

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



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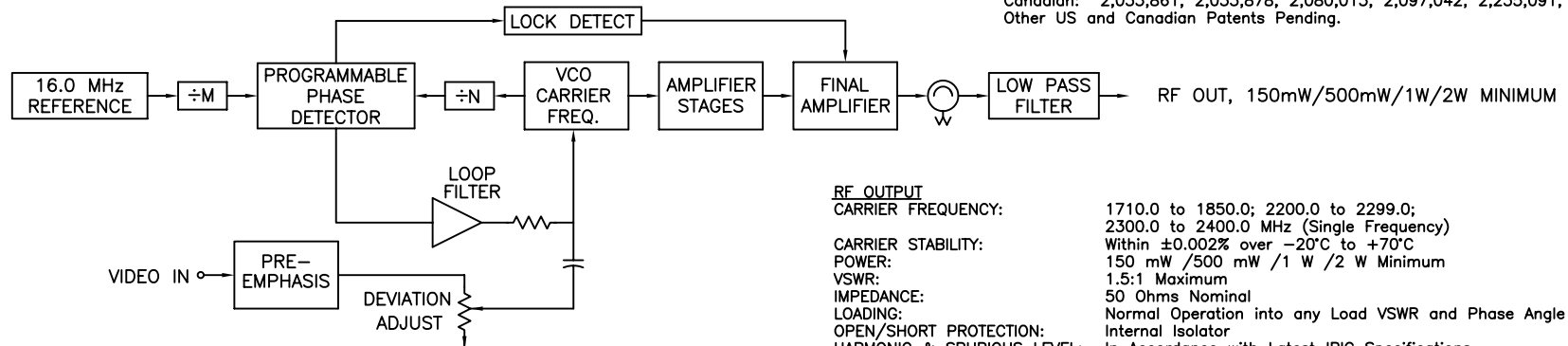
Web: www.emhiser.com

Video Transmitter Model EVT-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: 1710.0 to 1850.0; 2200.0 to 2299.0;
 2300.0 to 2400.0 MHz (Single Frequency)
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 150 mW / 500 mW / 1 W / 2 W 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

VIDEO MODULATION INPUT

TYPE: True FM, Positive Sense, AC Coupled
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30 pF Maximum

POWER REQUIREMENTS

INPUT VOLTAGE: +12 $\pm 4.5/-1.5$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

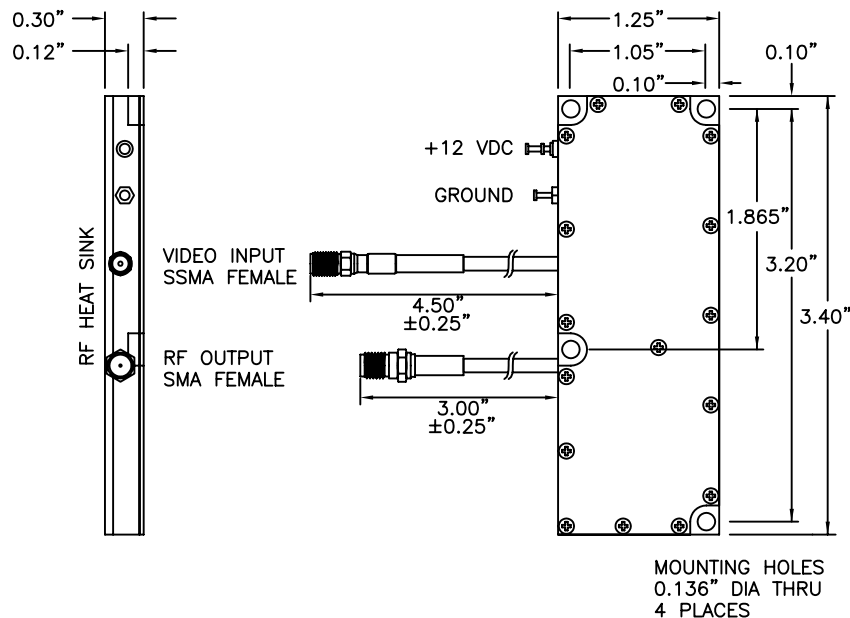
Power	Current
150 Milliwatts	200 Milliamps
500 Milliwatts	400 Milliamps
1 Watt	650 Milliamps
2 Watts	1.0 Amp

ENVIRONMENTAL SPECIFICATIONS

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

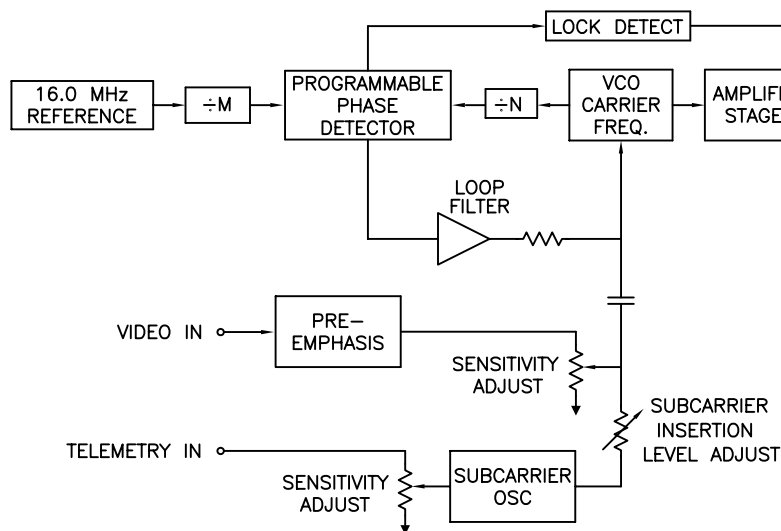


DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	VIDEO TRANSMITTER, 150mW/500mW/1W/2W SINGLE FREQUENCY, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
MODEL NO. EVT-01DEA SERIES		

Video Transmitter Model EVT-02DEA Series

Subcarrier Pre-Emphasis 2.6 Cubic Inches 150mW, 500mW, 1 Watt, or 2 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: 1710.0 to 1850.0; 2200.0 to 2299.0; 2300.0 to 2400.0 MHz (Single Frequency)
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+71^\circ\text{C}$
 POWER: 150mW/500mW/1W/2W 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

VIDEO MODULATION INPUT
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

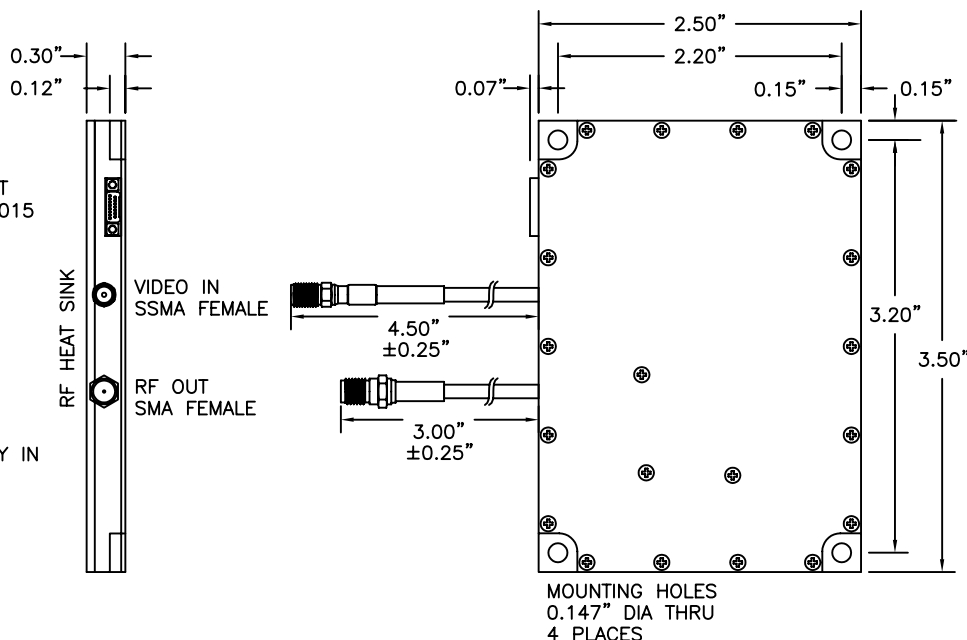
SUBCARRIER & S/C MODULATION INPUT
 SUBCARRIER FREQUENCY: 4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)
 SUBCARRIER STABILITY: Within $\pm 0.5\%$ Maximum over -20°C to $+70^\circ\text{C}$
 FREQUENCY RESPONSE: DC to 150 KHz
 PEAK DEVIATION: 300 KHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to ± 150 KHz/ ± 2.5 VDC
 DEVIATION NON-LINEARITY: $\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation
 HARMONIC DISTORTION: 5% Maximum from 10 Hz to 10 KHz
 INSERTION LEVEL: Adjustable up to -20 dBc Maximum
 INPUT IMPEDANCE: 10 KOhms Minimum

POWER REQUIREMENTS
 INPUT VOLTAGE: $+12 \pm 4.5/-1.5$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):
 Power Current
 150 Milliwatts 200 Milliamps
 500 Milliwatts 400 Milliamps
 1 Watt 650 Milliamps
 2 Watts 1.0 Amp
 Ground to Transmit

ON/OFF CONTROL:
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: 2.8 oz. Maximum

POWER/MOD SELECT
 AIRBORN NM-222-015
 -261-THAA-135
 PIN # 1: N/C
 2: N/C
 3: N/C
 4: N/C
 5: N/C
 6: N/C
 7: N/C
 8: N/C
 9: N/C
 10: TELEMETRY IN
 11: +12 VDC
 12: +12 VDC
 13: ON/OFF
 14: GND
 15: GND



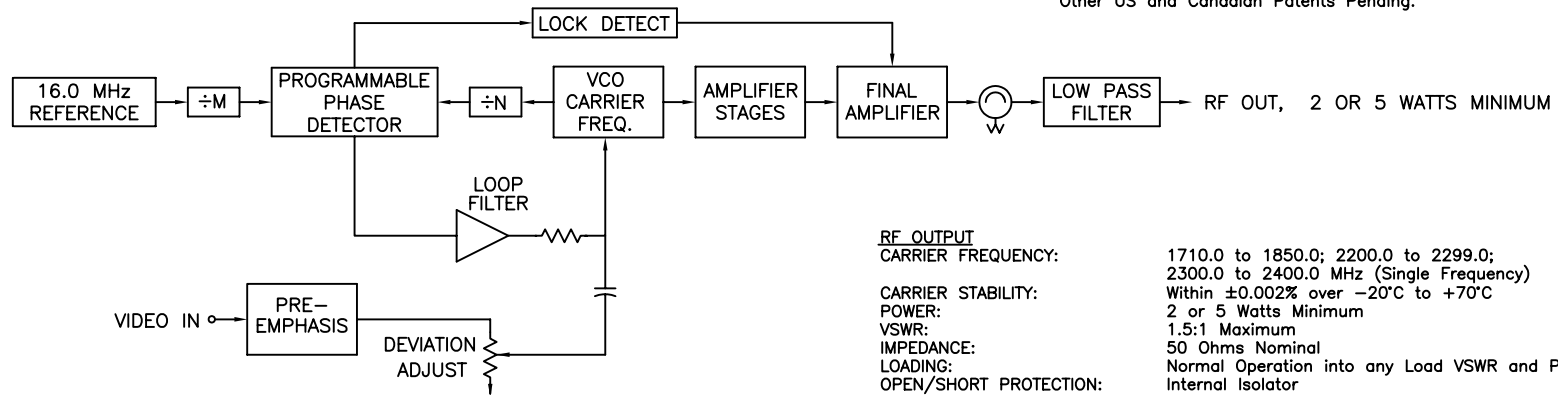
DATE	05 07 14	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		VIDEO TRANSMITTER/SC/P-E, 150mW/500mW/1W/2W SINGLE FREQUENCY, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
MODEL NO. EVT-02DEA SERIES		

