

Vocollect Antenna

The **Vocollect** antenna is 2 dBi omnidirectional in azimuth plane. It is mounted internally as shown in the attached photo. The **Vocollect** uses either a Murata Erie BFA or a MMCX connector. In its use it would be within 5 cm of a persons body. It is used in portable devices. This antenna / device combination was SAR tested and results filed with a Class II permissive change for the H9PLA3020. driven by 240 mW of transmitter power.

<i>Location</i>	Body worn device
<i>Pattern</i>	Omni
<i>Type</i>	Dipole
<i>Max Gain</i>	2 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	MXYPH75, RG-178
<i>Symbol P/N</i>	50-21900-025, 50-21900-026

Note: This antenna / terminal configuration is only to be used with a transmitter that produces an EIRP of less than 240 mW. For an EIRP of more than 240 mW a SAR test must be performed.



Antenna Photo

Talkman Open – 2.4 GHz Symbol Radio Information

Vocollect Antenna Specifications

Type:	Dipole
Gain:	2 dBi
Polarization:	Circular
Physical description:	Implemented on flat and rigid printed circuit board, internally mounted, parallel to the belt mounting loop.
Min distance from skin:	2.1 inches (1.70 inches to inside to belt loop plus 0.40 inches of padded belt)

Table 1: Bill of Materials- Talkman Open – Symbol Radio and Antenna

Item	Qty	Vocollect Part #	Vendor Part #	Supplier	Description
1	1	656022		Austin Antenna	ANTENNA PCB
2	1	606012	90174601	Huber-Suhner	CABLE ASSY, ANTENNA

Image 1: 2.4 GHz Antenna PC Board

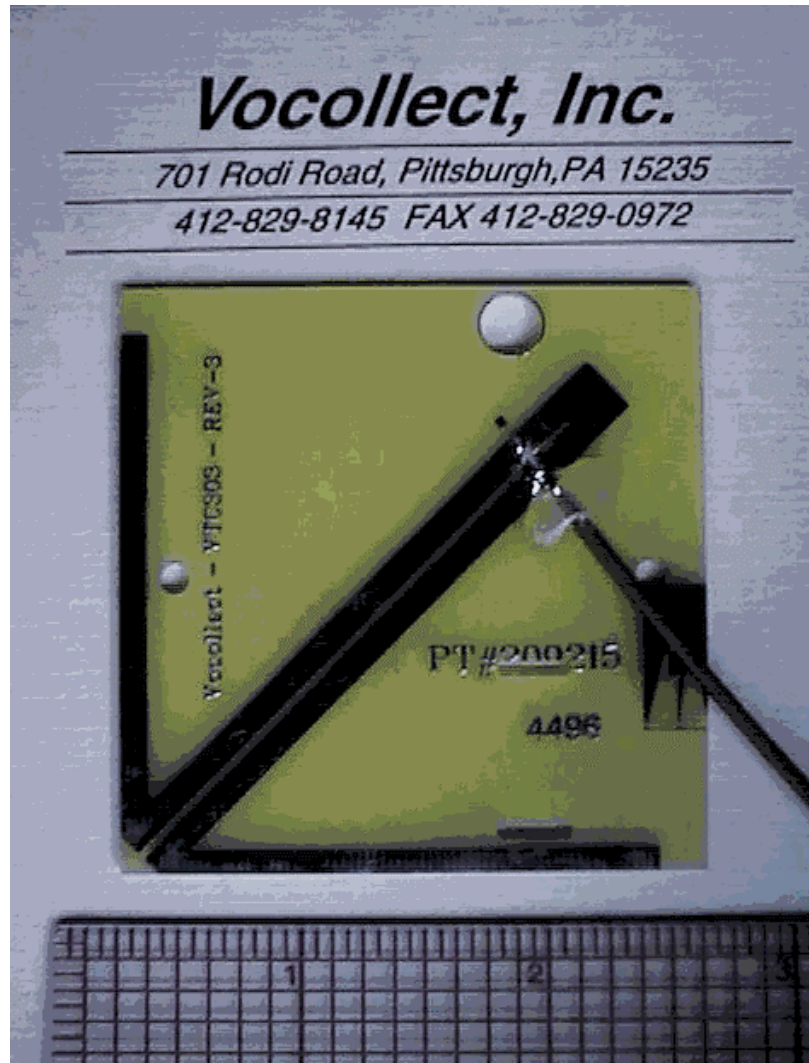


IMAGE 2: Beltworn Terminal - Drawing



IMAGE 3: Beltworn Terminal

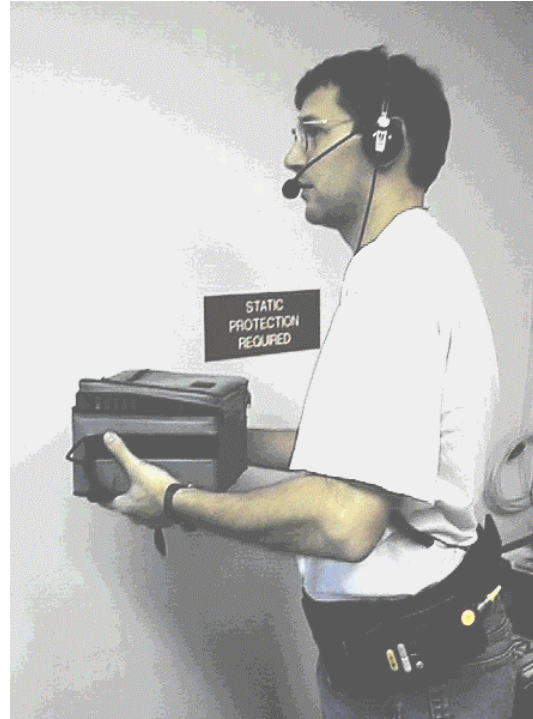


IMAGE 4: Drawing of Antenna Placement Inside Unit.

The antenna is mounted in the plane parallel to the belt loop and waist, 1.70 inches away from the belt loop used to connect the terminal to the padded mounting belt. Including the belt thickness, the radio is at least 2.1 inches distant from the skin.

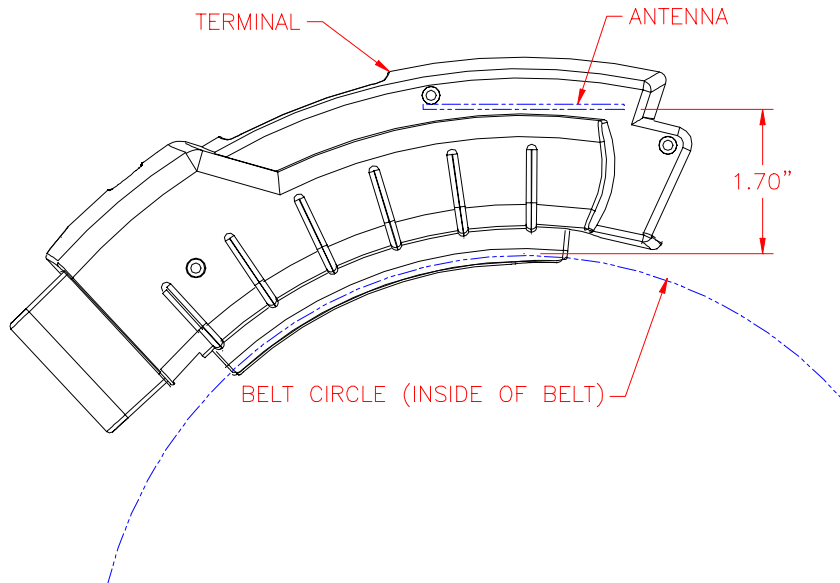


IMAGE 5: The unit mounts on a padded belt ½" thick.

The unit is connected to the belt by a secondary strap secured to the belt. The full width of the main padded belt remains between the terminal and user's body.



Toko Antenna

The Toko antenna is 0 dBi omni-directional in azimuth plane. It is mounted as a through hole device directly on the printed circuit board of a hand held device. In its use it would be within 20 cm of a persons hand but more than 20 cm from the users body. It is used in portable devices. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bullitin 65, Supplement C for EIRP greater than 200 mW.

<i>Location</i>	Hand Held Device
<i>Pattern</i>	Omni
<i>Type</i>	Dielectric Puck
<i>Max Gain</i>	2.15 dBi
<i>Physical</i>	See Attached Dwg.
<i>Cable</i>	none
<i>Symbol P/N</i>	50-21900-022

“Important Note: To comply with FCC RF exposure requirements, this hand-held device is approved for operation in a user’s hand when there is 20 cm or more between the antenna and everyone’s body.”



Installed Antenna Photo



Terminal Use Photo



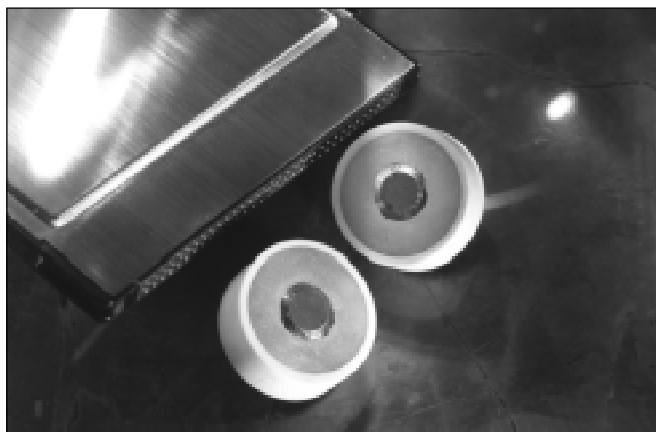
ANTENNA ELEMENT FOR 2.4 GHz

DESCRIPTION

The DAC Series is a miniature dielectric antenna element for 2.4 GHz wireless LAN systems. This antenna has vertical polarization characteristics. TOKO's proprietary ceramic dielectric material provides excellent stability and sensitivity. It is mountable in Type II extended PCMCIA cards.

