

Standard Telemetry Products

Emhiser Research, Inc. designs and manufactures a complete line of airborne and ground-based telemetry equipment designed specifically for harsh military applications. Our tested and proven products are qualified on numerous high profile defense programs.

This catalog contains technical bulletins of many of our more common products. If these products do not meet your exact specifications, give us a call to discuss your requirements.

- Wideband DC Coupled Transmitters and Receivers
- Digital Transmitters and Receivers
- Video Transmitters and Receivers
- Telemetry Transmitters and Receivers
- FSK Transmitters and Receivers



EMHISER RESEARCH, INC.

2705 Old Highway 40 West
P.O. Box 189
Verdi, Nevada 89439-0189

Phone: (775) 345-2705

Fax: (775) 345-2484

E-mail: info@emhiser.com

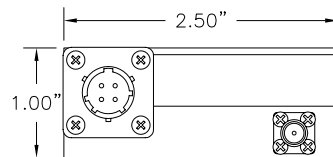
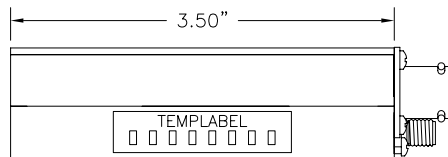
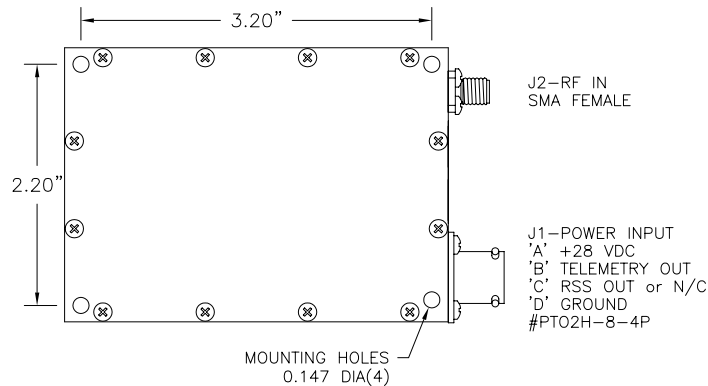
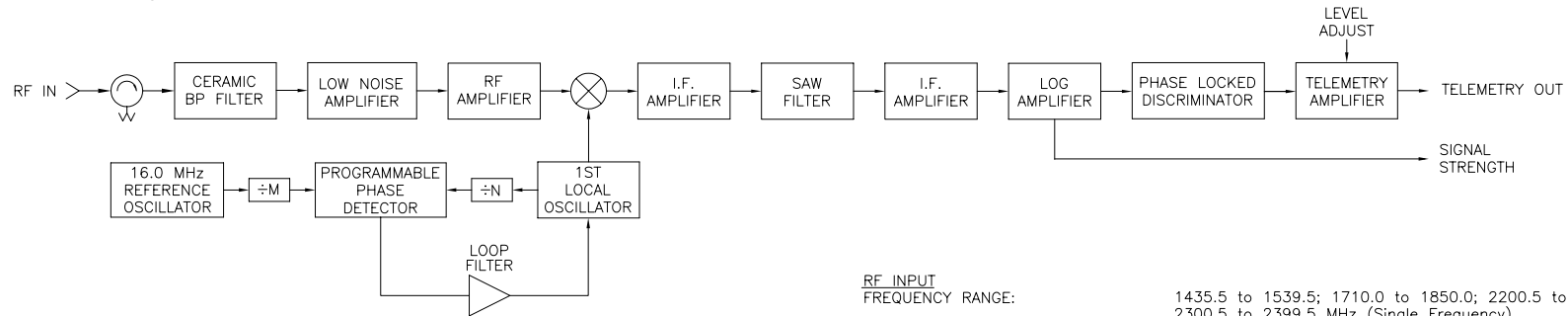
Web: www.emhiser.com

Telemetry Receiver Model ETR-09DEA Series

9 Cubic Inches Signal Strength

AC Coupled Single Frequency 28 VDC

Protected by One or More of the following Patents:
 US: 5,091,706, 5,097,230, 5,311,152, 5,497,509, 5,802,462, 6,404,292, 6,411,237,
 6,417,738, 6,650,180, 6,683,499, 6,690,238, 6,747,517, and 6,771,133.
 Canadian: 2,033,861, 2,033,878, 2,080,013, 2,097,042, 2,235,091, and 2,308,209.
 Other US and Canadian Patents Pending.