Video Transmitter Model EVT-S3DEA Series

Pre-Emphasis 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:

1710.0 to 1850.0; 2200.0 to 2299.0;
 2300.0 to 2400.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE:

10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB

PRE-EMPHASIS:

Specify

PEAK DEVIATION:

8 MHz Pk-Pk

DEVIATION SENSITIVITY:

Adjustable up to 8 MHz Pk-Pk/1V Pk-Pk at Crossover

HARMONIC DISTORTION:

2% Maximum

INCIDENTAL AM:

5% Maximum

INCIDENTAL FM:

10 KHz RMS Maximum

INPUT IMPEDANCE:

75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS

INPUT VOLTAGE:

$+28 \pm 4$ 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

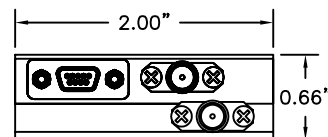
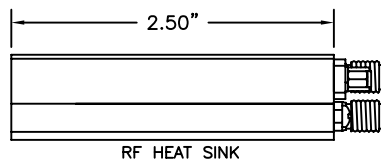
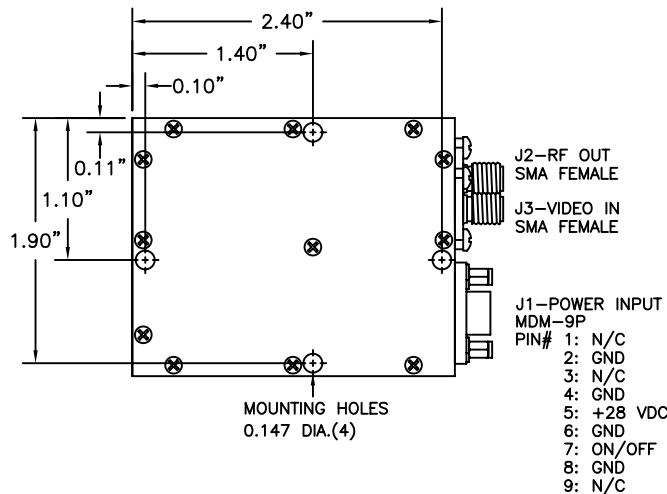
PHYSICAL CHARACTERISTICS

DIMENSIONS:

Per Outline Drawing

WEIGHT:

3.5 oz. Maximum



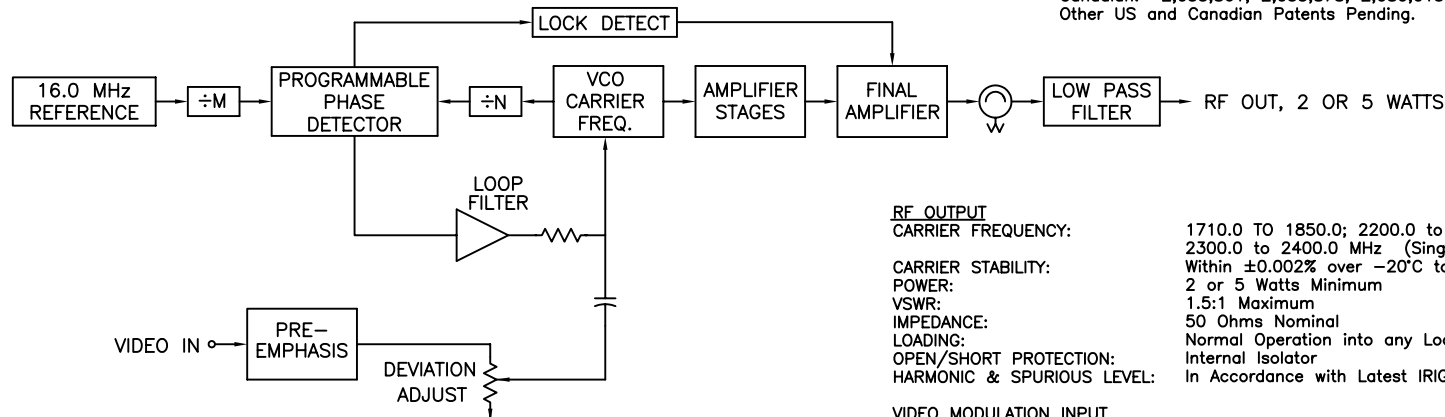
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		VIDEO TRANSMITTER/P-E, 2 OR 5 WATTS SINGLE FREQUENCY, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
		MODEL NO. EVT-S3DEA SERIES 

Video Transmitter Model EVT-05DEA Series

Pre-Emphasis 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:
 CARRIER STABILITY:
 POWER:
 VSWR:
 IMPEDANCE:
 LOADING:
 OPEN/SHORT PROTECTION:
 HARMONIC & SPURIOUS LEVEL:

1710.0 TO 1850.0; 2200.0 to 2299.0;
 2300.0 TO 2400.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE:
 PRE-EMPHASIS:
 PEAK DEVIATION:
 DEVIATION SENSITIVITY:
 HARMONIC DISTORTION:
 INCIDENTAL AM:
 INCIDENTAL FM:
 INPUT IMPEDANCE:

10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 Specify
 8 MHz Pk-Pk
 Adjustable up to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 2% Maximum
 5% Maximum
 10 KHz RMS Maximum
 75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS

INPUT VOLTAGE:
 INPUT CURRENT (MAXIMUM):

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

ENVIRONMENTAL SPECIFICATIONS

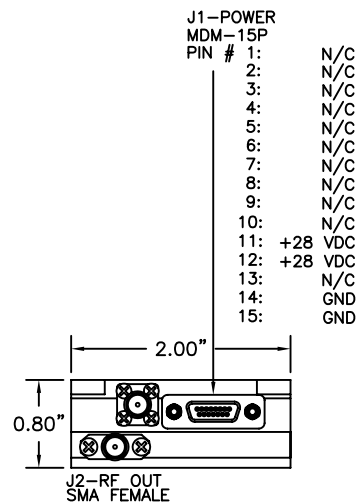
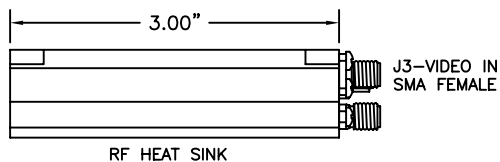
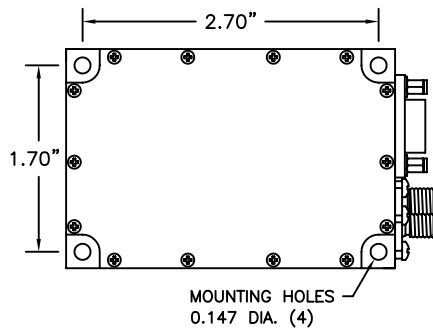
TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

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 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



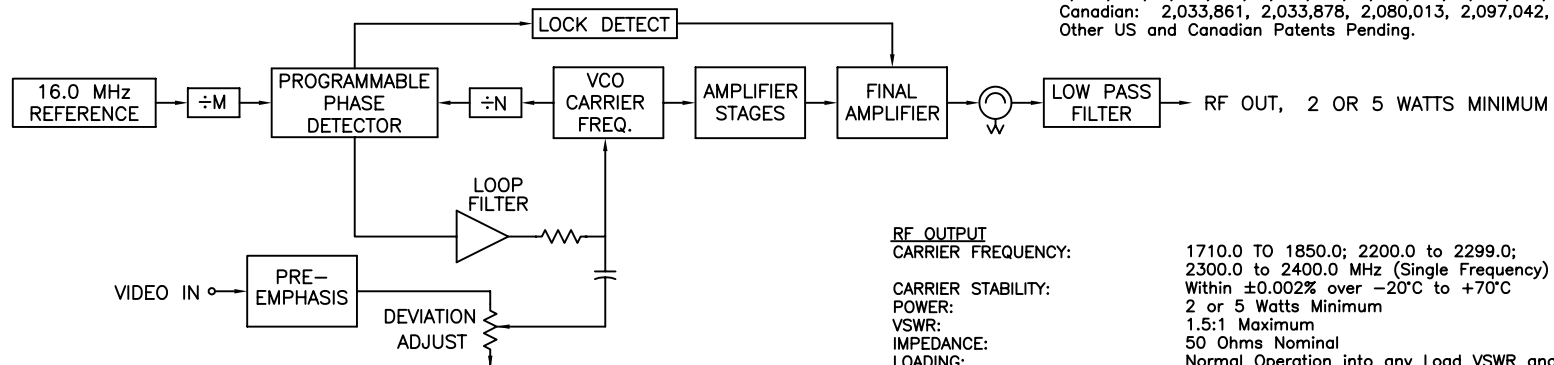
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DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	VIDEO TRANSMITTER/P-E, 2 OR 5 WATTS SINGLE FREQUENCY, AC COUPLED 1710.0 TO 2400.0 (3 BANDS)
MODEL NO. EVT-05DEA SERIES		

Video Transmitter Model EVT-06DEA Series

Pre-Emphasis 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: 1710.0 TO 1850.0; 2200.0 to 2299.0;
 2300.0 to 2400.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Adjustable up to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS

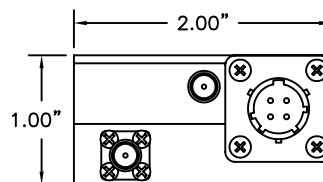
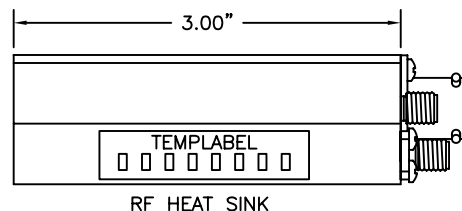
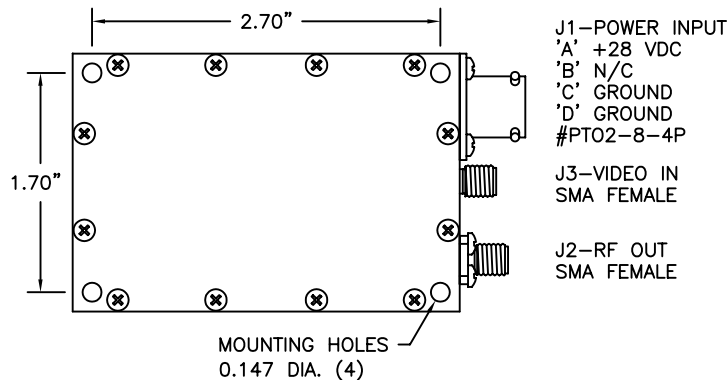
INPUT VOLTAGE: +28 ± 4 VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):
 Power Current
 2 Watts 650 Milliamps
 5 Watts 1.2 Amps