FEATURES

- Vertical Polarization reception
- Low profile (6.5mm max)
- Omni-directional in azimuth
- Low interference design
- Central feeding point terminal
- Wide bandwidth
- Light weight

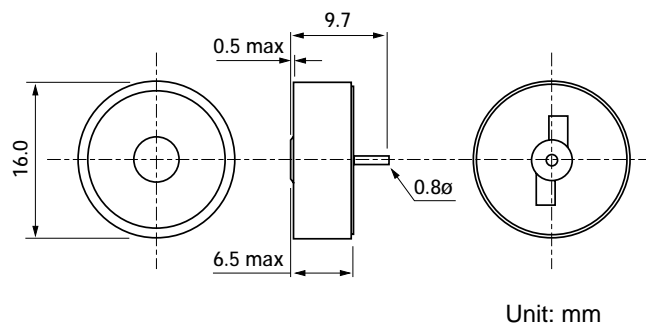


SPECIFICATIONS

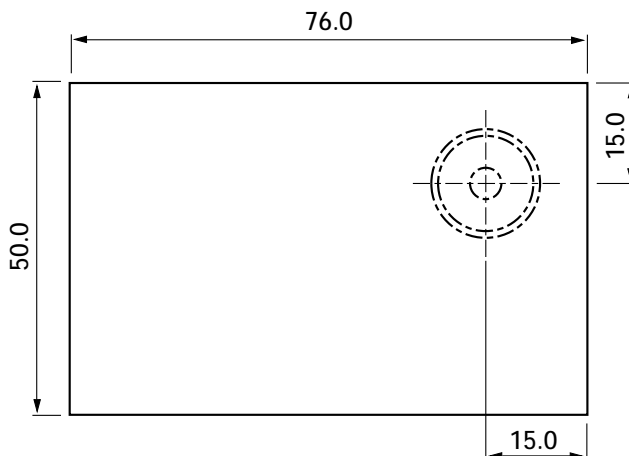
Part Number	DAC2450CT1
Center Frequency	2450 MHz
Receiving Bandwidth	±50 MHz min.
Impedance	50Ω
Peak Gain	2.15 dBi (0dBi typ.) max.
Operating Temperature	-10 ~ +60° C
Storage Temperature	-20 ~ +85° C
Weight	4g

DIMENSIONS

DAC SERIES

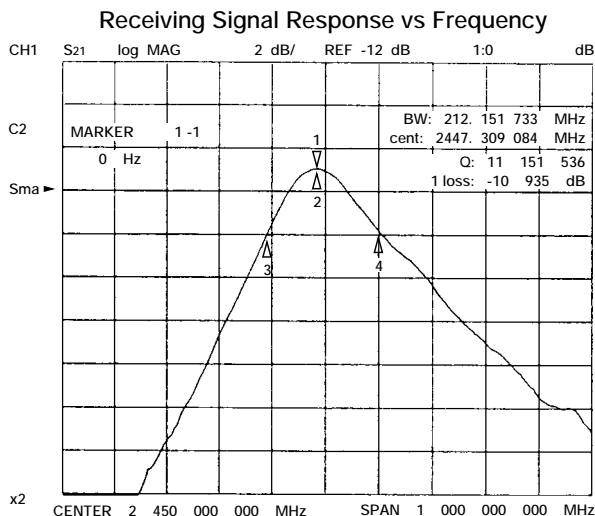


Mounted with Ground Plane

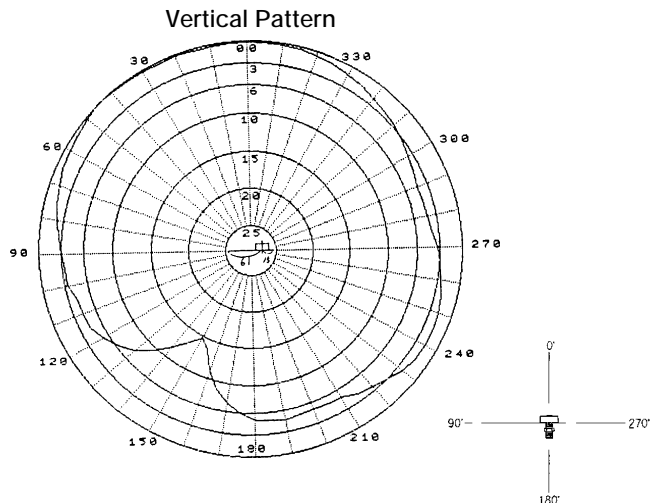
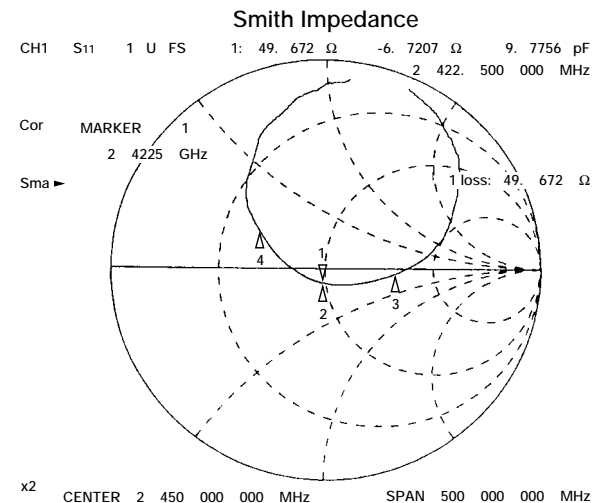
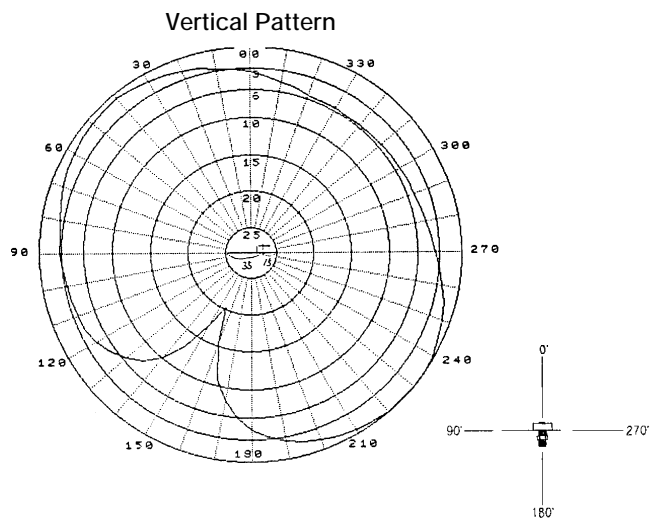
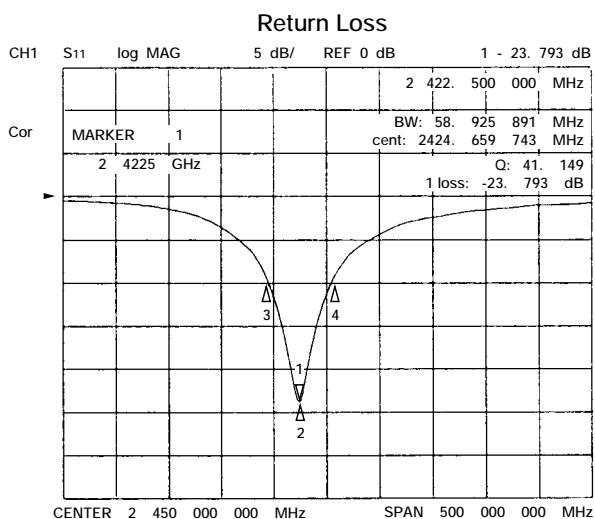
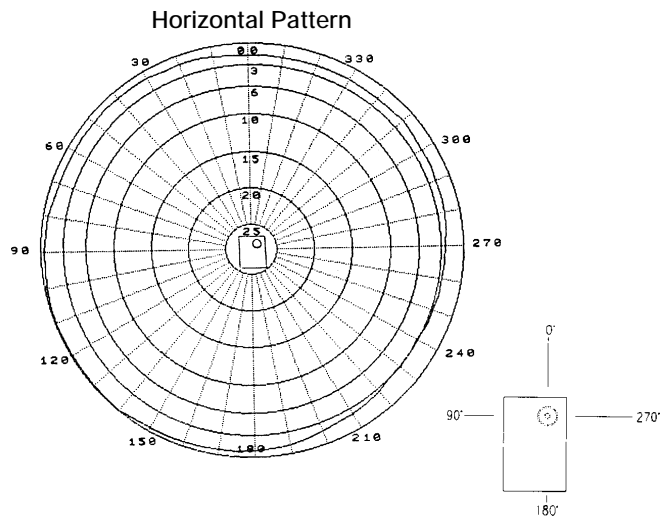


DAC Series

TYPICAL CHARACTERISTICS

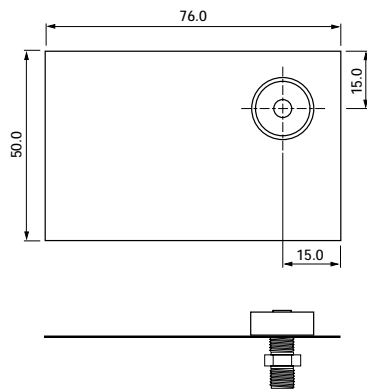


DIRECTIVITY CHART



INTERFERENCE COMPARISON OF DAC VS. PLANAR INVERTED F ANTENNA

DAC Set-up



Planar F Inverted Set-up

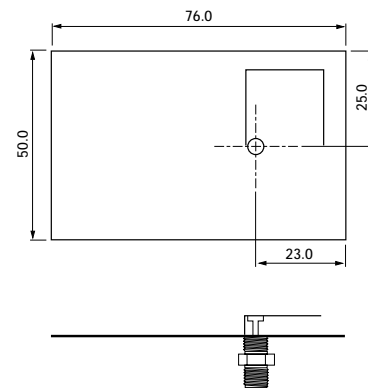


Fig.1

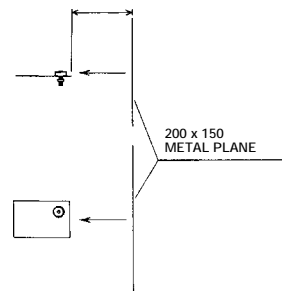
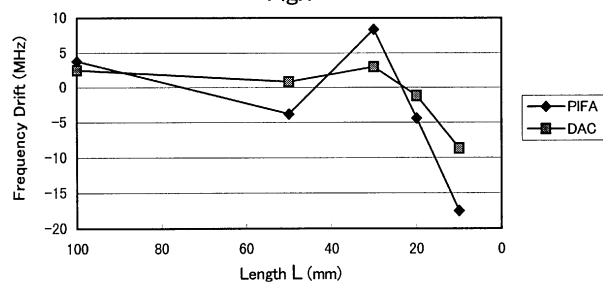


