Comant CI 429-200

ComDat WAAS GPS

COBHAM

The most important thing we build is trust

CI 429-200 ComDat® WAAS GPS

Comant's first FAA TSO'd GPS antenna qualified under new, stringent C190 WAAS requirements. Using the popular ARINC 743A footprint, this WAAS GPS will operate with any DO-301 qualified WAAS GPS system providing full Gamma 2 & 3 and LPV capabilities.

Environmentally tested under RTCA DO-160E standards, the CI 429-200 offers an extensive test pedigree that will meet many GPS system and aircraft requirements.

Manufactured with a tough, Skydrol resistant radome and nickel plated Aluminium base plate, the CI 429-200 comes standard with a Nitrile 'O' ring for positive sealing to the aircraft skin.

Not compatible with most hand-held GPS systems.

Applications

Most aircraft up to and including business jets. Consult your FBO or installation shop for best application information.

Frequencies Covered

GPS 1575.42 MHz / 26.5 - 32.5 dB Gain

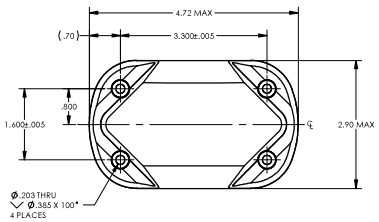
Specifications

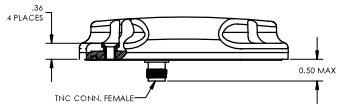
GPS Preamplifier Characteristics	
Frequency	1575.42 +/- 10.23MHz
VSWR	1.5:1
Polarization	RHCP
Radiation Pattern	Omnidirectional
Impedance	50 Ohms (Nominal)
Gain @ 1575.42 MHz	26.5dB MIN - 32.5dB MAX
DC Voltage	4 to 24 VDC
DC Current Min/Max	40 mA TYP / 60 mA MAX
Noise Figure	2.5dB MAX
Stability	Unconditional
Mechanical	
Weight	7.73 Oz. MAX
Finish	Glossy White
Connector	TNC (Female)
Environmental	
RTCA Env.	DO-160E
Federal Specifications	
TSO	C190

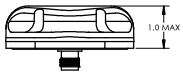
WARNING: Use factory supplied drawings and specifications for installation. Refer to FAA AC 43.13-2B for installation guidelines.

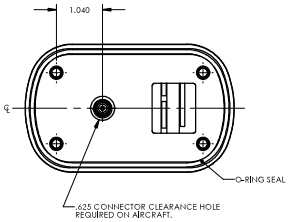
Order at:
Tel: 714-870-2420 Fax: 714-870-6294
Email: comantorders@cobham.com

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVAL
A	RELEASED DRAWING	2/25/08	AV 2/27/08
B	REF ECN 08-095	12/03/08	MN 12/03/08









INSTALLATION DRAWING

ASSEMBLY DRAWING NO. D42904

UNLESS OTHERWISE SPECIFIED	CONTRACT NO.		Comant Industries, inc.
DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ±.03 .XXX ±.010 FRACTIONS ± 1/32 ANGLES ± 1°	APPROVALS	DATE	GPS COMDAT ® ANTENNA
MACHINE FINISH 125 PER ANSI B46.1 REMOVE BURRS AND SHARP EDGES .015 MAX. MEET DIMENSIONS BEFORE PLATING DIMENSIONS ARE PER ASME Y14.5M	DRAWN A. VENEZIANO 2/25/08 CHECK D. HOLLOWAY 2/26/08 ENGR D. HOLLOWAY 2/26/08		
MATERIAL : -	MFG J. JONES 2/25/08		CAGE CODE D / CODE IDENT 51351 / DWG. NO. CI 429-200 / REV. B
DO NOT SCALE DRAWING	QC S. ADAMS 2/27/08		SCALE 1/1 CAD FILE — SHEET 1 OF 2

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVAL
	SEE SHEET 1		

1.0 GPS PASSIVE ANTENNA CHARACTERISTICS (T_c= -55° C TO +85° C)

1.1 FREQUENCY 1575.42 ± 10.23 MHz

1.2 POLARIZATION RIGHT HAND CIRCULAR

1.3 AXIAL RATIO 3.0 dB ON BORESIGHT (ZENITH) MAX.

1.4 PASSIVE RADIATING ELEMENT GAIN AT 1575.42 MHz AND 5° ELEVATION -5.5 dBic MINIMUM OVER ALL AZIMUTH ANGLES.

1.5 ANTENNA UNIT RELATIVE RADIATION PATTERN

MINIMUM		MAXIMUM	
ELEVATION ANGLE (DEG)	PATTERN RATIO	ELEVATION ANGLE (DEG)	PATTERN RATIO
0	-10	0	-2.0
5	-8.5	5	-2.75
10	-7.0	10	-0.5
20	-4.0	10<ELV.≤75	LINEAR INCREASE TO 0.0
30	-3.73		
30<ELV.≤75	LINEAR INCREASE TO -2.5		
>75	-2.5	>75	0.0

GAIN PATTERN MEASURED ON 4' CIRCULAR ROUND PLANE WITH 1.5" RADIUS EDGES.

