

# **Exhibit I: Antenna Information**

**FCC ID: HN2EASYLAN**

4

3

2

1

### APPROVED SOURCE(S) OF SUPPLY

SUPPLIER	PART NUMBER
1. CENTURION INTL	CAF95989
2.	
3.	
4.	
5.	
6.	

REVISIONS			
REV	DESCRIPTION	DATE	DRAWN & APPROVED
B	-001 RELEASED AT REV B		
C	-001 PER ECN 102232	3-7-01	G.RAVEN GMO

D

D

C

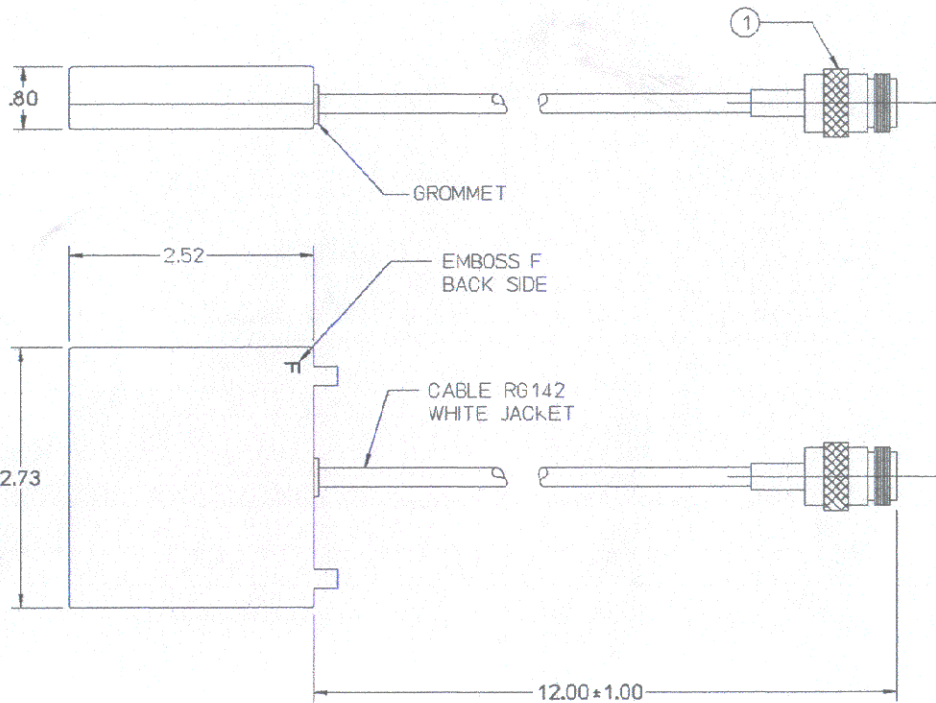
C

B

B

A

A



NOTES: UNLESS OTHERWISE SPECIFIED

- REFER TO THE MANUFACTURER'S SPECIFICATIONS FOR COMPLETE DESIGN PARAMETERS.
- BAG PARTS AND MARK BAG WITH 067262 TO WHICH MANUFACTURED PER SPECIFICATION 606427. DO NOT MARK DASH NUMBER.
- CHANGES REQUIRE SAC APPROVAL.
- SPECIFICATIONS:
  - \* FREQUENCY RANGE: 2400-2500 MHz
  - \* GAIN: 5dBi
  - \* VSWR: 1.8:1
  - \* IMPEDANCE: 50ohms
  - \* BEAMWIDTH 5 dB
    - H-PLANE: 55°
    - E-PLANE: 80°
  - \* OPERATING TEMPERATURE: -40°C TO +100°C
  - \* INPUT POWER (MAX): 50 WATTS
- MOUNTING KIT SUPPLIED.

### SOURCE CONTROL DRAWING

SEE SEPARATE PARTS LIST FOR 067262-001

# -001

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CAD DB,REF- 067262.1.c  
 SYSTEM - HP/ME3D

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.

