



New 7in Dia. Choke Ring GNSS Antenna for Global Navigation Satellite Systems (GNSS) Applications

P/N: 72GNSSA-XX-X (Survey Mount)



ANTCOM CORPORATION . 367 Van Ness Way, Suite 602 . Torrance, CA 90501 . Tel: (310) 782-1076 . Fax: (310) 782-1086 . E-mail: antennas@antcom.com . http://www.antcom.com

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SPECIFICATIONS

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
A	ECO# 0006	RELEASE	11-07-08	S. HUYNH

ELECTRICAL:

	L5 GPS E5, E5a, E5b, Galileo L5 IRNSS	L2 GPS B2 Compass	L2 GLONASS E6 Galileo B3 Compass	OmniSTAR / L-Band L6 Galileo B1 Compass	L1 GPS E1, E2 Galileo L1 IRNSS	L1 GLONASS
FREQUENCY:	1176.45 ± 12.0 MHz 1164.45 - 1219.14 MHz 1176.45 ± 15.0 MHz	1227.60 ± 12.0 MHz 1207.14 ± 10.0 MHz	1252.50 ± 7.5 MHz 1266.75 - 1290.75 MHz 1268.52 ± 10.0 MHz	1542.50 ± 14.0 MHz 1542.50 ± 5.0 MHz 1561.088 ± 10.0 MHz	1575.42 ± 15.0 MHz 1575.42 ± 17.0 MHz 1575.42 ± 12.0 MHz	1609.0 ± 7.0 MHz
RADIATION PATTERN:	HEMISPHERICAL					
POLARIZATION:	RHCP					
VSWR:	< 2.0:1					
IMPEDANCE:	50 ohms					
ANTENNA GAIN (dBi):	Free Space	4 ft G.P.	Free Space	4 ft G.P.	Free Space	4 ft G.P.
@ 90° (ZENITH):	-1.3	+2.4	+5.5	+3.6	+2.3	+3.1
@ 10° Elevation:	-12.1	-4.5	-3.6	-5.0	-5.4	-8.1
@ 20° Elevation:	-10.9	-1.6	-3.1	-0.4	-3.8	-1.9
@ 30° Elevation:	-9.1	+0.1	-1.4	+1.5	-2.0	-0.1
@ 60 - 90° Elevation:	> -3.3	> -0.7	> +3.6	> 0.6	> +3.1	> +1.1
BEAM WIDTH (3dB):	80 Deg.	128 Deg.	84 Deg.	130 Deg.	82 Deg.	120 Deg.
AXIAL RATIO:	0.5 dB		1.5 dB		1.0 dB	
LIGHTNING PROTECTION:	DC GROUNDING					
LNA GAIN:	35 dB	35 dB	35 dB	33 dB	33 dB	33 dB
LNA NOISE FIGURE:	3.0 dB	3.0 dB	3.0 dB	3.0 dB	3.0 dB	3.0 dB
LNA P1dB Out:	+13 dBm	+13 dBm	+13 dBm	+13 dBm	+13 dBm	+13 dBm
LNA DC POWER:	2.5V/20mA, 3V/29mA, 3.3V/35mA, (2.5-24)V/<50mA					
POWER HANDLING:	1 Watt CW, Optional: 10 Watts 1 Microsec Pulse (-AL-)					

MECHANICAL:

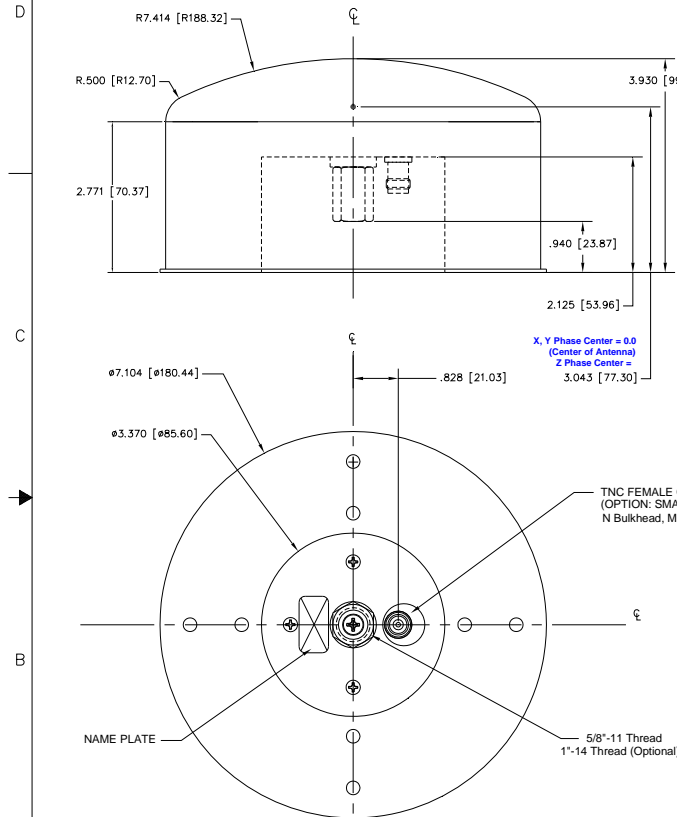
- SIZE: DIAMETER: 7.10 in. [180.44 mm]
HEIGHT: 3.93 in. [99.82 mm]
- WEIGHT: 1.87 lbs. (848 g)
- FINISH: SKYDROL RESISTANT POLYURETHANE ENAMEL
BASE IRIDITE PER MIL-C-5441
- MATERIAL: 6061-T6 ALUMINUM ALLOY BASE
COMPOSITE RADOME, IMPACT, ABRASION, UV,
SOLVENT, SKYDROL RESISTANCE
- CONNECTOR: TNC FEMALE CONNECTOR
(OPTION: SMA, BNC, TNC Bulkhead, N,
N Bulkhead, MCX, MMCX)

ENVIRONMENTAL:

- TEMPERATURE: -67 °F TO +185 °F [-55 °C TO +85 °C]
- ALTITUDE: 70,000 ft.
- VIBRATION: > 30 G's
- LEAKAGE: HERMETICALLY SEAL

FEDERAL & MILITARY SPECIFICATIONS:

- DESIGN TO:** FAA TSO-C144, DO-160D, D0-228, MIL-C-5541,
MIL-E-5400, MIL-I-45208A, MIL-STD-810, AND SAE J1455



SIZE:	LNA:	QUANTITY REQD	DESCRIPTION	PARTS LIST	PART NO	REV
1: 2" SQ.	A: WITH LNA	1	1"-14 Mount (Optional)	MTR-3B2		5
1.9: 1.9" SQ.	P: WITHOUT LNA	1	5/8"-11 Mount	MTR-3B		4
2: 2.6" DIA.		1	INTERNAL ANTENNA	2GNSSX-XX-X		3
3: 3.5" DIA.						2
4: MINI ARINC		1				1
42: ARINC 743						
52: 2.6" DIA. ON 5" GROUND PLANE						
72: 7" DIA. CHOKER RING						

P/N: 72GNSSA-XT-1

CABLE'S LENGTH:	CONNECTOR:	COLOR:
X: NO CABLE	S: SMA; B: BNC	-1: GLOSS WHITE #17925 PER FED-STD-595B
	M: MCX; MM: MMCX	-2: LUSTERLESS GRAY #36320 PER FED-STD-595B
	N: N; NB: N-Bulkhead	-3: OLIVE DRAB GREEN #34094 PER FED-STD-595B
	T: TNC; TB: TNC-Bulkhead	-4: LUSTERLESS BLACK #37038 PER FED-STD-595B

- 2. MOUNTING SCREWS ARE SUPPLIED BY ANTCOM CORPORATION
- 1. DIMENSIONS IN BRACKETS ARE IN MILLIMETERS [mm]
- NOTES: UNLESS OTHERWISE SPECIFIED:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FINISHES: ± 1/64 DECIMALS ± .015 ANGLES: ± 1° MACHINED SURFACES: V.25 DO NOT SCALE DRAWING

