

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

Ultra High Efficiency Transmitters

In efforts to improve designs to better serve customer needs, Emhiser's design efforts have resulted in an ultra high efficiency (UHE) line of telemetry transmitters with previously unattainable DC-RF conversion efficiency. UHE transmitters are available in miniaturized airborne packages with a variety of power levels, frequency bands, and supply voltage requirements. All Emhiser transmitters are designed for harsh military environments.

Emhiser's ultra high efficiency (UHE) technology enhances the design of our miniature airborne transmitters. For a required output power, our UHE technology decreases current draw and dissipated power requiring fewer, smaller, and lighter batteries and heat sinks. In applications requiring additional link margin or increased data rates, replacing a convention transmitter with an UHE transmitter with twice the output power actually decreases current draw and power dissipation.

If one of our standard UHE products does not meet your specifications, please call us to discuss your requirements.

- S-Band Single Frequency or Channelized
- 5 Watt Output Power
- Digital, Telemetry, or Video Modulation
- AC or DC Modulation Coupling
- +28 $\pm$ 4 Vdc Supply Voltage



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

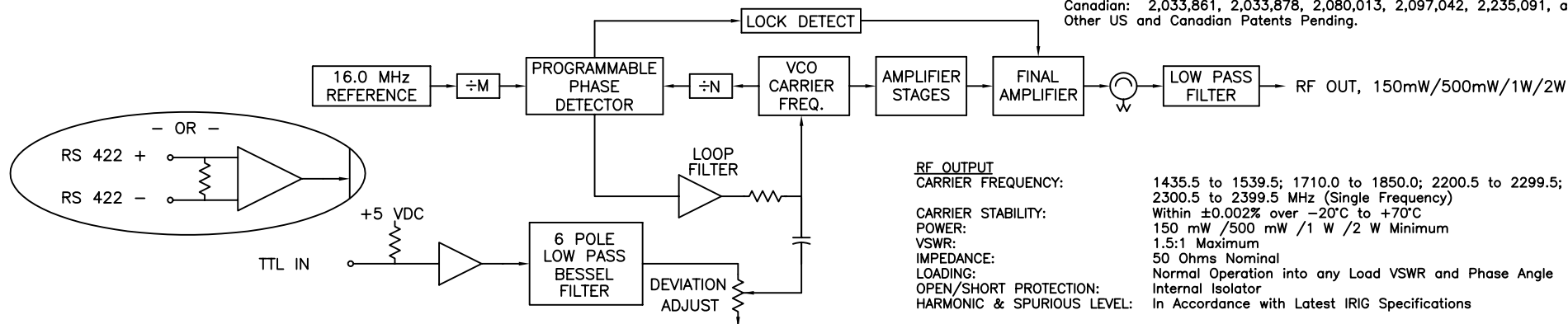
Web: www.emhiser.com

Digital Transmitter Model EDT-01DEA Series

1.3 Cubic Inches 150mW, 500mW, 1 Watt, or 2 Watts

AC Coupled Single Frequency 12 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 OUTPUT

CARRIER FREQUENCY:
 CARRIER STABILITY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 150 mW / 500 mW / 1 W / 2 W Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL MODULATION INPUT

TYPE:
 LEVELS:
 BIT RATE:
 CONDITIONING:
 DEVIATION:
 INCIDENTAL AM:
 INCIDENTAL FM:
 INPUT IMPEDANCE:

True FM, Positive Sense, AC Coupled
 TTL OR RS422 Compatible
 1 KBits/Sec to 10 MBits/Sec
 6 Pole Bessel Low Pass Filter Set at $0.7 \times$ Bit Rate
 Factory Set at $\pm 0.35 \times$ Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms Minimum to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+12 +4.5/-1.5 VDC: Reverse Polarity Protected

Power	Current
150 Milliwatts	200 Milliamps
500 Milliwatts	400 Milliamps
1 Watt	650 Milliamps
2 Watts	1.0 Amp

ENVIRONMENTAL SPECIFICATIONS

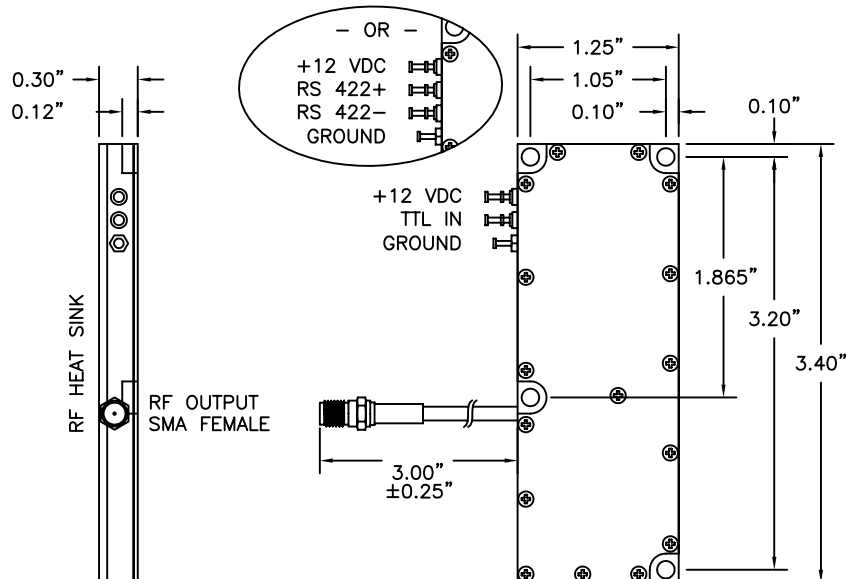
TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

Operating: -20°C to $+70^{\circ}\text{C}$; Storage: -55°C to $+100^{\circ}\text{C}$
 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
 2 oz. Maximum



MOUNTING HOLES
 0.136" DIA THRU
 4 PLACES

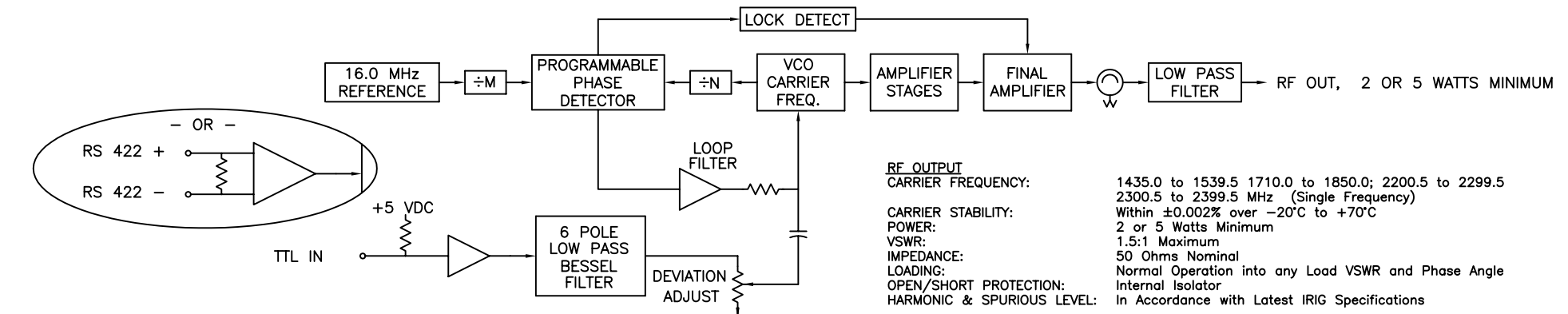
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		DIGITAL TRANSMITTER, 150mW/500mW/1W/2W SINGLE FREQUENCY, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EDT-01DEA SERIES		

Digital Transmitter Model EDT-S3DEA Series

3.3 Cubic Inches 2 or 5 Watts

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 OUTPUT

CARRIER FREQUENCY:
 CARRIER STABILITY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1435.0 to 1539.5 1710.0 to 1850.0; 2200.5 to 2299.5
 2300.5 to 2399.5 MHz (Single Frequency)
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 2 or 5 Watts Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:
 BIT RATE:
 CONDITIONING:

DEVIATION:
 DEVIATION NON-LINEARITY:
 INCIDENTAL AM:
 INCIDENTAL FM:
 INPUT IMPEDANCE:

TTL or RS422 Compatible
 100 Bits/Sec to 15 MBits/Sec Maximum
 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected
 Power Current
 2 Watts 550 Milliamps
 5 Watts 1.2 Amps

ENVIRONMENTAL SPECIFICATIONS

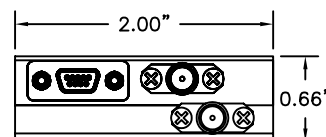
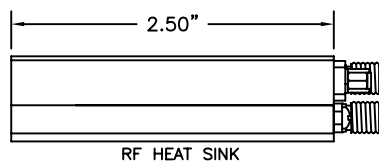
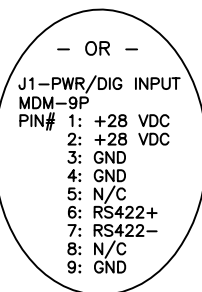
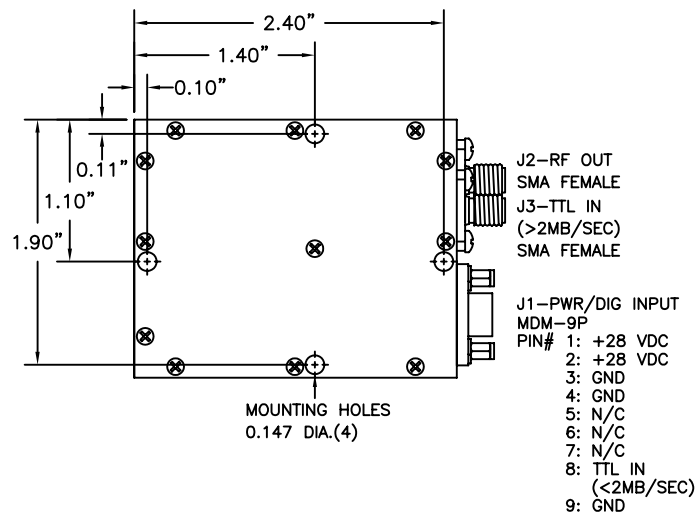
TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

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
 3.6 oz. Maximum



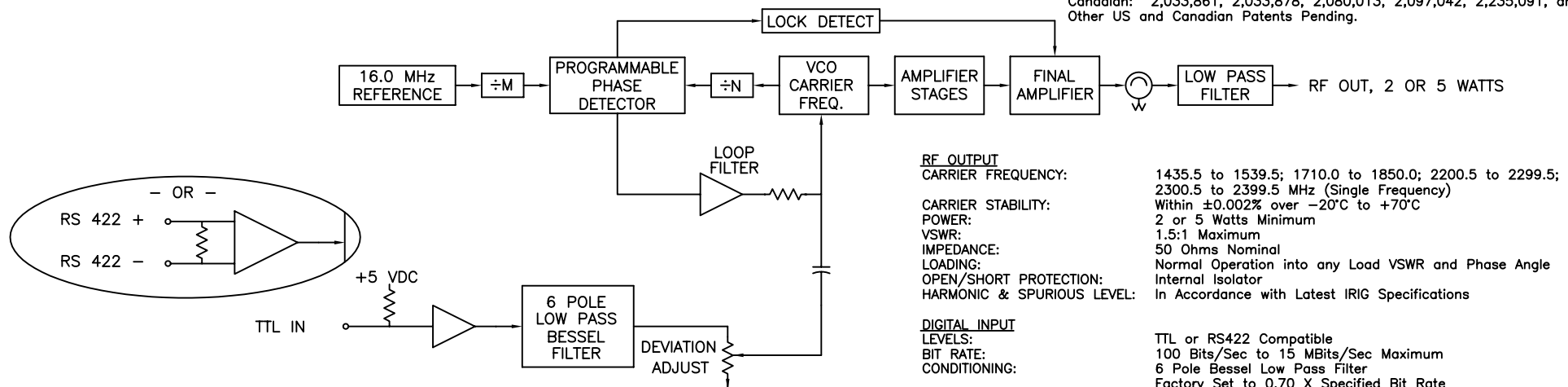
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 2 OR 5 WATTS SINGLE FREQUENCY, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
		MODEL NO. EDT-S3DEA SERIES 

Digital Transmitter Model EDT-05DEA Series

5 Cubic Inches 2 or 5 Watts

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 OUTPUT

CARRIER FREQUENCY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 2 or 5 Watts Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:
 BIT RATE:
 CONDITIONING:
 DEVIATION:
 DEVIATION NON-LINEARITY:
 INCIDENTAL AM:
 INCIDENTAL FM:
 INPUT IMPEDANCE:

TTL or RS422 Compatible
 100 Bits/Sec to 15 MBits/Sec Maximum
 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected
 Power Current
 2 Watts 650 Milliamps
 5 Watts 1.2 Amps

ENVIRONMENTAL SPECIFICATIONS

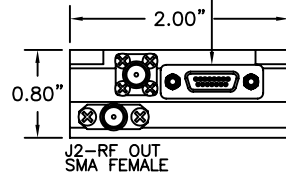
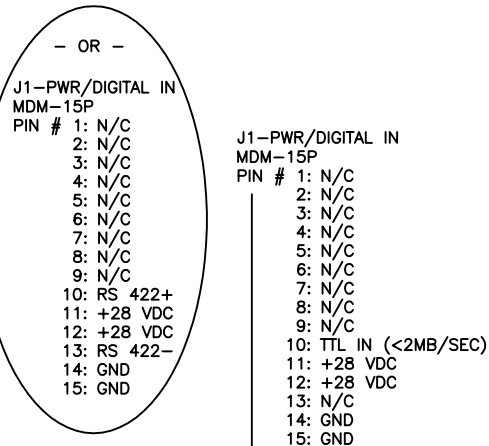
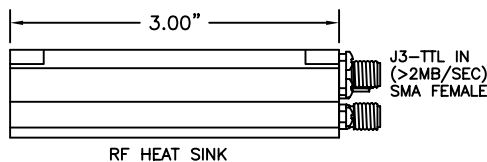
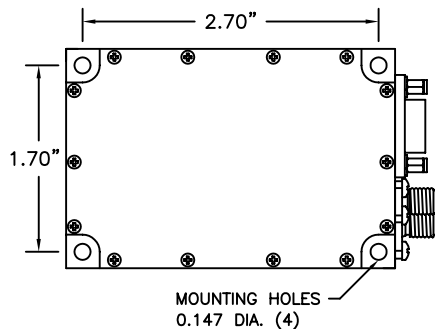
TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

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
 5.5 oz. Maximum



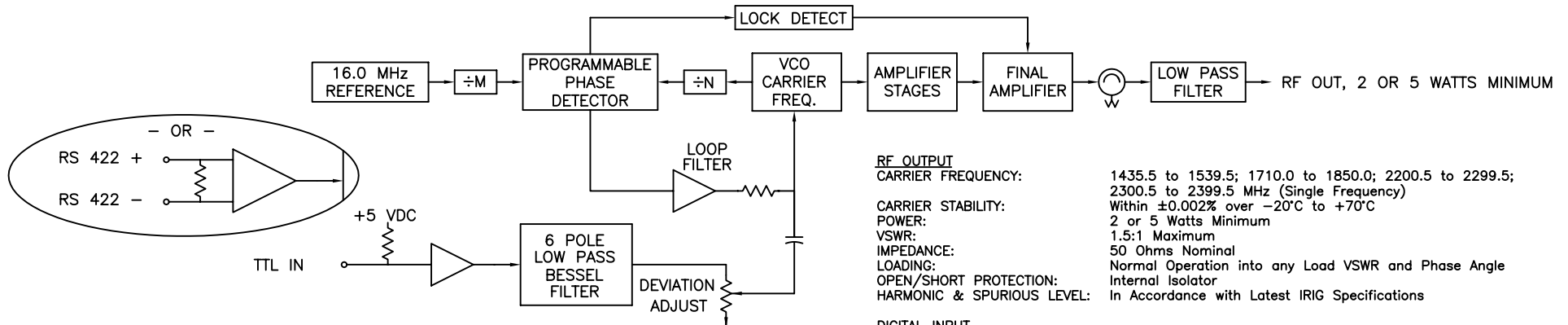
DATE	05 06 16	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 2 OR 5 WATTS SINGLE FREQUENCY, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EDT-05DEA SERIES		

Digital Transmitter Model EDT-06DEA Series

6 Cubic Inches 2 or 5 Watts

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 OUTPUT

CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5; 2300.5 to 2399.5 MHz (Single Frequency)
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 2 or 5 Watts Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 Ohms Nominal
 LOADING: Normal Operation into any Load VSWR and Phase Angle
 OPEN/SHORT PROTECTION: Internal Isolator
 HARMONIC & SPURIOUS LEVEL: In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS: TTL or RS422 Compatible
 BIT RATE: 100 Bits/Sec to 15 MBits/Sec Maximum
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 DEVIATION: Factory Set to ± 0.35 X Specified Bit Rate
 DEVIATION NON-LINEARITY: 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: TTL: 10 KOhms to ± 5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE: $\pm 28 \pm 4$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

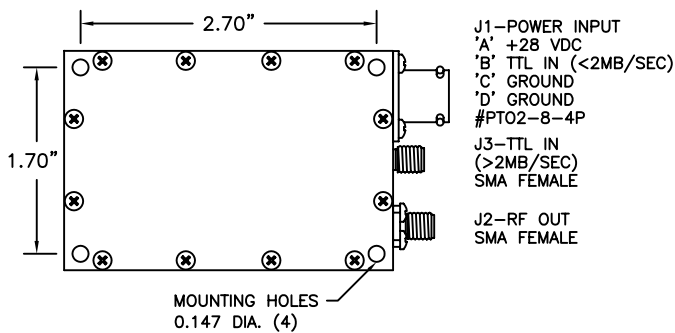
Power	Current
2 Watts	650 Milliamps
5 Watts	1.2 Amps

ENVIRONMENTAL SPECIFICATIONS

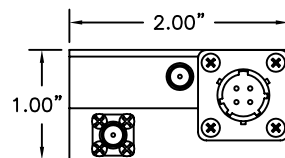
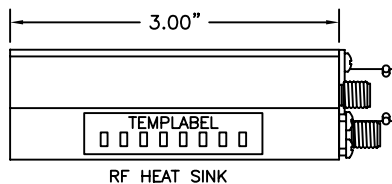
TEMPERATURE: Operating: -20°C to $+70^{\circ}\text{C}$; Storage: -54°C to $+125^{\circ}\text{C}$
 VIBRATION: 14 G's, Random, Standard Haystack, 20 Hz to 2 KHz, 3 Axes
 SHOCK: 1/2 Sine, 100 G's Pk, 11 ms, 3 Axes
 ACCELERATION: 100 G's, 3 Axes
 ALTITUDE: Unlimited
 HUMIDITY: To 95% at any Temperature forming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

PHYSICAL CHARACTERISTICS

DIMENSIONS: Per Outline Drawing
 WEIGHT: 9 oz. Maximum



- OR -
 J1-POWER INPUT
 'A' +28 VDC
 'B' RS 422 +
 'C' RS 422 -
 'D' GROUND
 #PT02-8-4P



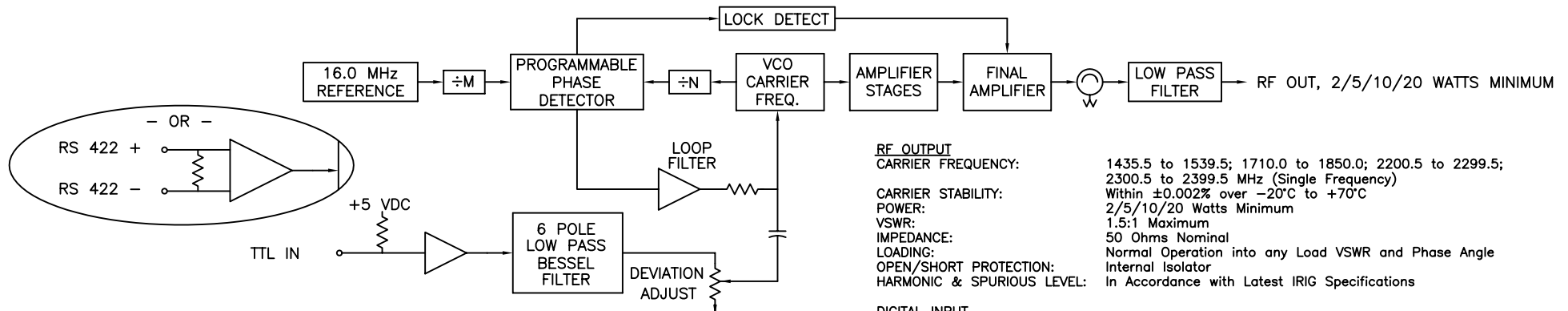
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 2 OR 5 WATTS SINGLE FREQUENCY, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EDT-06DEA SERIES		