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 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

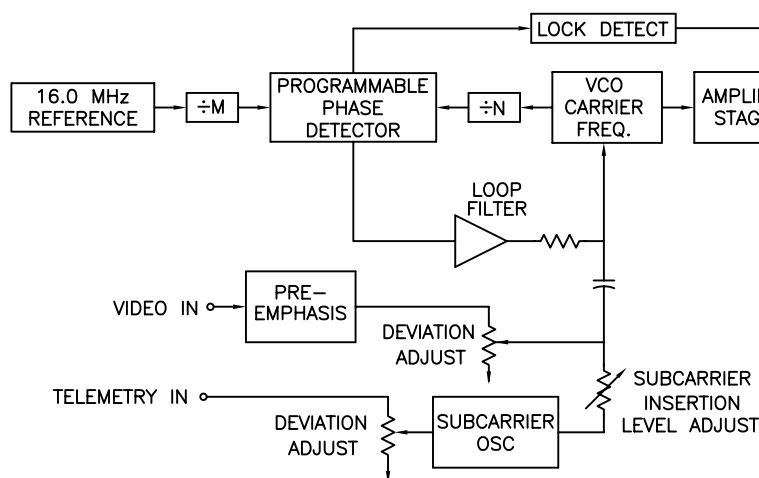


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DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	VIDEO TRANSMITTER/P-E, 2 OR 5 WATTS SINGLE FREQUENCY, AC COUPLED 1710.0 TO 2400.0 (3 BANDS) MODEL NO. EVT-06DEA SERIES

Video Transmitter Model EVT-09DEA Series

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

Subcarrier Pre-Emphasis 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 OUT, 2/5/10/20 WATTS MINIMUM

RF OUTPUT

CARRIER FREQUENCY:

CARRIER STABILITY:

POWER:

VSWR:

IMPEDANCE:

LOADING:

OPEN/SHORT PROTECTION:

HARMONIC & SPURIOUS LEVEL:

1710.0 to 1850.0; 2200.0 to 2299.0; 2300.0 to 2400.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE:

PRE-EMPHASIS:

PEAK DEVIATION:

DEVIATION SENSITIVITY:

HARMONIC DISTORTION:

INCIDENTAL AM:

INCIDENTAL FM:

INPUT IMPEDANCE:

10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB

Specify

8 MHz Pk-Pk

Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover

2% Maximum

5% Maximum

10 KHz RMS Maximum

75 Ohms, Shunted by 30pF Maximum

SUBCARRIER & S/C MODULATION INPUT

SUBCARRIER FREQUENCY:

SUBCARRIER STABILITY:

FREQUENCY RESPONSE:

PEAK DEVIATION:

DEVIATION SENSITIVITY:

DEVIATION NON-LINEARITY:

HARMONIC DISTORTION:

INSERTION LEVEL:

INPUT IMPEDANCE:

4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)

Within $\pm 0.5\%$ Maximum over -20°C to $+70^{\circ}\text{C}$

DC to 150 KHz

300 KHz Pk-Pk

Adjustable up to ± 150 KHz/ ± 2.5 VDC

$\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation

5% Maximum from 10 Hz to 10 KHz

Adjustable up to -20 dBc Maximum

10 KOhms Minimum

POWER REQUIREMENTS

INPUT VOLTAGE:

INPUT CURRENT (MAXIMUM):

$\pm 28 \pm 4$ 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

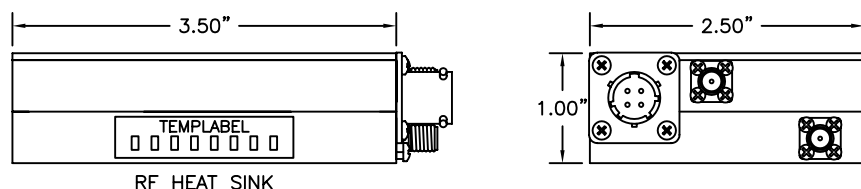
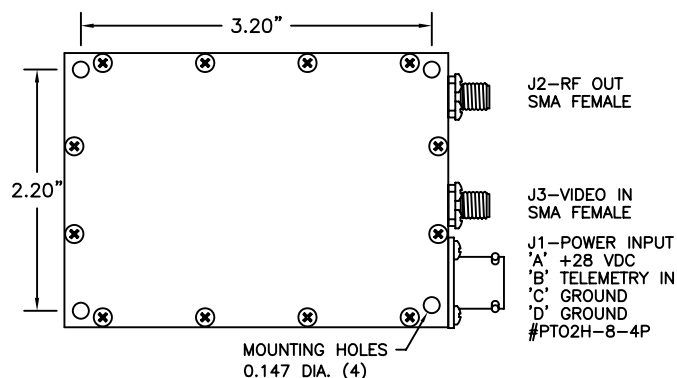
PHYSICAL CHARACTERISTICS

DIMENSIONS:

WEIGHT:

Per Outline Drawing

12 oz. Maximum



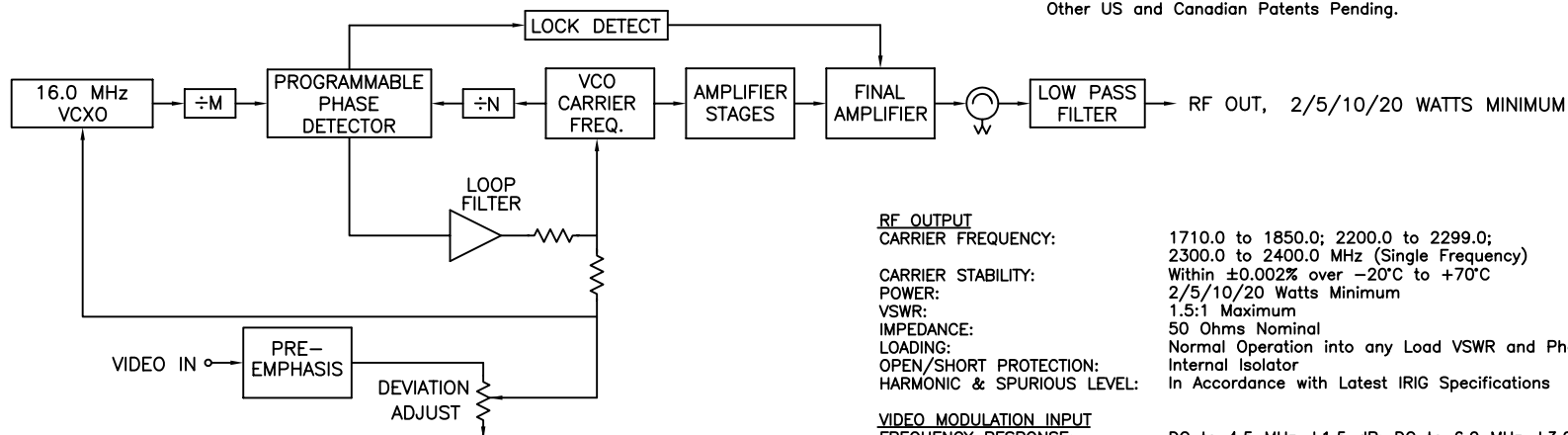
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		VIDEO TRANSMITTER, 2/5-UHE/5/10/20 WATTS SC/P-E, SINGLE FREQUENCY, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EVT-09DEA SERIES

Video Transmitter Model EVT-09DED Series

Standard or Ultra High Efficiency Pre-Emphasis 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.



RF OUTPUT

CARRIER FREQUENCY: 1710.0 to 1850.0; 2200.0 to 2299.0;
 2300.0 to 2400.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE: DC to 4.5 MHz ± 1.5 dB; DC to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS

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

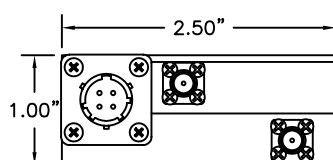
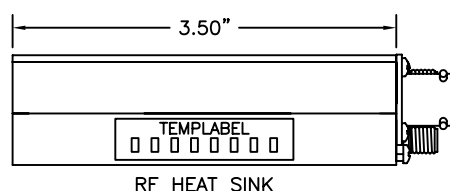
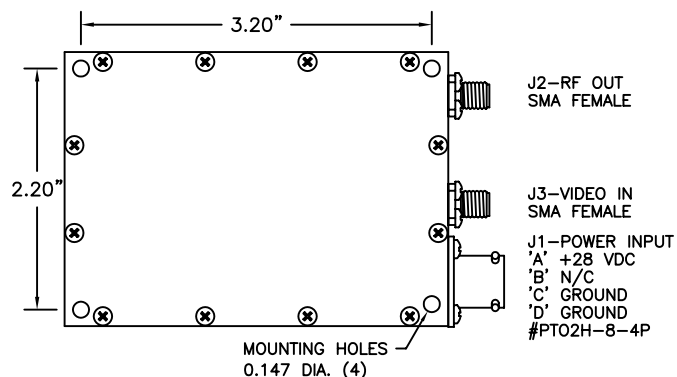
Power	Current
2 Watts	650 Milliamps
5 Watts	750 Milliamps (Ultra High Efficiency)
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

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: 12 oz. Maximum

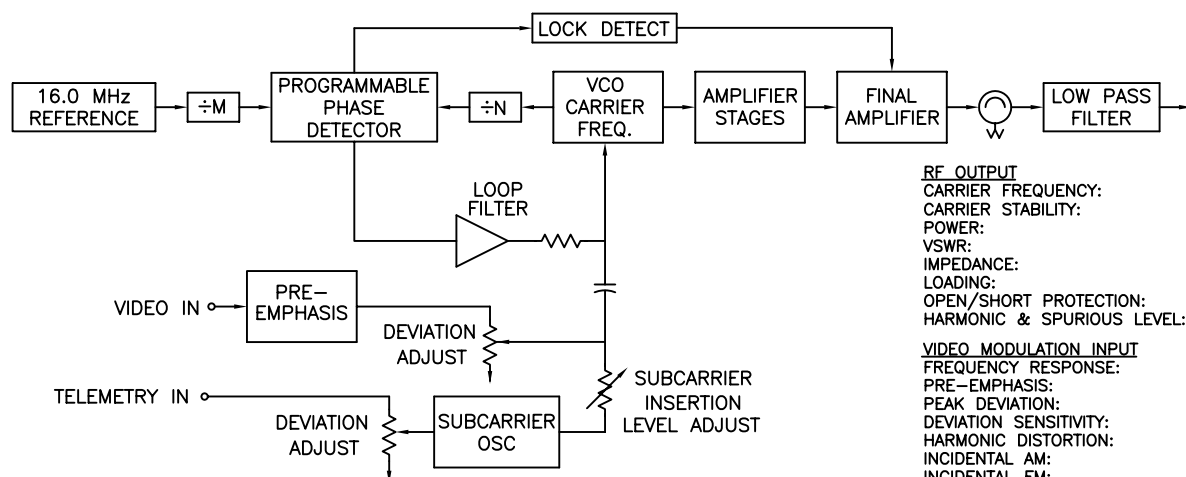


DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		VIDEO TRANSMITTER/P-E, 2/5-UHE/5/10/20 WATTS SINGLE FREQUENCY, DC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
MODEL NO. EVT-09DED SERIES		

