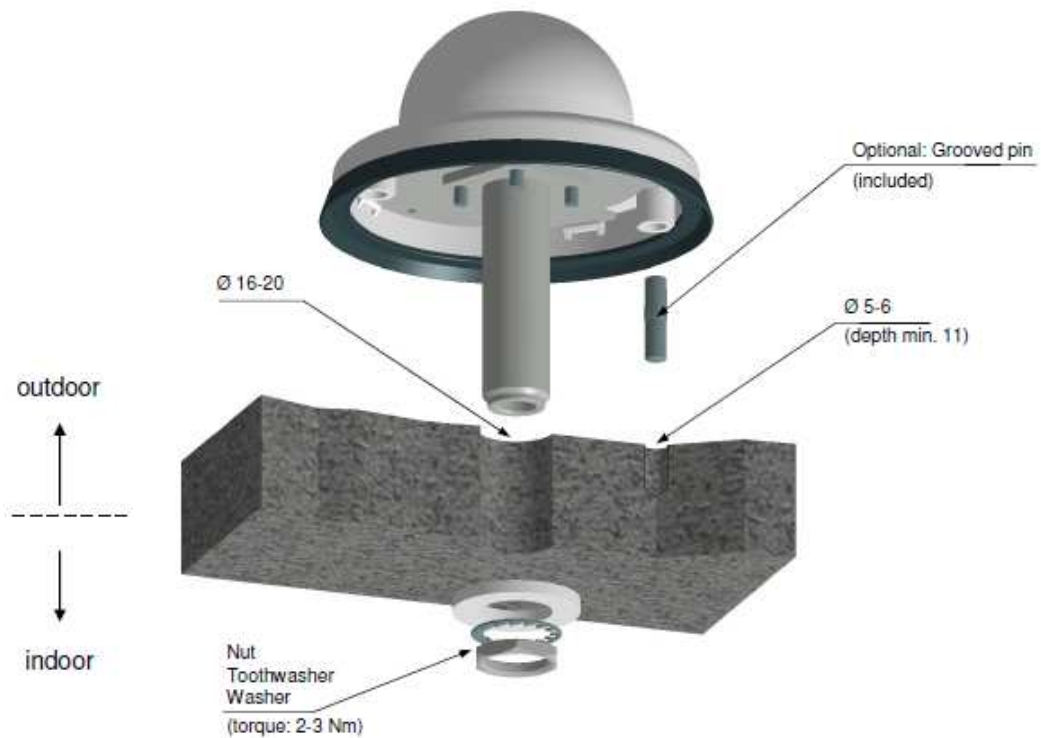
a) mounting with anchor bolts



b) mounting without anchor bolts

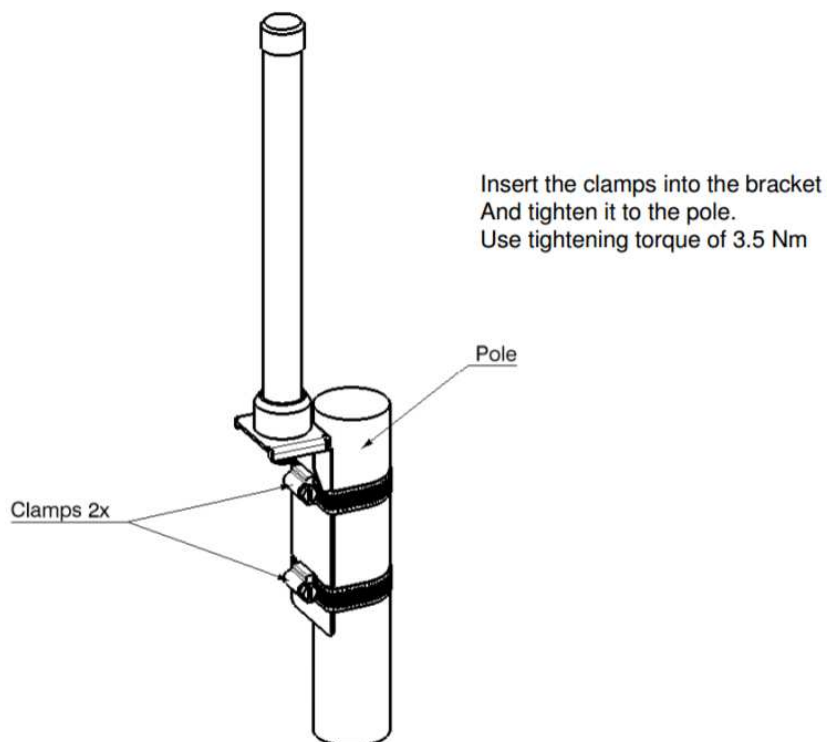


3.5 iANT215



3.6 iANT216

The iANT216M is designed to be mounted directly to wireless devices. The iANT216F is supplied with a pole mount bracket as standard.