RF INPUT

FREQUENCY RANGE: 1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)
 IMPEDANCE: 50 Ohms Nominal
 VSWR: 1.5:1 Maximum
 POWER: +10 dBm Maximum without Damage
 NOISE FIGURE: 4 dB Maximum
 SIGNAL STRENGTH OUTPUT: Dependent upon Pre-Detect Bandwidth. +0.3 VDC Nominal at Threshold Sensitivity, +5 VDC Nominal at Threshold Sensitivity + 50 dB

LO'S/IF'S

STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 1ST I.F.: 140 MHz
 PRE-DETECT BANDWIDTH: Specify
 HARMONIC AND SPURIOUS LEVEL: -50 dB Maximum

DEMODULATED TELEMTRY OUTPUT

TELEMTRY RESPONSE: 100 Hz to 1.0 MHz ± 1.5 dB
 OUTPUT LEVEL: Factory Set to 1.0 VRMS/ ± 500 KHz
 IMPEDANCE: 600 Ohms Nominal

POWER REQUIREMENTS

INPUT VOLTAGE: 28 ± 4 VDC, Reverse Polarity Protected
 INPUT CURRENT: 550 mA Maximum

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE: Operating: -20°C to $+70^{\circ}\text{C}$; Storage: -54°C to $+125^{\circ}\text{C}$
 VIBRATION: 14 G's, Random, Standard Haystack, 20 Hz to 2 KHz, 3 Axes
 SHOCK: 1/2 Sine, 100 G's Pk, 11 mS, 3 Axes
 ACCELERATION: 100 G's, 3 Axes
 ALTITUDE: Unlimited
 HUMIDITY: To 95% at any Temperature forming Frost or Condensation

PHYSICAL CHARACTERISTICS

DIMENSIONS: Per Outline Drawing
 WEIGHT: 10 oz. Maximum

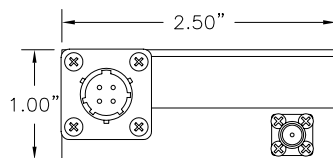
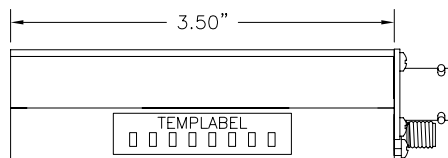
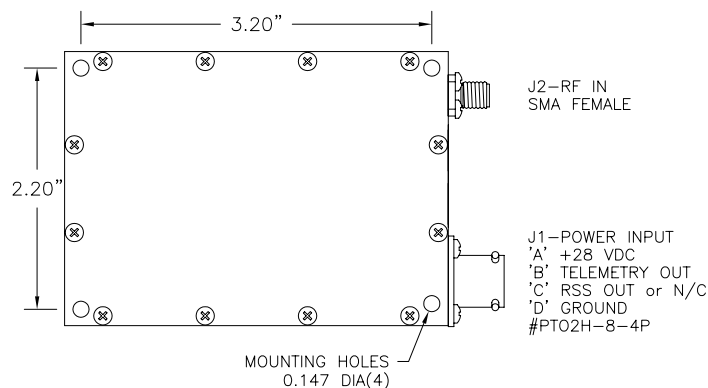
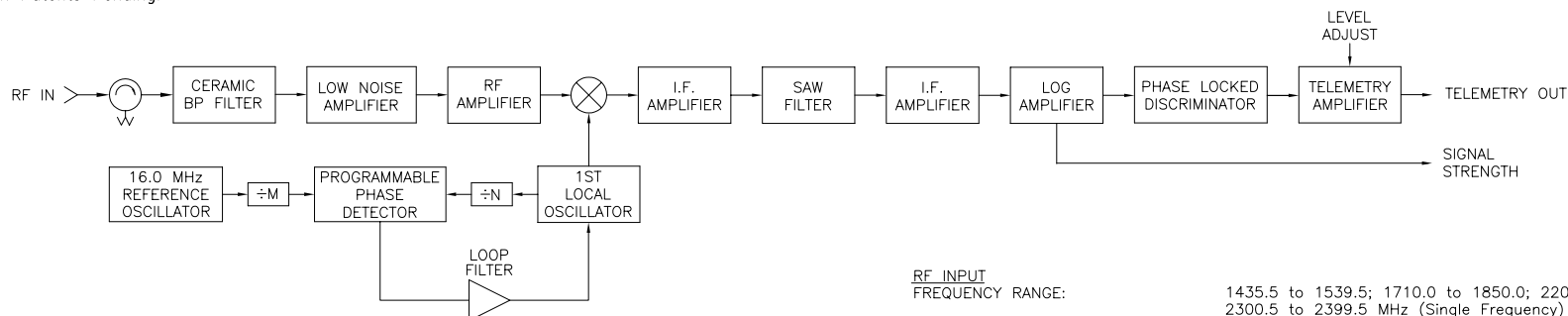
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	TELEMTRY RECEIVER/RSS SINGLE FREQUENCY, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
		MODEL NO. ETR-09DEA SERIES 