Fig.2

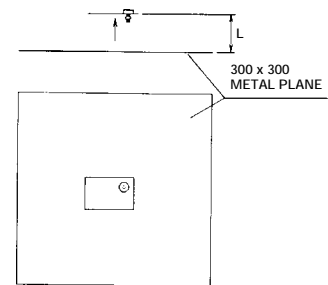
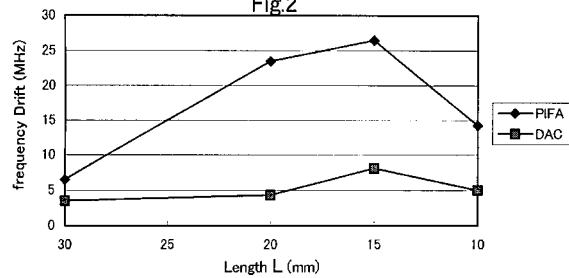


Fig.3

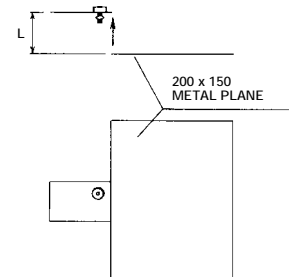
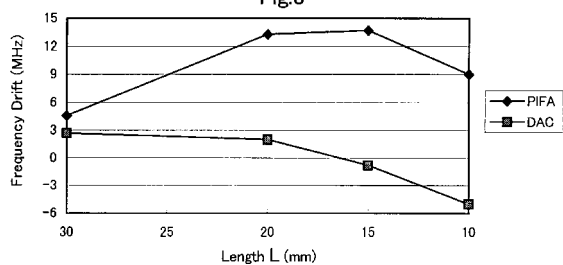
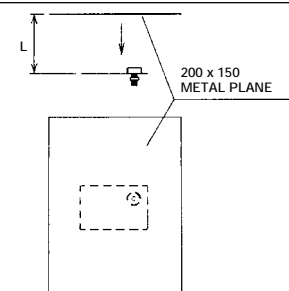
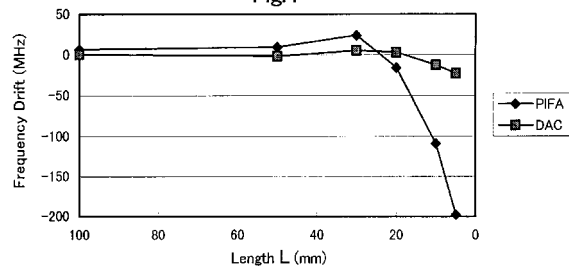


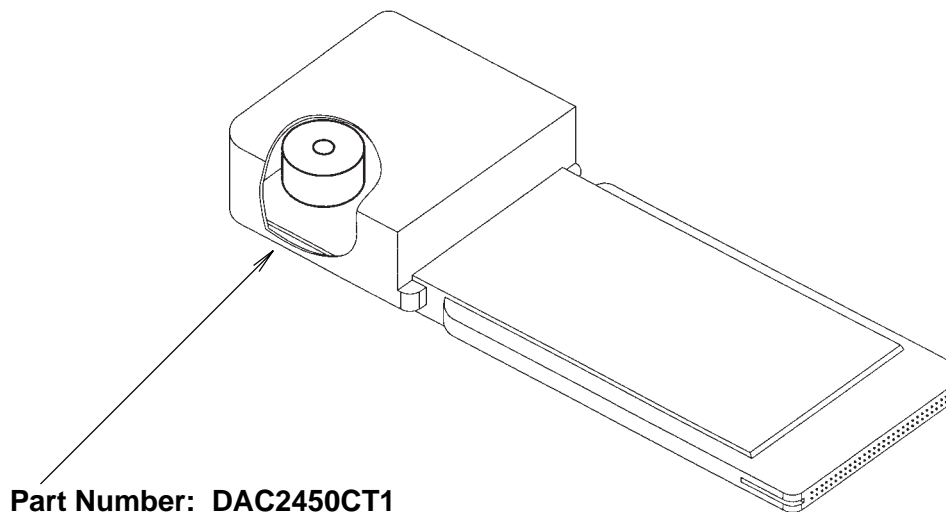
Fig.4



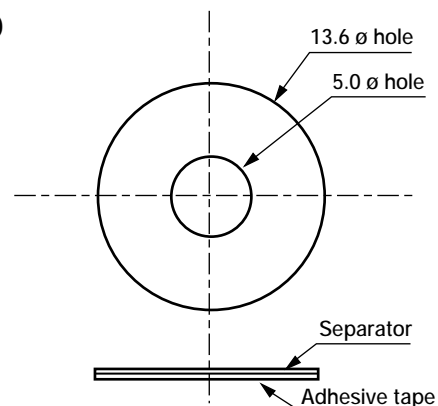
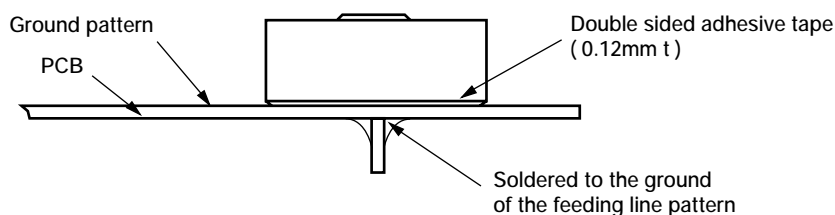
DAC Series

TYPICAL APPLICATION

MOUNTED IN PCMCIA TYPE II EXTENDED CARD



TYPICAL MOUNTING TO PRINTED CIRCUIT BOARD



Notes:

- Fix the antenna element on PCB using double sided adhesive tape of 0.12mm thickness. (Recommend No. 5015 : NITTO DENKO CORP.)
- Solder the antenna terminal pin on the bottom side of PCB to the ground of the feeding line pattern.
- The terminal pin should be separated from the ground pattern.

Unit: mm

Material: Nitto N5015

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Fax: (847) 699-7864

Western Regional Office
Toko America, Inc.
2480 North First Street, Suite 260
San Jose, CA 95131
Tel: (408) 432-8281
Fax: (408) 943-9790

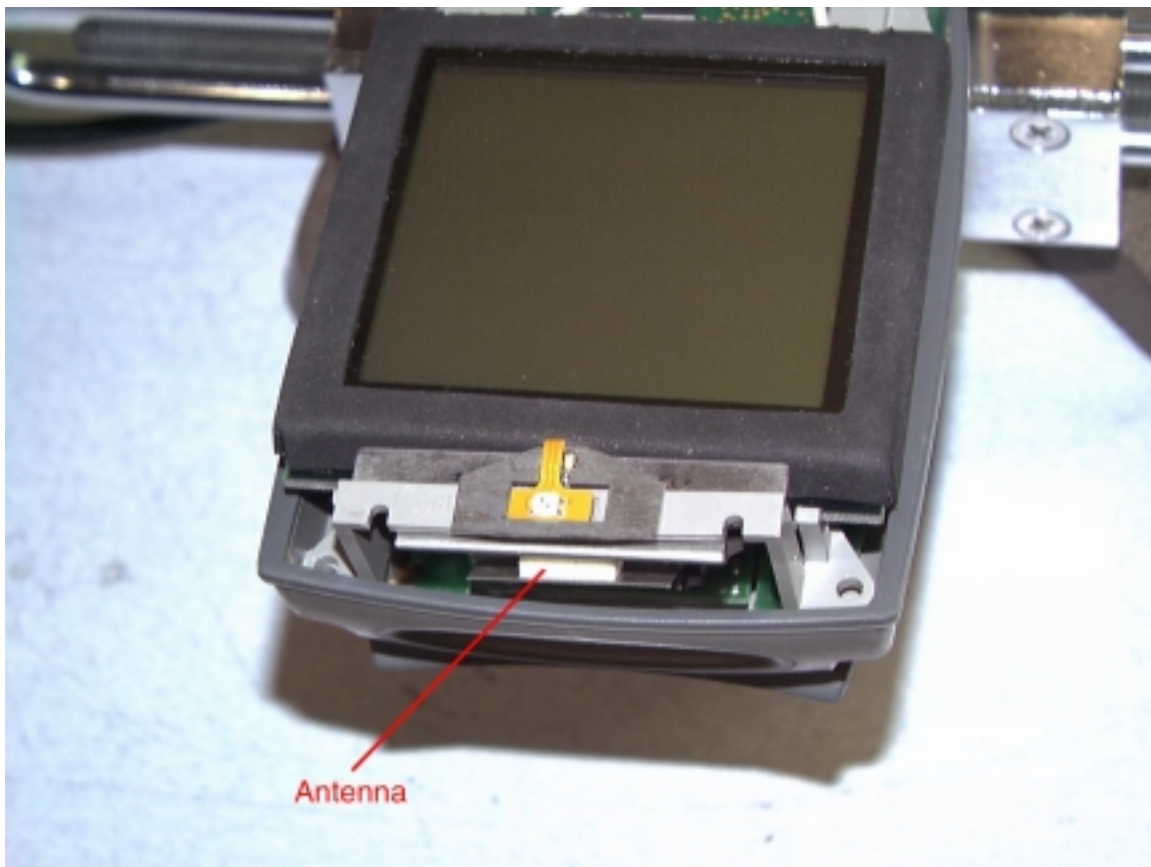
Eastern Regional Office
Toko America, Inc.
107 Mill Plain Road
Danbury, CT 06811
Tel: (203) 748-6871
Fax: (203) 797-1223

6846D Antenna

The **6846D** antenna is 0 dBi omni-directional in azimuth plane. It is mounted internally on the top end of the terminal as shown in the attached photo. The **6846D** uses a MMCX connector.. In its use it would be within 20 cm of a persons hand but more than 20 cm from the users body. It is used in portable devices. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C for EIRP greater than 200 mW.

<i>Location</i>	Hand Held Device
<i>Pattern</i>	Omni
<i>Type</i>	F-Element
<i>Max Gain</i>	0 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	MXYP75, RG-178
<i>Symbol P/N</i>	10-41003-01

“Important Note: To comply with FCC RF exposure requirements, this hand-held device is approved for operation in a user’s hand when there is 20 cm or more between the antenna and everyone’s body.”