Video Transmitter Model EVT-11DEA Series

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

Subcarrier Pre-Emphasis 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 OUT, 2/5/10/20 WATTS MINIMUM

RF OUTPUT

CARRIER FREQUENCY: 1710.0 to 1850.0; 2200.0 to 2299.0; 2300.0 to 2400.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

SUBCARRIER & S/C MODULATION INPUT

SUBCARRIER FREQUENCY: 4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)
 SUBCARRIER STABILITY: Within $\pm 0.5\%$ Maximum over -20°C to $+70^{\circ}\text{C}$
 FREQUENCY RESPONSE: DC to 150 KHz
 PEAK DEVIATION: 300 KHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to ± 150 KHz/ ± 2.5 VDC
 DEVIATION NON-LINEARITY: $\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation
 HARMONIC DISTORTION: 5% Maximum from 10 Hz to 10 KHz
 INSERTION LEVEL: Adjustable up to -20 dBC Maximum
 INPUT IMPEDANCE: 10 Kohms Minimum

POWER REQUIREMENTS

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

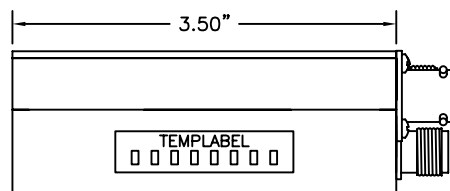
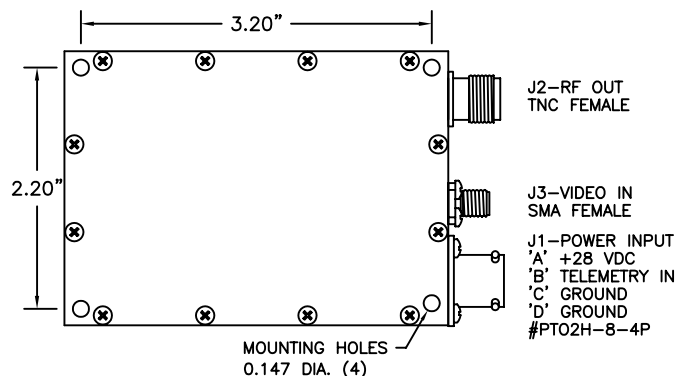
Power	Current
2 Watts	650 Milliamps
5 Watts	750 Milliamps (Ultra High Efficiency)
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

ENVIRONMENTAL SPECIFICATIONS

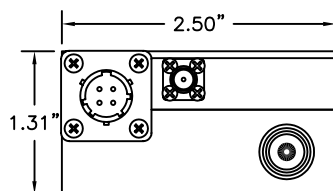
TEMPERATURE: Operating: -20°C to $+70^{\circ}\text{C}$; Storage: -54°C to $+125^{\circ}\text{C}$
 VIBRATION: 14 G's, Random, Standard Haystack, 20 Hz to 2 KHz, 3 Axes
 SHOCK: 1/2 Sine, 100 G's Pk, 11 ms, 3 Axes
 ACCELERATION: 100 G's, 3 Axes
 ALTITUDE: Unlimited
 HUMIDITY: To 95% at any Temperature forming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

PHYSICAL CHARACTERISTICS

DIMENSIONS:
 WEIGHT: Per Outline Drawing
 14 oz. Maximum



RF HEAT SINK



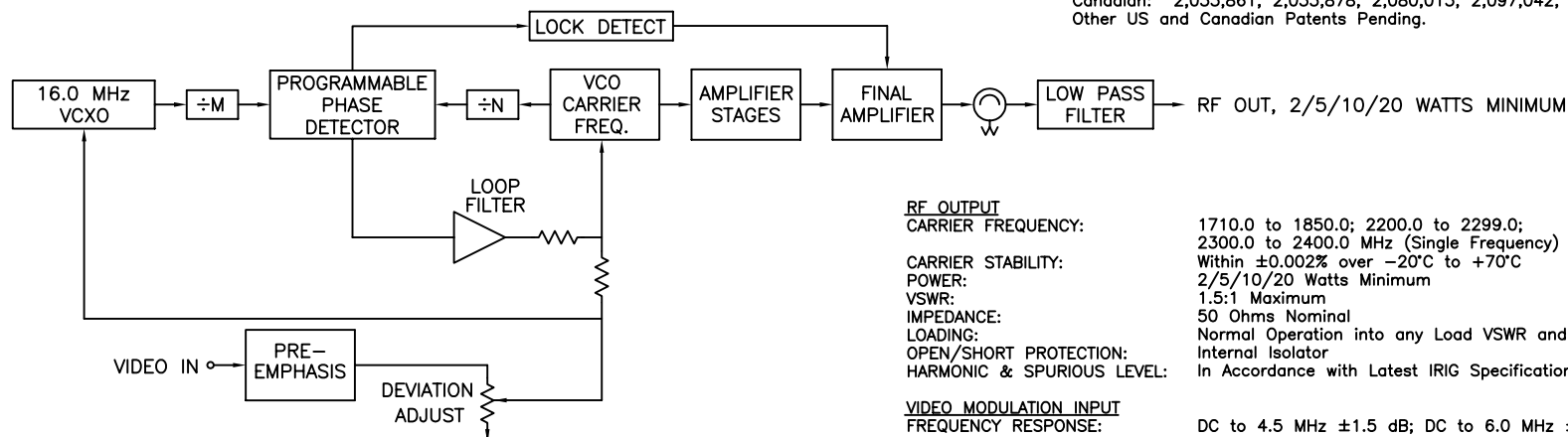
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	VIDEO TRANSMITTER, 2/5-UHE/5/10/20 WATTS SC/P-E, SINGLE FREQUENCY, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
MODEL NO. EVT-11DEA SERIES		

Video Transmitter Model EVT-11DED Series

Standard or Ultra High Efficiency Pre-Emphasis 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:

1710.0 to 1850.0; 2200.0 to 2299.0;
 2300.0 to 2400.0 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 IIRG Specifications

VIDEO MODULATION INPUT

FREQUENCY RESPONSE:

DC to 4.5 MHz ± 1.5 dB; DC to 6.0 MHz ± 3.0 dB

PRE-EMPHASIS:

Specify

PEAK DEVIATION:

8 MHz Pk-Pk

DEVIATION SENSITIVITY:

Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover

HARMONIC DISTORTION:

2% Maximum

INCIDENTAL AM:

5% Maximum

INCIDENTAL FM:

10 KHz RMS Maximum

INPUT IMPEDANCE:

75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS

INPUT VOLTAGE:

$\pm 28 \pm 4$ 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

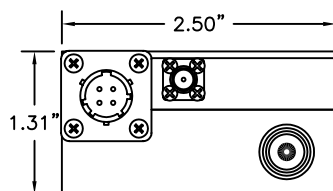
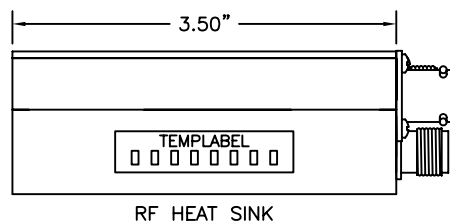
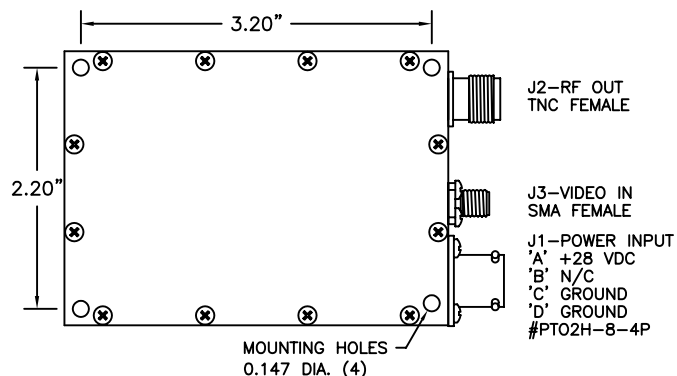
PHYSICAL CHARACTERISTICS

DIMENSIONS:

Per Outline Drawing

WEIGHT:

14 oz. Maximum

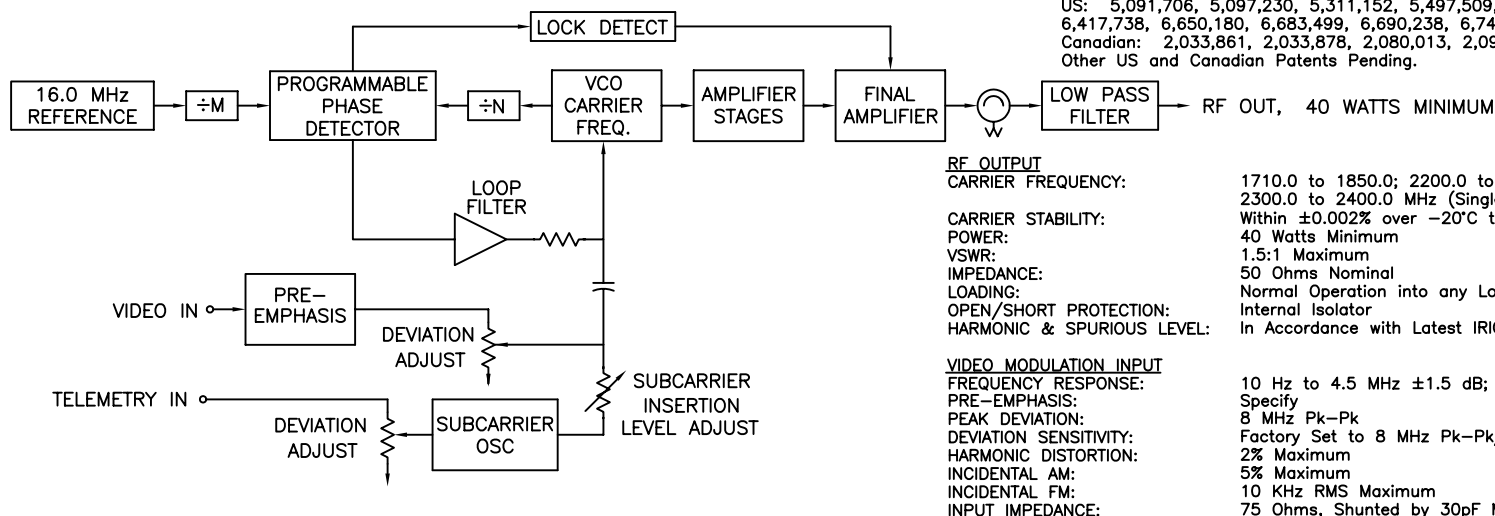


DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		VIDEO TRANSMITTER/P-E 2/5-UHE/5/10/20 WATTS SINGLE FREQUENCY, DC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
MODEL NO. EVT-11DED SERIES		