Telemetry Receiver Model ETR-09DED Series

9 Cubic Inches Signal Strength

DC Coupled Single Frequency 28 VDC

Protected by One or More of the following Patents:
 US: 5,091,706, 5,097,230, 5,311,152, 5,497,509, 5,802,462, 6,404,292, 6,411,237,
 6,417,738, 6,650,180, 6,683,499, 6,690,238, 6,747,517, and 6,771,133.
 Canadian: 2,033,861, 2,033,878, 2,080,013, 2,097,042, 2,235,091, and 2,308,209.
 Other US and Canadian Patents Pending.



RF INPUT

FREQUENCY RANGE:

IMPEDANCE:

VSWR:

POWER:

NOISE FIGURE:

SIGNAL STRENGTH OUTPUT:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)

50 Ohms Nominal

1.5:1 Maximum

+10 dBm Maximum without Damage

4 dB Maximum

Dependent upon Pre-Detect Bandwidth. +0.3 VDC Nominal at Threshold Sensitivity, +5 VDC Nominal at Threshold Sensitivity + 50 dB

L.O./I.F.

STABILITY:

I.F.:

PRE-DETECT BANDWIDTH:

HARMONIC AND SPURIOUS LEVEL:

Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$

140 MHz

Specify

-50 dB Maximum

DEMODULATED TELEMETRY OUTPUT

TELEMETRY RESPONSE:

OUTPUT LEVEL:

IMPEDANCE:

DC to 1.0 MHz ± 1.5 dB

Factory Set to 1.0 VRMS/ ± 500 KHz

600 Ohms Nominal

POWER REQUIREMENTS

INPUT VOLTAGE:

INPUT CURRENT:

28 ± 4 VDC, Reverse Polarity Protected

550 mA Maximum

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE:

VIBRATION:

SHOCK:

ACCELERATION:

ALTITUDE:

HUMIDITY:

Operating: -20°C to $+70^{\circ}\text{C}$; Storage: -54°C to $+125^{\circ}\text{C}$

14 G's, Random, Standard Haystack, 20 Hz to 2 KHz, 3 Axes

1/2 Sine, 100 G's Pk, 11 ms, 3 Axes

100 G's, 3 Axes

Unlimited

To 95% at any Temperature forming Frost or Condensation

PHYSICAL CHARACTERISTICS

DIMENSIONS:

WEIGHT:

Per Outline Drawing

10 oz. Maximum

DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		TELEMETRY RECEIVER/RSS SINGLE FREQUENCY, DC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
QC		
CAGE CODE IDENT NO.	60666	MODEL NO. ETR-09DED (SERIES) 