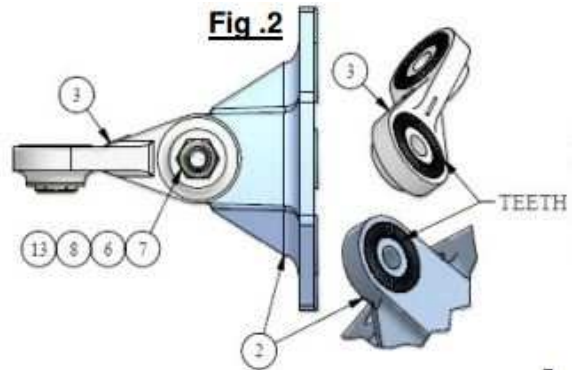
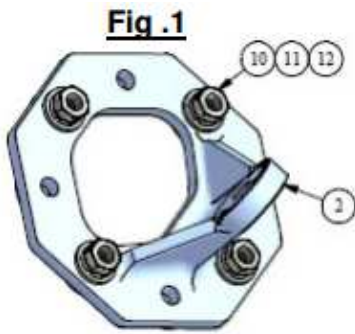
3.7 iANT217

Mounting bracket is available. The iANT217 is suitable for wall or pole mounting.

Pole mount bracket Extronics part number: iANTMB217. Note: this bracket is aluminium and is not suitable Group I and Zone 0 areas.

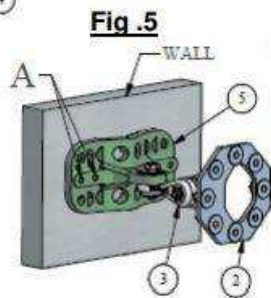
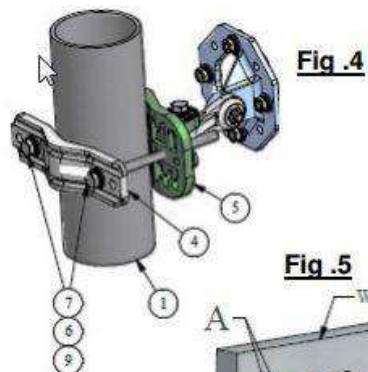
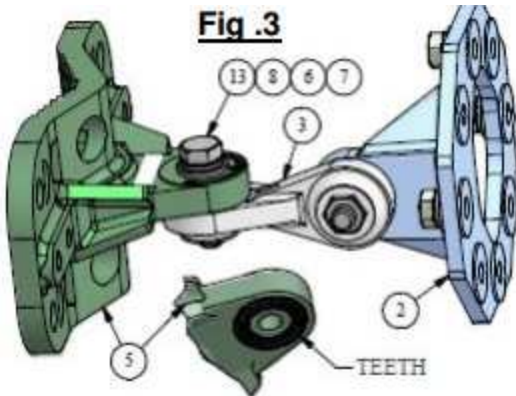