.XX ± .12

.XXX ±

ANGLES ±

APPROVALS	DATE
DRAWN J.FOTI	5-11-98
CHECKED R.HOAGLUND	5-21-98
RESP ENGM.SHAVER	6-2-98
QA T.ANDERSON	6-2-98
MFG ENG M.SALATINO	5-26-98
SAC P.HELTON	5-26-98
CMPNT ENG T.KEY	5-27-98

**Intermec** Technologies Corporation  
 6001 36TH AVENUE WEST  
 EVERETT, WA 98203-9280

TITLE ANTENNA, 2.4GHZ, 5dBi  
 DUAL FLAT PANEL

SIZE	CAGE CODE	DRAWING NUMBER	REV
C	33825	067262	C
SCALE NONE			SHEET 1 OF 1

4

3

2

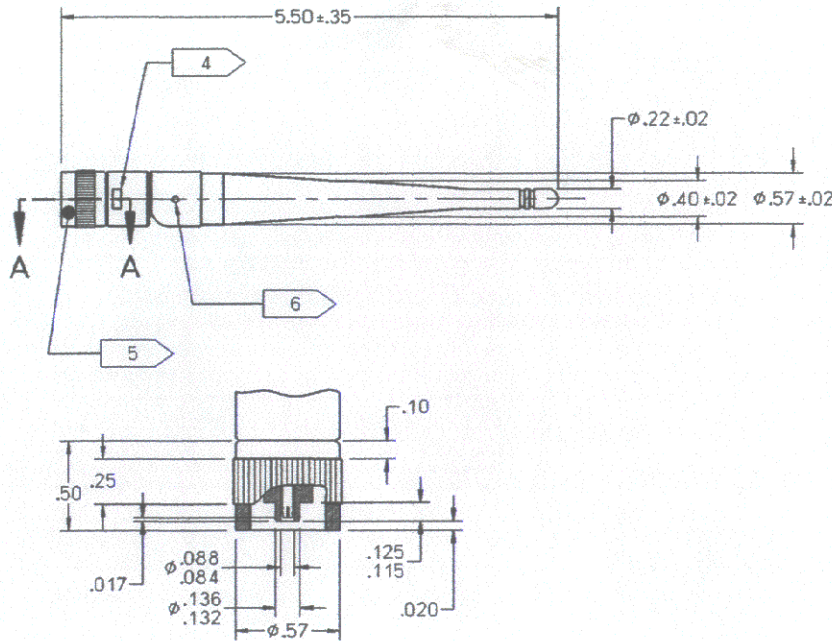
1

APPROVED SOURCE(S) OF SUPPLY	
SUPPLIER	PART NUMBER
1. CENTURION	066147-001
2.	
3.	
4.	
5.	
6.	

REVISIONS			
REV	DESCRIPTION	DATE	DRAWN & APPROVED
B	-001 RELEASED AT REV B		
C	-001 PER ECN 027276	03-07-98	JLEE RCH
D	-001 PER ECN 100361	04-09-99	JLEE JMB

NOTES: UNLESS OTHERWISE SPECIFIED

- BAG PARTS (25 MAX PER BAG) AND MARK BAG WITH 066147 AND DASH NUMBER TO WHICH MANUFACTURED PER SPECIFICATION 606427.
  - SPECIFICATIONS: FREQUENCY RANGE 2.4-2.5 GHZ  
GAIN: 1.0 dBI  
OPERATING TEMPERATURE: -40°C TO +85°C  
FLEX TEST: PER QEA0014  
PULL TEST: 20 LB LINEAR PULL  
TORQUE TEST: 20 IN-LB  
POWER RATING: 50 WATTS  
VSWR 1.5:1 MAX AT RESONANCE
  - CHANGES REQUIRE SAC APPROVAL.
- 4 PART MARKED WITH Aφ1.
- 5 THIS PIECE IS FREE TO ROTATE 360°.
- 6 FREE TO ROTATE 90° (DOWNWARD) ABOUT THIS PIVOT. LOCKS IN 0° AND 90° POSITION.
- ALL PARTS OF ASSEMBLY ARE TO BE MOLDED BLACK OR BLACK CHROME.