ANTCOM CORP. TORRANCE CALIFORNIA

OUTLINE DRAWING
ACTIVE OR PASSIVE GNSS
CHOKER RING ANTENNA

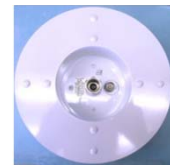
APPROVED: S. HUYNH 11-07-08
DWG NO: D13CVE11
SCALE: 1/1

SHEET 1 OF 1



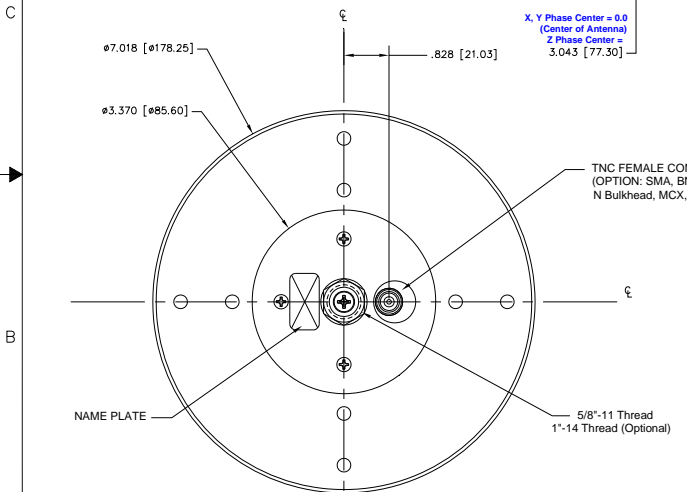
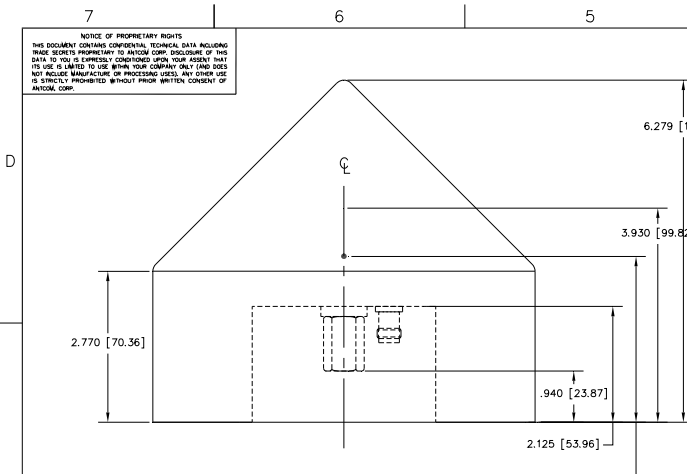
New 7in Dia. Conical Choke Ring GNSS Antenna for Global Navigation Satellite Systems (GNSS) Applications

P/N: 72CGNSSA-XX-X (Survey Mount)



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X, Y Phase Center = 0.0
(Center of Antenna)
Z Phase Center = 3.043 [77.30]

SIZE:	LNA:	
1: 2" SQ.	A: WITH LNA	
1.9: 1.9" SQ.	P: WITHOUT LNA	
2: 2.6" DIA.		
3: 3.5" DIA.		
4: MINI ARINC		
42: ARINC 743		
52: 2.6" DIA. ON 5" GROUND PLANE		
72: 7" DIA. CHOKER RING		

P/N: 72CGNSSA-XT-1

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CABLE'S LENGTH:	CONNECTOR:	COLOR:
X: NO CABLE	S: SMA; B: BNC	-1: GLOSS WHITE #17925 PER FED-STD-595B
	M: MCX; MM: MMCX	-2: LUSTERLESS GRAY #36320 PER FED-STD-595B
	N: N; NB: N-Bulkhead	-3: OLIVE DRAB GREEN #34094 PER FED-STD-595B
	T: TNC; TB: TNC-Bulkhead	-4: LUSTERLESS BLACK #37038 PER FED-STD-595B

SPECIFICATIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
A		ECO# 0006, RELEASE	11-07-08	S. HUYNH