Video Transmitter Model EVT-36DEA Series

Subcarrier Pre-Emphasis 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: 1710.0 to 1850.0; 2200.0 to 2299.0;
 2300.0 to 2400.0 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

VIDEO MODULATION INPUT
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

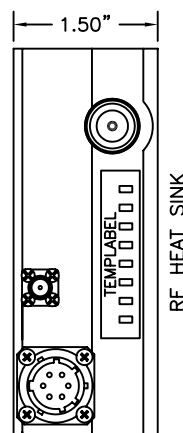
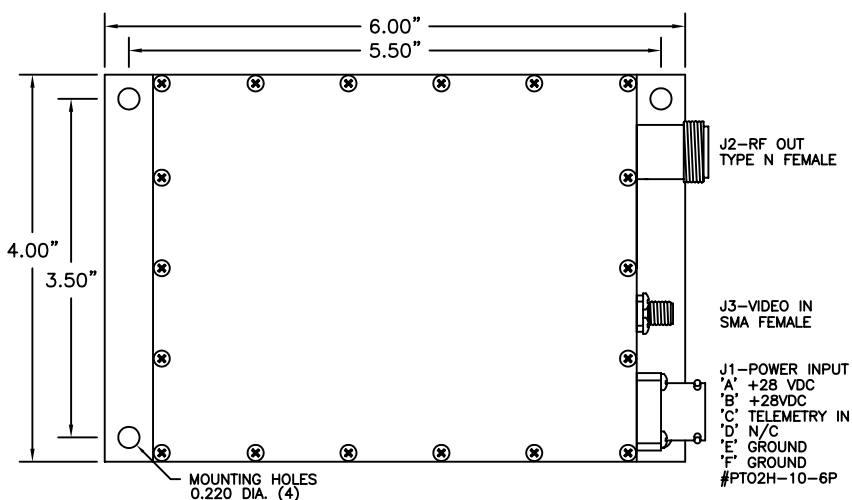
SUBCARRIER & S/C MODULATION INPUT
 SUBCARRIER FREQUENCY: 4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)
 SUBCARRIER STABILITY: Within $\pm 0.5\%$ Maximum over -20°C to $+70^{\circ}\text{C}$
 FREQUENCY RESPONSE: DC to 150 KHz
 PEAK DEVIATION: 300 KHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to ± 150 KHz/ ± 2.5 VDC
 DEVIATION NON-LINEARITY: $\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation
 HARMONIC DISTORTION: 5% Maximum from 10 Hz to 10 KHz
 INSERTION LEVEL: Adjustable up to -20 dBc Maximum
 INPUT IMPEDANCE: 10 KOHms Minimum

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

Band	Current
1710.0 to 1850.0 MHz	7.5 A
2200.0 to 2299.0 MHz	8.0 A
2300.0 to 2400.0 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: 28 oz. Maximum

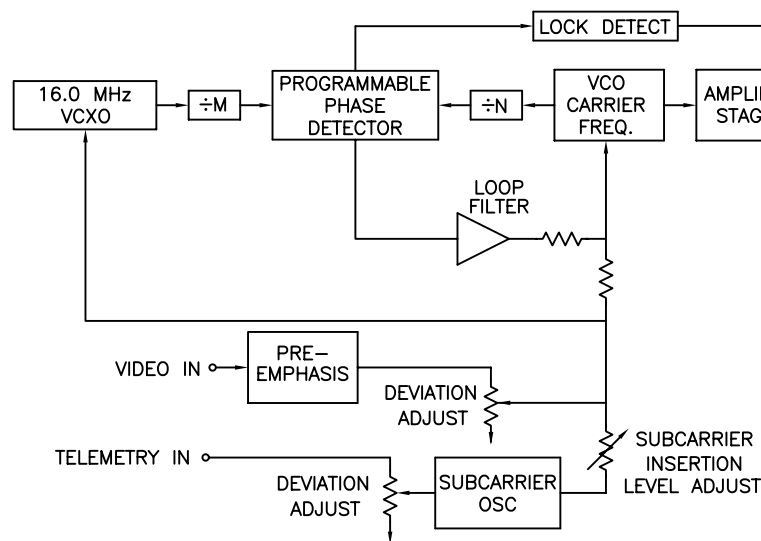


DATE	06 03 08	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		VIDEO TRANSMITTER/SC/P-E, 40 WATTS SINGLE FREQUENCY, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
MODEL NO. EVT-36DEA SERIES		

Video Transmitter Model EVT-36DED Series

Subcarrier Pre-Emphasis 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: 1710.0 to 1850.0; 2200.0 to 2299.0;
 2300.0 to 2400.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE: DC to 4.5 MHz ± 1.5 dB; DC to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

SUBCARRIER & S/C MODULATION INPUT

SUBCARRIER FREQUENCY: 4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)
 SUBCARRIER STABILITY: Within $\pm 0.5\%$ Maximum over -20°C to $+70^{\circ}\text{C}$
 FREQUENCY RESPONSE: DC to 150 KHz
 PEAK DEVIATION: 300 KHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to ± 150 KHz/ ± 2.5 VDC
 DEVIATION NON-LINEARITY: $\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation
 HARMONIC DISTORTION: 5% Maximum from 10 Hz to 10 KHz
 INSERTION LEVEL: Adjustable up to -20 dBc Maximum
 INPUT IMPEDANCE: 10 KOhms Minimum

POWER REQUIREMENTS

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

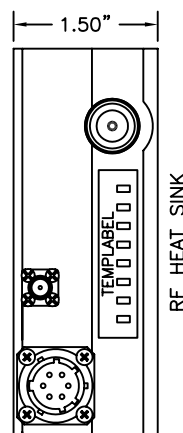
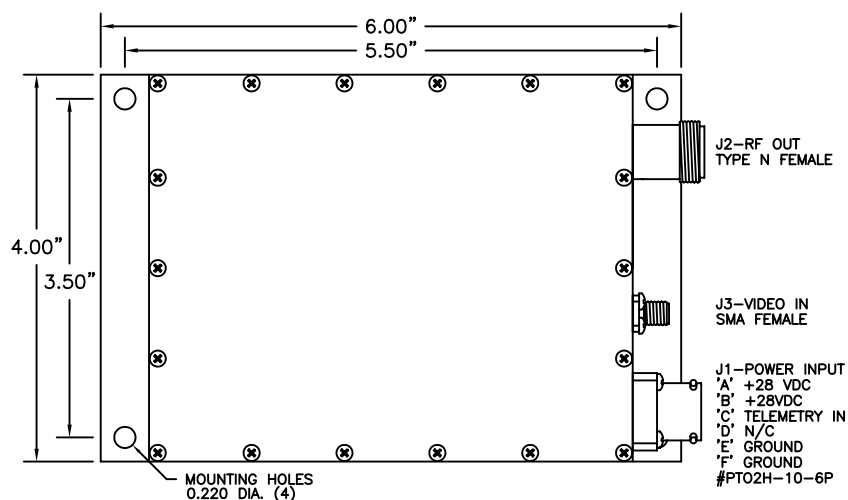
Band	Current
1710.0 to 1850.0 MHz	7.5 A
2200.0 to 2299.0 MHz	8.0 A
2300.0 to 2400.0 MHz	8.0 A

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: 28 oz. Maximum

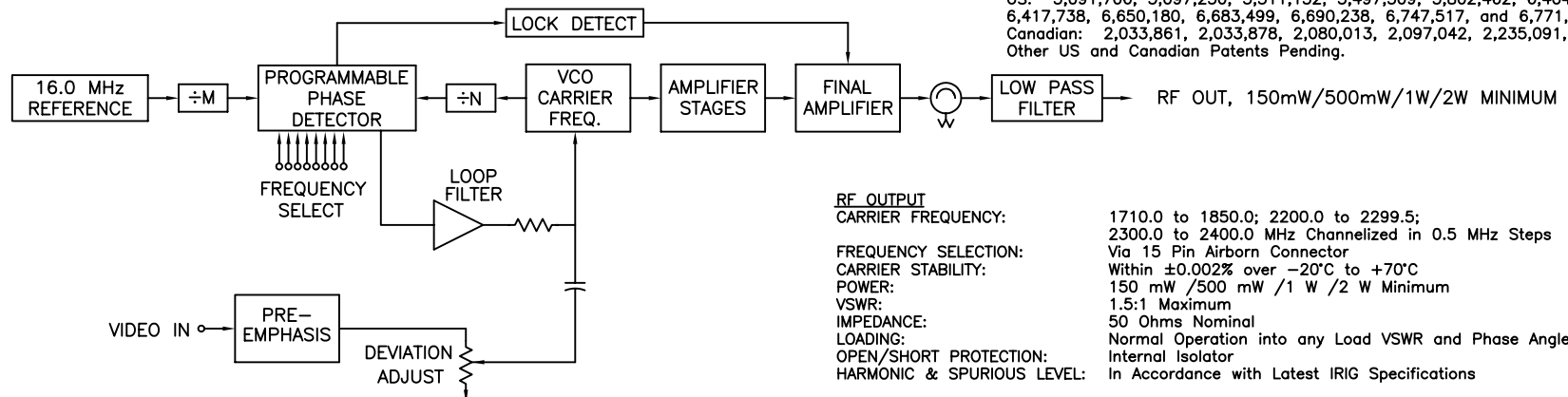


DATE	06 03 08	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	VIDEO TRANSMITTER/SC/P-E, 40 WATTS SINGLE FREQUENCY, DC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
		MODEL NO. EVT-36DED SERIES

Video Transmitter Model EVTC-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: 1710.0 to 1850.0; 2200.0 to 2299.5;
 2300.0 to 2400.0 MHz Channelized in 0.5 MHz Steps
 FREQUENCY SELECTION: Via 15 Pin Airborn Connector
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 150 mW / 500 mW / 1 W / 2 W 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

VIDEO MODULATION INPUT

TYPE: True FM, Positive Sense, AC Coupled
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30 pF Maximum

POWER REQUIREMENTS

INPUT VOLTAGE: $+12 \pm 4.5/-1.5$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

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

 Ground to Transmit

ON/OFF CONTROL:

ENVIRONMENTAL SPECIFICATIONS

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

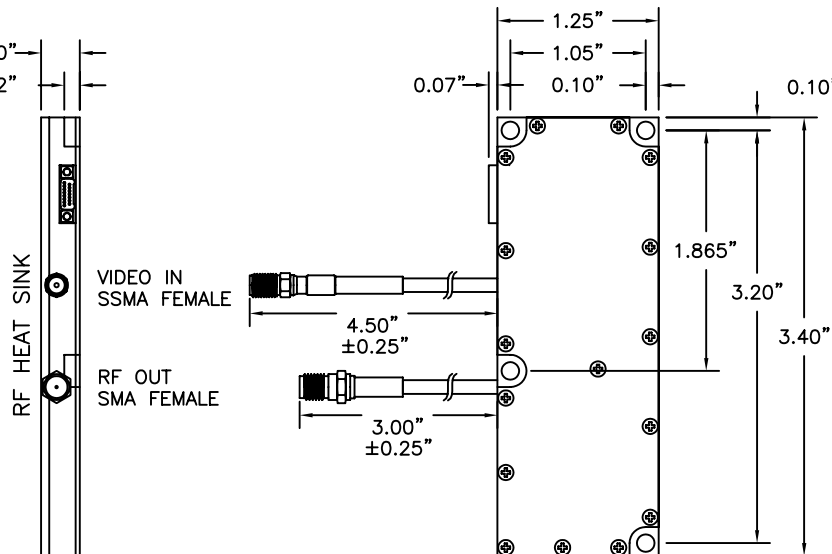
DIMENSIONS: Per Outline Drawing
 WEIGHT: 2 oz. Maximum