SECTION A-A

SCALE 2/1

SOURCE CONTROL DRAWING

CAD DB,REF- 066147.1.d  
SYSTEM - HP/ME30

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.

.XX ± .03

.XXX ± .010

ANGLES ±

APPROVALS	DATE
DRAWN G.RAVEN	7-11-97
CHECKED RHOAGLUND	10-29-97
RESP ENG T.BENSON	10-30-97
QA T.ANDERSON	11-10-97
MFG ENG V.LORD	11-6-97
SAC O.DREW	10-30-97
CMPNT ENGR.KELLY	11-4-97

**Intermec**

6001 36TH AVENUE WEST  
EVERETT, WA 98203-9280

TITLE ANTENNA, TNC, 2.4 GHZ,  
DIPOLE, 248X

SIZE	CAGE CODE	DRAWING NUMBER	REV
C	33825	066147	D

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-001

APPROVED SOURCE(S)  
OF SUPPLY

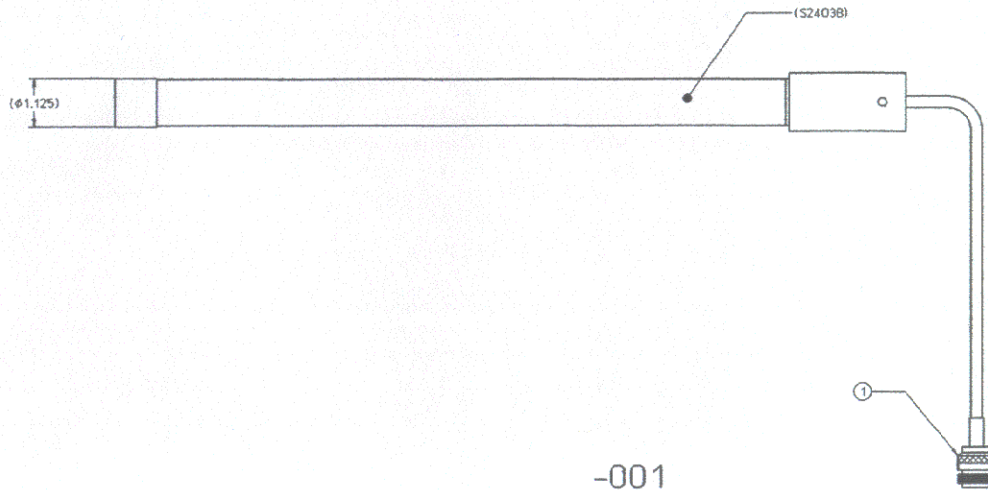
SUPPLIER	PART NUMBER
1. CUSHCRAFT	S2403BP12RNF [7]
2.	
3.	
4.	
5.	
6.	

REV	DESCRIPTION	DATE	DRAWN & APPROVED
C	-001 RELEASED AT REV C		
D	-001 PER ECM 025344	8-27-96	G.JPSTAD RCH

NOTES: UNLESS OTHERWISE SPECIFIED

- MATERIAL: POLYCARBONATE.
- REMOVE ALL BURRS AND SHARP EDGES.
- COSMETIC REQUIREMENTS PER SPECIFICATION 044856, APPENDIX C, CATEGORY II, CLASS B.
- BAG PARTS AND MARK BAG WITH 063363 PER SPECIFICATION 606427. DO NOT MARK DASH NUMBER.
- CHANGES REQUIRE SAC APPROVAL.
- SPECIFICATION:  
 FREQUENCY RANGE: 2400-2500MHz  
 IMPEDANCE: 50 OHMS (NOMINAL)  
 GAIN: 3dB (REFERENCED TO DIPOLE)  
 5dB (REFERENCED TO ISOTROPIC)  
 BANDWIDTH: 100MHz (VWSR <= 1.5:1)  
 VSWR: <= 1.5:1 (2400-2500MHz)  
 WIND SURVIVAL: 125MPH  
 POWER RATING: 50 WATTS MAX

[7] MOUNTING HARDWARE KIT AND INSTRUCTIONS INCLUDED.