ELECTRICAL:

	L5 GPS E5, E5a, E5b, Galileo L5 IRNSS	L2 GPS B2 Compass	L2 GLONASS E6 Galileo B3 Compass	OmniSTAR / L-Band L6 Galileo B1 Compass	L1 GPS E1, E2 Galileo L1 IRNSS	L1 GLONASS
FREQUENCY:	1176.45 ± 12.0 MHz 1164.45 - 1219.14 MHz 1176.45 ± 15.0 MHz	1227.60 ± 12.0 MHz 1207.14 ± 10.0 MHz	1262.50 ± 7.5 MHz 1266.75 - 1290.75 MHz 1268.52 ± 10.0 MHz	1542.50 ± 14.0 MHz 1542.50 ± 5.0 MHz 1561.098 ± 10.0 MHz	1575.42 ± 15.0 MHz 1575.42 ± 17.0 MHz 1575.42 ± 12.0 MHz	1609.0 ± 7.0 MHz
RADIATION PATTERN:	HEMISPHERICAL					
POLARIZATION:	RHCP		RHCP		RHCP	
VSWR:	< 2.0:1		< 2.0:1		< 2.0:1	
IMPEDANCE:	50 ohms		50 ohms		50 ohms	
ANTENNA GAIN (dBic):	Free Space 4 ft G.P.	Free Space 4 ft G.P.	Free Space 4 ft G.P.	Free Space 4 ft G.P.	Free Space 4 ft G.P.	Free Space 4 ft G.P.
@ 90° (ZENITH):	-1.3 +2.4	+5.5 +3.6	+5.0 +2.3	+3.1 -2.5	+4.4 +3.5	+1.5 -2.1
@ 10° Elevation:	-12.1 -4.5	-4.5 -3.6	-5.0 -5.4	-8.1 -7.1	-6.8 -1.2	-9.9 -7.7
@ 20° Elevation:	-10.9 -1.6	-3.1 -0.4	-3.8 -1.9	-6.0 -4.0	-4.6 +1.6	-7.7 -4.9
@ 30° Elevation:	-9.1 +0.1	-1.4 +1.5	-2.0 -0.1	-3.9 -2.8	-2.7 +2.1	-5.8 -4.5
@ 60 - 90° Elevation:	> -3.3 > -0.7	> +3.6 > 0.6	> +3.1 > 0.1	> +1.1 > -5.0	> +2.5 > -1.5	> -0.5 > -8.6
BEAM WIDTH (3dB):	80 Deg. 128 Deg.	84 Deg. 130 Deg.	82 Deg. 120 Deg.	78 Deg. 125 Deg.	80 Deg. 135 Deg.	80 Deg. 130 Deg.
AXIAL RATIO:	0.5 dB		1.5 dB		5.0 dB	
LIGHTNING PROTECTION:	DC GROUNDING					
LNA GAIN:	35 dB		35 dB		33 dB	
LNA NOISE FIGURE:	3.0 dB		3.0 dB		3.0 dB	
LNA P1dB Out:	+13 dBm		+13 dBm		+13 dBm	
LNA DC POWER:	2.5V/20mA, 3V/29mA, 3.3V/35mA, (2.5-24V)/~50mA					
POWER HANDLING:	1 Watt CW, Optional: 10 Watts 1 Microsec Pulse (-AL-)					

MECHANICAL:

- SIZE: DIAMETER: 7.01in. [178 mm]
HEIGHT: 6.279 in. [159.48 mm]
- WEIGHT: 1.87 lbs. (848 g)
- FINISH: SKYDROL RESISTANT POLYURETHANE ENAMEL
BASE IRIDITE PER MIL-C-5441
- MATERIAL: 6061-T6 ALUMINUM ALLOY BASE
COMPOSITE RADOME, IMPACT, ABRASION, UV,
SOLVENT, SKYDROL RESISTANCE
- CONNECTOR: TNC FEMALE CONNECTOR
(OPTION: SMA, BNC, TNC Bulkhead, N,
N Bulkhead, MCX, MMCX)