Digital Transmitter Model EDT-09DEA Series

Standard or Ultra High Efficiency 9 Cubic Inches 2, 5, 10 or 20 Watts

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 OUTPUT

CARRIER FREQUENCY:
 CARRIER STABILITY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 2/5/10/20 Watts Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:
 BIT RATE:
 CONDITIONING:

TTL or RS422 Compatible
 100 Bits/Sec to 15 MBits/Sec Maximum
 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected
 Power Current
 2 Watts 650 Milliamps
 5 Watts 750 Milliamps Ultra High Efficiency
 5 Watts 1.2 Amps
 10 Watts 2.0 Amps
 20 Watts 4.0 Amps

ENVIRONMENTAL SPECIFICATIONS

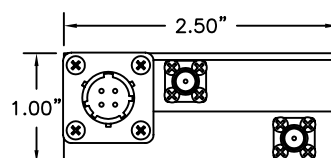
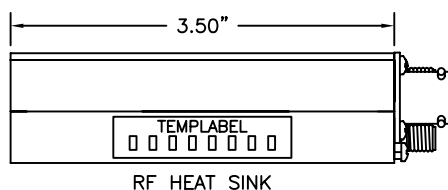
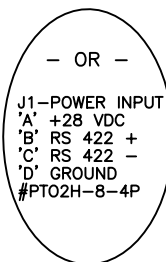
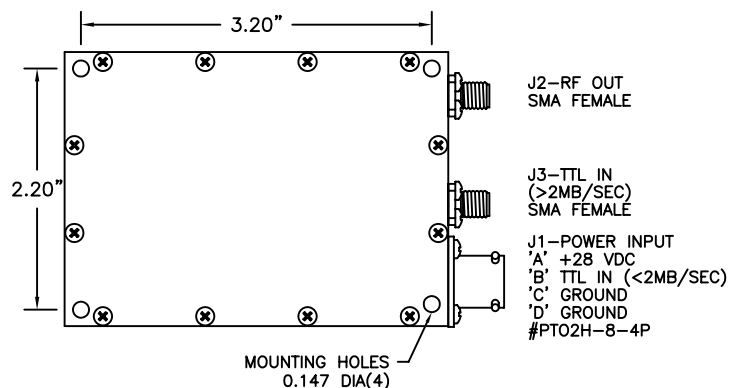
TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

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
 12 oz. Maximum



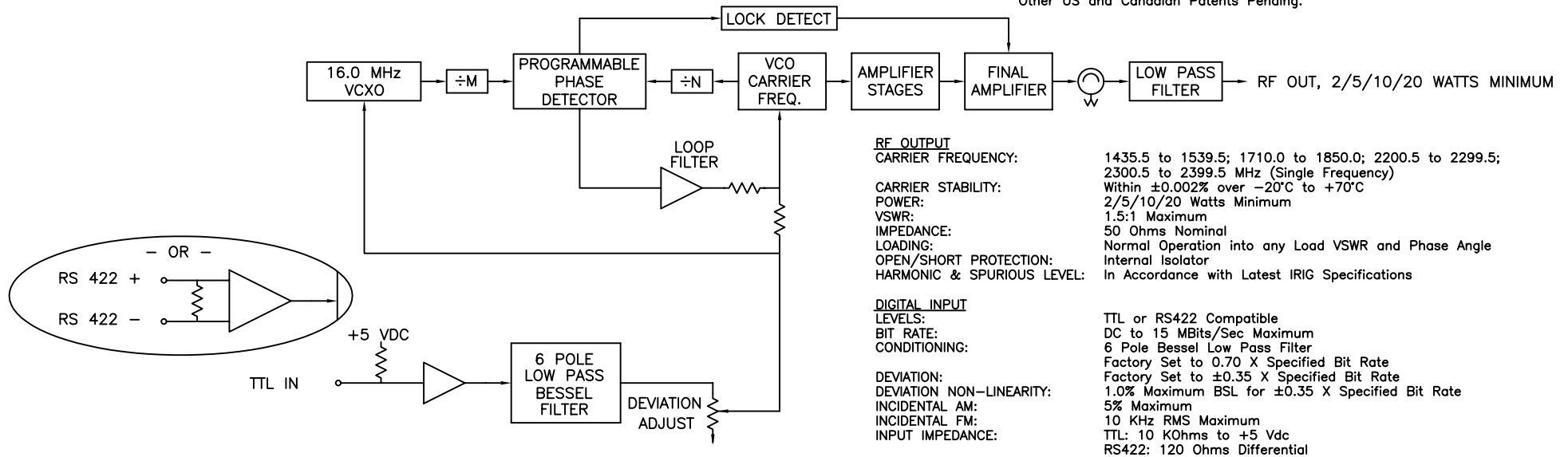
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 2/5-UHE/5/10/20 WATTS SINGLE FREQUENCY, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
		MODEL NO. EDT-09DEA SERIES

Digital Transmitter Model EDT-09DED Series

Standard or Ultra High Efficiency 9 Cubic Inches 2, 5, 10 or 20 Watts

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.



POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

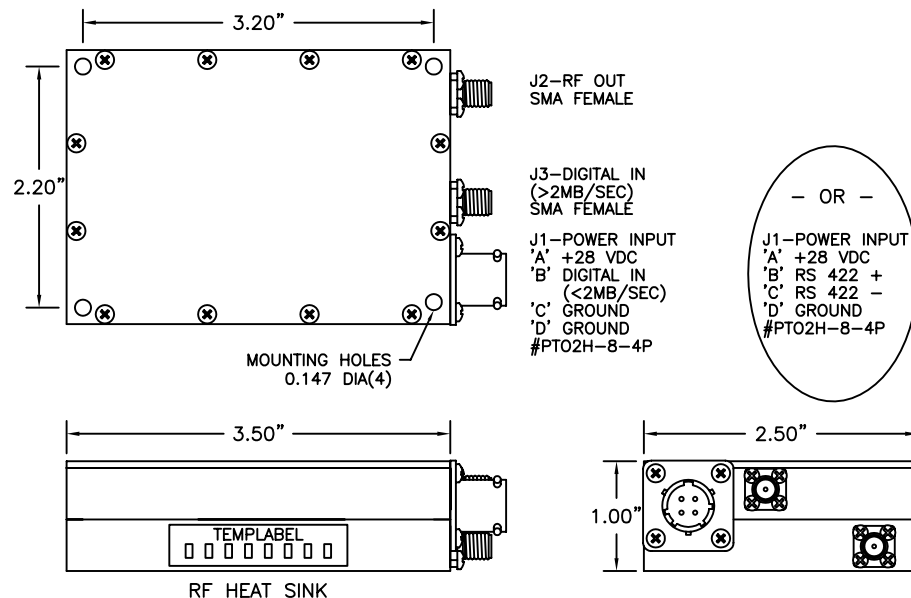
+28 ± 4 VDC: Reverse Polarity Protected	
Power	Current
2 Watts	650 Milliamps
5 Watts	750 Milliamps Ultra High Efficiency
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

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: 12 oz. Maximum



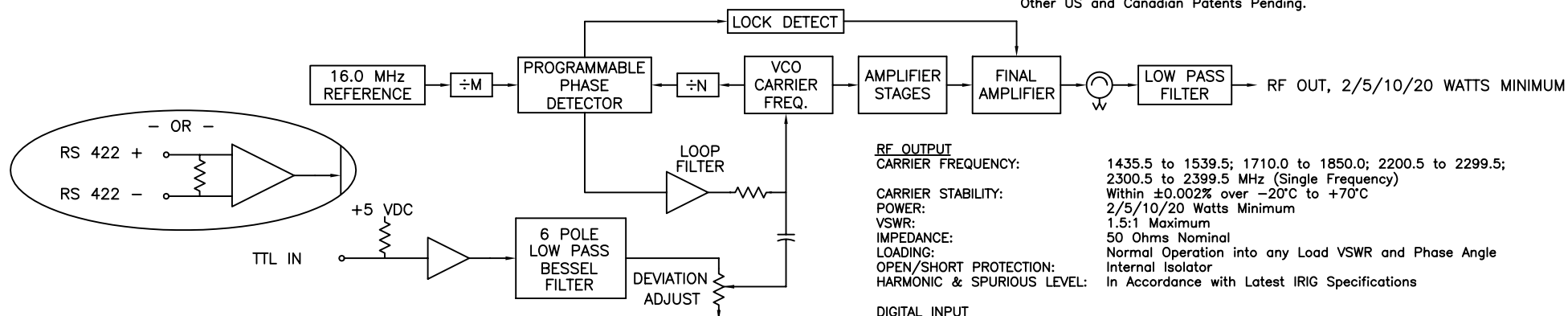
DATE	05 07 05	EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		DIGITAL TRANSMITTER, 2/5-UHE/5/10/20 WATTS SINGLE FREQUENCY, DC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EDT-09DED SERIES		

Digital Transmitter Model EDT-11DEA Series

Standard or Ultra High Efficiency 11 Cubic Inches 2, 5, 10, or 20 Watts

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 OUTPUT

CARRIER FREQUENCY:

CARRIER STABILITY:

POWER:

VSWR:

IMPEDANCE:

LOADING:

OPEN/SHORT PROTECTION:

HARMONIC & SPURIOUS LEVEL:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 2/5/10/20 Watts Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:

BIT RATE:

CONDITIONING:

DEVIATION:

DEVIATION NON-LINEARITY:

INCIDENTAL AM:

INCIDENTAL FM:

INPUT IMPEDANCE:

TTL or RS422 Compatible
 100 Mbits/Sec to 15 Mbits/Sec Maximum
 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms to +5 Vdc
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:

INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected

Power	Current
2 Watts	650 Milliamps
5 Watts	750 Milliamps Ultra High Efficiency
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

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

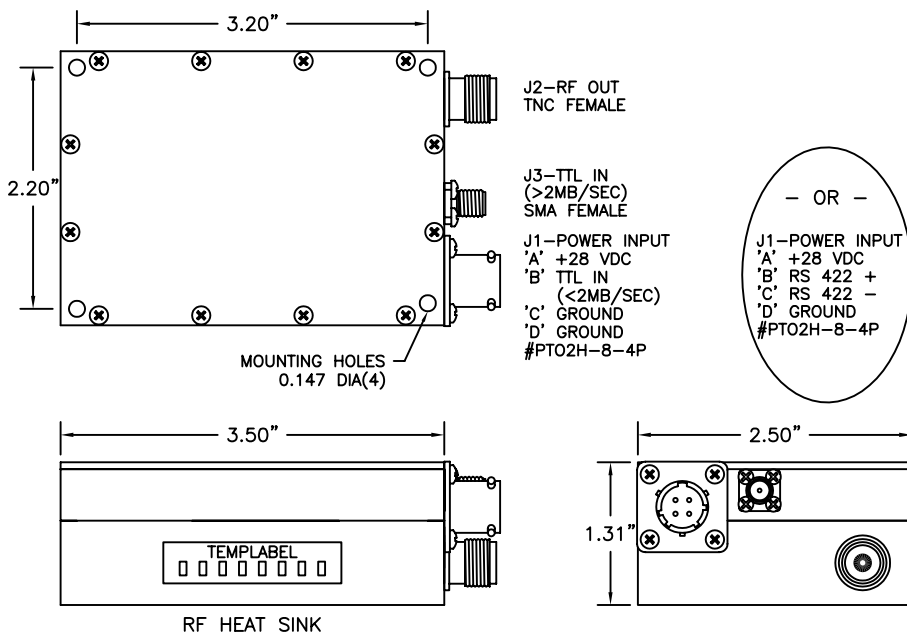
PHYSICAL CHARACTERISTICS

DIMENSIONS:

WEIGHT:

Per Outline Drawing

14 oz. Maximum



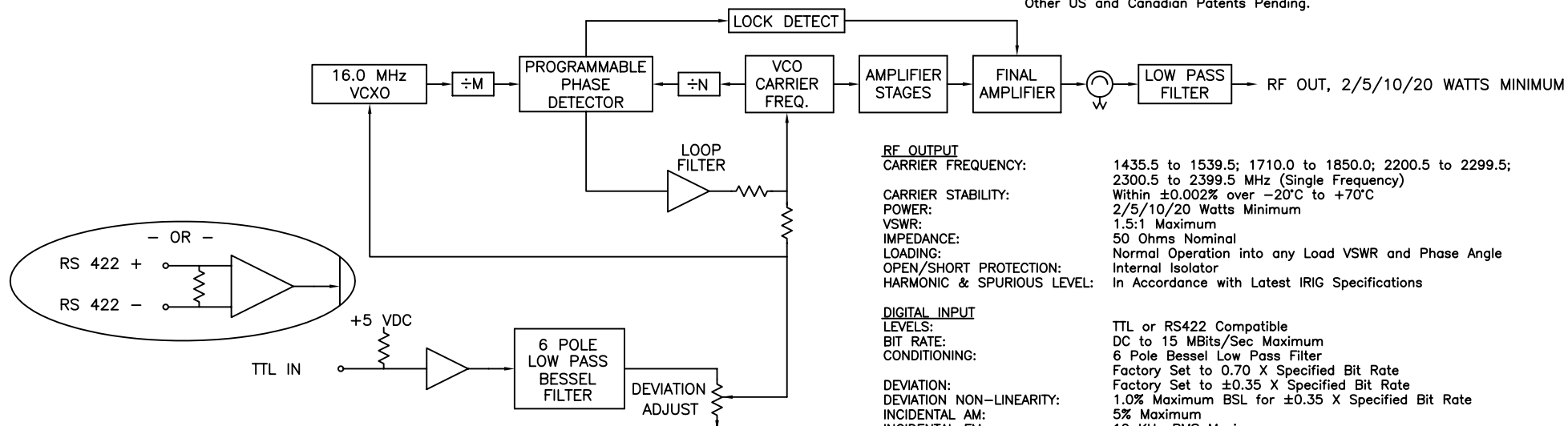
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 2/5-UHE/5/10/20 WATTS SINGLE FREQUENCY, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EDT-11DEA SERIES		

Digital Transmitter Model EDT-11DED Series

Standard or Ultra High Efficiency 11 Cubic Inches 2, 5, 10 or 20 Watts

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 OUTPUT
 CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 2/5/10/20 Watts Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 Ohms Nominal
 LOADING: Normal Operation into any Load VSWR and Phase Angle
 OPEN/SHORT PROTECTION: Internal Isolator
 HARMONIC & SPURIOUS LEVEL: In Accordance with Latest IRIG Specifications

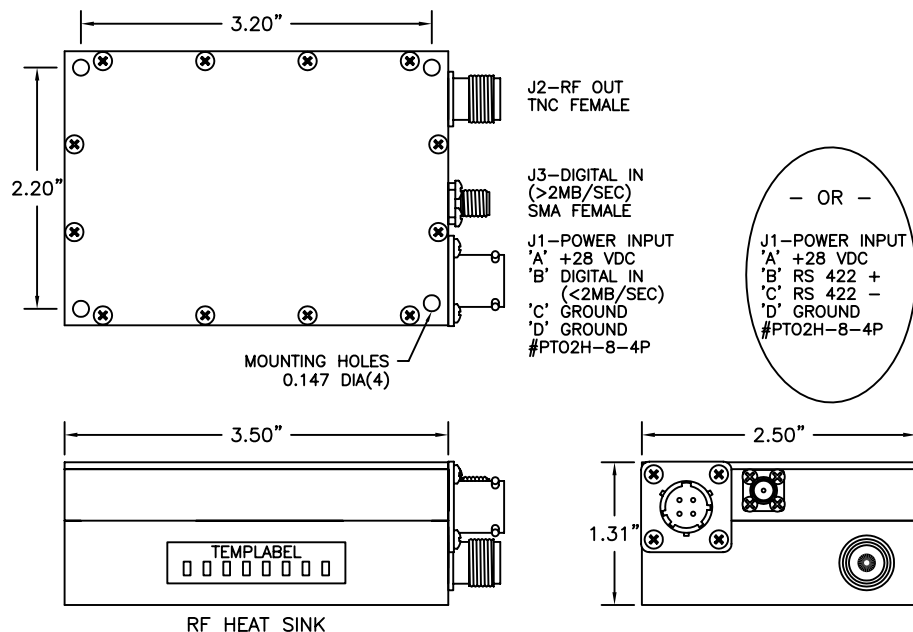
DIGITAL INPUT
 LEVELS: TTL or RS422 Compatible
 BIT RATE: DC to 15 MBits/Sec Maximum
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 DEVIATION: 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: TTL: 10 KOhms to +5 Vdc
 RS422: 120 Ohms Differential

POWER REQUIREMENTS
 INPUT VOLTAGE: +28 ± 4 VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

Power	Current
2 Watts	650 Milliamps
5 Watts	750 Milliamps Ultra High Efficiency
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

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: 14 oz. Maximum



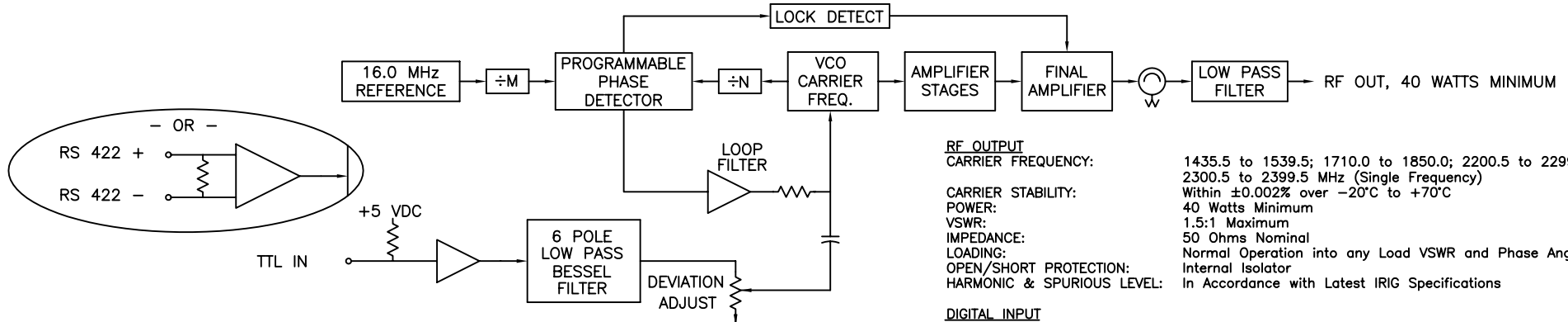
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		DIGITAL TRANSMITTER, 2/5-UHE/5/10/20 WATTS SINGLE FREQUENCY, DC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EDT-11DED SERIES 

Digital Transmitter Model EDT-36DEA Series

36 Cubic Inches 40 Watts

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 OUTPUT

CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)
CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
POWER: 40 Watts Minimum
VSWR: 1.5:1 Maximum
IMPEDANCE: 50 Ohms Nominal
LOADING: Normal Operation into any Load VSWR and Phase Angle
OPEN/SHORT PROTECTION: Internal Isolator
HARMONIC & SPURIOUS LEVEL: In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS: TTL or RS422 Compatible
BIT RATE: 100 Bits/Sec to 15 MBits/Sec Maximum
CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
DEVIATION: 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
DEVIATION NON-LINEARITY: 5% Maximum
INCIDENTAL AM: 10 KHz RMS Maximum
INCIDENTAL FM: TTL: 10 KOhms to +5 VDC
INPUT IMPEDANCE: RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE: +28 ± 4 VDC: Reverse Polarity Protected
INPUT CURRENT (MAXIMUM):