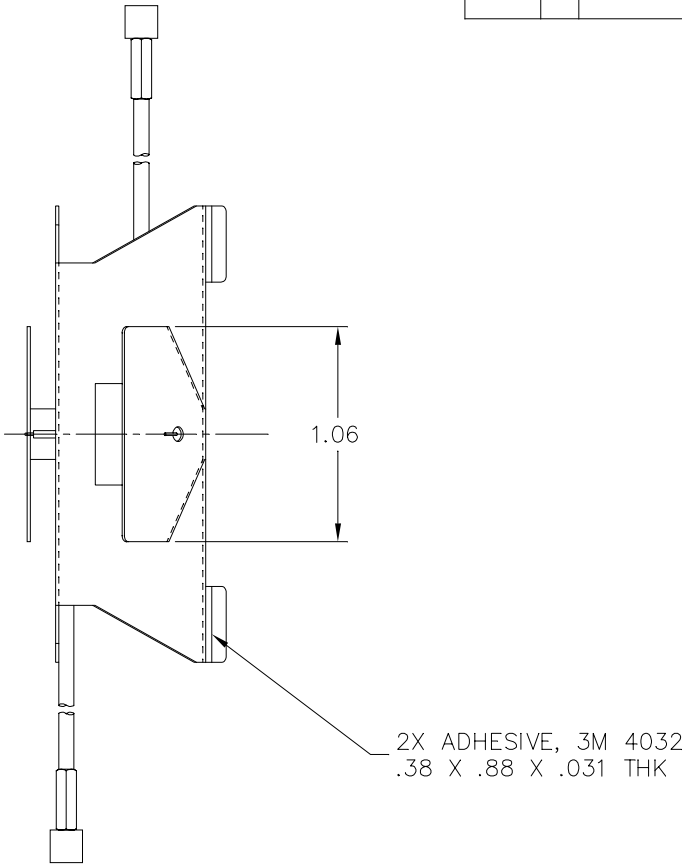
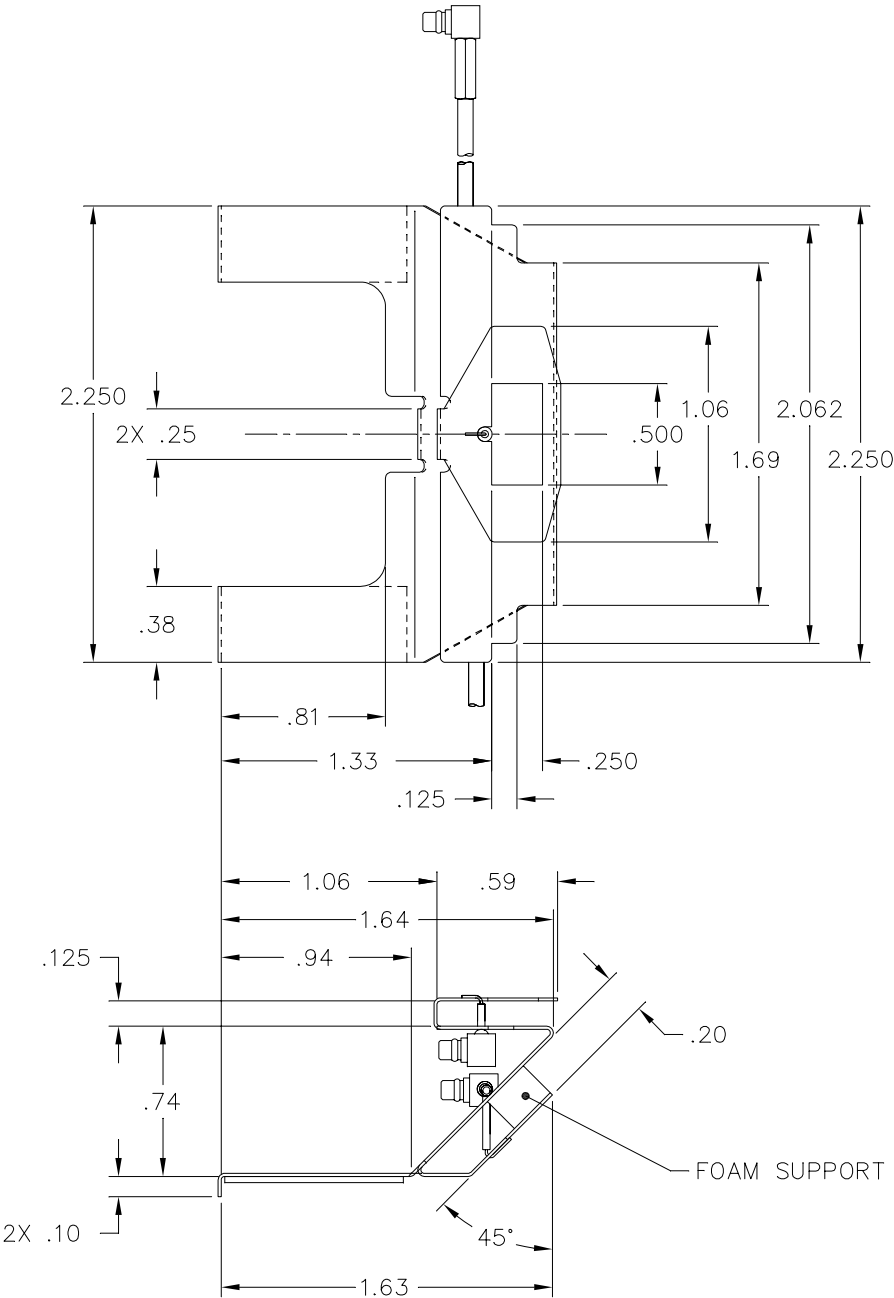
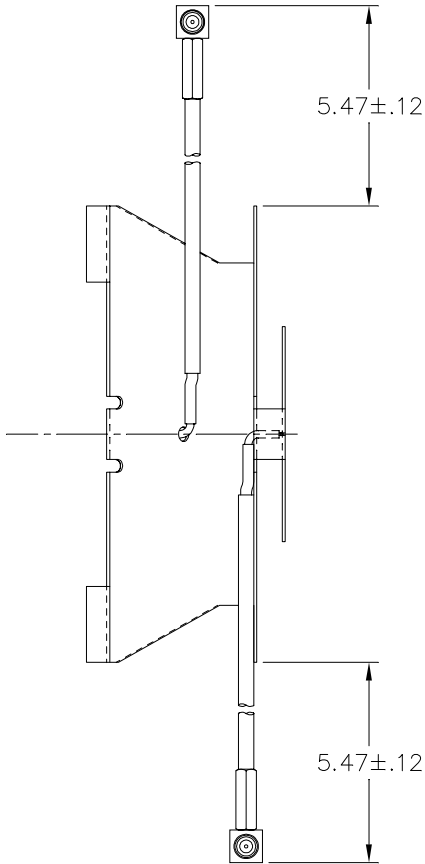


Antenna Installed in Device



Terminal Use Photo

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
.	A	REDESIGNED TO IMPROVE FIT & PERFORMANCE REDRAWN.	2-10-00 JL	
5B,6A	B	.74 WAS .740, .94 WAS .938 1.06 WAS 1.063, .59 WAS .594	2-18-00 JL	
5B	C	1.33 WAS 1.334	2-29-00 JL	

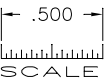



SPECIFICATIONS

FREQUENCY: _____ 2.4-2.485 GHZ
VSWR: _____ 2.0:1 MAX
GAIN: _____ 0dBi NOMINAL
POLARIZATION: _____ LINEAR
CABLE: _____ RG178 OR EQUIV
CONNECTOR: _____ MMCX MALE

4. SHARP CORNERS & EDGES .005 MAX.
3. FINISH SHALL BE UNIFORM AND EXHIBIT NO EVIDENCE OF CORROSION OR OXIDATION WHEN VIEWED WITH THE UNAIDED EYE. EDGE PLATING ON CUT OR SHEARED SURFACES IS NOT REQUIRED.
2. ALTERNATE:
MATERIAL: CRS 1008, .015 THK.
FINISH: BRIGHT TIN PLATE PER MIL-T-10727A, TYPE 1,
ELECTRO DEPOSITED .00010-.00025 IN.
1. MATERIAL: ELECTROLYTIC TIN PLATED STEEL SHEET, .015 THK.

NOTES : UNLESS OTHERWISE SPECIFIED



PMIC		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES: .XX ± .03 .XXX ± .010 ANGLES ± 0°30' MACHINED SURFACE ROUGHNESS 125✓ REMOVE BURRS, SHARP EDGES R.005-.015 MACHINED FILLETS R.005-.015 DIMENSIONS ARE AFTER PLATING. MACHINED DIA'S ON COMMON CENTERLINE CONCENTRIC WITHIN .005 TIR. INTERPRET PER ANSI Y14.5M-1982.		CONTRACT NUMBER		<div>TECOM INDUSTRIES INC. 9324 TOPANGA CYN BLVD CHATSWORTH, CA. 91311 TECHNICAL EXCELLENCE COMMITTED TO QUALITY</div>			
				CONTRACTOR					
				DRAWN BY	DATE				
				J. LOWE	1-25-00				
		HOLE TOLERANCES:		CHECKER	MFG ENGR	TITLE <div>ANTENNA, 2.4 GHZ</div>			
	(SLK DIVERSITY)	.040 - .128 +.003 -.001	.515 - .750 +.008 -.001						
823407	CP00-021	.136 - .228 +.004 -.001	.765 - 1.000 +.010 -.002	QA	ENGR	SIZE	CAGE CODE	DWG NO	
NEXT ASSY	USED ON	.234 - .500 +.006 -.001	1.031 UP +.015 -.002			D	52791		703645
APPLICATION		MATL ENGR	APPROVAL	PRGM MGR	ENGR	SCALE	2/1	UNIT WT	SHEET 1 OF 1