ENVIRONMENTAL:

- TEMPERATURE: -67 °F TO +185 °F [-55 °C TO +85 °C]
- ALTITUDE: 70,000 ft.
- VIBRATION: > 30 G's
- LEAKAGE: HERMETICALLY SEAL

FEDERAL & MILITARY SPECIFICATIONS:

- DESIGN TO: FAA TSO-C144, DO-160D, DO-228, MIL-C-5541,
MIL-E-5400, MIL-I-45208A, MIL-STD-810, AND SAE J1455

QUANTITY REQD.	DESCRIPTION	PARTS LIST	PART NO.	ITEM NO.
1	1"-14 Mount (Optional)	MTR-3B2		5
1	5/8"-11 Mount	MTR-3B		4
1	INTERNAL ANTENNA	2GNSSX-XX-X		3
				2
				1

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
FRACTIONS USE 16 AS DENOMINATOR
± 1/64
XXX.X .005
XXXX .005

TOLERANCE SW PER ANSI Y14.5
BREAK EXTERNAL EDGES .005 TO .015
SCREW THREADS PER UNF-5-8B79
DATA ON A COMMON C-59 000
MACHINED SURFACE
DO NOT SCALE DRAWING

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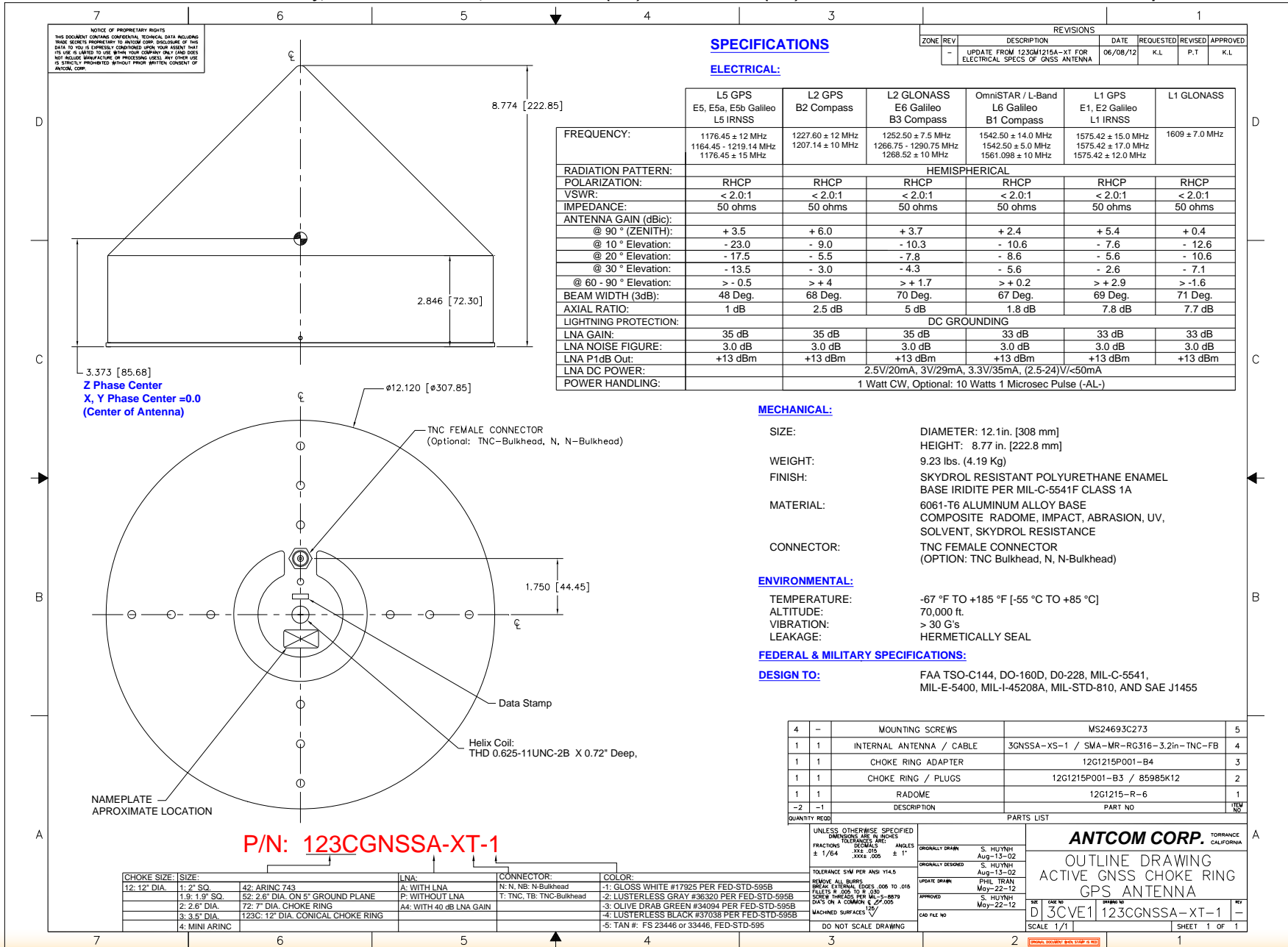
OUTLINE DRAWING
ACTIVE OR PASSIVE GNSS
CHOKER RING ANTENNA