Telemetry Receiver Model ETRC-09DEA Series

9 Cubic Inches Signal Strength

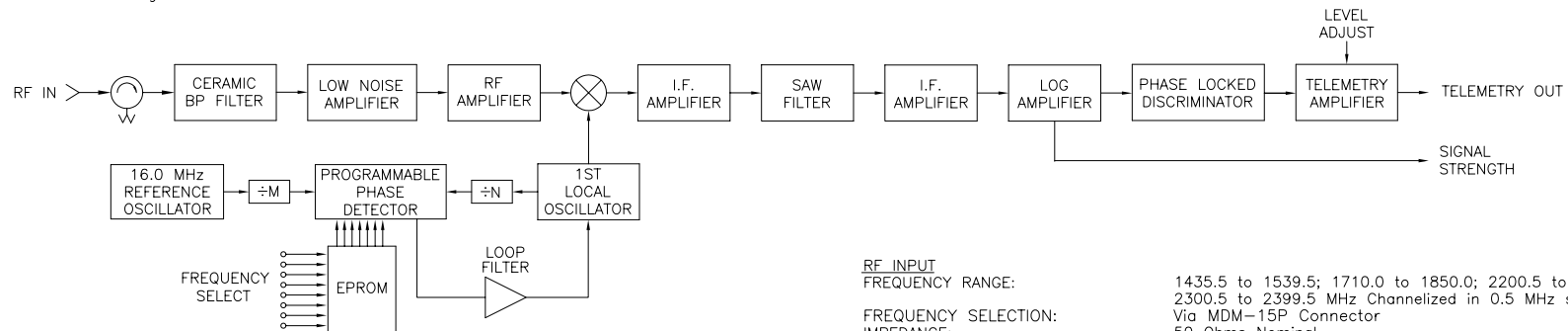
AC Coupled Channelized 28 VDC

Protected by One or More of the following Patents:

US: 5,091,706, 5,097,230, 5,311,152, 5,497,509, 5,802,462, 6,404,292, 6,411,237, 6,417,738, 6,650,180, 6,683,499, 6,690,238, 6,747,517, and 6,771,133.

Canadian: 2,033,861, 2,033,878, 2,080,013, 2,097,042, 2,235,091, and 2,308,209.

Other US and Canadian Patents Pending.



RF INPUT

FREQUENCY RANGE:

FREQUENCY SELECTION:

IMPEDANCE:

VSWR:

POWER:

NOISE FIGURE:

SIGNAL STRENGTH OUTPUT:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
2300.5 to 2399.5 MHz Channelized in 0.5 MHz steps
Via MDM-15P Connector
50 Ohms Nominal
1.5:1 Maximum
+10 dBm Maximum without Damage
4 dB Maximum
Dependent upon Pre-Detect Bandwidth. +0.3 VDC Nominal at Threshold
Sensitivity, +5 VDC Nominal at Threshold Sensitivity + 50 dB

LO'S/IF'S

STABILITY:

1ST I.F.:

PRE-DETECT BANDWIDTH:

HARMONIC AND SPURIOUS LEVEL:

Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
140 MHz
Specify
-50 dB Maximum

DEMODULATED TELEMTRY OUTPUT

TELEMTRY RESPONSE:

OUTPUT LEVEL:

IMPEDANCE:

100 Hz to 1.0 MHz ± 1.5 dB
Factory Set to 1.0 VRMS/ ± 500 KHz
600 Ohms Nominal

POWER REQUIREMENTS

INPUT VOLTAGE:

INPUT CURRENT:

28 ± 4 VDC, Reverse Polarity Protected
550 mA Maximum

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE:

VIBRATION:

SHOCK:

ACCELERATION:

ALTITUDE:

HUMIDITY:

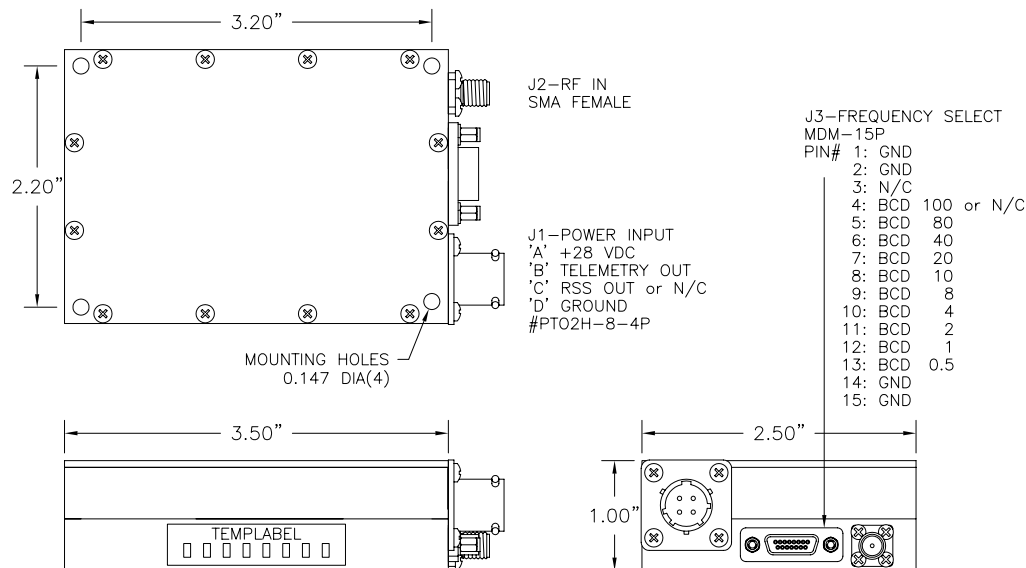
Operating: -20°C to $+70^{\circ}\text{C}$; Storage: -54°C to $+125^{\circ}\text{C}$
14 G's, Random, Standard Haystack, 20 Hz to 2 KHz, 3 Axes
1/2 Sine, 100 G's Pk, 11 mS, 3 Axes
100 G's, 3 Axes
Unlimited
To 95% at any Temperature forming Frost or Condensation

PHYSICAL CHARACTERISTICS

DIMENSIONS:

WEIGHT:

Per Outline Drawing
10 oz. Maximum



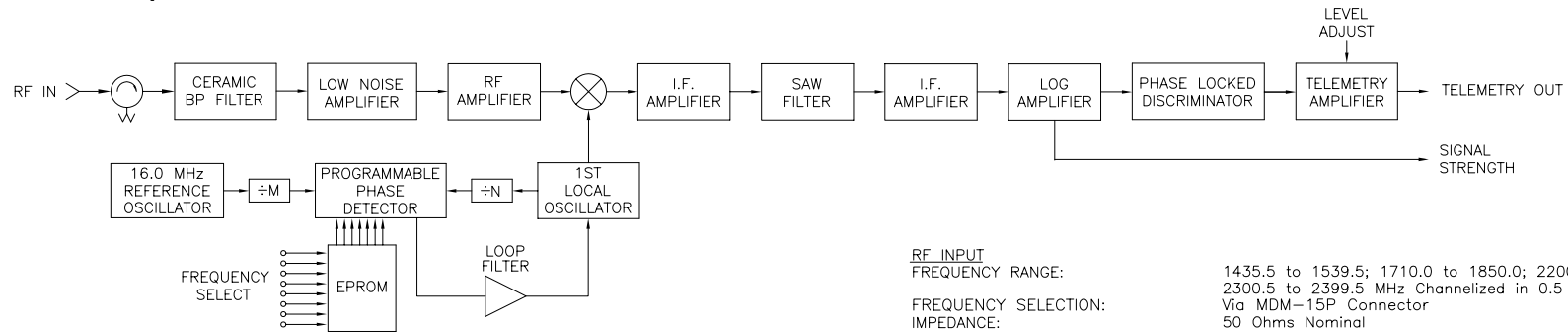
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		TELEMTRY RECEIVER/RSS CHANNELIZED, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. ETRC-09DEA SERIES 

Telemetry Receiver Model ETRC-09DED Series

9 Cubic Inches Signal Strength

DC Coupled Channelized 28 VDC

Protected by One or More of the following Patents:
 US: 5,091,706, 5,097,230, 5,311,152, 5,497,509, 5,802,462, 6,404,292, 6,411,237,
 6,417,738, 6,650,180, 6,683,499, 6,690,238, 6,747,517, and 6,771,133.
 Canadian: 2,033,861, 2,033,878, 2,080,013, 2,097,042, 2,235,091, and 2,308,209.
 Other US and Canadian Patents Pending.