-001

SOURCE CONTROL DRAWING  
SEE SEPARATE PARTS LIST FOR 063363-001

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CAD DB:REP - /ocdserv/rel/063363.1.d		SYSTEM - BP-MCS0	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.		APPROVALS DATE	
DRAWN	J.FOTI	8-23-95	
CHECKED	R.HOAGLUND	1-19-96	
RESP ENG	M.CHIN	1-23-96	
QA	T.ANDERSON		
MFG ENG	M.SALATINO	1-22-96	
SAC	P.HELTON	1-22-96	
CHPMT ENG			
TITLE		6001 36TH AVENUE WEST EVERETT, WA 98203-9260	
ANTENNA, 2.4GHZ, OMNI		INTERMEC	
SIZE	D 33825	CAGE CODE	063363
DRAWING NUMBER		REV	D
SCALE	NONE	SHEET 1 OF 1	

## Compliance with 47 CFR 15.247(b)(4)

*“Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See Sec. 1.1307(b)(1) of this chapter.” (Excerpt taken from 47 CFR 15.247(b)(4))*

Per 47 CFR 15.247 (b)(4), the EUT meets the requirement that it be operated in a manner that ensures the public is not exposed to radio frequency energy levels in excess of the Commission’s guidelines (ref. 47 CFR 1.1307, 1.1310, 2.1091, and 2.1093. Also OET Bulletin 65, Supplement C).

The EUT will be used only in the applicant’s printers and can therefore be considered a mobile transmitter per 47 CFR 2.1091. The EUT supports the connection of only one antenna at a time.

The MPE estimates are as follows:

Table 1 in 47 CFR 1.1310 defines the maximum permissible exposure (MPE) for the general population as  $1\text{mW}/\text{cm}^2$ . The exposure level at a 20 cm distance from the EUT’s transmitting antenna is calculated using the general equation:

$$S = (PG)/4\pi R^2$$

Where: S = power density ( $\text{mW}/\text{cm}^2$ )

P = power input to the antenna (mW)

G = linear power gain relative to an isotropic radiator

R = distance to the center of the radiation of the antenna (20 cm = limit for MPE estimates)

Solving for S, the maximum power densities 20 cm from the transmitting antennas are as follows:

Antenna Manufacturer	Antenna Type	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Conducted Output Power (mW)	Antenna Gain (dBi)	Power Density @ 20 cm ( $\text{mW}/\text{cm}^2$ )	Maximum Permitted Power Density ( $\text{mW}/\text{cm}^2$ )
Cushcraft	omni	63363	2400	52	5	0.033	1
Centurion	tuned dipole	66147	2400	52	1	0.013	1
Centurion	patch	67262	2400	52	5	0.033	1



A **UNOVA** Company

**Intermec Technologies Corporation**  
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425.348.2633 fax  
[www.intermec.com](http://www.intermec.com)

May 7, 2002

To Whom It May Concern:

Intermec complies with the unique connector requirement of FCC Part 15.203 by using a modified TNC connector. As can be seen in the following drawings the dimensions of the teflon insulator inside the metal sleeve are different in our custom TNC connector (first drawing) than the standard TNC connector (second drawing). This makes it impossible to properly mate our custom TNC connector with a standard polarized (reversed gender) TNC connector, since the insulators would be destroyed if the connectors are forced. If you have any questions regarding this product, please feel free to contact me (phone: 425 356 1765, fax: 425 348 2633, email: [carl.turk@intermec.com](mailto:carl.turk@intermec.com)).