End Cap "C" Antenna

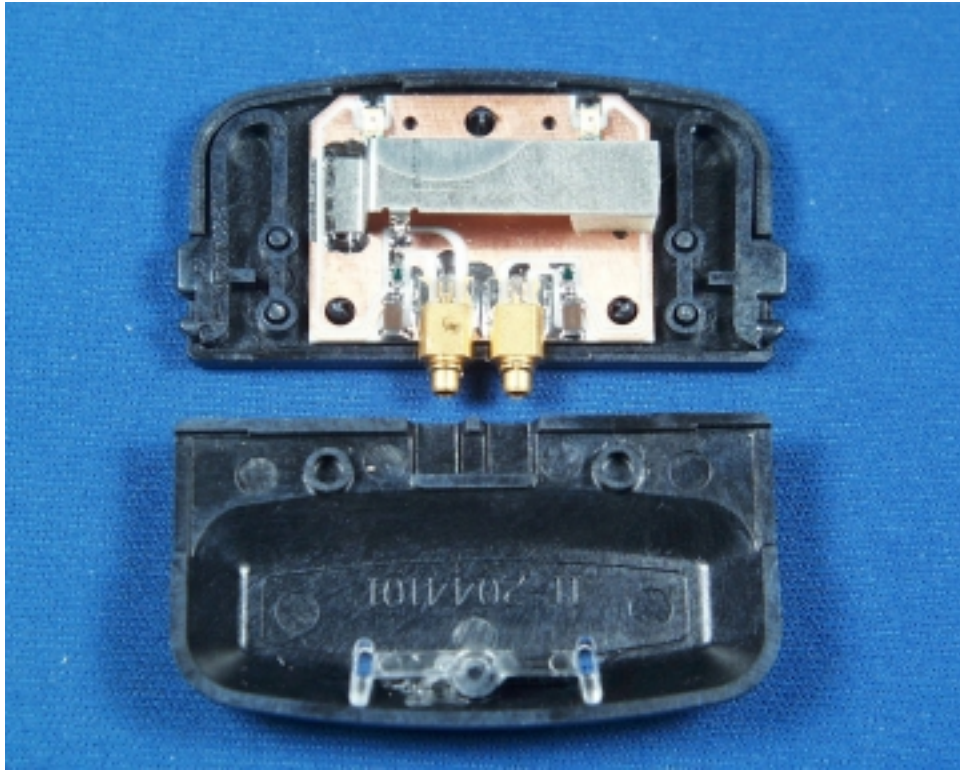
The **End Cap "C"** antenna is 0 dBi omnidirectional in azimuth plane. It is installed on the end of the PC Card as shown in the attached photo. The **End Cap "C"** uses a pair of MMCX connectors. In its use it could be within 20 cm of a persons hand but more than 20 cm from the users body. It is used in portable devices. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C for EIRP greater than 200 mW.

<i>Location</i>	Laptop PC
<i>Pattern</i>	Omni
<i>Type</i>	F-Element
<i>Gain</i>	0 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	none
<i>Symbol P/N</i>	10-20511-01
<i>EIRP</i>	See Summary Tbl

"Important Note: To comply with FCC RF exposure requirements, this portable device is approved for operation near a user's hand when there is 20 cm or more between the antenna and everyone's body."



Antenna Photo



Antenna Element Photo



Antenna Use Photo

Amtrak Omni

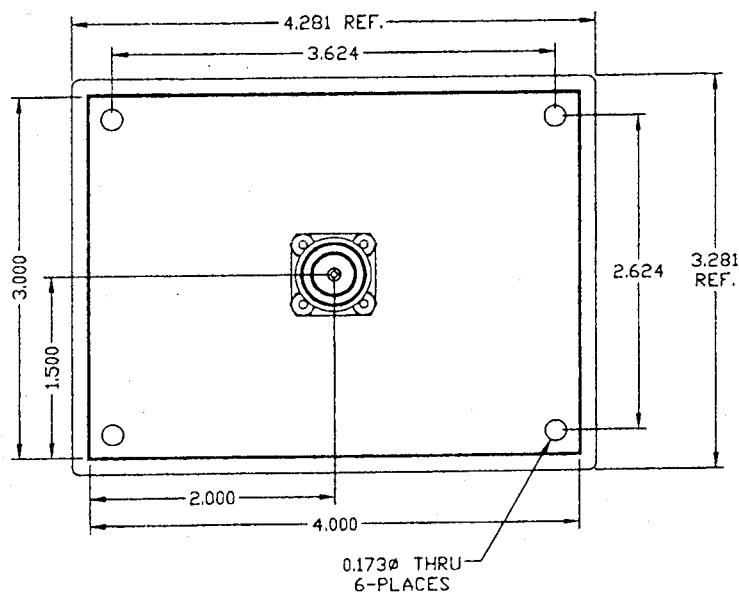
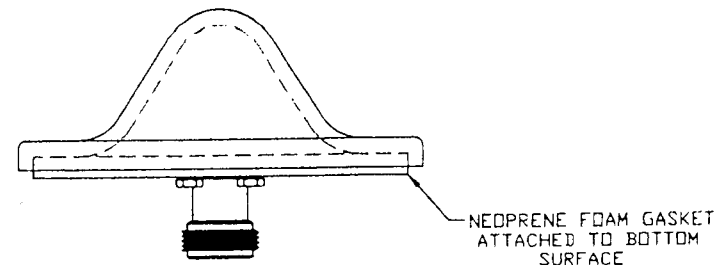
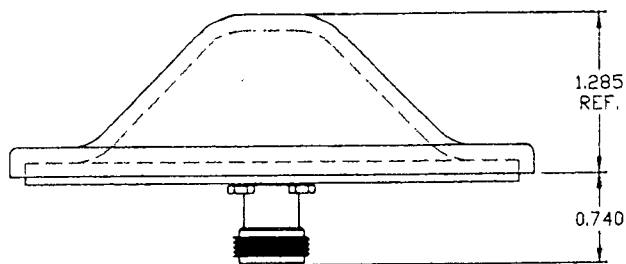
The **Amtrak Omni** antenna is 3 dBi omni-directional in azimuth plane. The **Amtrak Omni** uses a type N connector. This antenna will only be sold to Amtrak. Installation will be by Amtrak employees that have access to train car documentation for specific cable routing. This antenna will be installed into 16 – 20 different styles of computer cars with custom cable assemblies for each style of car. The cable assembly will connect the rack mounted radio through and past structural components of the car to the antenna mounted externally on the top side of the car. In this configuration it would be farther than 20 cm from a persons body. It is used with mobile devices.

<i>Location</i>	Horizontal Surface
<i>Pattern</i>	Omni
<i>Type</i>	Folded Dipole
<i>Max Gain</i>	3 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	None
<i>Symbol P/N</i>	SQ2403PSNF
<i>MPE Distance</i>	See summary table



Antenna Photograph

REVISION			
LTR	DESCRIPTION	DATE	INITIAL
AA	ORIGINAL	1-23-00	SKL



Parameter	Performance
Frequency	2.4-2.5 GHz
Gain	3 dBi Min.
Polarization	Vertical
VSWR	1.5:1 Max.
Horizontal Pattern	Omni Directional
Vertical 3 dB Beamwidth	60°
RF Connector	Type N Female
Power	50 Watts
Weight	0.25 lb
Radome Color	Gray

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DOCUMENT

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express written permission of Cushcraft Corporation, Manchester, NH.

MATERIAL:	DRAWN S JOHNSON	DATE 1-23-00	CUSHCRAFT 48 PERIMETER ROAD MANCHESTER NH 03108	
	ENGINEER <i>David H. Johnson</i>	DATE <i>1/23/00</i>		
DO NOT SCALE DRAWING	ENGINEERING MGR <i>C. Allen</i>	DATE <i>1/23/00</i>	TITLE: SQ2403PSNF MOUNTING & OUTLINE	
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE: ANGLES ± 0.5° FRACTIONS ± 1/64" .XX ± 0.010" .XXX ± 0.005"	FINISH:		DRAWING NO. SQ2403PSNFM0	REV AA
			SCALE 1:1	SHEET 1 OF 1

Rubber Duck Antenna

The **Rubber Duck** antenna is 1 dBi omni-directional in azimuth plane. It is mounted internally on the top end of the terminal as shown in the attached photo. The **Rubber Duck** uses a BNC-RP connector while the **Rubber Duck TNC** uses the TNC-RP. In its use it would be within 20 cm of a persons hand but more than 20 cm from the users body. It is used in portable devices. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C for EIRP greater than 200 mW.

<i>Location</i>	Hand Held Device
<i>Pattern</i>	Omni
<i>Type</i>	Dipole
<i>Max Gain</i>	1 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	none
<i>Symbol P/N</i>	ML-2499-APA1-00 ML-2499-APA2-00

“Important Note: To comply with FCC RF exposure requirements, this hand-held device is approved for operation in a user’s hand when there is 20 cm or more between the antenna and everyone’s body.”



Antenna Photograph



1380

Portable Device Photo



Mobile Device Photo

[illegible]

THE FOLLOWING STI SPECIFICATIONS APPLY:

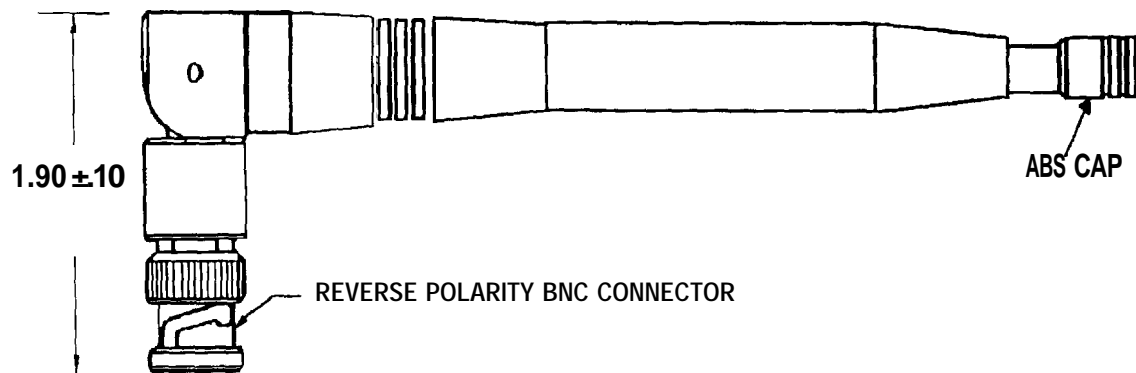
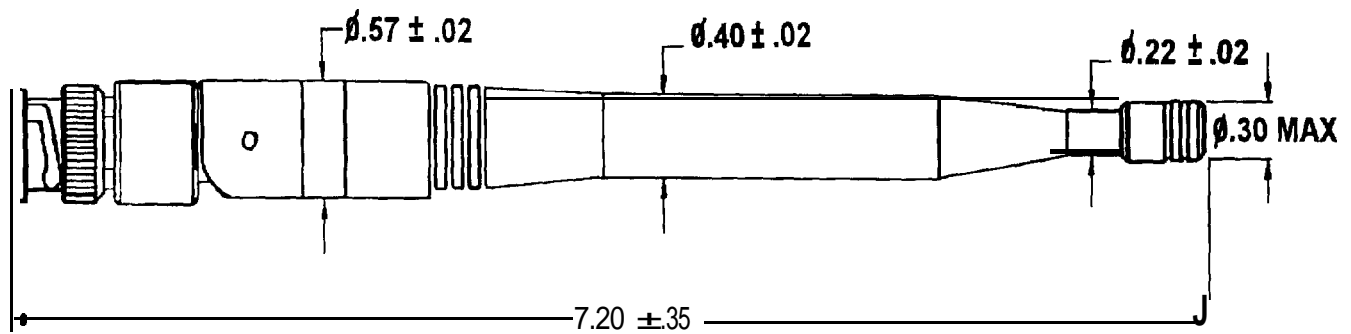
EN-I 0983-01 General Component Requirements