DATE: 11-07-08
SCALE: 1/1
SHEET 1 OF 1



Active GNSS Choke Ring Antennas, P/N: 123CGNSSA-XT-1: 12" Diameter x 8.77" High, Pipe Mount Configurations

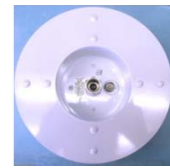
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New 7in Dia. Choke Ring GNSS Antenna for Global Navigation Satellite Systems (GNSS) Applications

P/N: 72GNSSA-XX-X-NR (Survey Mount)



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REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

SPECIFICATIONS

Dimensions: 3.227 [81.97], 2.770 [70.36], 2.163 [54.94], 1.413 [35.89], .828 [21.02], .828 [21.03], .06.888 [#174.96], #3.438 [#87.33]

5/8"-11 Thread

X, Y Phase Center = 0.0 (Center of Antenna)
Z Phase Center = 3.043 [77.28]

TNC FEMALE CONNECTOR (OPTION: SMA, BNC, TNC Bulkhead, N, N Bulkhead, MCX, MMCX)

NAME PLATE

ELECTRICAL:

	L5 GPS E5, E5a, E5b, Galileo L5 IRNSS	L2 GPS B2 Compass	L2 GLONASS E6 Galileo B3 Compass	OrnniSTAR / L-Band L6 Galileo B1 Compass	L1 GPS E1, E2 Galileo L1 IRNSS	L1 GLONASS	
FREQUENCY:	1176.45 ± 12.0 MHz 1164.45 - 1219.14 MHz 1176.45 ± 15.0 MHz	1227.60 ± 12.0 MHz 1207.14 ± 10.0 MHz	1252.50 ± 7.5 MHz 1266.75 - 1290.75 MHz 1268.52 ± 10.0 MHz	1542.50 ± 14.0 MHz 1542.50 ± 5.0 MHz 1561.098 ± 10.0 MHz	1575.42 ± 15.0 MHz 1575.42 ± 17.0 MHz 1575.42 ± 12.0 MHz	1609.0 ± 7.0 MHz	
RADIATION PATTERN:	HEMISPHERICAL						
POLARIZATION:	RHCP		RHCP		RHCP		
VSWR:	< 2.0:1		< 2.0:1		< 2.0:1		
IMPEDANCE:	50 ohms		50 ohms		50 ohms		
ANTENNA GAIN (dBic):	Free Space 4 ft G.P.	Free Space 4 ft G.P.	Free Space 4 ft G.P.	Free Space 4 ft G.P.	Free Space 4 ft G.P.	Free Space 4 ft G.P.	
@ 90° (ZENITH):	- 1.3 +2.4 +5.5 +3.6 +5.0 +2.3 +3.1 - 2.5 +6.4 +3.5 +1.5 - 2.1	- 4.5 - 4.5 - 3.6 - 5.0 - 5.0 - 1.9 - 6.0 - 4.0 - 4.6 +1.6 - 7.7 - 4.9	- 12.1 - 10.9 - 1.6 - 3.1 - 0.4 - 1.4 +1.5 - 2.0 - 0.1 - 3.9 - 2.8 - 2.7 +2.1 - 5.8 - 4.5	> - 3.3 > - 0.7 > + 3.6 > 0.6 > +3.1 > +1.1 > +1.1 > +2.5 > -1.5 > 0.5 > -8.6	80 Deg. 128 Deg. 84 Deg. 130 Deg. 82 Deg. 120 Deg. 78 Deg. 125 Deg. 80 Deg. 135 Deg. 80 Deg. 130 Deg.	0.5 dB 0.5 dB 1.5 dB 1.0 dB 5.0 dB 5.0 dB	
AXIAL RATIO:	DC GROUNDING						
LIGHTNING PROTECTION:	35 dB		35 dB		33 dB		
LNA GAIN:	3.0 dB		3.0 dB		3.0 dB		
LNA NOISE FIGURE:	+13 dBm		+13 dBm		+13 dBm		
LNA P1dB Out:	2.5V/20mA, 3V/29mA, 3.3V/35mA, (2.5-24)V/<50mA		1 Watt CW, Optional: 10 Watts 1 Microsec Pulse (-AL)				
LNA DC POWER:							
POWER HANDLING:							