Sincerely,

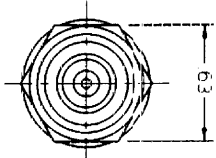
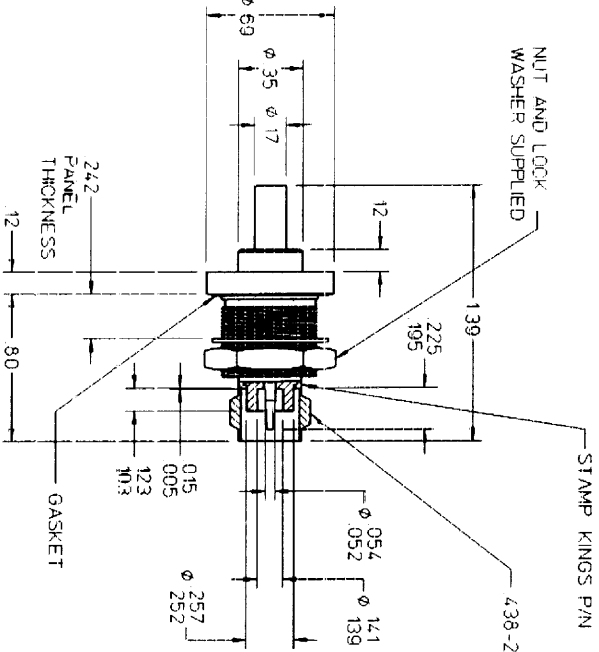
Carl K. Turk, MSEE  
Sr. EMC Engineer  
Intermec Technologies Corp.

APPROVED SOURCE(S)  
OF SUPPLY

SUPPLIER	PART NUMBER
1. KINGS ELECTRONICS	372-6-9
2.	
3.	
4.	

REV STATUS	REV	DESCRIPTION	DATE	DRAWN & APPROVED	
5	4	3	2	1	REVISION SHEET
C	-002	PER ECN 027402	03-30-98	JLEE ROH	

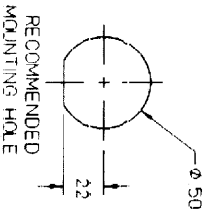
NOTES: UNLESS OTHERWISE SPECIFIED



9. SPACER, TEFLON  
KINGS #1-1689-11M99

10. TUBE, BRASS  
KINGS #1-7068-14H07

-002



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SOURCE CONTROL DRAWING

CAD DREF: R058905.1.c	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.	XX # .02	XXX # .010	ANALYS #
APPROVALS	DATE	TITLE	DRAWING NUMBER	REV
DRAWN: DHAGAN	11-19-92	CONNECTOR, BULKHEAD, FNC JACK	058905	0
CHECKED: RHOGLUND	11-19-92			0
REF'D ENG: MSHAVER	11-24-92			0
QA: K. CANTRELL	11-19-92			0
INFO ENG: SKALANOSKI	11-20-92			0
SAC: PHELTON	11-23-92	SCALE: 2/1		0