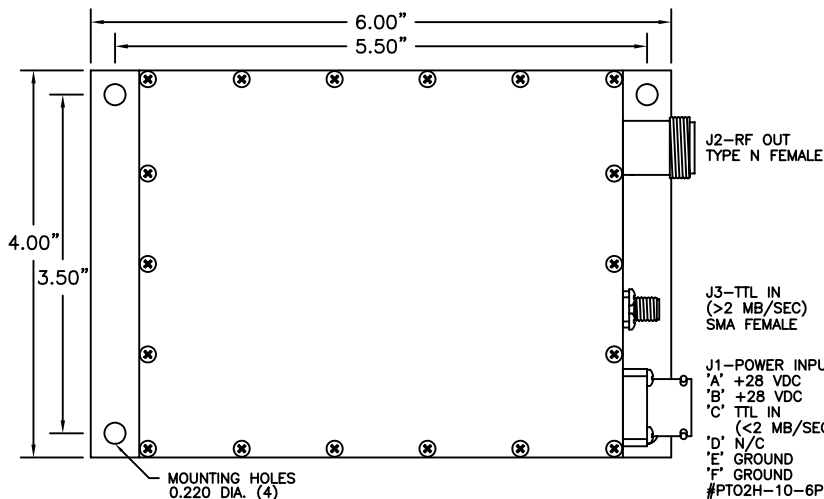
Band	Current
1435.5 to 1539.5 MHz	7.5 A
1710.0 to 1850.0 MHz	7.5 A
2200.5 to 2299.5 MHz	8.0 A
2300.5 to 2399.5 MHz	8.0 A

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: 28 oz. Maximum



OR
 J1-POWER INPUT
 A' +28 VDC
 B' +28 VDC
 C' RS422+
 D' RS422-
 E' GROUND
 F' GROUND
 #PT02H-10-6P

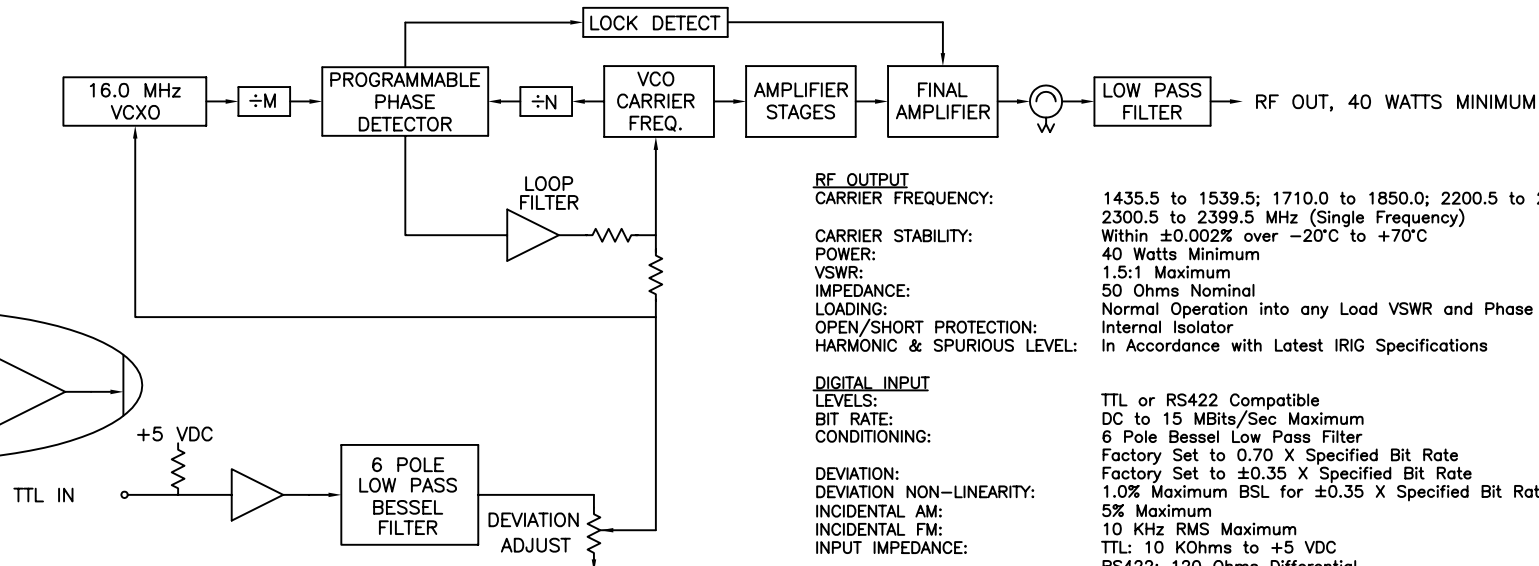
DATE	06 03 08	EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		DIGITAL TRANSMITTER, 40 WATTS SINGLE FREQUENCY, AC COUPLED 1435.0 TO 2399.0 MHZ (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EDT-36DEA SERIES

Digital Transmitter Model EDT-36DED Series

36 Cubic Inches 40 Watts

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 OUTPUT

CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz (Single Frequency)
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 40 Watts Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 Ohms Nominal
 LOADING: Normal Operation into any Load VSWR and Phase Angle
 OPEN/SHORT PROTECTION: Internal Isolator
 HARMONIC & SPURIOUS LEVEL: In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS: TTL or RS422 Compatible
 BIT RATE: DC to 15 MBits/Sec Maximum
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 DEVIATION: 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 DEVIATION NON-LINEARITY: 5% Maximum
 INCIDENTAL AM: 10 KHz RMS Maximum
 INCIDENTAL FM: TTL: 10 KOhms to +5 VDC
 INPUT IMPEDANCE: RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE: $+28 \pm 4$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

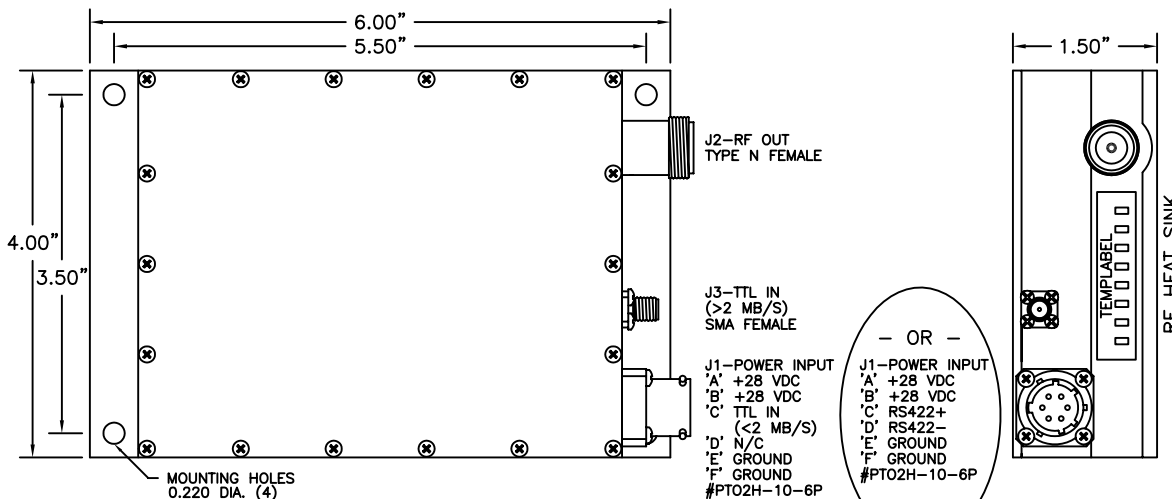
Band	Current
1435.5 to 1539.5 MHz	7.5 A
1710.0 to 1850.0 MHz	7.5 A
2200.5 to 2299.5 MHz	8.0 A
2300.5 to 2399.5 MHz	8.0 A

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: 28 oz. Maximum



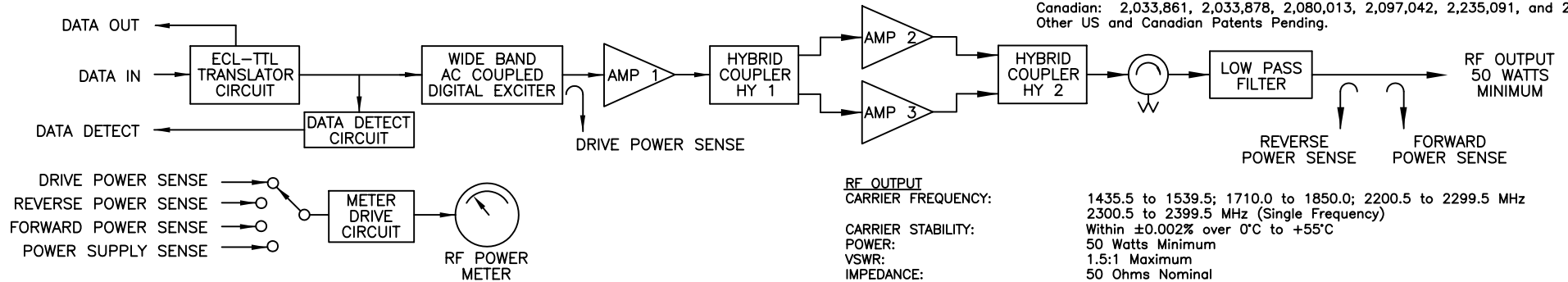
DATE	06 03 08	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 40 WATTS SINGLE FREQUENCY, DC COUPLED 1435.5 TO 2399.5 MHz (4 BANDS)
MODEL NO. EDT-36DED SERIES		

Digital Transmitter Model EDT-7RDEA Series

7 Inch Rack Mount 50 Watts

AC Coupled Single Frequency 115 VAC

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 OUTPUT
 CARRIER FREQUENCY:
 CARRIER STABILITY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2299.5 MHz
 2300.5 to 2399.5 MHz (Single Frequency)
 Within $\pm 0.002\%$ over 0°C to +55°C
 50 Watts Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:
 BIT RATE:
 CONDITIONING:
 DEVIATION:
 DEVIATION NON-LINEARITY:
 INCIDENTAL AM:
 INCIDENTAL FM:
 INPUT IMPEDANCE:

ECL 10K Series Compatible
 100 Bits/Sec to 15 MBits/Sec Maximum
 6 Pole Bessel Low Pass Filter
 Factory Set at 0.70 X Bit Rate
 Factory Set to ± 0.35 X Bit Rate
 1.0% Maximum BSL for ± 0.35 X Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 ECL 10K Series Compatible

ENVIRONMENTAL SPECIFICATIONS:

TEMPERATURE:
 VIBRATION:
 SHOCK:
 FUNGUS:
 HUMIDITY:
 STORAGE LIFE:

0°C to +55°C
 IAW MIL-STD-167A, Type 1
 1/2 Sine, 8 G's Pk, 15 mS, 3 Axes
 All Exposed Surfaces are of Fungus Inert Material
 IAW MIL-E-16400
 Three Years Minimum Without Degradation

POWER REQUIREMENTS

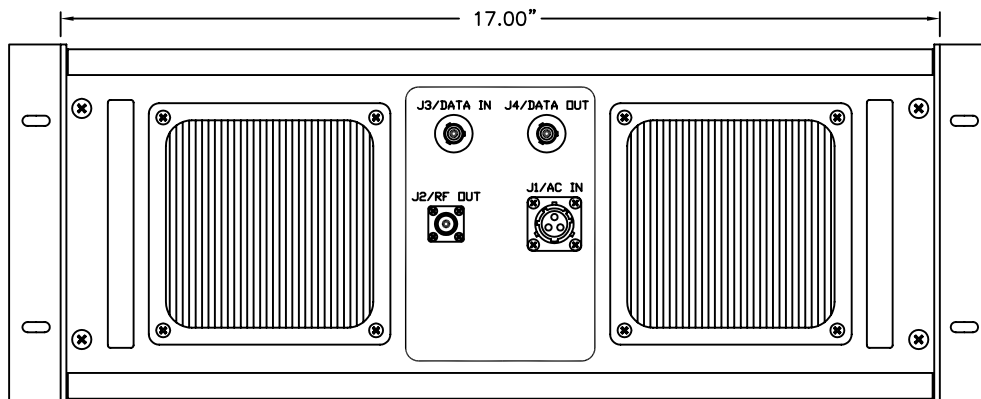
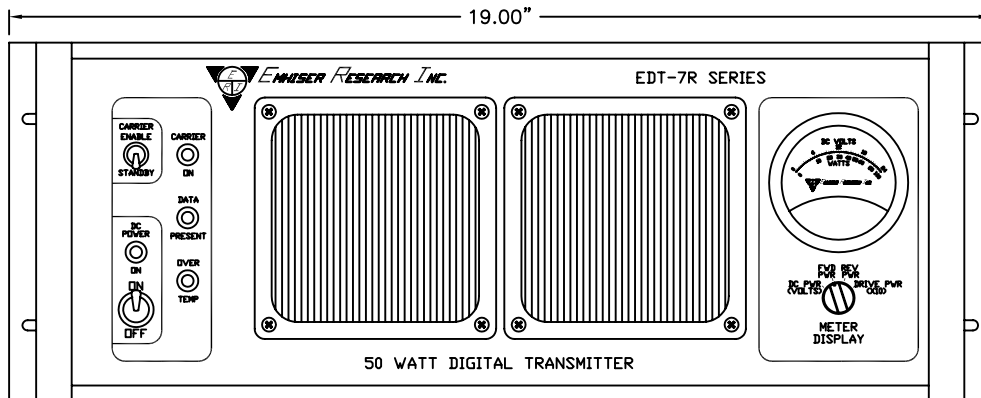
INPUT VOLTAGE:
 INPUT CURRENT:

115 VAC $\pm 10\%$, 47 to 440 Hz
 6 Amps Maximum

PHYSICAL CHARACTERISTICS

DIMENSIONS:
 WEIGHT:
 COOLING:
 CONNECTORS:

Per Outline Drawing
 50 lbs. Maximum
 4 Internal Fans, Thermal Shutdown at Greater than +55°C
 Power - PT02CE 12-3P; Data In - Trompeter Twinax TRB Series
 RF Out - TNC Female; Data Out - Trompeter Twinax TRB Series



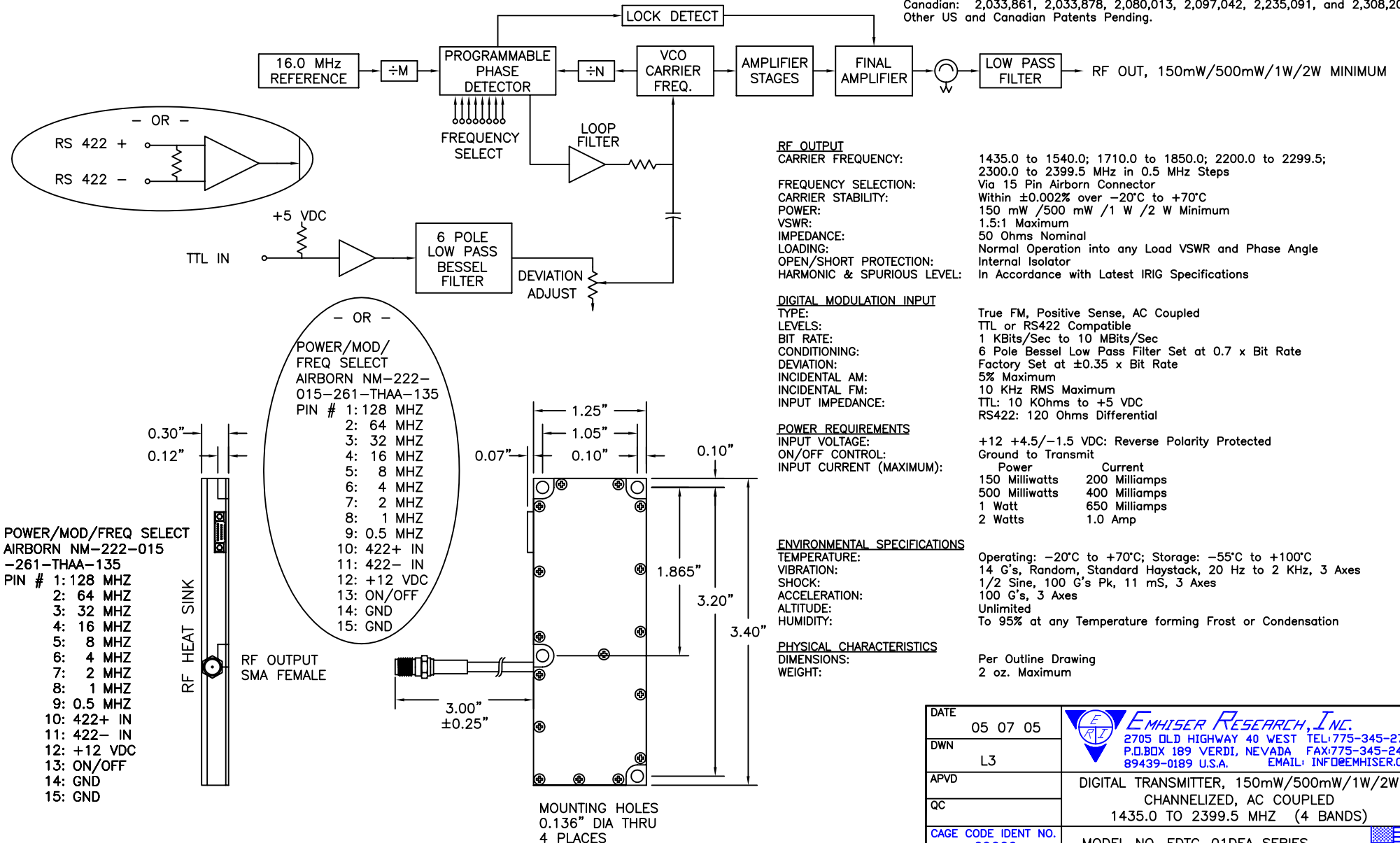
DATE	05 06 24	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN		
APVD		
QC		DIGITAL TRANSMITTER, 50 WATTS SINGLE FREQUENCY, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EDT-7RDEA SERIES

Digital Transmitter Model EDTC-01DEA Series

1.3 Cubic Inches 150mW, 500mW, 1 Watt, or 2 Watts

AC Coupled Channelized 12 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 OUTPUT

CARRIER FREQUENCY:

FREQUENCY SELECTION:

CARRIER STABILITY:

POWER:

VSWR:

IMPEDANCE:

LOADING:

OPEN/SHORT PROTECTION:

HARMONIC & SPURIOUS LEVEL:

1435.0 to 1540.0; 1710.0 to 1850.0; 2200.0 to 2299.5;
 2300.0 to 2399.5 MHz in 0.5 MHz Steps
 Via 15 Pin Airborn Connector
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 150 mW / 500 mW / 1 W / 2 W Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL MODULATION INPUT

TYPE:

LEVELS:

BIT RATE:

CONDITIONING:

DEVIATION:

INCIDENTAL AM:

INCIDENTAL FM:

INPUT IMPEDANCE:

True FM, Positive Sense, AC Coupled
 TTL or RS422 Compatible
 1 KBits/Sec to 10 MBits/Sec
 6 Pole Bessel Low Pass Filter Set at $0.7 \times$ Bit Rate
 Factory Set at $\pm 0.35 \times$ Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:

ON/OFF CONTROL:

INPUT CURRENT (MAXIMUM):

+12 +4.5/-1.5 VDC: Reverse Polarity Protected
 Ground to Transmit

Power	Current
150 Milliwatts	200 Milliamps
500 Milliwatts	400 Milliamps
1 Watt	650 Milliamps
2 Watts	1.0 Amp

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE:

VIBRATION:

SHOCK:

ACCELERATION:

ALTITUDE:

HUMIDITY:

Operating: -20°C to $+70^{\circ}\text{C}$; Storage: -55°C to $+100^{\circ}\text{C}$
 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
 2 oz. Maximum

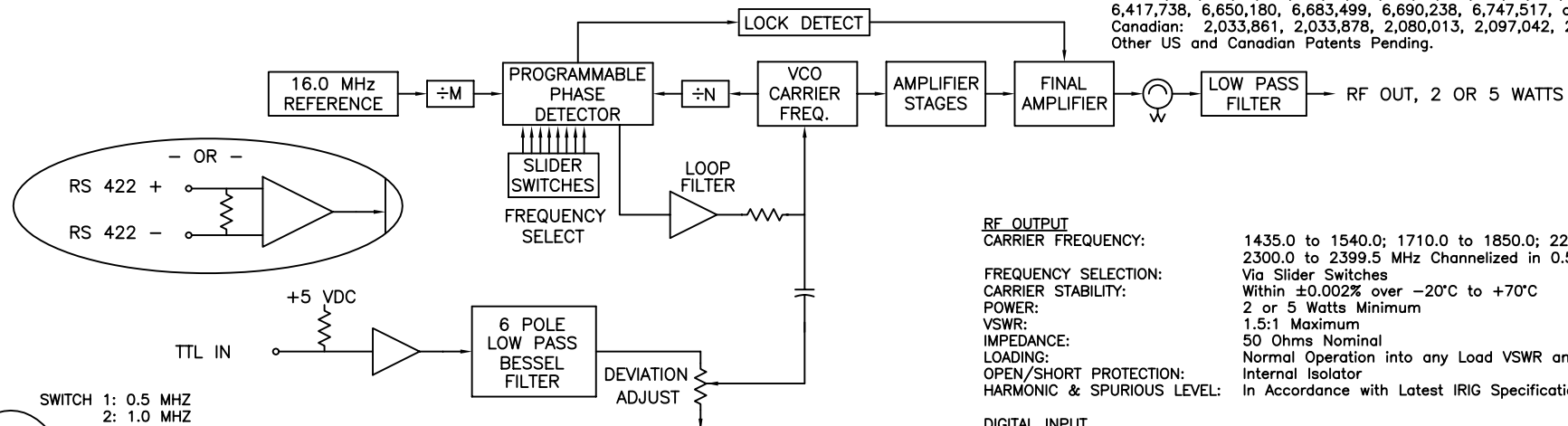
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		DIGITAL TRANSMITTER, 150mW/500mW/1W/2W CHANNELIZED, AC COUPLED 1435.0 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EDTC-01DEA SERIES		

Digital Transmitter Model EDTC-L3DEA Series

2.5 Cubic Inches 2 or 5 Watts

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 OUTPUT

CARRIER FREQUENCY:

1435.0 to 1540.0; 1710.0 to 1850.0; 2200.0 to 2299.5;
 2300.0 to 2399.5 MHz Channelized in 0.5 MHz Steps

FREQUENCY SELECTION:

Via Slider Switches

CARRIER STABILITY:

Within ±0.002% over -20°C to +70°C

POWER:

2 or 5 Watts Minimum

VSWR:

1.5:1 Maximum

IMPEDANCE:

50 Ohms Nominal

LOADING:

Normal Operation into any Load VSWR and Phase Angle

OPEN/SHORT PROTECTION:

Internal Isolator

HARMONIC & SPURIOUS LEVEL:

In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:

TTL or RS422 Compatible

BIT RATE:

100 Bits/Sec to 15 MBits/Sec Maximum

CONDITIONING:

6 Pole Bessel Low Pass Filter

DEVIATION:

Factory Set to 0.70 X Specified Bit Rate

DEVIATION NON-LINEARITY:

Factory Set to ±0.35 X Specified Bit Rate

INCIDENTAL AM:

1.0% Maximum BSL for ±0.35 X Specified Bit Rate

INCIDENTAL FM:

5% Maximum

INPUT IMPEDANCE:

10 KHz RMS Maximum

TTL: 10 KOhms to +5 VDC

RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:

+28 ±4 VDC: Reverse Polarity Protected

INPUT CURRENT (MAXIMUM):

Power Current

2 Watts 550 Milliamps

5 Watts 1.2 Amps

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE:

Operating: -20°C to +70°C; Storage: -54°C to +125°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

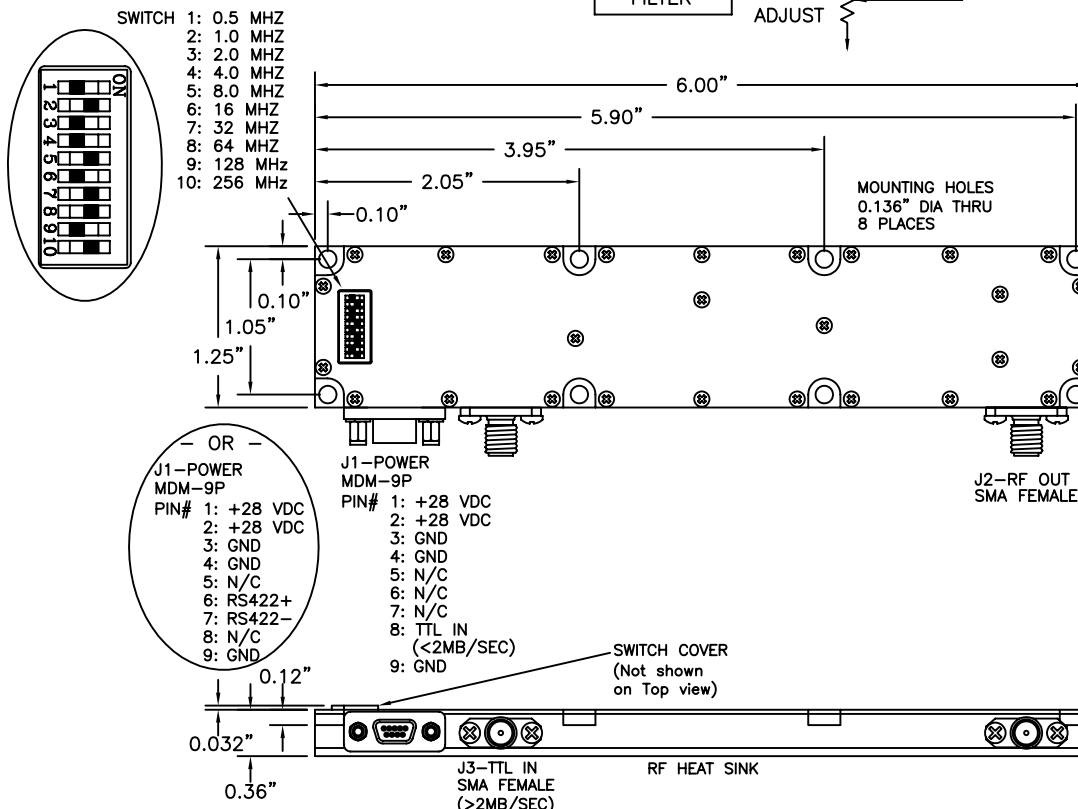
PHYSICAL CHARACTERISTICS

DIMENSIONS:

Per Outline Drawing

WEIGHT:

2.7 oz. Maximum



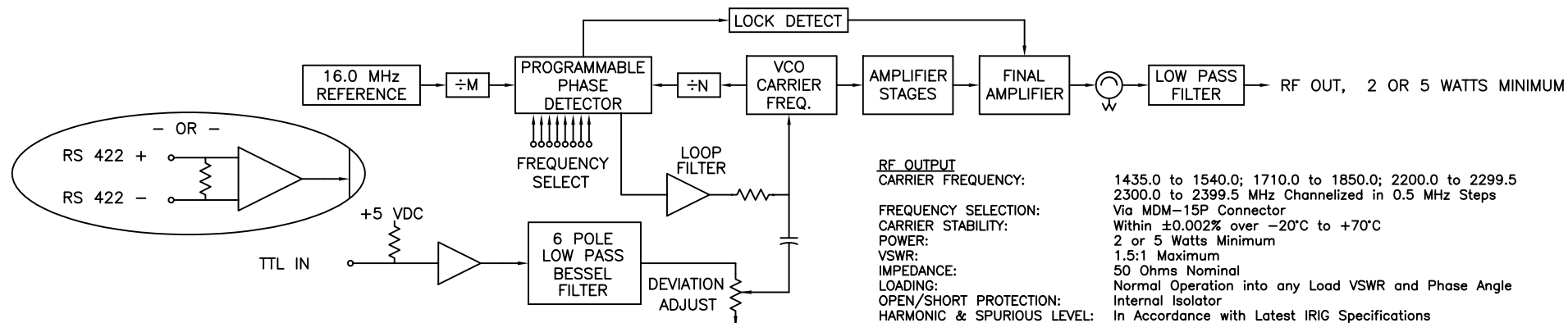
DATE	05 07 05	EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 2 OR 5 WATTS CHANNELIZED, AC COUPLED 1435.0 TO 2399.5 MHZ (4 BANDS)
		MODEL NO. EDTC-L3DEA SERIES

Digital Transmitter Model EDTC-S3DEA Series

3.3 Cubic Inches 2 or 5 Watts

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 OUTPUT
 CARRIER FREQUENCY:
 FREQUENCY SELECTION:
 CARRIER STABILITY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1435.0 to 1540.0; 1710.0 to 1850.0; 2200.0 to 2299.5
 2300.0 to 2399.5 MHz Channelized in 0.5 MHz Steps
 Via MDM-15P Connector
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 2 or 5 Watts Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:
 BIT RATE:
 CONDITIONING:
 DEVIATION:
 DEVIATION NON-LINEARITY:
 INCIDENTAL AM:
 INCIDENTAL FM:
 INPUT IMPEDANCE:

TTL or RS422 Compatible
 100 Bits/Sec to 15 MBits/Sec Maximum
 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected
 Power Current
 2 Watts 550 Milliamps
 5 Watts 1.2 Amps

ENVIRONMENTAL SPECIFICATIONS

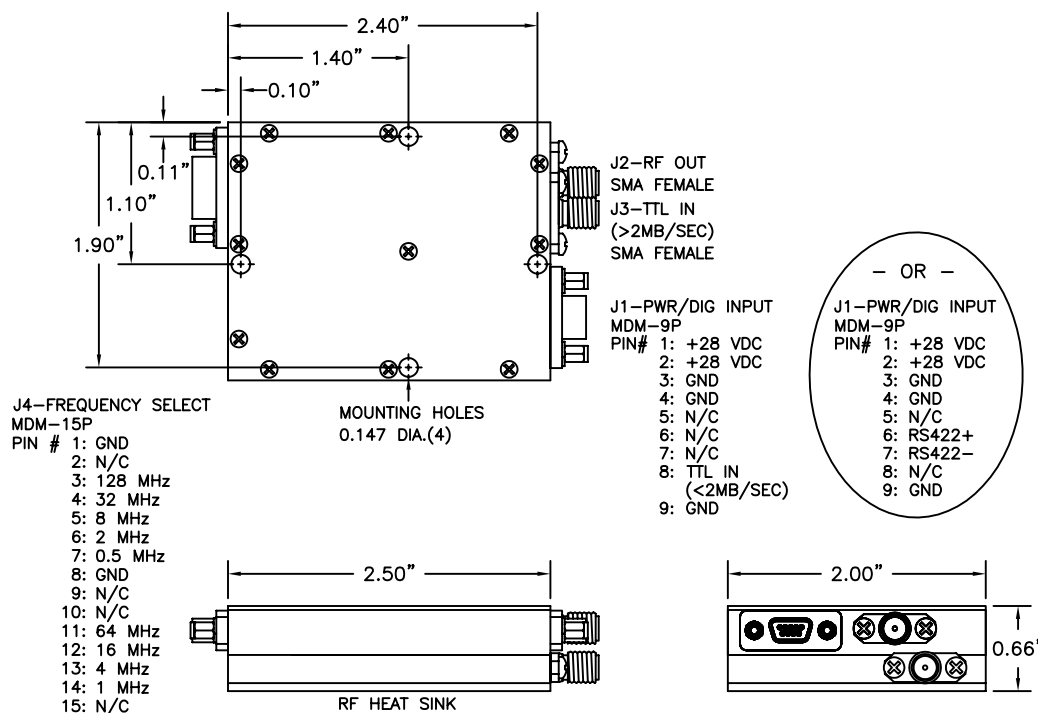
TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

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
 3.6 oz. Maximum



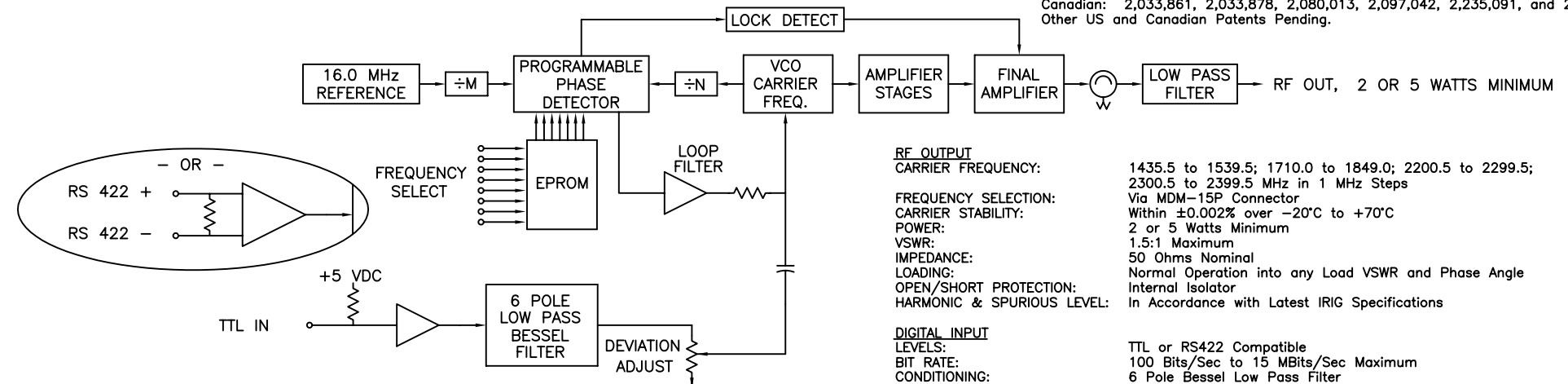
DATE	05 06 24	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		DIGITAL TRANSMITTER, 2 OR 5 WATTS CHANNELIZED, AC COUPLED 1435.0 TO 2399.5 MHz (4 BANDS) MODEL NO. EDTC-S3DEA SERIES

Digital Transmitter Model EDTC-05DEA Series

5 Cubic Inches 2 or 5 Watts

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 OUTPUT
 CARRIER FREQUENCY:
 FREQUENCY SELECTION:
 CARRIER STABILITY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz in 1 MHz Steps
 Via MDM-15P Connector
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 2 or 5 Watts Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT
 LEVELS:
 BIT RATE:
 CONDITIONING:

TTL or RS422 Compatible
 100 Bits/Sec to 15 MBits/Sec Maximum
 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS
 INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected

Power	Current
2 Watts	650 Milliamps
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

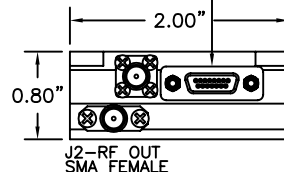
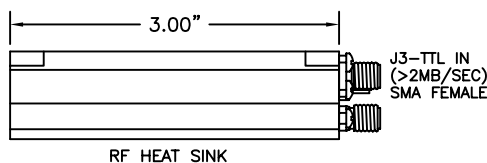
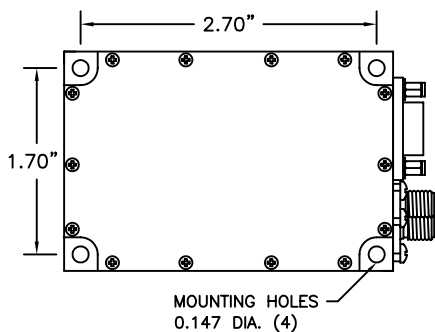
ENVIRONMENTAL SPECIFICATIONS

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
 5.5 oz. Maximum



J1-PWR/DIGITAL IN/FREQ SELECT
 MDM-15P
 PIN #

1:	BCD 100/GND
2:	BCD 80
3:	BCD 40
4:	BCD 20
5:	BCD 10
6:	BCD 8
7:	BCD 4
8:	BCD 2
9:	BCD 1
10:	RS 422+
11:	+28 VDC
12:	+28 VDC
13:	RS 422-
14:	GND
15:	GND

J1-PWR/DIGITAL IN/FREQ SELECT
 MDM-15P
 PIN #

1:	BCD 100/GND
2:	BCD 80
3:	BCD 40
4:	BCD 20
5:	BCD 10
6:	BCD 8
7:	BCD 4
8:	BCD 2
9:	BCD 1
10:	TTL IN (<2MB/SEC)
11:	+28 VDC
12:	+28 VDC
13:	N/C
14:	GND
15:	GND

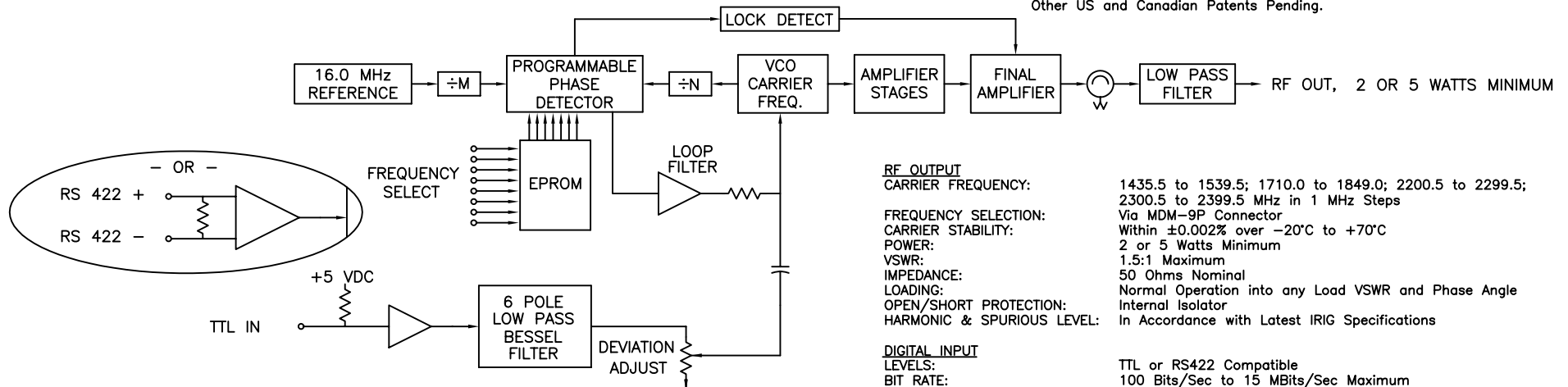
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		DIGITAL TRANSMITTER, 2 OR 5 WATTS CHANNELIZED, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
		MODEL NO. EDTC-05DEA SERIES

Digital Transmitter Model EDTC-06DEA Series

6 Cubic Inches 2 or 5 Watts

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.