MECHANICAL:

SIZE: DIAMETER: 6.89 in. [175 mm]
HEIGHT: 3.23 in. [81.98 mm]

WEIGHT: 1.37 lbs. (620 g)

FINISH: SKYDROL RESISTANT POLYURETHANE ENAMEL

MATERIAL: 6061-T6 ALUMINUM ALLOY BASE
COMPOSITE RADOME, IMPACT, ABRASION, UV,
SOLVENT, SKYDROL RESISTANCE

CONNECTOR: TNC FEMALE CONNECTOR
(OPTION: SMA, BNC, TNC Bulkhead, N, N Bulkhead, MCX, MMCX)

ENVIRONMENTAL:

TEMPERATURE: -67 °F TO +185 °F [-55 °C TO +85 °C]

ALTITUDE: 70,000 ft.

VIBRATION: > 30 G's

LEAKAGE: HERMETICALLY SEAL

FEDERAL & MILITARY SPECIFICATIONS:

DESIGN TO: FAA TSO-C144, DO-160D, D0-228, MIL-C-5541, MIL-E-5400, MIL-I-45208A, MIL-STD-810, AND SAE J1455

SIZE:

1: 2" SQ.	LNA:	
1.8: 1.9" SQ.	A: WITH LNA	
2: 2.6" DIA.	P: WITHOUT LNA	
3: 3.5" DIA.		
4: MINI ARINC		
42: ARINC 743		
52: 2.6" DIA. ON 5" GROUND PLANE		
72: 7" DIA. CHOKER RING		

QUANTITY RECORD

QTY	DESCRIPTION	PART NO	ITEM NO
1	5/8"-11 Mount	MTR-3B-05	5
1	INTERNAL ANTENNA	2GNSSX-XX-X	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

FRACTIONS: DECIMALS: ANGLES: ± 1/64 ± .005 ± 1°

TOLERANCE SURF PER ANSI Y14.5

RELIEVE ALL SHARP EDGES TO R0.05

REMOVE BURRS FROM INTERNAL EDGES .005 TO .015

SCREEN THROUGHS PER MIL-S-8879

DATA ON A COMMON ± .007, .005

MACHINED SURFACES ✓

DO NOT SCALE DRAWING

ANTCOM CORP. TORRANCE CALIFORNIA

OUTLINE DRAWING
ACTIVE OR PASSIVE GNSS
CHOKER RING ANTENNA

DATE: 10-27-09
DRAWN BY: S. HUYTHA
APPROVED BY: S. HUYTHA
10-27-09

SCALE: 1/1

SHEET 1 OF 1