RF INPUT
 FREQUENCY RANGE:
 FREQUENCY SELECTION:
 IMPEDANCE:
 VSWR:
 POWER:
 NOISE FIGURE:
 SIGNAL STRENGTH OUTPUT:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz Channelized in 0.5 MHz Steps
 Via MDM-15P Connector
 50 Ohms Nominal
 1.5:1 Maximum
 +10 dBm Maximum without Damage
 4 dB Maximum
 Dependent upon Pre-Detect Bandwidth. +0.3 VDC Nominal at Threshold
 Sensitivity, +5 VDC Nominal at Threshold Sensitivity + 50 dB

L.O./I.F.
 STABILITY:
 I.F.:
 PRE-DETECT BANDWIDTH:
 HARMONIC AND SPURIOUS LEVEL:

Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 140 MHz
 Specify
 -50 dB Maximum

DEMODULATED TELEMETRY OUTPUT
 TELEMETRY RESPONSE:
 OUTPUT LEVEL:
 IMPEDANCE:

DC to 1.0 MHz ± 1.5 dB
 Factory Set to 1.0 VRMS/ ± 500 KHz
 600 Ohms Nominal

POWER REQUIREMENTS
 INPUT VOLTAGE:
 INPUT CURRENT:

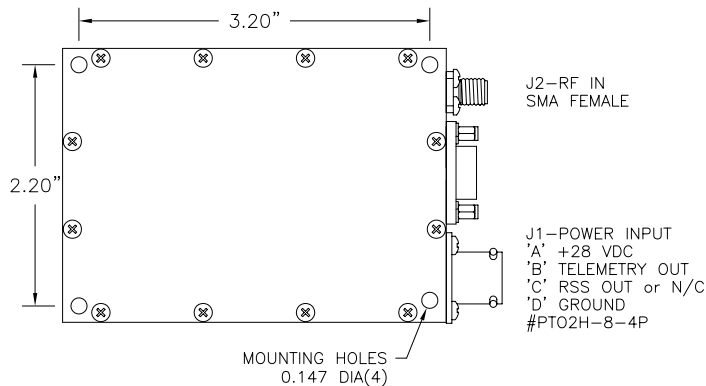
28 ± 4 VDC, Reverse Polarity Protected
 550 mA Maximum

ENVIRONMENTAL SPECIFICATIONS
 TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

Operating: -20°C to $+70^{\circ}\text{C}$; Storage: -54°C to $+125^{\circ}\text{C}$
 14 G's, Random, Standard Haystack, 20 Hz to 2 KHz, 3 Axes
 1/2 Sine, 100 G's Pk, 11 ms, 3 Axes
 100 G's, 3 Axes
 Unlimited
 To 95% at any Temperature forming Frost or Condensation

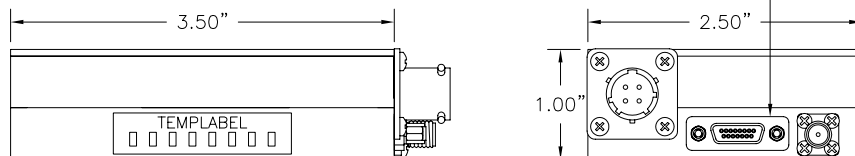
PHYSICAL CHARACTERISTICS
 DIMENSIONS:
 WEIGHT:

Per Outline Drawing
 10 oz. Maximum



J3-FREQUENCY SELECT
 MDM-15P
 PIN#

1:	GND
2:	GND
3:	N/C
4:	BCD 100 or N/C
5:	BCD 80
6:	BCD 40
7:	BCD 20
8:	BCD 10
9:	BCD 8
10:	BCD 4
11:	BCD 2
12:	BCD 1
13:	BCD 0.5
14:	GND
15:	GND



DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		TELEMETRY RECEIVER/RSS CHANNELIZED, DC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
QC		
CAGE CODE IDENT NO.	60666	MODEL NO. ETRC-09DED (SERIES) 