RELEASED

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APPROVAL	NAME	DATE	COMPONENT SPECIFICATION	
DRAWN	D.FORTIER	7/ 1/96	ANTENNA:RADIO,FLEX, 2.4-2.5GHz *REVERSE POLARITY BNC,50 OHM, ARTICULATE JOINT	
CHECKED	M.WELLS	7/26/96		
ENG	M. POPE			
CEG	T.SMURA	7/30/96	DOCUMENT No. 50-21900-007	REV B
				SHEET 1 of 2



DRAWING NOT TO SCALE

Bandwidth:	2.4 to 2.5 Ghz
VSWR:	1.5:1 Max. at resonance
Gain:	1.0 dBi
Power Rating:	50 Watts
Torque Test:	20 in-lbs.
Operating Temperature:	-40° - +85°C
Flex Test:	Per QEA0014
Pull Test:	20lbs Liner Pull

Dimensions are in inches unless otherwise noted

Tolerances are as follows $\text{XX} \pm .010$ unless otherwise noted.

SYMBOL TECHNOLOGIES, INC.

DOCUMENT No.50-21900-007

REV B

SHEET 2 of 2



PC04, PC14 Antenna

The **PC04** antenna is 1.7 dBi omni-directional in azimuth plane. The **PC04** uses a MMCX connector. It is mounted with Velcro on a vertical laptop surface. In its use it would be farther than 20 cm from a person's body but could be closer than 20 cm to the users hands. In its use on a computer it would probably not, but it could come, within 20 cm of a person. It is used with mobile devices. The **PC14** is the same as the **PC04** but has an 11 in. cable.

<i>Location</i>	Laptop cover
<i>Pattern</i>	Omni
<i>Type</i>	Dipole
<i>Max Gain</i>	1.7 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	4.5" RG-178
<i>Symbol P/N</i>	ML-2499-PC04-00 ML-2499-PC14-00
<i>MPE Distance</i>	See summary table

The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C when ever the device configuration could reduce the MPE distance to be less than 20 cm.

“Important Note: To comply with FCC RF exposure requirements, no one may remain within 20 cm of the antenna for extended periods of time.”

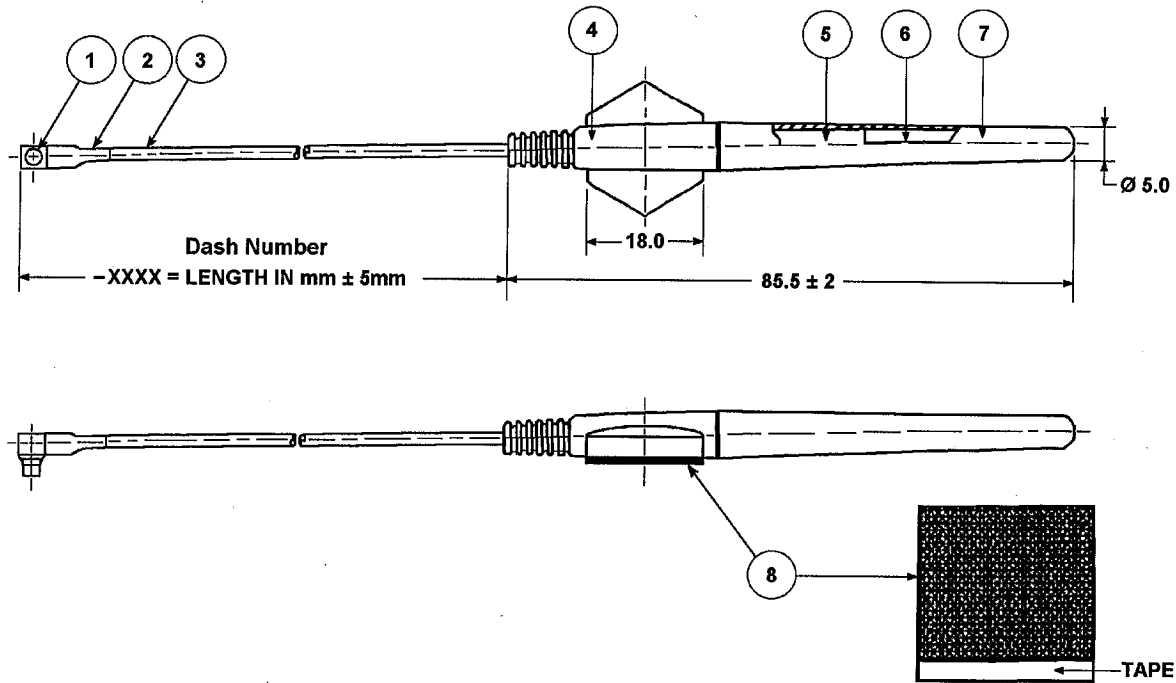


Antenna Photograph



Laptop Configuration

OUTLINE DRAWING



DRAWING NOT TO SCALE

DRAWING CALLOUT LIST

ITEM NO.	PART TYPE	MATERIAL	FINISH
1	MMCX coax connector plug	Brass	Gold plated
2	Tube		Black
3	RG-178 coaxial cable		Black
4	Base	ABS plastic	Black
5	Pipe	Brass	
6	Element		
7	Sleeve	Urethane	Black
8	Velcro		Black

Dimensions are in mm and tolerance is ± 0.6 mm, unless otherwise noted.

SYMBOL TECHNOLOGIES, INC.

DOCUMENT No.50-11903-XXXX

REV A

SHEET 2 of 4

FAMILY PART NUMBER DEFINITION

50-11903-XXXX	XXXX = Cable length variant in mm ± 5 mm with leading zeros as applicable. (eg: 50-11903-0300 defines an antenna with a 300mm long cable)
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ELECTRICAL DATA	SPECIFICATION
Antenna Type	Sleeve dipole antenna
Frequency Range	2.40 to 2.48GHz
Electrical Length	$\frac{1}{2} \lambda$
Nomnal Impedance	50 Ohms
Polarization	Vertical
V.S.W.R.	Less than 2.0 over freq. range
Gain	1.0 dBi

MECHANICAL DATA	SPECIFICATION
Element	7 x $\phi 0.1$ mm StCuAg (center conductor of RG-178)
Sleeve	Urethane (black)
Cable	RG-178/U coaxial cable
Connector	Type MMCX
Antenna Total Length	85.5 \pm 2mm

Dimensions are in inches unless otherwise noted

SYMBOL TECHNOLOGIES, INC.

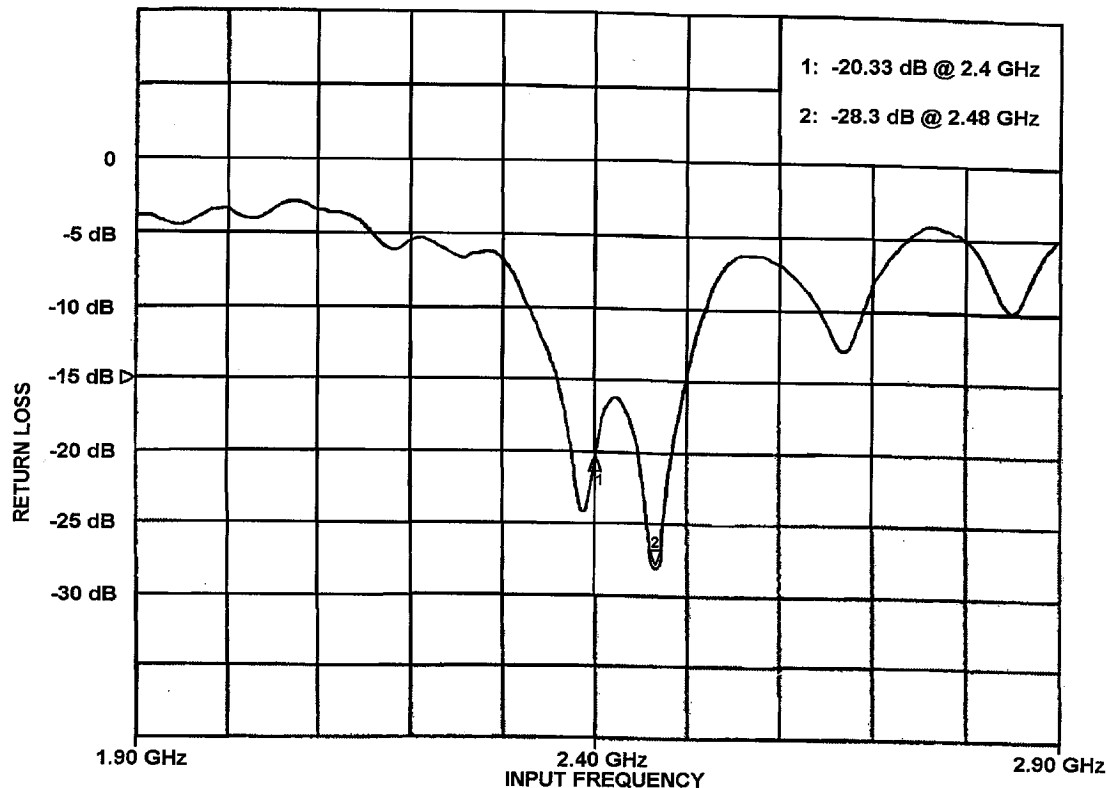
DOCUMENT No.50-11903-XXXX

REV A

SHEET 3 of 4

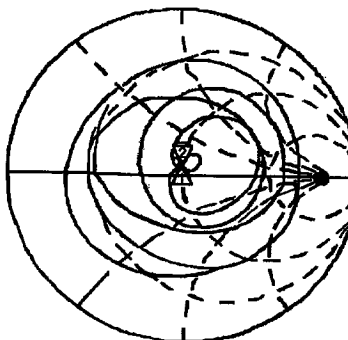
TYPICAL ANTENNA CHARACTERISTICS

ANTENNA MATCH (RESONANCE)