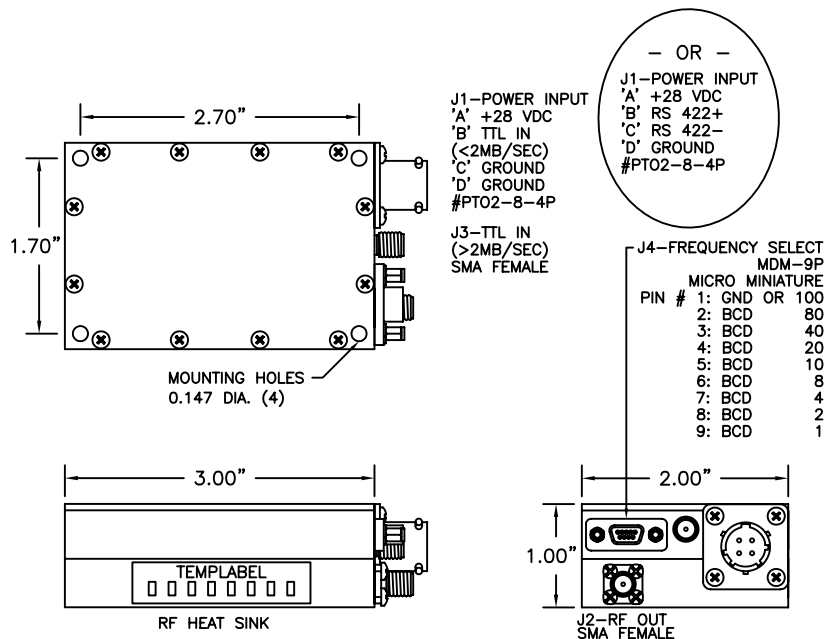
RF OUTPUT
 CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz in 1 MHz Steps
 Via MDM-9P Connector
 FREQUENCY SELECTION: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 CARRIER STABILITY: 2 or 5 Watts Minimum
 POWER: 1.5:1 Maximum
 VSWR: 50 Ohms Nominal
 IMPEDANCE: Normal Operation into any Load VSWR and Phase Angle
 LOADING: Internal Isolator
 OPEN/SHORT PROTECTION: In Accordance with Latest IRIG Specifications
 HARMONIC & SPURIOUS LEVEL:

DIGITAL INPUT
 LEVELS: TTL or RS422 Compatible
 BIT RATE: 100 Bits/Sec to 15 MBits/Sec Maximum
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 Factory Set to ± 0.35 X Specified Bit Rate
 DEVIATION: 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 DEVIATION NON-LINEARITY: 5% Maximum
 INCIDENTAL AM: 10 KHz RMS Maximum
 INCIDENTAL FM: TTL: 10 KOhms to +5 VDC
 INPUT IMPEDANCE: RS422: 120 Ohms Differential

POWER REQUIREMENTS
 INPUT VOLTAGE: +28 ± 4 VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):
 Power Current
 2 Watts 650 Milliamps
 5 Watts 1.2 Amps

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: 9 oz. Maximum



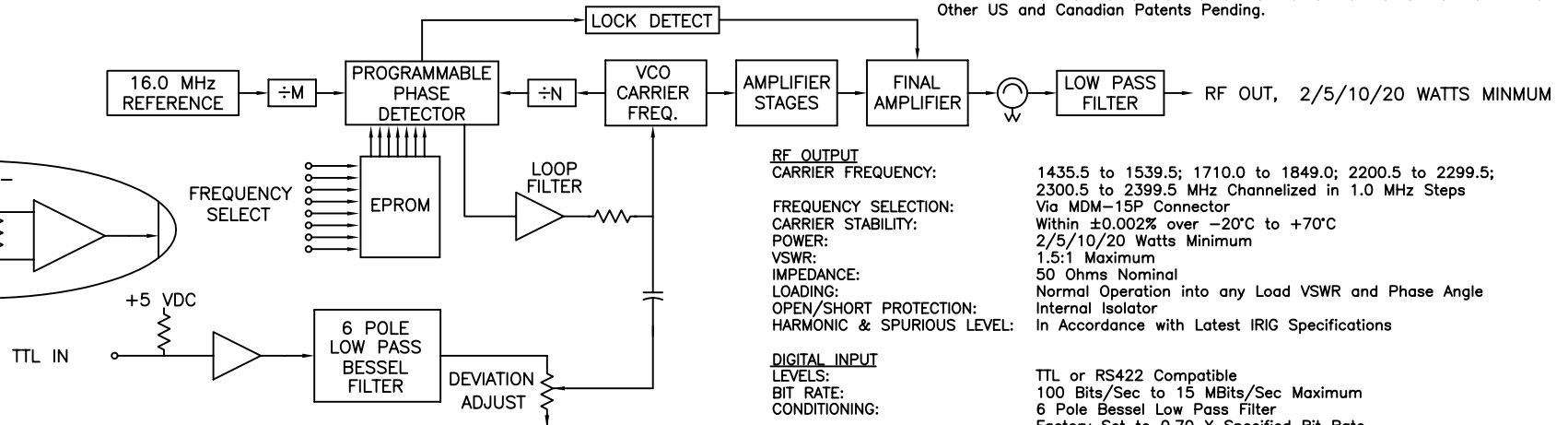
DATE	05 07 05	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 2 OR 5 WATTS CHANNELIZED, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
		MODEL NO. EDTC-06DEA SERIES 

Digital Transmitter Model EDTC-09DEA Series

Standard or Ultra High Efficiency 9 Cubic Inches 2, 5, 10, or 20 Watts

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 OUTPUT

CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz Channelized in 1.0 MHz Steps
 Via MDM-15P Connector
 FREQUENCY SELECTION: Within $\pm 0.002\%$ over -20°C to $+70^\circ\text{C}$
 POWER: 2/5/10/20 Watts Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 Ohms Nominal
 LOADING: Normal Operation into any Load VSWR and Phase Angle
 OPEN/SHORT PROTECTION: Internal Isolator
 HARMONIC & SPURIOUS LEVEL: In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS: TTL or RS422 Compatible
 BIT RATE: 100 Bits/Sec to 15 MBits/Sec Maximum
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 DEVIATION: Factory Set to ± 0.35 X Specified Bit Rate
 DEVIATION NON-LINEARITY: 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: TTL: 10 KOhms to ± 5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

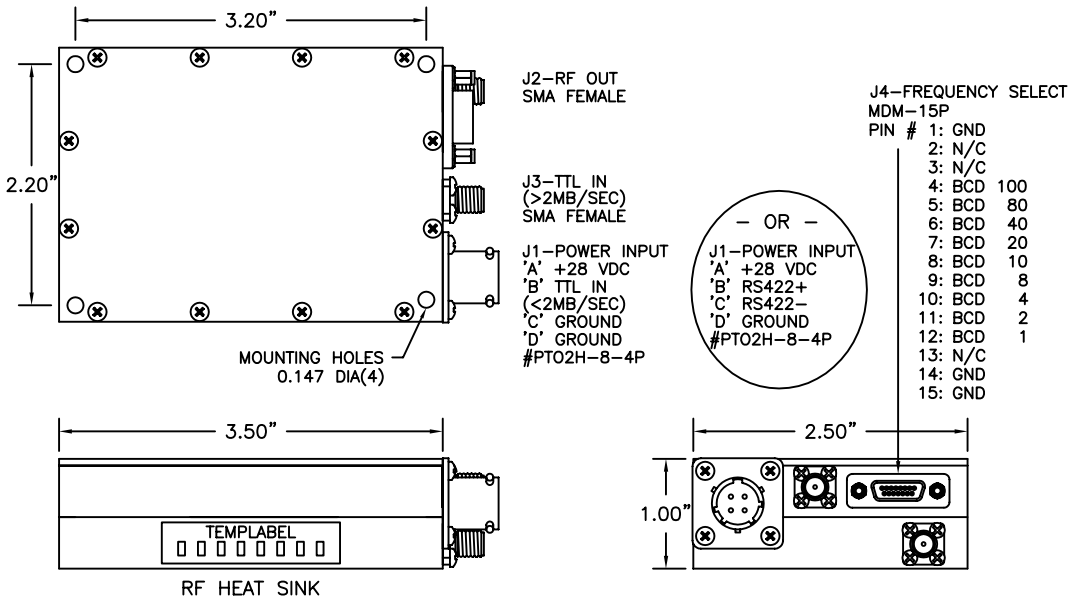
Power	Current
2 Watts	650 Milliamps
5 Watts	800 Milliamps Ultra High Efficiency
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

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:
 WEIGHT: Per Outline Drawing
 12 oz. Maximum



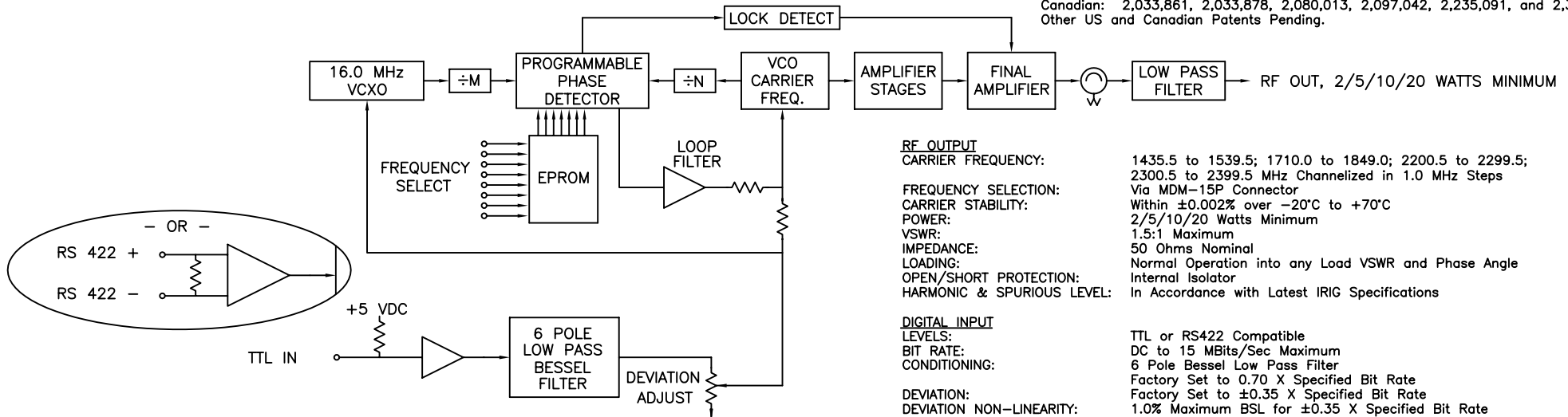
DATE	05 07 08	EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		DIGITAL TRANSMITTER, 2/5-UHE/5/10/20 WATTS CHANNELIZED, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EDTC-09DEA SERIES

Digital Transmitter Model EDTC-09DED Series

Standard or Ultra High Efficiency 9 Cubic Inches 2, 5, 10, or 20 Watts

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 OUTPUT

CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz Channelized in 1.0 MHz Steps
 FREQUENCY SELECTION: Via MDM-15P Connector
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 2/5/10/20 Watts Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 Ohms Nominal
 LOADING: Normal Operation into any Load VSWR and Phase Angle
 OPEN/SHORT PROTECTION: Internal Isolator
 HARMONIC & SPURIOUS LEVEL: In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS: TTL or RS422 Compatible
 BIT RATE: DC to 15 Mbits/Sec Maximum
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 DEVIATION: Factory Set to ± 0.35 X Specified Bit Rate
 DEVIATION NON-LINEARITY: 1.0% Maximum BSL for ± 0.35 X Specified Bit Rate
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE: +28 ± 4 VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

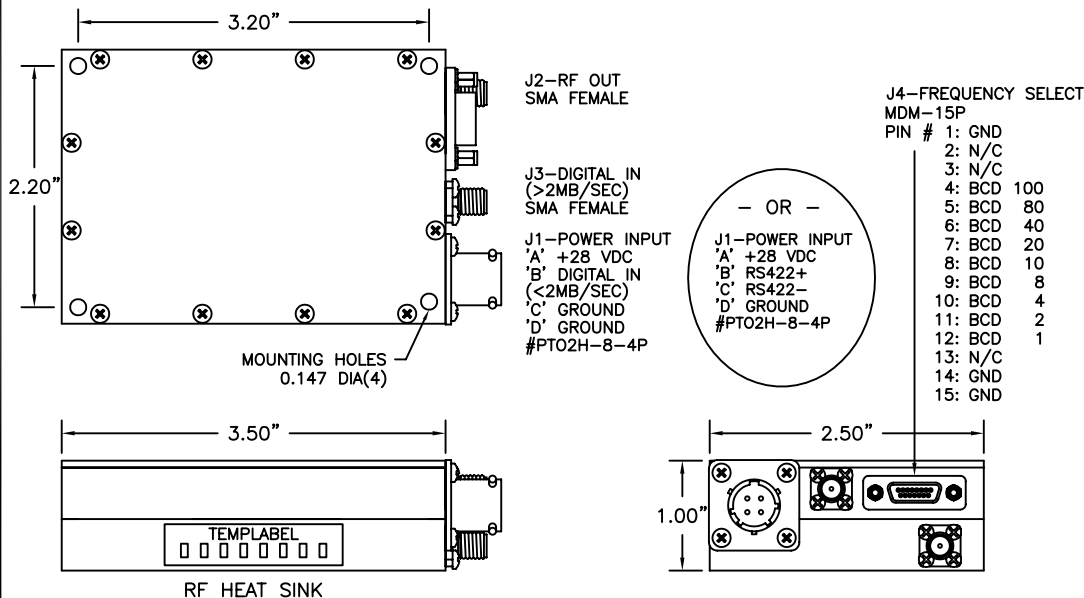
Power	Current
2 Watts	650 Milliamps
5 Watts	800 Milliamps Ultra High Efficiency
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

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: 12 oz. Maximum



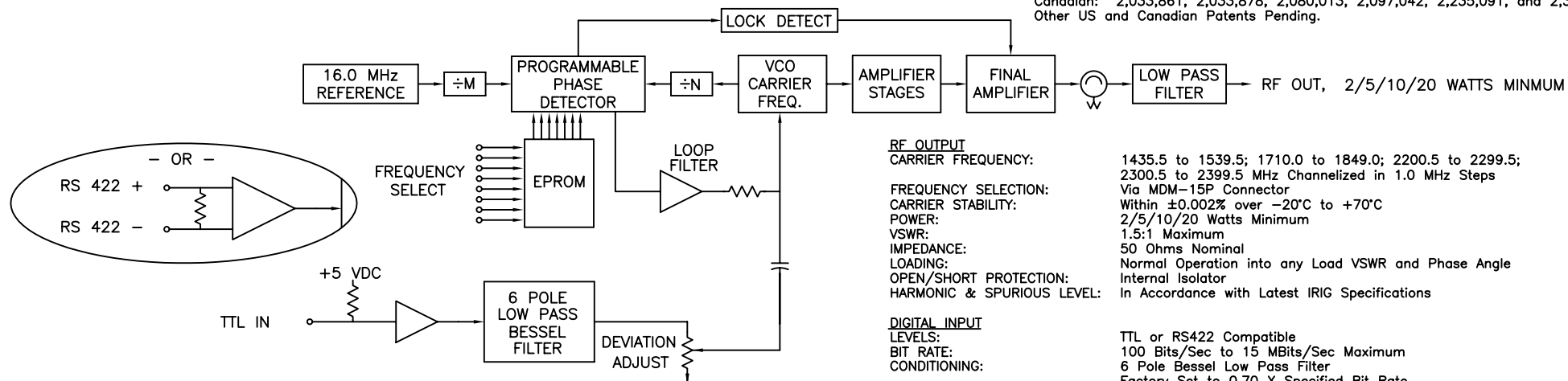
DATE	05 07 08	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		DIGITAL TRANSMITTER, 2/5-10-20 WATTS CHANNELIZED, DC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EDTC-09DED SERIES

Digital Transmitter Model EDTC-11DEA Series

Standard or Ultra High Efficiency 11 Cubic Inches 2, 5, 10 or 20 Watts

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.



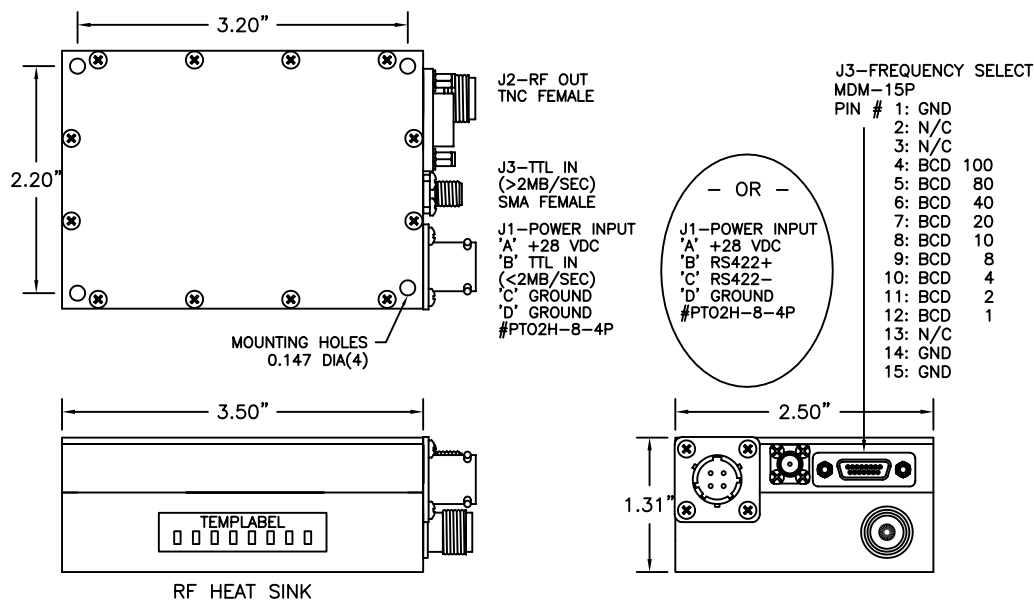
RF OUTPUT
 CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz Channelized in 1.0 MHz Steps
 Via MDM-15P Connector
 FREQUENCY SELECTION: Within ±0.002% over -20°C to +70°C
 CARRIER STABILITY: 2/5/10/20 Watts Minimum
 POWER: 1.5:1 Maximum
 VSWR: 50 Ohms Nominal
 IMPEDANCE: Normal Operation into any Load VSWR and Phase Angle
 LOADING: Internal Isolator
 OPEN/SHORT PROTECTION: In Accordance with Latest IRIG Specifications
 HARMONIC & SPURIOUS LEVEL:

DIGITAL INPUT
 LEVELS: TTL or RS422 Compatible
 BIT RATE: 100 Bits/Sec to 15 MBits/Sec Maximum
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Specified Bit Rate
 DEVIATION: Factory Set to ±0.35 X Specified Bit Rate
 DEVIATION NON-LINEARITY: 1.0% Maximum BSL for ±0.35 X Specified Bit Rate
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS
 INPUT VOLTAGE: +28 ±4 VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):
 Power Current
 2 Watts 650 Milliamps
 5 Watts 800 Milliamps Ultra High Efficiency
 5 Watts 1.2 Amps
 10Watts 2.0 Amps
 20 Watts 4.0 Amps

ENVIRONMENTAL SPECIFICATIONS
 TEMPERATURE: Operating: -20°C to +70°C; Storage: -54°C to +125°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: 14 oz. Maximum



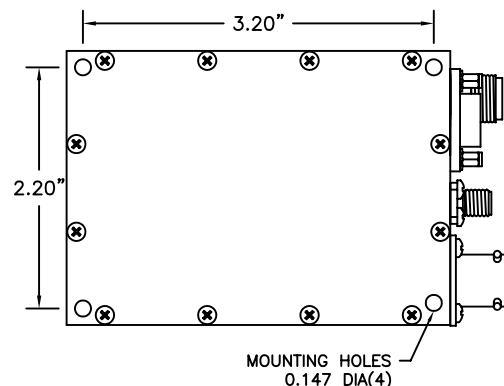
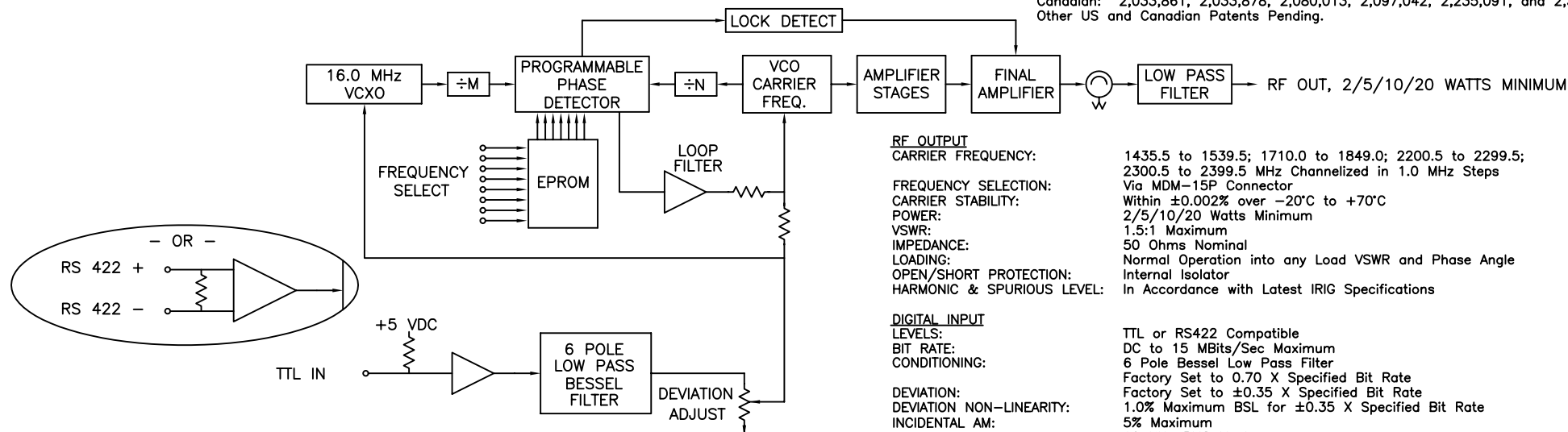
DATE	05 07 08	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		DIGITAL TRANSMITTER, 2/5-10/20 WATTS CHANNELIZED, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EDTC-11DEA SERIES		

Digital Transmitter Model EDTC-11DED Series

Standard or Ultra High Efficiency 11 Cubic Inches 2, 5, 10, or 20 Watts

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.