6001 36TH AVENUE WEST  
EVERETT, WA 98203-9280

INTERTEC

CONNECTOR, BULKHEAD, FNC JACK

DRAWING NUMBER 058905

REV 0

SHEET 1 OF 1

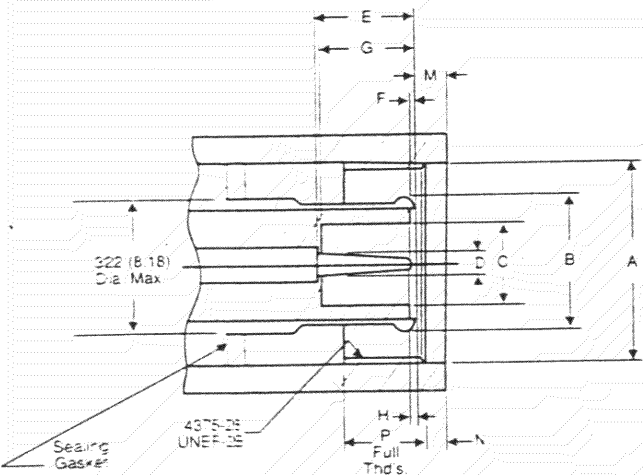
# FINISHES

Contacts	<p>1. Standard finish on all MIL-PRF-39012 items .00005 (.0012mm) min. hard gold plate per MIL-G-45204 over .00005 (.0012mm) min. nickel plate per QQ-N-290.</p> <p>2. All other items .00005" (.0012mm) min. hard gold plate per MIL-G-45204 over copper, unless otherwise specified.</p>
Bodies & Fittings	<p>1. Standard finish .0002" (.005mm) min. silver plate, electro-deposited per QQ-S-365A plus Kings TR-4® electrolytic chromate treatment.</p> <p>2. TR-5® - Kings tarnish resistant alloy electrodeposit finish.</p>

# INTERFACE

Per MIL-PRF-39012 or MIL-STD-348 as applicable

# PLUG



Dim Ltr	inches (mm)		Dim Ltr	inches (mm)	
	Minimum	Maximum		Minimum	Maximum
A	.440 (11.18)		G	.208 (5.28)	.228 (5.79)
B	Gauge Test		H	.003 (0.08)	.040 (1.02)
C	.190 (4.83)		M		.078 (1.98)
D	.052 (1.32)	.054 (1.37)	N	.063 (1.60)	
E	.210 (5.33)	.230 (5.84)	P	.156 (3.96)	
F	.006 (0.15)				

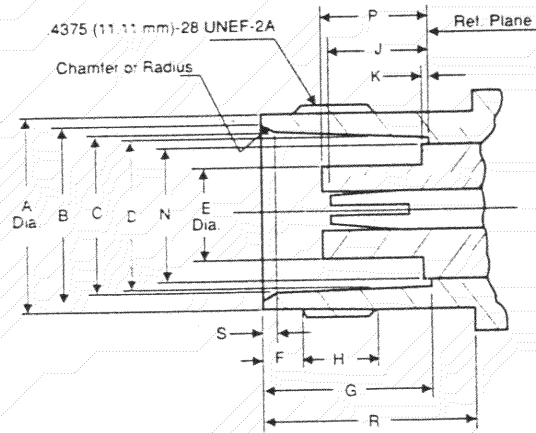
(MIL-PRF-39012 cable connectors)

# ENVIRONMENTAL

Temperature Range	PTFE Insulators: -85°F to +329°F (-65°C to +165°C)
Vibration	MIL-STD-202 Method 204, test condition B
Shock	MIL-STD-202 Method 213, test condition G
Corrosion (salt spray)	MIL-STD-202 Method 101, test condition B
Moisture Resistance	MIL-STD-202 Method 106
Hermetic Seals	Leakage shall not exceed $1 \times 10^{-7}$ cc/sec of tracer gas at atmospheric pressure.
Compression Seals	Gasketed units show no leakage at 50 psi.

Specifications are typical for straight plug configurations designed to MIL-PRF-39012 and may not apply to all connectors.

# JACK



Dim Ltr	inches (mm)		Dim Ltr	inches (mm)	
	Minimum	Maximum		Minimum	Maximum
A	.378 (9.60)	.381 (9.68)	H	.187 (4.75)	
B	.346 (8.79)	.356 (9.04)	J	.186 (4.72)	.206 (5.23)
C	.327 (8.31)	.333 (8.46)	K		.006 (0.15)
D	.319 (8.10)	.321 (8.15)	N		.256 (6.50)
E		.186 (4.72)	P	.188 (4.78)	.208 (5.28)
F	.068 (1.73)	.088 (2.24)	R	.414 (10.52)	
G	.327 (8.31)	.335 (8.51)	S	.015 (0.38)	.030 (0.76)