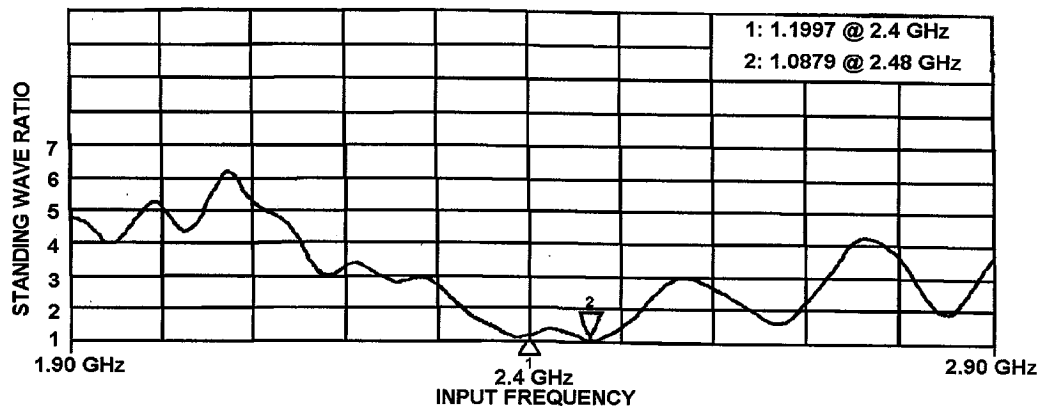


IMPEDANCE CHARACTERISTICS

- 1: 49.823 Ω
9.5273 Ω
@ 2.4 GHz
- 2: 50.33 Ω
3.748 Ω
@ 2.48 GHz



VOLTAGE STANDING WAVE RATIO (VSWR)



4340 / 4342 Antenna

The **4340** antenna is 1 dBi omni-directional in azimuth plane. It is mounted externally on the top end of the terminal as shown in the attached photo. The **4340** uses a Murata Erie BFA connector while the **4342** uses the MMCX. In its use it would be within 20 cm of a persons hand but more than 20 cm from the users body. It is used in portable devices. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C for EIRP greater than 200 mW.

<i>Location</i>	Hand Held Device
<i>Pattern</i>	Omni
<i>Type</i>	Dipole
<i>Max Gain</i>	1 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	HSK01232-5
<i>Symbol P/N</i>	
<i>EIRP</i>	See Summary Tbl

“Important Note: To comply with FCC RF exposure requirements, this hand-held device is approved for operation in a user’s hand when there is 20 cm or more between the antenna and the user’s body.”



Antenna Installed in Device



Terminal Use Photo

2420A(SPEC)

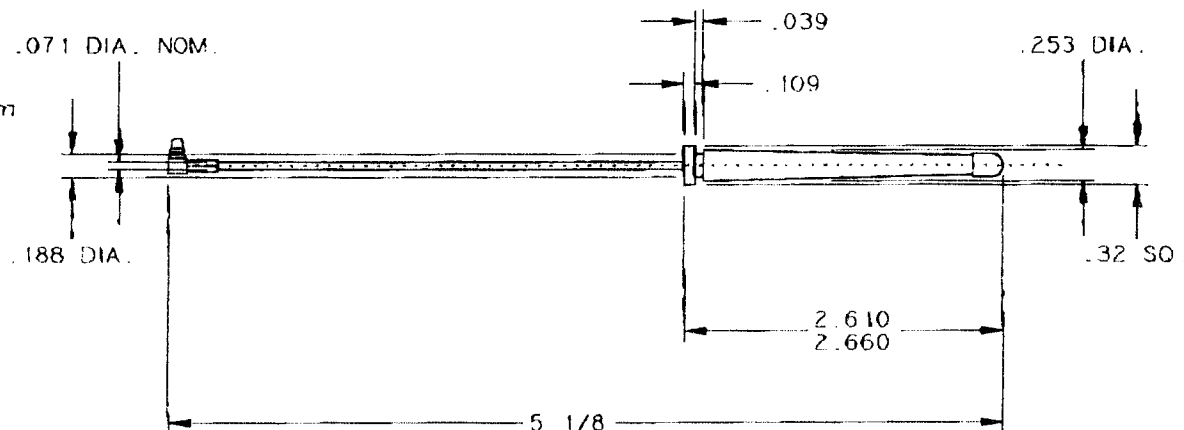
This drawing contains descriptive or specification information
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Communications, Inc., and shall not be released, disclosed,
or otherwise used for the purpose of
TELEX.


REVISIONS

REV NO	LTR	DESCRIPTION	DATE	APPD
---	A	RELEASE	04 MAY 98	SRL
5-47-98	B	RESTATE GAIN MEAS. CUST.	28 MAY 98	PSE

SPECIFICATIONS:

FREQUENCY 2.4 - 2.483 GHz
 SWR < 2.00:1
 NOMINAL IMPEDANCE 50 ohms
 POLARIZATION VERTICAL
 RADIATION PATTERN OMNIDIRECTIONAL
 GAIN 1.0 dBi
 COAX H. S. K 01232-5 50 ohm
 .070 NOM. DIA., BLACK
 COAX TERMINATION PLUG, MICROMATE,
 RIGHT ANGLE (MMCX)
 ANTENNA PHYSICAL SIZE LENGTH 2 5/8 in. NOM.
 DIAMETER .25 in. NOM.
 WEIGHT < .5oz
 OPERATING TEMP + 150°F - 60°F



QTY		DESCRIPTION		ITEM	PART NO.	SPECIFICATION	
		UNSPECIFIED LIMITS OF TOLERANCE		DATE	4 MAY 98		 TELEX COMMUNICATIONS INC. Lincoln, Nebraska, U.S.A.
		DECIMAL	FRACTIONS ± 1/8	DR BY	T.C.N.		
		.X = 0.050 IN.	MACHINED	CHK BY	TCN 5/4/98		
		.XX = 0.030 IN.	FINISH 64 ✓	APPD.	SRL 5/4/98		
		.XXX = 0.010 IN.		PROD.	-----		TITLE 2.4 GHz FLEX ANTENNA CUSTOMER DWG.
		ANGLES 11°, BENDS 12°		MATERIAL: -----			
		STRAIGHTNESS AND/OR					
		FLATNESS .005 IN./1 IN.					
		CONCENTRICITY .010 TIR					
		UNMARKED ANGLES, BENDS		SIZE	CODE IDENT	DWG. NO. 2420AW	
		AND INTERSECTIONS 90°		8	57010	2420AW DISK 114 SPEC	
NEXT ASSY.	USED ON	THREADS- EXT. CLASS 2A		SCALE: NONE	SHEET: 1 OF 1		
APPLICATIONS		INT. CLASS 2B					

MAY 05 2000 14:42 FR

TO 14085282740

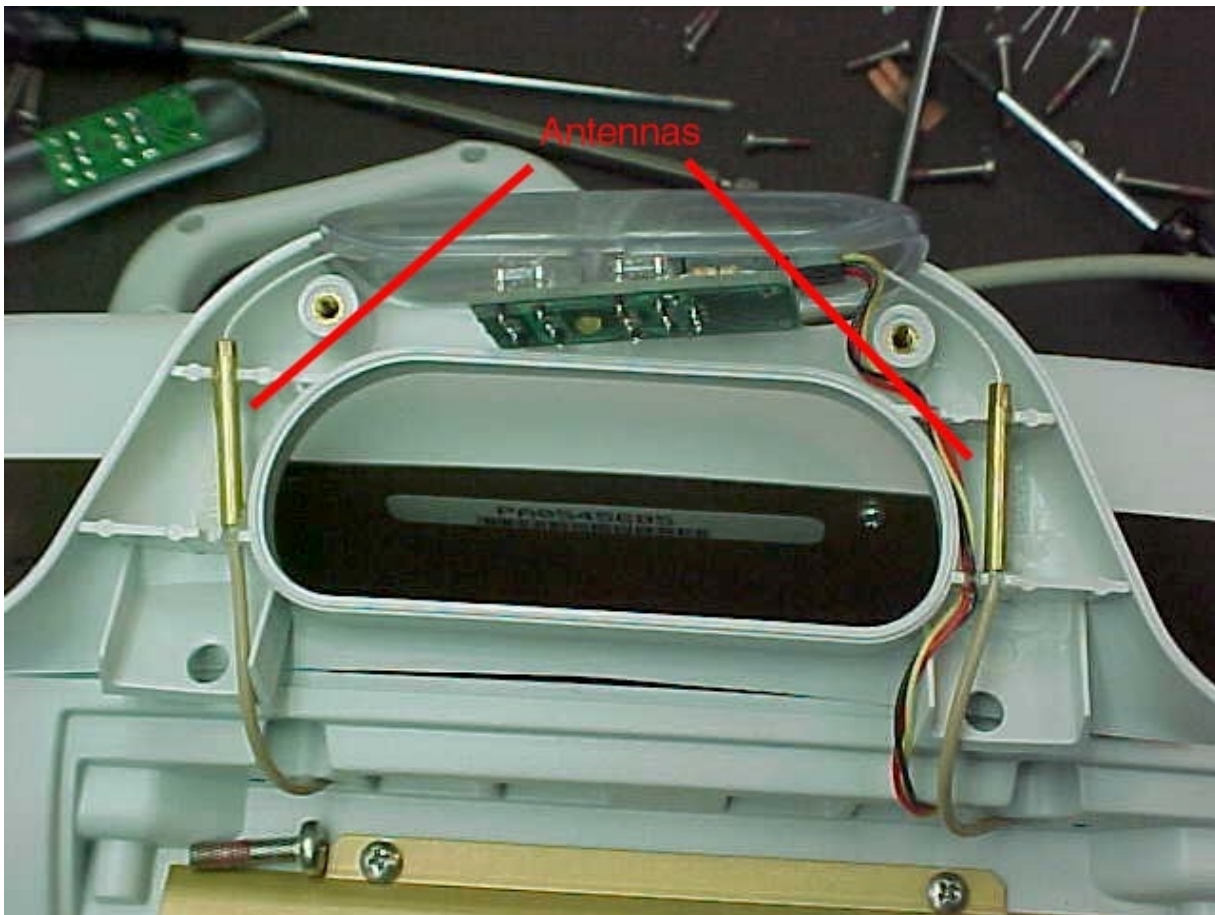
P.02/02

Dash 3000 Antenna

The **Dash 3000** antenna is 1.6 dBi omni-directional in azimuth plane. It is mounted internally on the top end of the terminal as shown in the attached photo. The **Dash 3000** uses a MMCX connector. In its use it can be carried from place to place by a health care worker for portable use but its weight of 12 lbs. would deter continuous hand held use. It is used in a portable device. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C for EIRP greater than 200 mW.