2.0 GPS PREAMPLIFIER CHARACTERISTICS (T_c= -55° C TO +70° C)

2.1 FREQUENCY 1575.42 ± 10.23MHz

2.2 OUTPUT IMPEDANCE 50 OHMS (NOMINAL)

2.3 OUTPUT VSWR 1.5: 1 MAX.
R/L -13.98 dB

2.4 GAIN AT 1575.42 ± 3MHz 26.5 dB MIN – 32.5 dB MAX.

2.5 NOISE FIGURE 2.5 dB MAX.

2.6 SELECTIVITY MAXIMUM BORESIGHT RELATIVE FREQUENCY RESPONSE

1315 MHz ≤ f < 1504.42 MHz ___ -50 dB
1504.42 MHz ≤ f < 1555.42 MHz ___ LINEARLY INCREASING FROM -50 dB TO -5 dB
1554.42 MHz ≤ f < 1558.42 MHz ___ " " " -5 dB TO -0 dB
1558.42 MHz ≤ f ≤ 1591.92 MHz ___ 0 dB
1591.92 MHz < f ≤ 1605.42 MHz ___ LINEARLY DECREASING TO -25.35 dB
1605.42 MHz < f ≤ 1625.42 MHz ___ " " FROM -25.35 dB TO -50 dB
1625.42 MHz < f ≤ 2000.00 MHz ___ -50 dB

2.7 DC VOLTAGE 4 TO 24 VDC

2.8 DC CURRENT 40 mA TYP / 60 mA MAX.

2.9 STABILITY UNCONDITIONALLY STABLE FOR ANY LOAD IMPEDANCE ON TNC CONNECTOR

2.10 BURNOUT PROTECTION 30dBm / 1.0 W CW UNMODULATED / 5 MINUTES

2.11 -3 dB RELATIVE RESPONSE FREQUENCIES 1567.92 MHz ≤ -3 dB BORESIGHT GAIN ≤ 1582.92 MHz

2.12 BORESIGHT DIFFERENTIAL GROUP DELAY VERSUS FREQUENCY 1575.42±10.23 MHz < 25 ns

2.13 GROUP DELAY VERSUS ASPECT ANGLE 5° ≤ EL < 45° (2.5 – 0.04625 (EL-5°)) NANOSECONDS
EL ≥ 45° 0.65 NANOSECOND

2.14 1dB COMPRESSION POINT -25 dBm BETWEEN 1557 MHz AND 1593 MHz
-LINEARLY INCREASING FROM -25 dBm TO - 15 dBm BETWEEN 1593 MHz AND 1610 MHz
-LINEARLY INCREASING FROM -15 dBm TO + 8 dBm BETWEEN 1610 MHz AND 1625 MHz
+ 8dBm ABOVE 1625 MHz
-LINEARLY INCREASING FROM -25 dBm TO - 10 dBm BETWEEN 1555 MHz AND 1525 MHz
-LINEARLY INCREASING FROM -10 dBm TO + 23 dBm BETWEEN 1525 MHz AND 1315 MHz
-LINEARLY INCREASING FROM +8 dBm TO + 20 dBm BETWEEN 1660 MHz AND 2000 MHz
+23dBm BETWEEN 1000 – 1315 MHz

2.15 PULSE POWER SATURATION RECOVERY NORMAL OPERATION WITHIN 10 µS FROM TRAILING EDGE OF + 30 dBm PEAK POWER PULSES WITH PULSE WIDTH OF 1 mS AT FREQUENCIES AND PRF LISTED BELOW:

1000.00 MHz ___ 22 PPS
1315.00 MHz ___ 22 PPS
1525.00 MHz ___ 100 PPS
1565.42 MHz ___ 100 PPS
1585.42 MHz ___ 100 PPS
1610.00 MHz ___ 100 PPS
1660.00 MHz ___ 56 PPS
2000.00 MHz ___ 56 PPS

2.16 G/T RATIO @ 5° ELEVATION ___ ≥ 31.6 dB/K

3.0 ANTENNA WEIGHT 7.73 Oz. MAX.

4.0 TSO-C190, RTCA DO-160E, ENV. CAT. [F2X]ABB[C,L,Y]XSFDXSAXXX[ZC][RR]H[A3,03][2A]CAC

5.0 FINISH: GLOSSY WHITE.

6.0 A42906 INSTALLATION INSTRUCTIONS SUPPLIED WITH ANTENNA.

ANTENNA NOTES AND SPECIFICATIONS

Comant Industries, inc.			
GPS COMDAT ® ANTENNA			
CAGE CODE D	CODE IDENT 51351	DWG. NO. CI 429-200	REV. B
SCALE —	CAD FILE —	SHEET 2 OF 2	