J2-RF OUT
TNC FEMALE

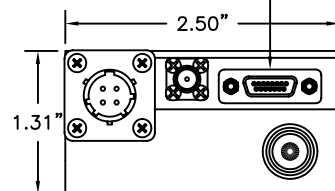
J3-DIGITAL IN
($>2\text{MB/SEC}$)
SMA FEMALE

J1-POWER INPUT
'A' +28 VDC
'B' DIGITAL IN
($<2\text{MB/SEC}$)
'C' GROUND
'D' GROUND
#PT02H-8-4P

J3-FREQUENCY SELECT
MDM-15P
PIN #

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

- OR -
 J1-POWER INPUT
'A' +28 VDC
'B' RS422+
'C' RS422-
'D' GROUND
#PT02H-8-4P



POWER REQUIREMENTS

INPUT VOLTAGE:
INPUT CURRENT (MAXIMUM):

Power	Current
2 Watts	650 Milliamps
5 Watts	800 Milliamps Ultra High Efficiency
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

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
14 oz. Maximum

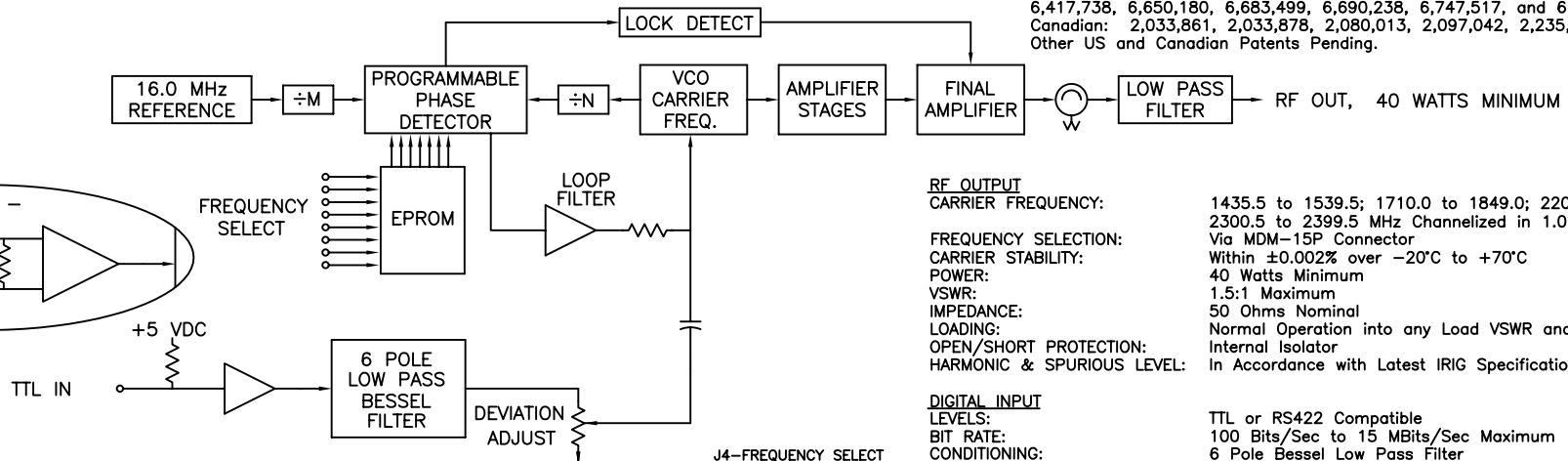
DATE	05 07 08	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		DIGITAL TRANSMITTER, 2/5-UHE/5/10/20 WATTS CHANNELIZED, DC COUPLED 1435.0 TO 2399.0 MHZ (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EDTC-11DED SERIES

Digital Transmitter Model EDTC-36DEA Series

36 Cubic Inches 40 Watts

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 OUTPUT

CARRIER FREQUENCY:

1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz Channelized in 1.0 MHz Steps

FREQUENCY SELECTION:

Via MDM-15P Connector

CARRIER STABILITY:

Within ±0.002% over -20°C to +70°C

POWER:

40 Watts Minimum

VSWR:

1.5:1 Maximum

IMPEDANCE:

50 Ohms Nominal

LOADING:

Normal Operation into any Load VSWR and Phase Angle

OPEN/SHORT PROTECTION:

Internal Isolator

HARMONIC & SPURIOUS LEVEL:

In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:

TTL or RS422 Compatible

BIT RATE:

100 Bits/Sec to 15 MBits/Sec Maximum

CONDITIONING:

6 Pole Bessel Low Pass Filter

DEVIATION:

Factory Set to 0.70 X Specified Bit Rate

DEVIATION NON-LINEARITY:

Factory Set to ±0.35 X Specified Bit Rate

INCIDENTAL AM:

1.0% Maximum BSL for ±0.35 X Specified Bit Rate

INCIDENTAL FM:

5% Maximum

INPUT IMPEDANCE:

10 KHz RMS Maximum

TTL: 10 KOhms to +5 VDC

RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:

+28 ±4 VDC: Reverse Polarity Protected

INPUT CURRENT (MAXIMUM):

Band Current

1435.0 to 1539.0 MHz 7.5 A

1710.0 to 1849.0 MHz 7.5 A

2200.0 to 2299.0 MHz 8.0 A

2300.0 to 2399.0 MHz 8.0 A

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE:

Operating: -20°C to +70°C; Storage: -54°C to +125°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

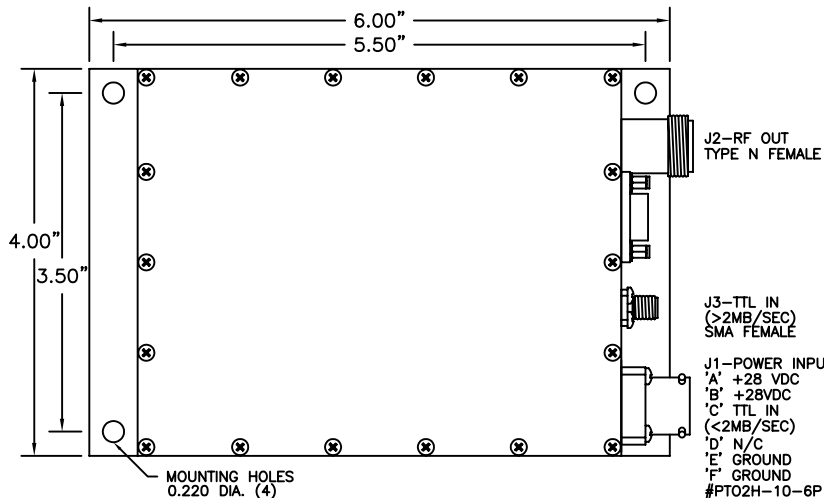
DIMENSIONS:

Per Outline Drawing

WEIGHT:

28 oz. Maximum

J4-FREQUENCY SELECT	
MDM-15P	
MICRO-MINIATURE	
PIN#	
1:	GND
2:	GND
3:	N/C
4:	GND OR 100
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:	N/C
14:	GND
15:	GND



- OR -

J1-POWER INPUT

'A' +28 VDC

'B' +28 VDC

'C' RS422+

'D' RS422-

'E' TTL IN (<2MB/SEC)

'F' N/C

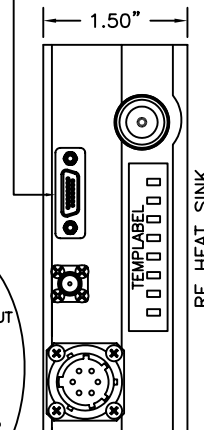
'G' GROUND

'H' GROUND

'I' GROUND

'J' GROUND

#PT02H-10-6P



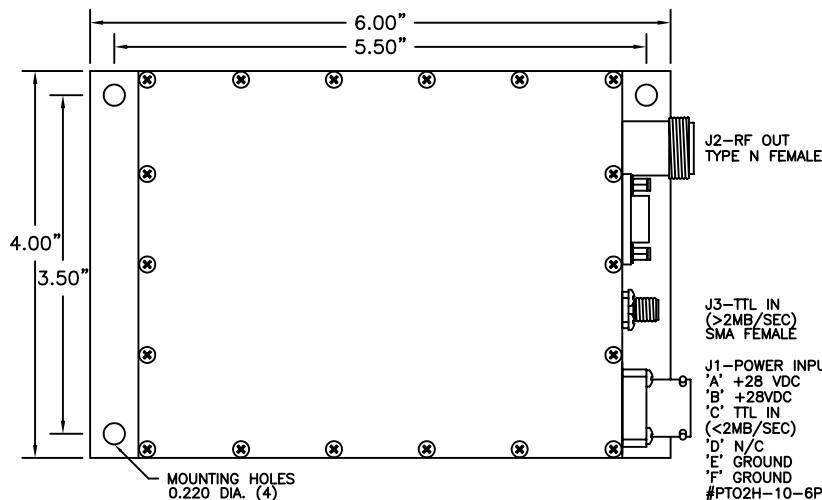
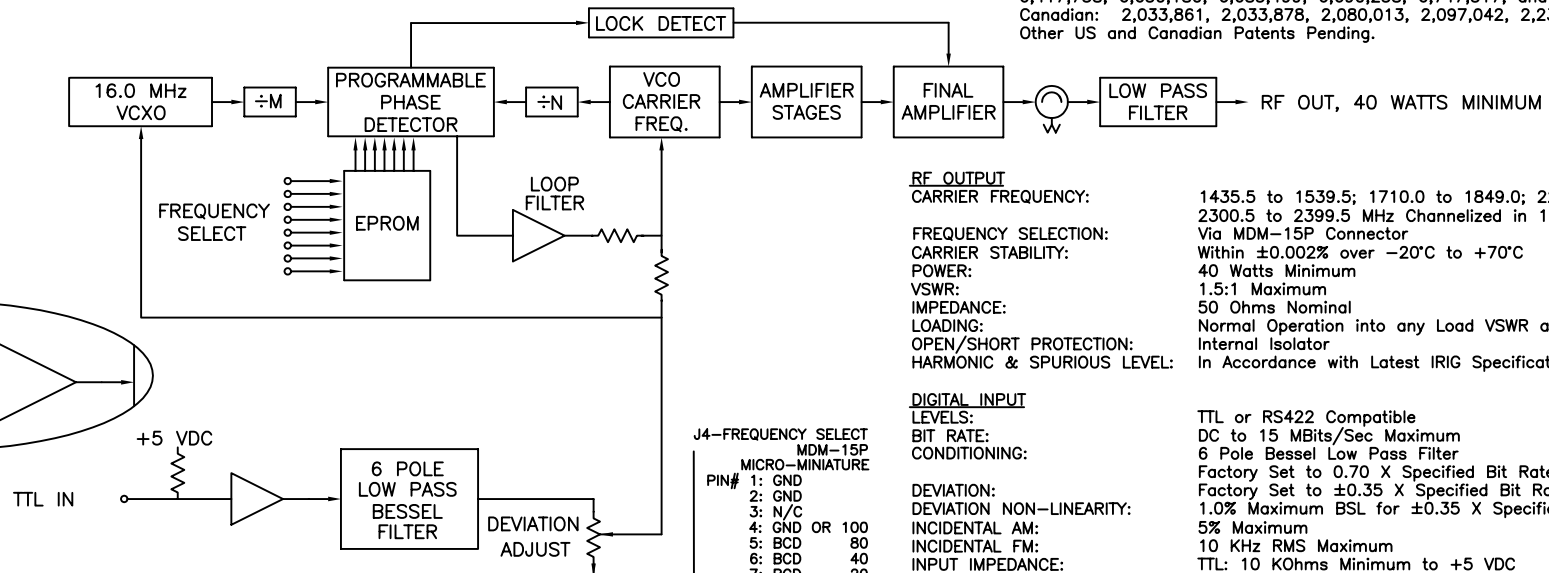
DATE	06 03 08	EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		DIGITAL TRANSMITTER, 40 WATTS CHANNELIZED, AC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EDTC-36DEA SERIES

Digital Transmitter Model EDTC-36DED Series

36 Cubic Inches 40 Watts

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.



J4-FREQUENCY SELECT MDM-15P MICRO-MINIATURE

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

J1-POWER INPUT
 'A' +28 VDC
 'B' +28 VDC
 'C' RS422+
 'D' RS422-
 'E' GROUND
 'F' GROUND
 #PT02H-10-6P

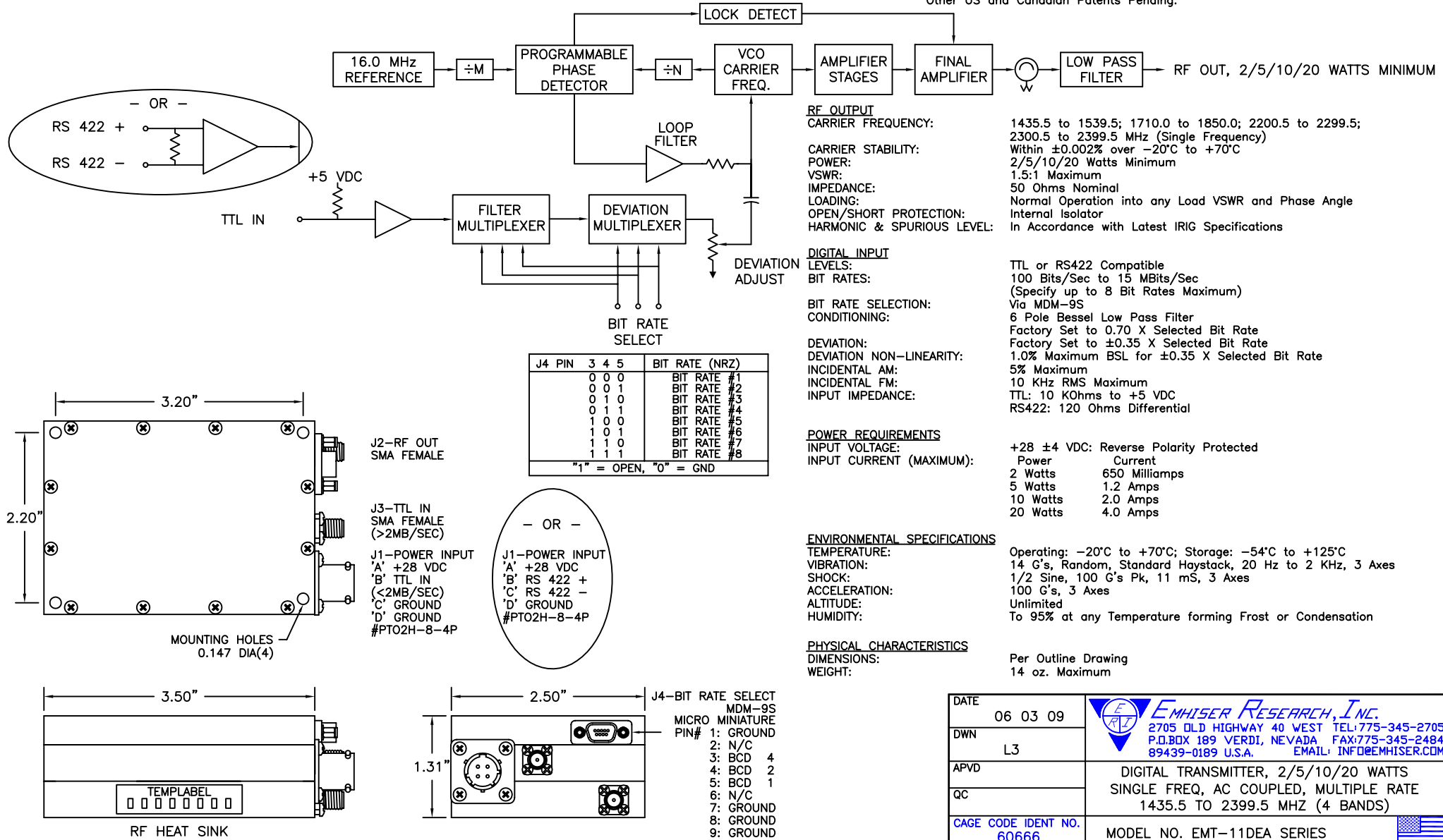
DATE	06 03 08	EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		DIGITAL TRANSMITTER, 40 WATTS CHANNELIZED, DC COUPLED 1435.5 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EDTC-36DED SERIES		

Digital Transmitter Model EMT-11DEA Series

11 Cubic Inches Multiple Bit Rate 2, 5, 10 or 20 Watts

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.