<i>Location</i>	Hand Held Device
<i>Pattern</i>	Omni
<i>Type</i>	Dipole
<i>Max Gain</i>	1.6 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	RG-178
<i>Symbol P/N</i>	50-21900-036

“Important Note: To comply with FCC RF exposure requirements, this device is approved for hand-held operation when there is 20 cm or more between the antenna and anyone’s body.”



Antenna Installed in Device



Terminal Use Photo

NCC TECHNICAL DATA BULLETIN

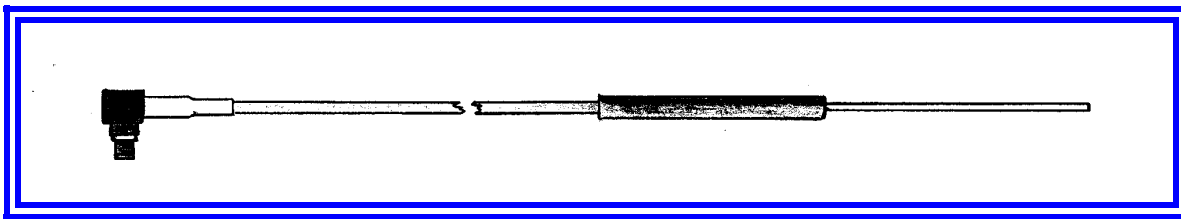


Illustration - Model N2400MMCX1

Description

2.4 GHz Antenna with Integrated Transmission Line and MMCX Connector

SPECIFICATIONS

Frequency Range - 2.4 GHz - 2.5 GHz

Bandwidth - 40 MHz <1.5:1

VSWR - <1.5:1 at Resonance

Impedance - Nominally 50 Ohms

Gain - 2 dBi

Connector - Right Angle MMCX Plug

**NCC, Inc.
18385 Parkman-Nelson Road
Parkman, Ohio 44080**

Telephone (440) 548-5384

Fax (440) 548-5404


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GE Marquette

Dash 3000 Monitor General Information

[General Information](#) | [Specifications](#) | [Certification](#) | [Warranty](#)

Built to move; featured to stay put.

Advanced capabilities allow you to reliably move a patient throughout your enterprise, while feature-rich, no-compromise performance at the bedside helps maximize equipment utilization.



Weighing no more than 12 pounds, regardless of configuration, this lightweight monitor is made to move with a patient. The compact, ergonomic package, complete with integral power supply, allows easy handling. And drop-test rugged design means the DASH 3000 is made to withstand your demanding portable applications.

An extensive feature set enables you to create a portable monitoring solution capable of meeting a wide range of acuity demands. Many features you would only expect to find as options elsewhere are standard on the DASH 3000 - including 3 and 5 lead ECG, pulse oximetry, noninvasive blood pressure, two temperatures and respiration.

The DASH 3000 also accommodates two invasive blood pressures, mainstream CO₂ monitoring, and your choice of full arrhythmia, true 12-lead ECG with enhanced ST segment analysis, cardiac output and PA wedge procedures.

In addition to 24-hour trending with alarm histories, productivity-enhancing software includes online help, and drug dose, cardiac and pulmonary calculations.

And to ensure easy viewing of the data, the DASH 3000 features a full 8.4" screen, in your choice of color or monochrome. It displays up to 10 parameters and 6 waveforms, and an alternate screen configuration further enhances screen utilization and visibility.

Products & Services

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As part of the new DASH family of monitors, the DASH 3000 is field upgradable and expansion enabled to leverage your investment over time. To ensure continuity of care, it supports 2-way wired or wireless networking, can import HIS demographic and lab data and can view other patients. And it looks and feels like other GE Marquette Medical Systems monitors, enabling users to confidently and efficiently transition from one monitor to the next, throughout your facility.

Plus, the DASH 3000's smart battery management system incorporates two, commercially available, user-accessible batteries. They feature a 4-5 hour run time and recharge in 2-4 hours, either internally or with a charger. Because the batteries can be changed one at a time, without loss of function, the DASH 3000 is specifically designed to help you maintain monitoring continuity.

Related Topics

- [News: GE Marquette Medical Systems Announces the Availability of its New Dash[®] 2000 And Dash[®] 3000 Configured Monitors](#)

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Mag Dipole Antenna

The **Mag Dipole** antenna is -1 dBi omnidirectional in azimuth plane. The **Mag Dipole** uses a reverse polarity BNC connector. It is mounted on a vehicle. In its use it would be mounted farther than 20 cm from a person's body. It is used with mobile devices.

The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C whenever the device configuration could reduce the MPE distance to be less than 20 cm.

<i>Location</i>	Vehicle Roof
<i>Pattern</i>	Omni
<i>Type</i>	Dipole
<i>Max Gain</i>	-1 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	RG-58 (12 ft)
<i>Symbol P/N</i>	ML-2499-MGA1-00
<i>MPE Distance</i>	See summary table

“Important Note: To comply with FCC RF exposure requirements, no one may remain within 20 cm of the antenna for extended periods of time.”



Antenna Photograph

RELEASED

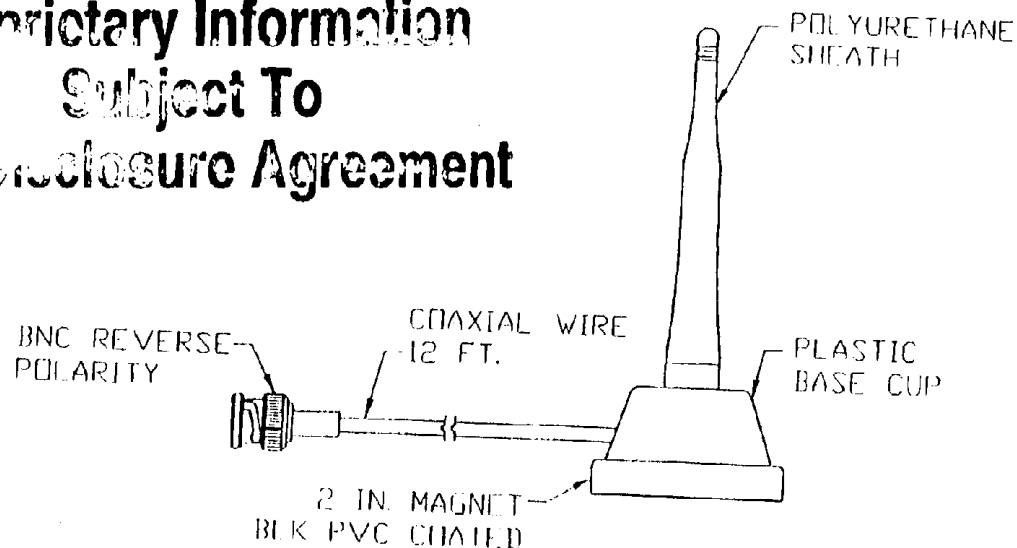
Proprietary Information Subject To Non Disclosure Agreement

NOTES:

1. SPECIFICATIONS:

GAIN: 10 dBi
 VSWR: 1:1 MAX AT RESONANCE
 OPERATING TEMP: -40°C TO +85°C
 FLEX TEST: 180° 50/MIN 2.50" ABOVE BASE
 PULL TEST: 20 lbs. LINEAR PULL
 TORQUE TEST: 20 in-lbs
 POWER RATING: 25 WATTS
 IMPEDANCE: 50 OHMS NOMINAL

CENTURION PART NO.	FREQUENCY RANGE
CAF95770	2.4-2.5GHZ



SYMBOL TECHNOLOGIES

PART NO.ML-2499-MGA1-01

ANTENNA:MAGNETIC, 2.4, -3DB, 12 FT

REV .A

PAGE 1 OF 3

PART IS PACKAGED ACCORDING TO STI SPECIFICATION :50-04100-013
 OEM PRODUCT

PKG ID: 12524 4113



BOX COUNT: 1 OF 1



QUANTITY:



500 EA. SAN JOSE,

TRANS ID: 012345678912

CA 95125

CUSTOMER
PROD. ID: ML-2499-MGA1-01

RELEASED

PART IS PACKAGED ACCORDING TO STI SPECIFICATION :50-04100-013
OEM PRODUCTSYMBOL TECHNOLOGIES
PART NO.ML-2499-MGA1-01
ANTENNA:MAGNETIC, 2.4, -3DB, 12 FT
REV .A
PAGE 2 OF 3

Centurion International, Inc.
3425 North 44th Street
P.O. Box 82846
Lincoln, NE 68504
U.S.A.

CUSTOMER PART NUMBER:(P)



ML-2499-MGA1-01

DESCRIPTION: ANT.SYMBOLS TECHNOLOGIES BNCM

DATE CODE:(D)



16

Quantity:(Q)



1

REV:(2P)



2P

SPECIAL:(Z)



(Z)

PART IS PACKAGED ACCORDING TO STI SPECIFICATION :50-04100-013
OEM PRODUCT

SYMBOL TECHNOLOGIES

PART NO.ML-2499-MGA1-01

ANTENNA:MAGNETIC, 2.4, -3DB, 12 FT

REV .A

PAGE 3 OF 3