POWER/MOD/FREQ SELECT

AIRBORN NM-222-015

-261-THAA-135

PIN # 1: 128 MHZ 0.30"
 2: 64 MHZ 0.12"
 3: 32 MHZ
 4: 16 MHZ
 5: 8 MHZ
 6: 4 MHZ
 7: 2 MHZ
 8: 1 MHZ
 9: 0.5 MHZ
 10: N/C
 11: +12 VDC
 12: +12 VDC
 13: ON/OFF
 14: GND
 15: GND



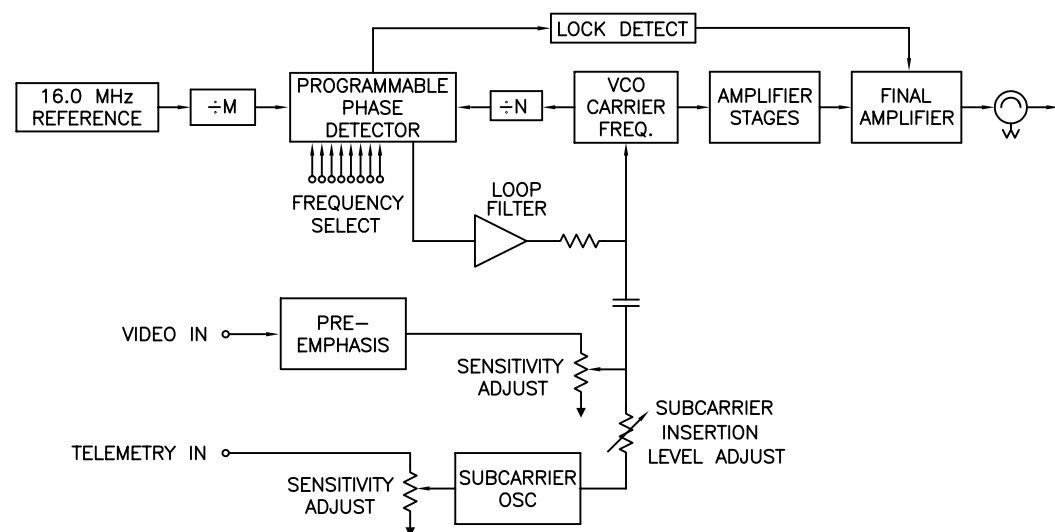
MOUNTING HOLES
 0.136" DIA THRU
 4 PLACES

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		VIDEO TRANSMITTER, 150mW/500mW/1W/2W CHANNELIZED, AC COUPLED 1710.0 TO 2400.0MHZ (3 BANDS)
QC		
CAGE CODE IDENT NO.	60666	MODEL NO. EVTC-01DEA SERIES 

Video Transmitter Model EVTC-02DEA Series

Subcarrier Pre-Emphasis 2.6 Cubic Inches 150mW, 500mW, 1 Watt, or 2 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: 1710.0 to 1850.0; 2200.0 to 2299.5; 2300.0 to 2400.0 MHz Channelized in 0.5 MHz Steps
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+71^{\circ}\text{C}$
 POWER: 150mW/500mW/1W/2W Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 Ohms Nominal
 OPEN/SHORT PROTECTION: Normal Operation into any Load VSWR and Phase Angle
 HARMONIC & SPURIOUS LEVEL: In Accordance with Latest IRIG Specifications

VIDEO MODULATION INPUT
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

SUBCARRIER & S/C MODULATION INPUT
 SUBCARRIER FREQUENCY: 4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)
 SUBCARRIER STABILITY: Within $\pm 0.5\%$ Maximum over -20°C to $+70^{\circ}\text{C}$
 FREQUENCY RESPONSE: DC to 150 KHz
 PEAK DEVIATION: 300 KHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to ± 150 KHz/ ± 2.5 VDC
 DEVIATION NON-LINEARITY: $\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation
 HARMONIC DISTORTION: 5% Maximum from 10 Hz to 10 KHz
 INSERTION LEVEL: Adjustable up to -20 dBc Maximum
 INPUT IMPEDANCE: 10 Kohms Minimum

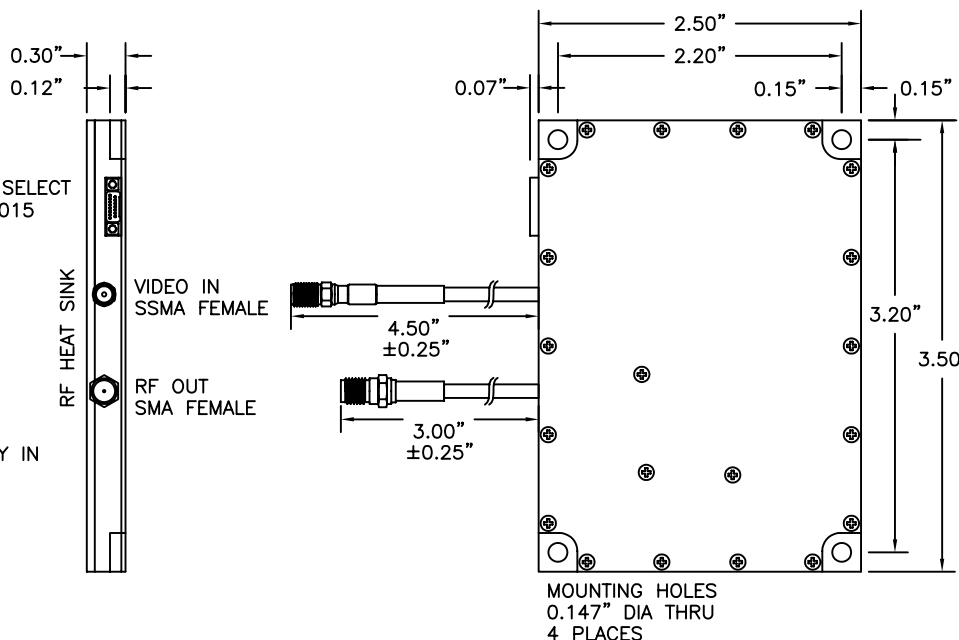
POWER REQUIREMENTS
 INPUT VOLTAGE: $+12 \pm 4.5/-1.5$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):
 Power Current
 150 Milliwatts 200 Milliamps
 500 Milliwatts 400 Milliamps
 1 Watt 650 Milliamps
 2 Watts 1.0 Amp
 Ground to Transmit

ON/OFF CONTROL:

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: 2.8 oz. Maximum

POWER/MOD/FREQ SELECT
 AIRBORN NM-222-015
 -261-THAA-135
 PIN # 1: 128 MHZ
 2: 64 MHZ
 3: 32 MHZ
 4: 16 MHZ
 5: 8 MHZ
 6: 4 MHZ
 7: 2 MHZ
 8: 1 MHZ
 9: 0.5 MHZ
 10: TELEMETRY IN
 11: $+12$ VDC
 12: $+12$ VDC
 13: ON/OFF
 14: GND
 15: GND



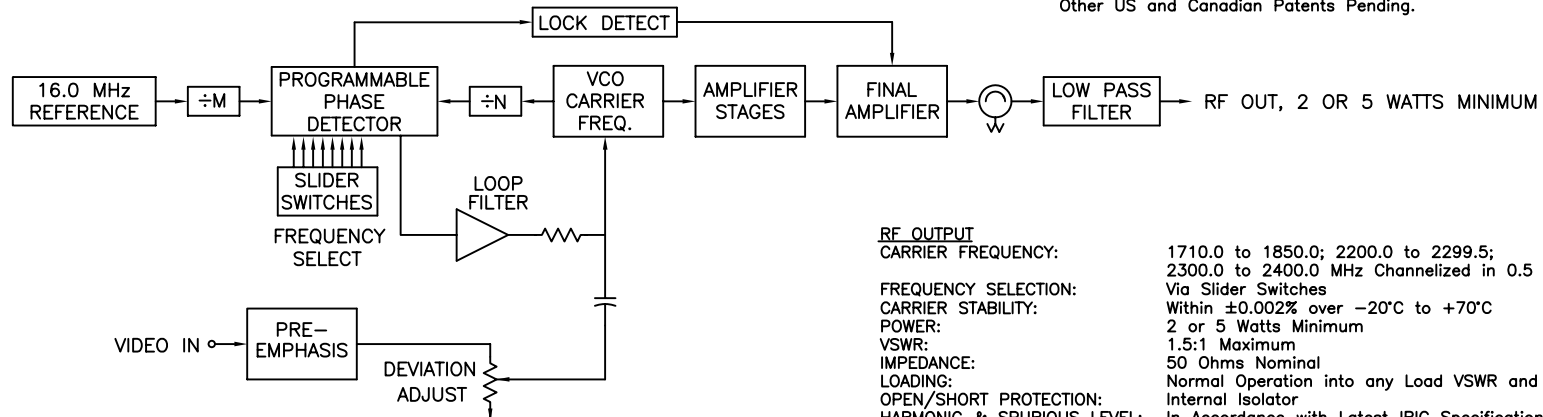
DATE	05 07 14	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		VIDEO TRANSMITTER/SC/P-E, 150mW/500mW/1W/2W CHANNELIZED, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
MODEL NO. EVTC-02DEA SERIES		

Video Transmitter Model EVTC-L3DEA Series

Pre-Emphasis 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.