3.8 iANT218 / iANT219 / iANT220 / iANT221

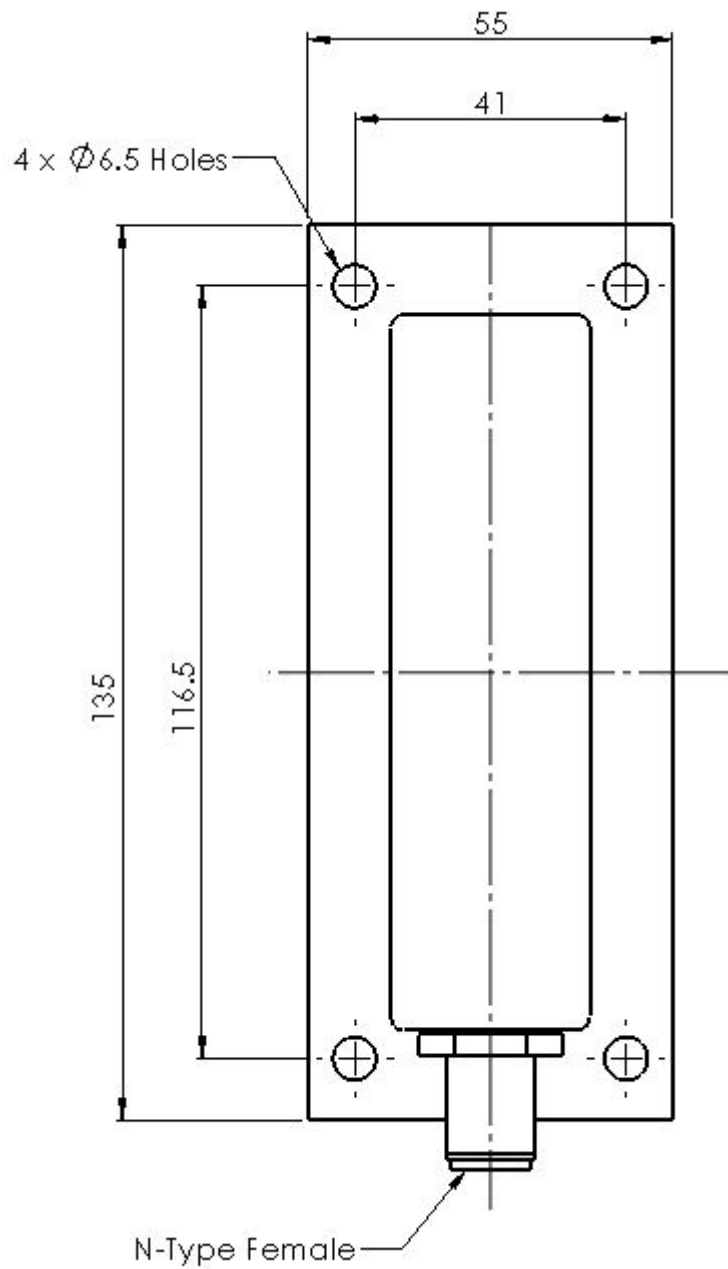


1. Place item No.2 on the antenna, as illustrated in the drawing. Align with the screw holes.
2. Connect item No. 2 to the antenna with spring washers (11), flat washers (10) and nuts (12).
3. Tighten the nuts at a torque of 30 Lbs*In.
4. Connect item No. 3 to item No. 2 ONLY as illustrated in Fig.2, with items 6, 7,8,13. (Teeth of item 2 facing teeth of item 3) Leave screw slightly loose.

5. Connect item No. 3 to item No. 5 as illustrated, with items 6, 7,8,13. (Teeth of item 5 facing teeth of item 3) Leave screw slightly loose.
6. For pole mounting attach items No. 4 and 5 to the pole as illustrated (Fig 4), and connect those using items No. 6, 7, and 9. Close screws (9) one and another in turn up to tightening torque of each screw is 30...35 Lbs·In. Distance between ends of items 4, 5 on one and another side must be equal. NO SKEWNESS ALLOWED.
7. For wall mounting attach item 5 to the wall (Fig 5). Fasten it with screws 1/4" or M6 using holes "A". (Screws not supplied).
8. Adjust the desired angle, and fully tighten the loose screws (paragraphs 4, 5) at a torque of 30 Lbs·In.



3.8 iANT222



The antenna can be mounted and positioned with the galvanised steel bracket supplied for mast or pole mounting.

4 Manual Revision

Issued By:	Andy Peak			Issue Date :	25/02/2014	
Approved By:	Nick Saunders			Approval Date :	23/01/2017	
Doc Ref:	403449	Revision:	3.1	ATEX RELATED DOCUMENT THIS DOCUMENT MUST NOT BE MODIFIED WITHOUT PRIOR PERMISSION FROM THE AUTHORISED PERSON		
Document Change History						
Issue No.	Change d By	Details Of Change	Date	Red Line PIL	ECN	Approved by:
1.0	AJP	Modified range – new antennas added. D of C removed, Doc number changed from 320157	25/02/2014	N/A	N/A	NS
2.0	BTS	Update range	03/09/2014	N/A	N/A	NS
2.1	JR	Added to Extronics Winman BMS	29/07/2015	N/A	N/A	NS
2.2	PR	Antenna mounting bracket drawings added. New drawing for iANT200	08/10/2015	N/A	N/A	NS
3.0	PR	New images on front page. New table showing maximum RF power. IANT216 and iANT217 mounting brackets added. Antenna data removed from this manual, refer to individual datasheets for latest data	25/10/2016	N/A	N/A	NS
3.1	PR	New signed revision sheets added	23/01/2017	N/A	N/A	NS
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