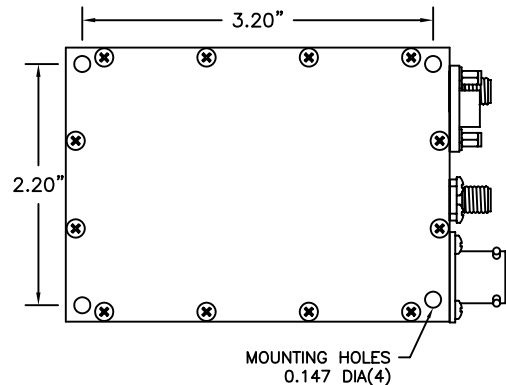
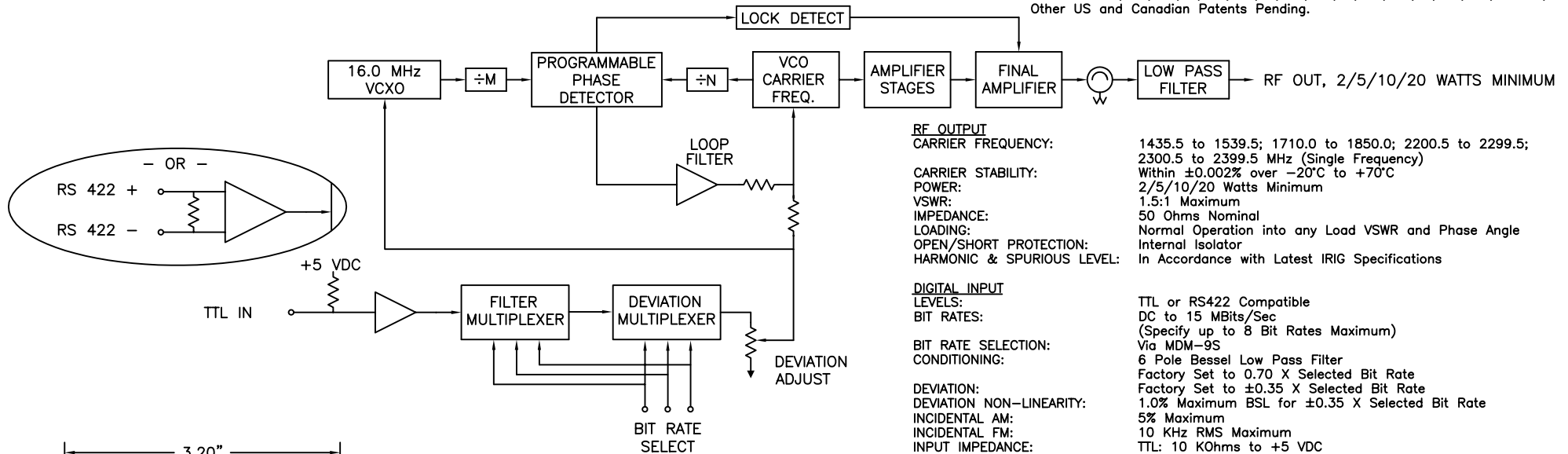


Digital Transmitter Model EMT-11DED Series

11 Cubic Inches Multiple Bit Rate 2, 5, 10 or 20 Watts

DC Coupled Single Frequency 28 VDC

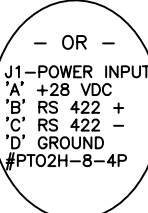
Protected by One or More of the following Patents:
 US: 5,091,706, 5,097,230, 5,311,152, 5,497,509, 5,802,462, 6,404,292, 6,411,237,
 6,417,738, 6,650,180, 6,683,499, 6,690,238, 6,747,517, and 6,771,133.
 Canadian: 2,033,861, 2,033,878, 2,080,013, 2,097,042, 2,235,091, and 2,308,209.
 Other US and Canadian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



J2-RF OUT SMA FEMALE

J3-TTL IN SMA FEMALE (>2MB/SEC)

J1-POWER INPUT
 'A' +28 VDC
 'B' TTL IN (<2MB/SEC)
 'C' GROUND
 'D' GROUND #PT02H-8-4P



J4 PIN	BIT RATE (NRZ)
3 0 0	BIT RATE #1
0 0 1	BIT RATE #2
0 1 0	BIT RATE #3
0 1 1	BIT RATE #4
1 0 0	BIT RATE #5
1 0 1	BIT RATE #6
1 1 0	BIT RATE #7
1 1 1	BIT RATE #8

*1" = OPEN, "0" = GND

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected	Power
	Current
2 Watts	650 Milliamps
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

ENVIRONMENTAL SPECIFICATIONS

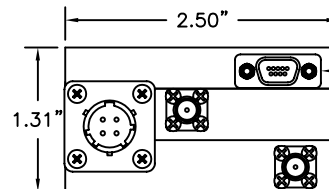
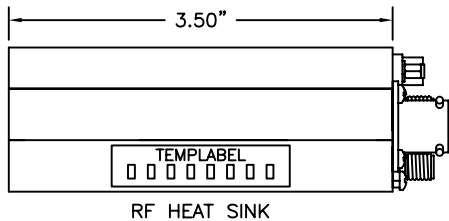
TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

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
 14 oz. Maximum



1: GROUND
 2: N/C
 3: BCD 4
 4: BCD 2
 5: BCD 1
 6: N/C
 7: GROUND
 8: GROUND
 9: GROUND

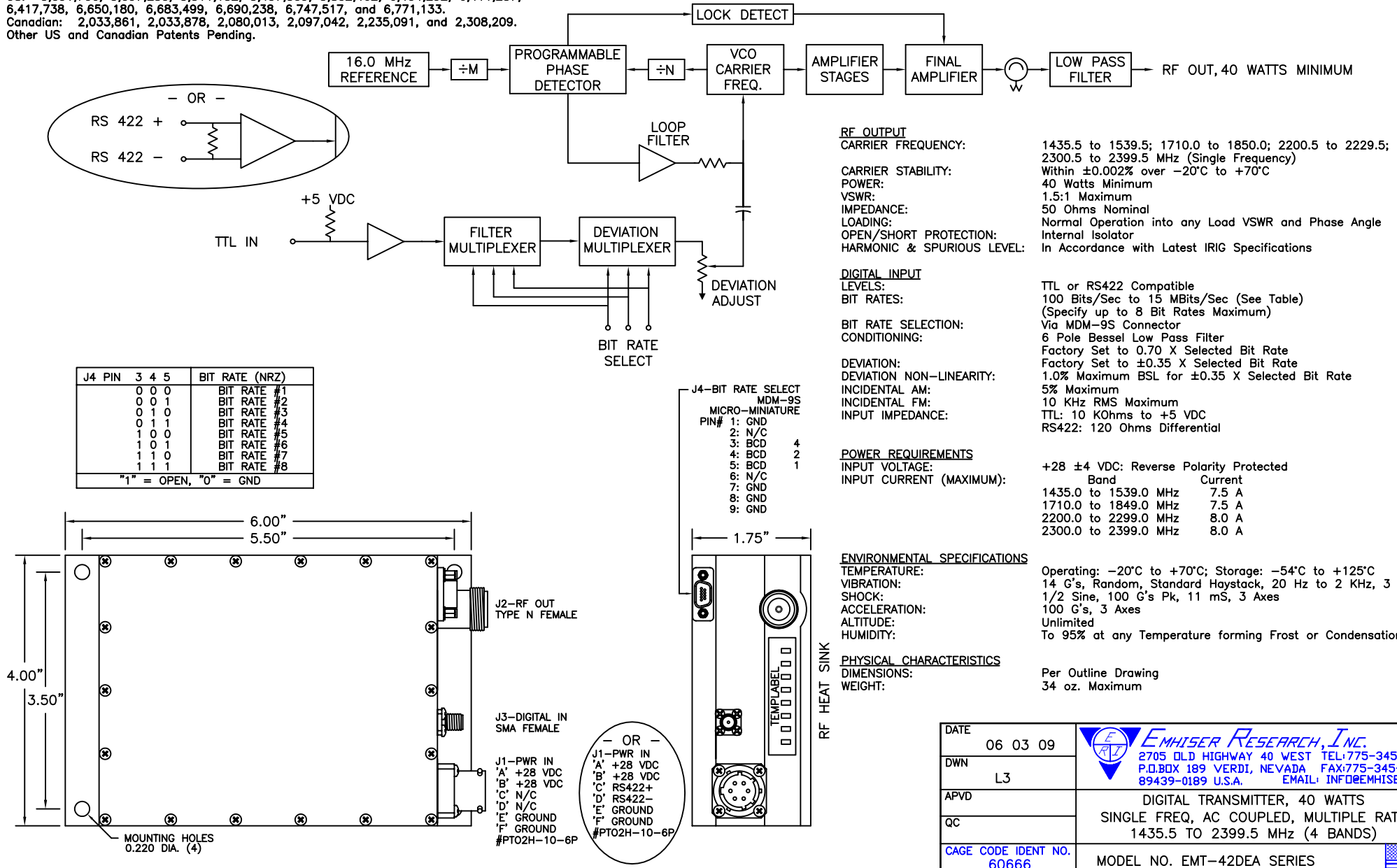
DATE	06 03 09	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM	
DWN	L3		
APVD			
QC		DIGITAL TRANSMITTER, 2/5/10/20 WATTS SINGLE FREQ, DC COUPLED, MULTIPLE RATE 1435.5 TO 2399.5 MHZ (4 BANDS)	
CAGE CODE IDENT NO.	60666	MODEL NO. EMT-11DED SERIES	

Digital Transmitter Model EMT-42DEA Series

42 Cubic Inches Multiple Bit Rate 40 Watts

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 OUTPUT
 CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2229.5; 2300.5 to 2399.5 MHz (Single Frequency)
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 40 Watts Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 Ohms Nominal
 LOADING: Normal Operation into any Load VSWR and Phase Angle
 OPEN/SHORT PROTECTION: Internal Isolator
 HARMONIC & SPURIOUS LEVEL: In Accordance with Latest IRIG Specifications

DIGITAL INPUT
 LEVELS: TTL or RS422 Compatible
 BIT RATES: 100 Bits/Sec to 15 MBits/Sec (See Table)
 (Specify up to 8 Bit Rates Maximum)
 BIT RATE SELECTION: Via MDM-9S Connector
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Selected Bit Rate
 DEVIATION: Factory Set to ± 0.35 X Selected Bit Rate
 DEVIATION NON-LINEARITY: 1.0% Maximum BSL for ± 0.35 X Selected Bit Rate
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: TTL: 10 Kohms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS
 INPUT VOLTAGE: +28 ± 4 VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

Band	Current
1435.0 to 1539.0 MHz	7.5 A
1710.0 to 1849.0 MHz	7.5 A
2200.0 to 2299.0 MHz	8.0 A
2300.0 to 2399.0 MHz	8.0 A

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: 34 oz. Maximum

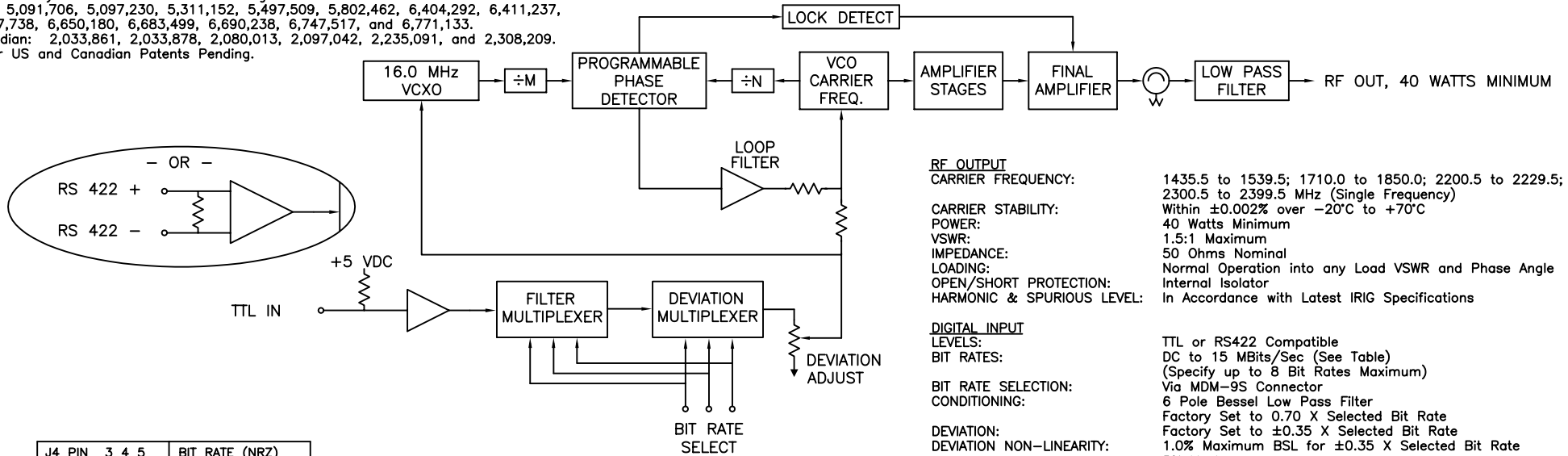
DATE	06 03 09	EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		DIGITAL TRANSMITTER, 40 WATTS SINGLE FREQ, AC COUPLED, MULTIPLE RATE 1435.5 TO 2399.5 MHz (4 BANDS)
QC		
CAGE CODE IDENT NO.	60666	MODEL NO. EMT-42DEA SERIES

Digital Transmitter Model EMT-42DED Series

42 Cubic Inches Multiple Bit Rate 40 Watts

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 OUTPUT

CARRIER FREQUENCY:
 CARRIER STABILITY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1435.5 to 1539.5; 1710.0 to 1850.0; 2200.5 to 2229.5;
 2300.5 to 2399.5 MHz (Single Frequency)
 Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 40 Watts Minimum
 1.5:1 Maximum
 50 Ohms Nominal
 Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:
 BIT RATES:
 BIT RATE SELECTION:
 CONDITIONING:

TTL or RS422 Compatible
 DC to 15 Mbits/Sec (See Table)
 (Specify up to 8 Bit Rates Maximum)
 Via MDM-9S Connector
 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Selected Bit Rate
 Factory Set to ± 0.35 X Selected Bit Rate
 1.0% Maximum BSL for ± 0.35 X Selected Bit Rate
 5% Maximum
 10 KHz RMS Maximum
 TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected

Band	Current
1435.0 to 1539.0 MHz	7.5 A
1710.0 to 1849.0 MHz	7.5 A
2200.0 to 2299.0 MHz	8.0 A
2300.0 to 2399.0 MHz	8.0 A

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

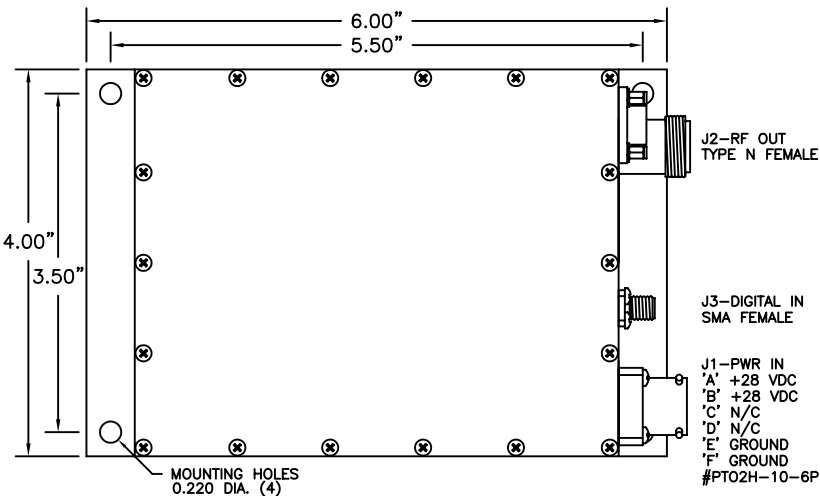
DIMENSIONS:
 WEIGHT:

Per Outline Drawing
 34 oz. Maximum

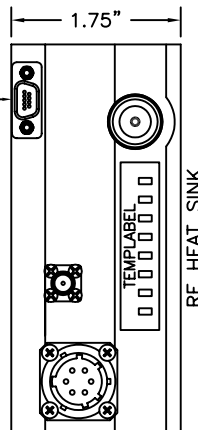
J4 PIN	3	4	5	BIT RATE (NRZ)
0	0	0	0	BIT RATE #1
0	0	1	0	BIT RATE #2
0	1	0	0	BIT RATE #3
0	1	1	0	BIT RATE #4
1	0	0	0	BIT RATE #5
1	0	1	0	BIT RATE #6
1	1	0	0	BIT RATE #7
1	1	1	0	BIT RATE #8

*1" = OPEN, "0" = GND

J4-BIT RATE SELECT	MDM-9S
PIN# 1:	GND
2:	N/C
3:	BCD
4:	BCD
5:	BCD
6:	N/C
7:	GND
8:	GND
9:	GND



— OR —
 J1-PWR IN
 'A' +28 VDC
 'B' +28 VDC
 'C' RS422+
 'D' RS422-
 'E' GROUND
 'F' GROUND
 #PT02H-10-6P



DATE	06 03 09	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		DIGITAL TRANSMITTER, 40 WATTS DC COUPLED, MULTIPLE RATE 1435.5 TO 2399.5 MHz (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EMT-42DED SERIES

Digital Transmitter Model EMTC-11DEA Series

11 Cubic Inches Multiple Bit Rate 2, 5, 10 or 20 Watts

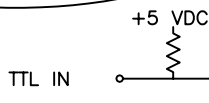
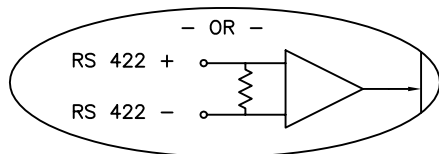
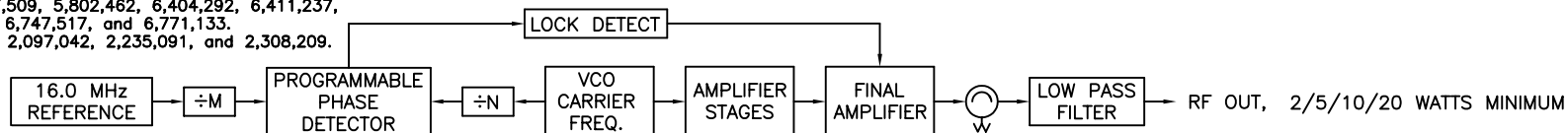
AC Coupled Channelized 28 VDC

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.

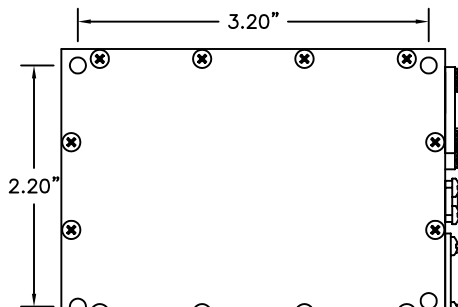
Canadian: 2,033,861, 2,033,878, 2,080,013, 2,097,042, 2,235,091, and 2,308,209.

Other US and Canadian Patents Pending.