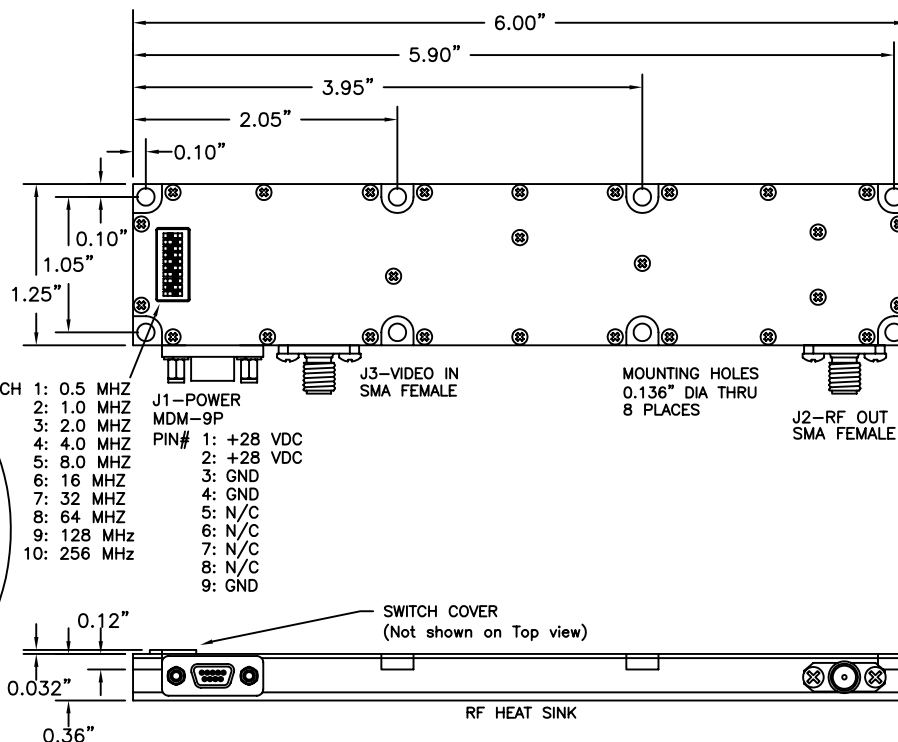
RF OUTPUT
 CARRIER FREQUENCY: 1710.0 to 1850.0; 2200.0 to 2299.5;
 2300.0 to 2400.0 MHz Channelized in 0.5 MHz Steps
 FREQUENCY SELECTION: Via Slider Switches
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 2 or 5 Watts Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 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

VIDEO MODULATION INPUT
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Adjustable up to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS
 INPUT VOLTAGE: $+28 \pm 4$ 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: 2.7 oz. Maximum



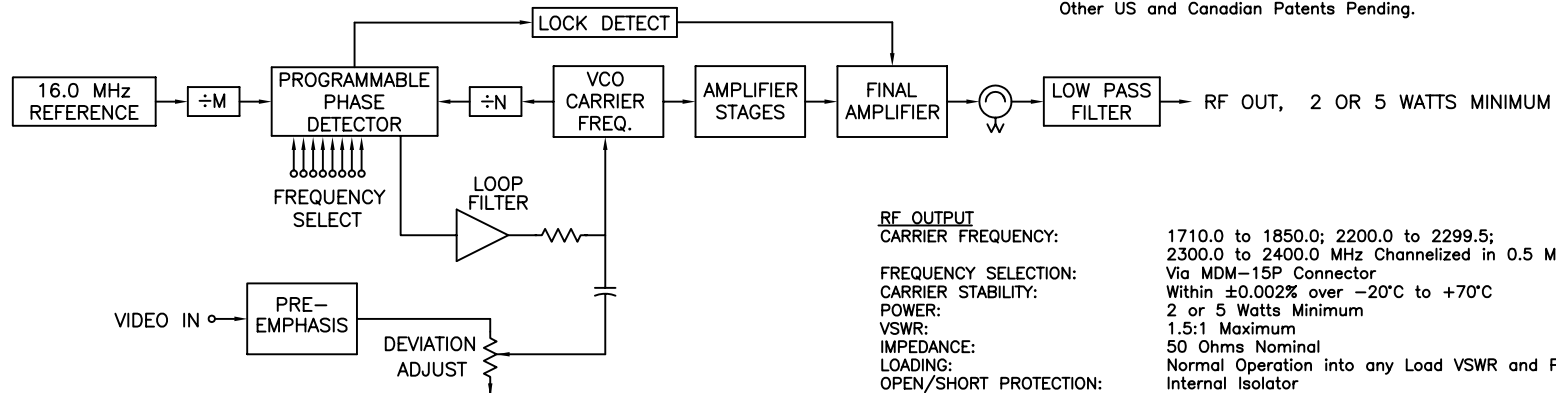
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO. 60666		VIDEO TRANSMITTER/P-E, 2 OR 5 WATTS CHANNELIZED, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
MODEL NO. EVTC-L3DEA SERIES		

Video Transmitter Model EVTC-S3DEA Series

Pre-Emphasis 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.



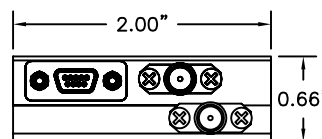
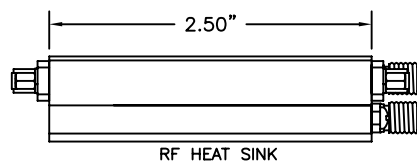
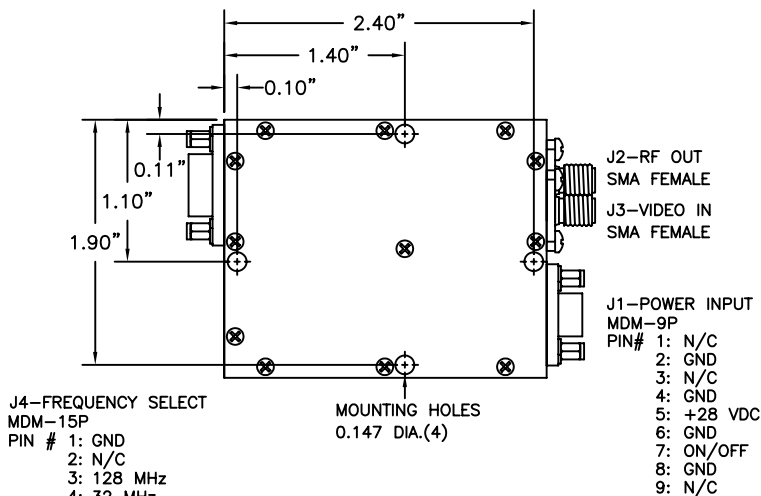
RF OUTPUT
 CARRIER FREQUENCY: 1710.0 to 1850.0; 2200.0 to 2299.5;
 2300.0 to 2400.0 MHz Channelized in 0.5 MHz Steps
 FREQUENCY SELECTION: Via MDM-15P Connector
 CARRIER STABILITY: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 POWER: 2 or 5 Watts Minimum
 VSWR: 1.5:1 Maximum
 IMPEDANCE: 50 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

VIDEO MODULATION INPUT
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Adjustable up to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS
 INPUT VOLTAGE: $+28 \pm 4$ 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: 3.6 oz. Maximum



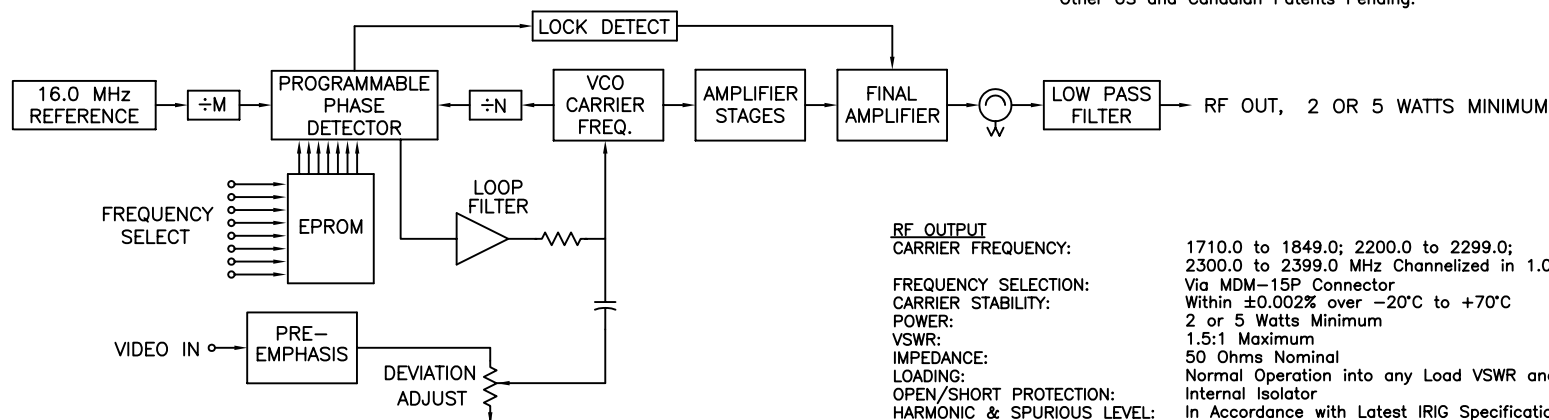
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	VIDEO TRANSMITTER/P-E, 2 OR 5 WATTS CHANNELIZED, AC COUPLED 1710.0 TO 2400.0 MHZ (3 BANDS)
		MODEL NO. EVTC-S3DEA SERIES 

Video Transmitter Model EVTC-05DEA Series

Pre-Emphasis 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:

1710.0 to 1849.0; 2200.0 to 2299.0;
 2300.0 to 2399.0 MHz Channelized in 1.0 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 IIRG Specifications

VIDEO MODULATION INPUT

FREQUENCY RESPONSE:
 PRE-EMPHASIS:
 PEAK DEVIATION:
 DEVIATION SENSITIVITY:
 HARMONIC DISTORTION:
 INCIDENTAL AM:
 INCIDENTAL FM:
 INPUT IMPEDANCE:

10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 Specify
 8 MHz Pk-Pk
 Adjustable up to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 2% Maximum
 5% Maximum
 10 KHz RMS Maximum
 75 Ohms, Shunted by 30pF Maximum

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

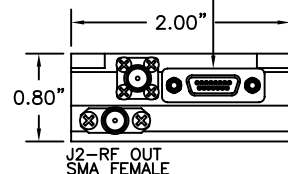
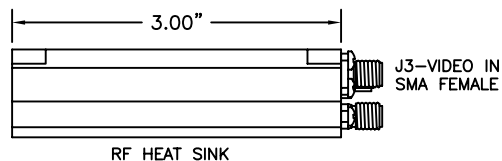
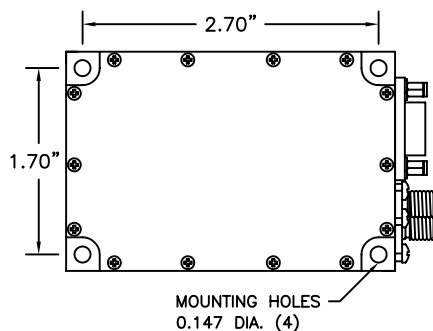
TEMPERATURE:
 VIBRATION:
 SHOCK:
 ACCELERATION:
 ALTITUDE:
 HUMIDITY:

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 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-POWER/FREQ SELECT
 MDM-15P
 MICRO-MINIATURE

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: N/C
 11: +28 VDC
 12: +28 VDC
 13: N/C
 14: GND
 15: GND