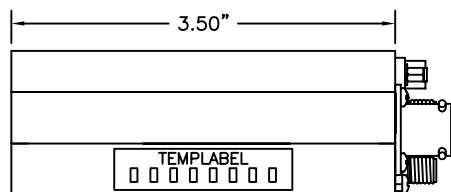


J5 PIN	3	4	5	BIT RATE (NRZ)
0	0	0	0	BIT RATE #1
0	0	0	1	BIT RATE #2
0	1	0	0	BIT RATE #3
0	1	0	1	BIT RATE #4
1	0	0	0	BIT RATE #5
1	0	0	1	BIT RATE #6
1	1	0	0	BIT RATE #7
1	1	0	1	BIT RATE #8

"1" = OPEN, "0" = GND



MOUNTING HOLES
0.147 DIA(4)

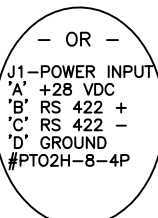


RF HEAT SINK

J2-RF OUT
SMA FEMALE

J3-TTL IN
SMA FEMALE

J1-POWER INPUT
'A' +28 VDC
'B' TTL IN
'C' GROUND
'D' GROUND
#PT02H-8-4P



BIT RATE
SELECT

J5-BIT RATE SELECT
MDM-9S
MICRO MINIATURE
PIN# 1: GROUND
2: N/C
3: BCD 4
4: BCD 2
5: BCD 1
6: N/C
7: GROUND
8: GROUND
9: GROUND

J4-FREQUENCY SELECT
MDM-15P
PIN # 1: GND
2: N/C
3: N/C
4: BCD 100
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: N/C
14: GND
15: GND

RF OUTPUT
CARRIER FREQUENCY:

FREQUENCY SELECTION:

CARRIER STABILITY:

POWER:

VSWR:

IMPEDANCE:

LOADING:

OPEN/SHORT PROTECTION:

HARMONIC & SPURIOUS LEVEL:

DIGITAL INPUT

LEVELS:

BIT RATES:

BIT RATE SELECTION:

CONDITIONING:

DEVIATION:

DEVIATION NON-LINEARITY:

INCIDENTAL AM:

INCIDENTAL FM:

INPUT IMPEDANCE:

POWER REQUIREMENTS

INPUT VOLTAGE:

INPUT CURRENT (MAXIMUM):

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE:

VIBRATION:

SHOCK:

ACCELERATION:

ALTITUDE:

HUMIDITY:

PHYSICAL CHARACTERISTICS

DIMENSIONS:

WEIGHT:

1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
2300.5 to 2399.5 MHz Channelized in 1.0 MHz Steps
Via MDM-15P Connector
Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
2/5/10/20 Watts Minimum
1.5:1 Maximum
50 Ohms Nominal
Normal Operation into any Load VSWR and Phase Angle
Internal Isolator
In Accordance with Latest IRIG Specifications

TTL or RS422 Compatible

100 Bits/Sec to 15 MBits/Sec

(Specify up to 8 Bit Rates Maximum)

Via MDM-9S Connector

6 Pole Bessel Low Pass Filter

Factory Set to 0.70 X Selected Bit Rate

Factory Set to ± 0.35 X Selected Bit Rate

1.0% Maximum BSL for ± 0.35 X Selected Bit Rate

5% Maximum

10 KHz RMS Maximum

TTL: 10 KOhms to +5 VDC

RS422: 120 Ohms Differential

+28 ± 4 VDC: Reverse Polarity Protected

Power Current

2 Watts 650 Milliamps

5 Watts 1.2 Amps

10 Watts 2.0 Amps

20 Watts 4.0 Amps

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

Per Outline Drawing
14 oz. Maximum

DATE	05 07 08	 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	DIGITAL TRANSMITTER, 2/5/10/20 WATTS CHANNELIZED, AC COUPLED, MULTIPLE RATE 1435.5 TO 2399.5 MHZ (4 BANDS)
MODEL NO. EMTC-11DEA SERIES		

Digital Transmitter Model EMTC-11DED Series

11 Cubic Inches Multiple Bit Rate 2, 5, 10 or 20 Watts

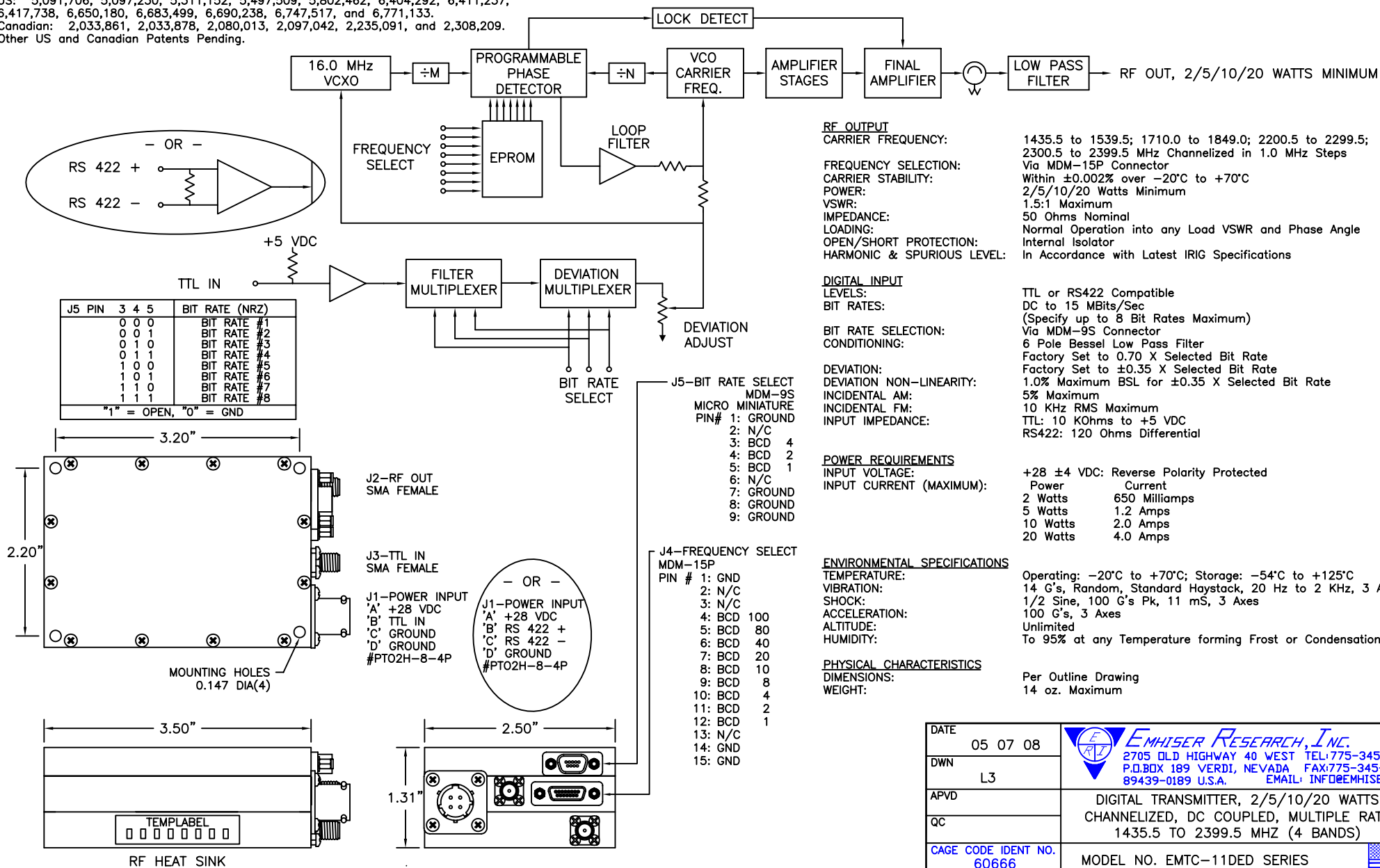
DC Coupled Channelized 28 VDC

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 OUTPUT

CARRIER FREQUENCY:

FREQUENCY SELECTION:

CARRIER STABILITY:

POWER:

VSWR:

IMPEDANCE:

LOADING:

OPEN/SHORT PROTECTION:

HARMONIC & SPURIOUS LEVEL:

1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
2300.5 to 2399.5 MHz Channelized in 1.0 MHz Steps
Via MDM-15P Connector
Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
2/5/10/20 Watts Minimum
1.5:1 Maximum
50 Ohms Nominal
Normal Operation into any Load VSWR and Phase Angle
Internal Isolator
In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS:

BIT RATES:

BIT RATE SELECTION:

CONDITIONING:

DEVIATION:

DEVIATION NON-LINEARITY:

INCIDENTAL AM:

INCIDENTAL FM:

INPUT IMPEDANCE:

TTL or RS422 Compatible
DC to 15 Mbits/Sec
(Specify up to 8 Bit Rates Maximum)
Via MDM-9S Connector
6 Pole Bessel Low Pass Filter
Factory Set to 0.70 X Selected Bit Rate
Factory Set to ± 0.35 X Selected Bit Rate
1.0% Maximum BSL for ± 0.35 X Selected Bit Rate
5% Maximum
10 KHz RMS Maximum
TTL: 10 KOHms to +5 VDC
RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE:

INPUT CURRENT (MAXIMUM):

+28 ± 4 VDC: Reverse Polarity Protected
Power Current
2 Watts 650 Milliamps
5 Watts 1.2 Amps
10 Watts 2.0 Amps
20 Watts 4.0 Amps

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
14 oz. Maximum

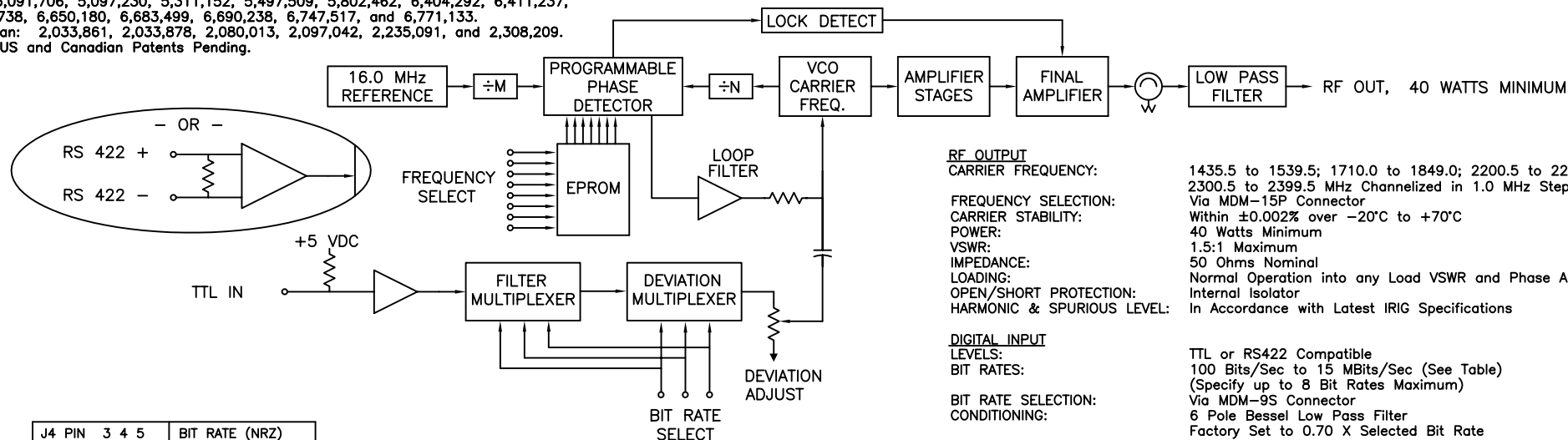
DATE	05 07 08	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		DIGITAL TRANSMITTER, 2/5/10/20 WATTS CHANNELIZED, DC COUPLED, MULTIPLE RATE 1435.5 TO 2399.5 MHZ (4 BANDS) MODEL NO. EMTC-11DED SERIES

Digital Transmitter Model EMTC-42DEA Series

42 Cubic Inches Multiple Bit Rate 40 Watts

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.



J4 PIN	3	4	5	BIT RATE (NRZ)
0	0	0	0	BIT RATE #1
0	0	1	0	BIT RATE #2
0	1	0	0	BIT RATE #3
0	1	1	0	BIT RATE #4
1	0	0	0	BIT RATE #5
1	0	1	0	BIT RATE #6
1	1	0	0	BIT RATE #7
1	1	1	0	BIT RATE #8

"1" = OPEN, "0" = GND

J5-FREQUENCY SELECT MDM-15P MICRO-MINIATURE
 PIN# 1: GND
 2: GND
 3: N/C
 4: GND OR 100
 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: N/C
 14: GND
 15: GND

J4-BIT RATE SELECT MDM-9S MICRO-MINIATURE
 PIN# 1: GND
 2: N/C
 3: BCD 4
 4: BCD 2
 5: BCD 1
 6: N/C
 7: GND
 8: GND
 9: GND

RF OUTPUT

CARRIER FREQUENCY: 1435.5 to 1539.5; 1710.0 to 1849.0; 2200.5 to 2299.5;
 2300.5 to 2399.5 MHz Channelized in 1.0 MHz Steps
 FREQUENCY SELECTION: Via MDM-15P Connector
 POWER: Within $\pm 0.002\%$ over -20°C to $+70^\circ\text{C}$
 VSWR: 40 Watts Minimum
 IMPEDANCE: 1.5:1 Maximum
 LOADING: 50 Ohms Nominal
 HARMONIC & SPURIOUS LEVEL: Normal Operation into any Load VSWR and Phase Angle
 Internal Isolator
 In Accordance with Latest IRIG Specifications

DIGITAL INPUT

LEVELS: TTL or RS422 Compatible
 BIT RATES: 100 Bits/Sec to 15 MBits/Sec (See Table)
 (Specify up to 8 Bit Rates Maximum)
 BIT RATE SELECTION: Via MDM-9S Connector
 CONDITIONING: 6 Pole Bessel Low Pass Filter
 Factory Set to 0.70 X Selected Bit Rate
 DEVIATION: Factory Set to ± 0.35 X Selected Bit Rate
 DEVIATION NON-LINEARITY: 1.0% Maximum BSL for ± 0.35 X Selected Bit Rate
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: TTL: 10 KOhms to +5 VDC
 RS422: 120 Ohms Differential

POWER REQUIREMENTS

INPUT VOLTAGE: $+28 \pm 4$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

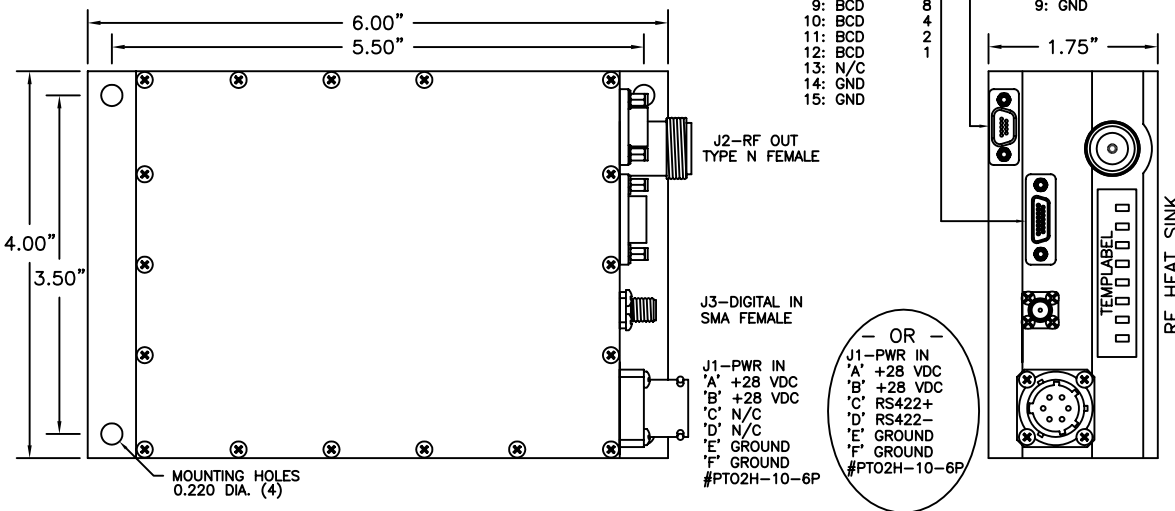
Band	Current
1435.0 to 1539.0 MHz	7.5 A
1710.0 to 1849.0 MHz	7.5 A
2200.0 to 2299.0 MHz	8.0 A
2300.0 to 2399.0 MHz	8.0 A

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: 34 oz. Maximum



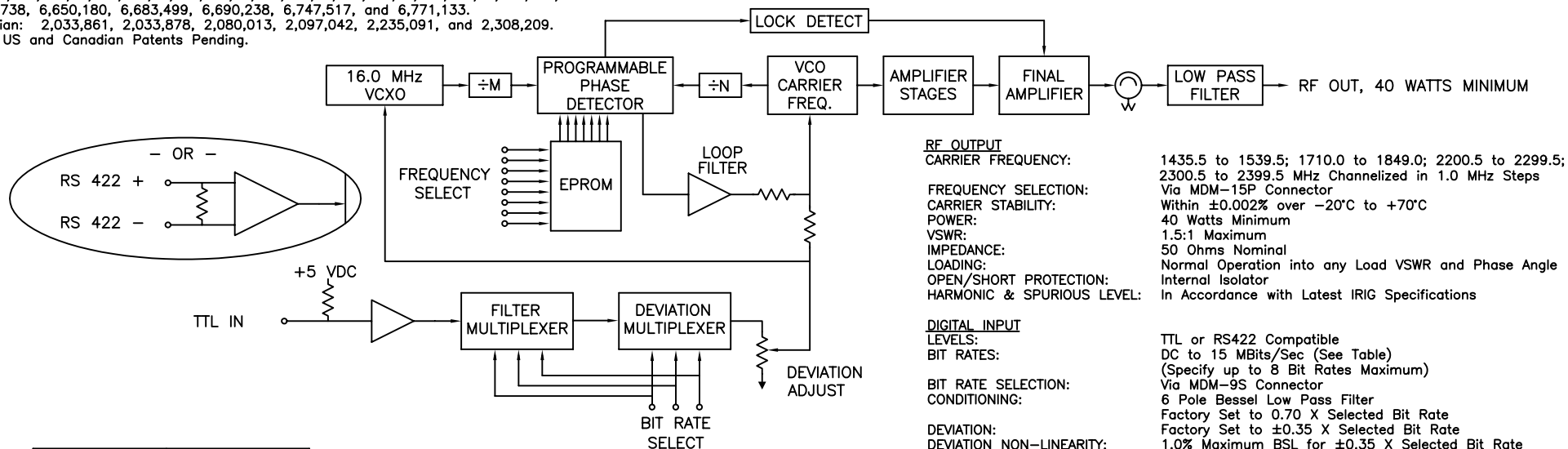
DATE	06 03 08	EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	DIGITAL TRANSMITTER, 40 WATTS CHANNELIZED, AC COUPLED, MULTIPLE RATE 1435.5 TO 2399.5 MHz (4 BANDS)
		MODEL NO. EMTC-42DEA SERIES

Digital Transmitter Model EMTC-42DED Series

42 Cubic Inches Multiple Bit Rate 40 Watts

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.



POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

+28 $\pm$ 4 VDC: Reverse Polarity Protected		
Band	Current	
1435.0 to 1539.0 MHz	7.5 A	
1710.0 to 1849.0 MHz	7.5 A	
2200.0 to 2299.0 MHz	8.0 A	
2300.0 to 2399.0 MHz	8.0 A	

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

Operating: -20°C to +70°C; Storage: -54°C to +125°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:

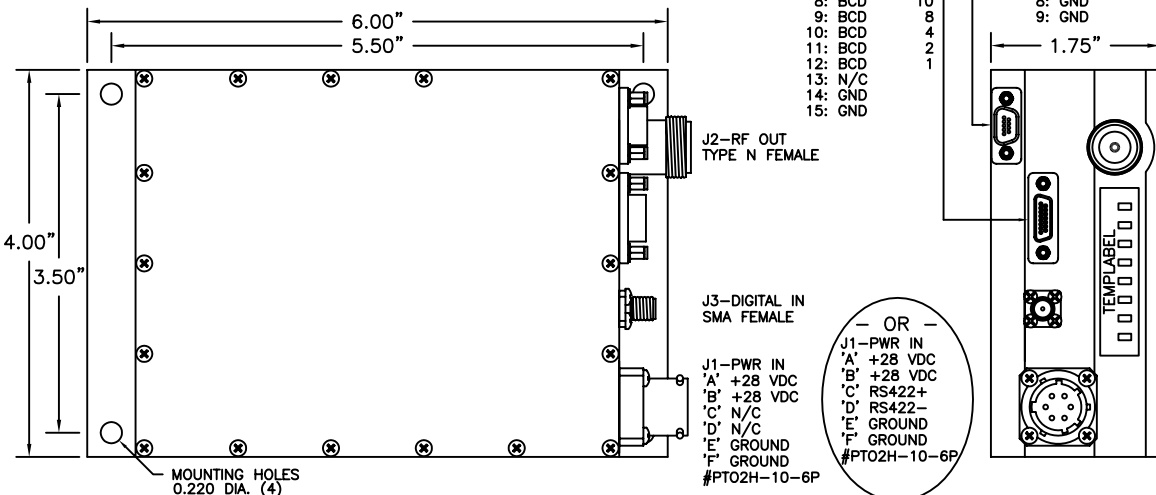
Per Outline Drawing
 34 oz. Maximum

J4 PIN	3	4	5	BIT RATE (NRZ)
0	0	0	0	BIT RATE #1
0	0	0	1	BIT RATE #2
0	1	0	0	BIT RATE #3
0	1	0	1	BIT RATE #4
1	0	0	0	BIT RATE #5
1	0	1	0	BIT RATE #6
1	1	0	0	BIT RATE #7
1	1	1	0	BIT RATE #8

"1" = OPEN, "0" = GND

J5-FREQUENCY SELECT	MDM-15P
PIN#	MICRO-MINIATURE
1:	GND
2:	GND
3:	N/C
4:	GND OR 100
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:	N/C
14:	GND
15:	GND

J4-BIT RATE SELECT	MDM-9S
PIN#	MICRO-MINIATURE
1:	GND
2:	N/C
3:	BCD 4
4:	BCD 2
5:	BCD 1
6:	N/C
7:	GND
8:	GND
9:	GND



DATE	06 03 08	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		DIGITAL TRANSMITTER, 40 WATTS CHANNELIZED, DC COUPLED, MULTIPLE RATE 1435.5 TO 2399.5 MHz (4 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EMTC-42DED SERIES