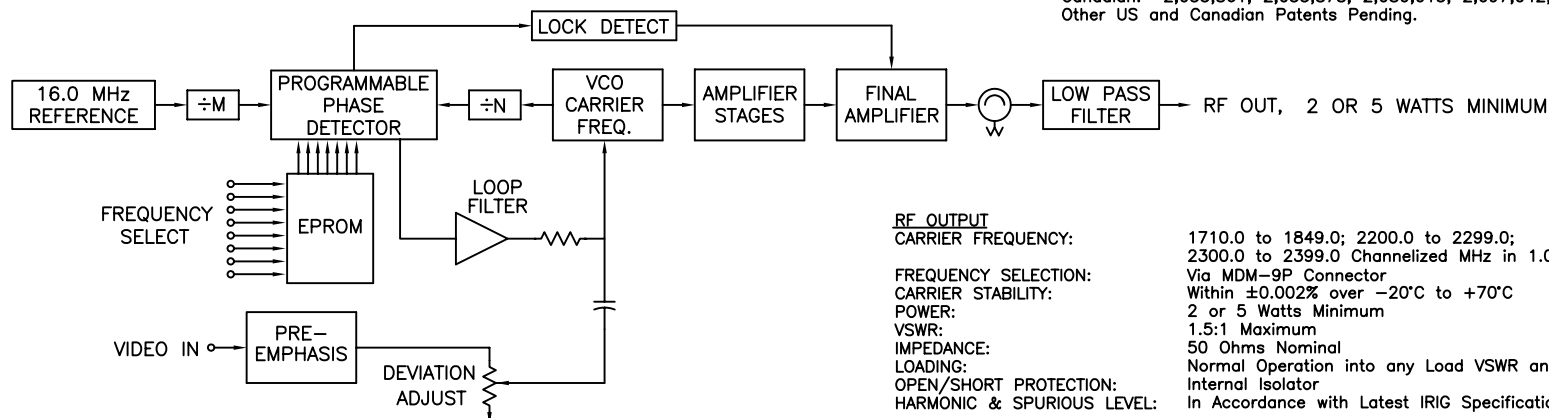
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		VIDEO TRANSMITTER/P-E, 2 OR 5 WATTS CHANNELIZED, AC COUPLED 1710.0 TO 2399.0 (3 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EVTC-05DEA SERIES

Video Transmitter Model EVTC-06DEA Series

Pre-Emphasis 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: 1710.0 to 1849.0; 2200.0 to 2299.0;
 2300.0 to 2399.0 Channelized MHz in 1.0 MHz Steps
 Via MDM-9P Connector
 FREQUENCY SELECTION: Within $\pm 0.002\%$ over -20°C to $+70^{\circ}\text{C}$
 CARRIER STABILITY: 1.5:1 Maximum
 POWER: 2 or 5 Watts Minimum
 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:

VIDEO MODULATION INPUT

FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Adjustable up to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS

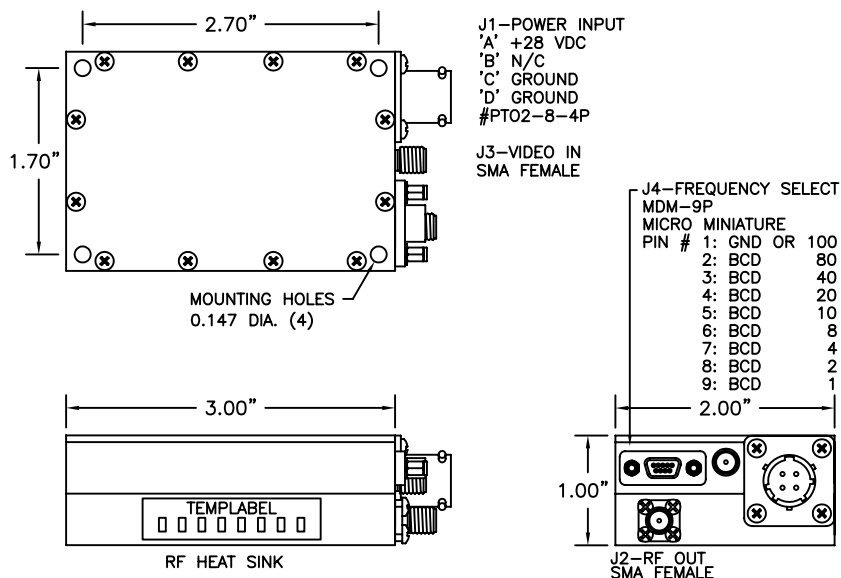
INPUT VOLTAGE: $+28 \pm 4$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):
 Power Current
 2 Watts 650 Milliamps
 5 Watts 1.2 Amps

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 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

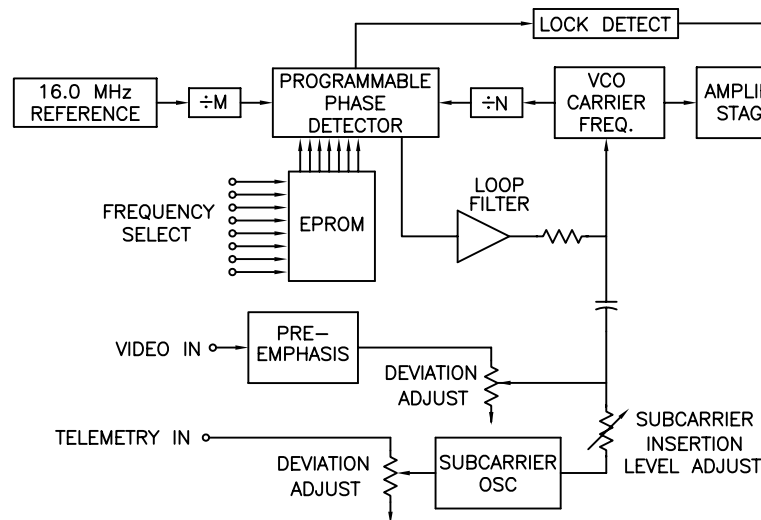


DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	VIDEO TRANSMITTER/P-E, 2 OR 5 WATTS CHANNELIZED, AC COUPLED 1710.0 TO 2399.0 (3 BANDS)
MODEL NO. EVTC-06DEA SERIES		

Video Transmitter Model EVTC-09DEA Series

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

Subcarrier Pre-Emphasis 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: 1710.0 to 1849.0; 2200.0 to 2299.0;
 2300.0 to 2399.0 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

VIDEO MODULATION INPUT
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

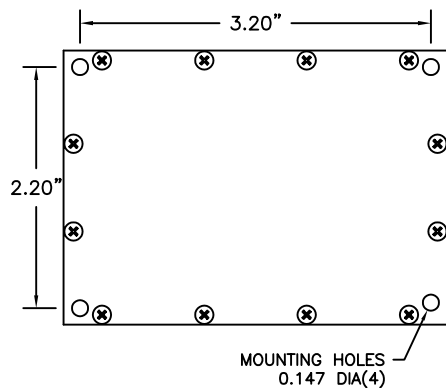
SUBCARRIER & S/C MODULATION INPUT
 SUBCARRIER FREQUENCY: 4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)
 SUBCARRIER STABILITY: Within $\pm 0.5\%$ Maximum over -20°C to $+70^{\circ}\text{C}$
 FREQUENCY RESPONSE: DC to 150 KHz
 PEAK DEVIATION: 300 KHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to ± 150 KHz/ ± 2.5 VDC
 DEVIATION NON-LINEARITY: $\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation
 HARMONIC DISTORTION: 5% Maximum from 10 Hz to 10 KHz
 INSERTION LEVEL: Adjustable up to -20 dBc Maximum
 INPUT IMPEDANCE: 10 KOhms Minimum

POWER REQUIREMENTS
 INPUT VOLTAGE: $+28 \pm 4$ 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



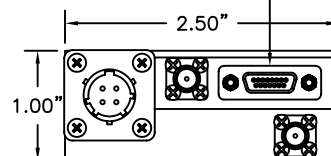
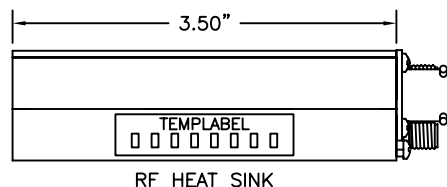
J2-RF OUT
SMA FEMALE

J3-VIDEO IN
SMA FEMALE

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

J4-FREQUENCY SELECT
MDM-15P
PIN #

1: GND
2: N/C
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: N/C
14: GND
15: GND



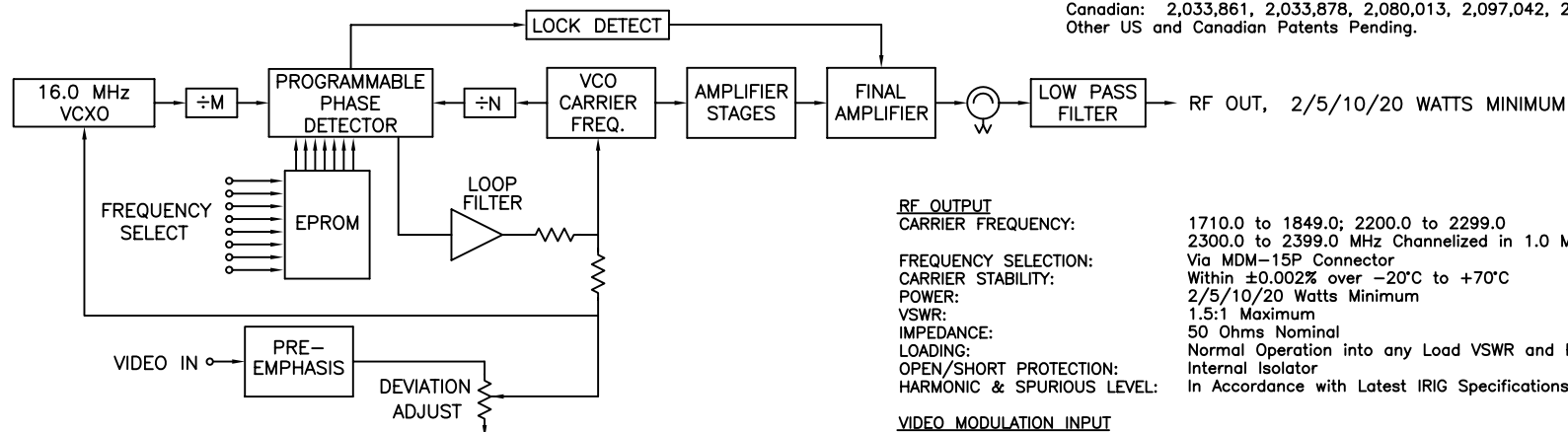
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		
CAGE CODE IDENT NO.	60666	VIDEO TRANSMITTER, 2/5-UHE/5/10/20 WATTS SC/P-E, CHANNELIZED, AC COUPLED 1710.0 TO 2399.0 MHZ (3 BANDS)
MODEL NO. EVTC-09DEA SERIES		

Video Transmitter Model EVTC-09DED Series

Standard or Ultra High Efficiency Pre-Emphasis 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:

1710.0 to 1849.0; 2200.0 to 2299.0
 2300.0 to 2399.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE:

DC to 4.5 MHz ± 1.5 dB; DC to 6.0 MHz ± 3.0 dB

PRE-EMPHASIS:

Specify

PEAK DEVIATION:

8 MHz Pk-Pk

DEVIATION SENSITIVITY:

Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover

HARMONIC DISTORTION:

2% Maximum

INCIDENTAL AM:

5% Maximum

INCIDENTAL FM:

10 KHz RMS Maximum

INPUT IMPEDANCE:

75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS

INPUT VOLTAGE:

$+28 \pm 4$ 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

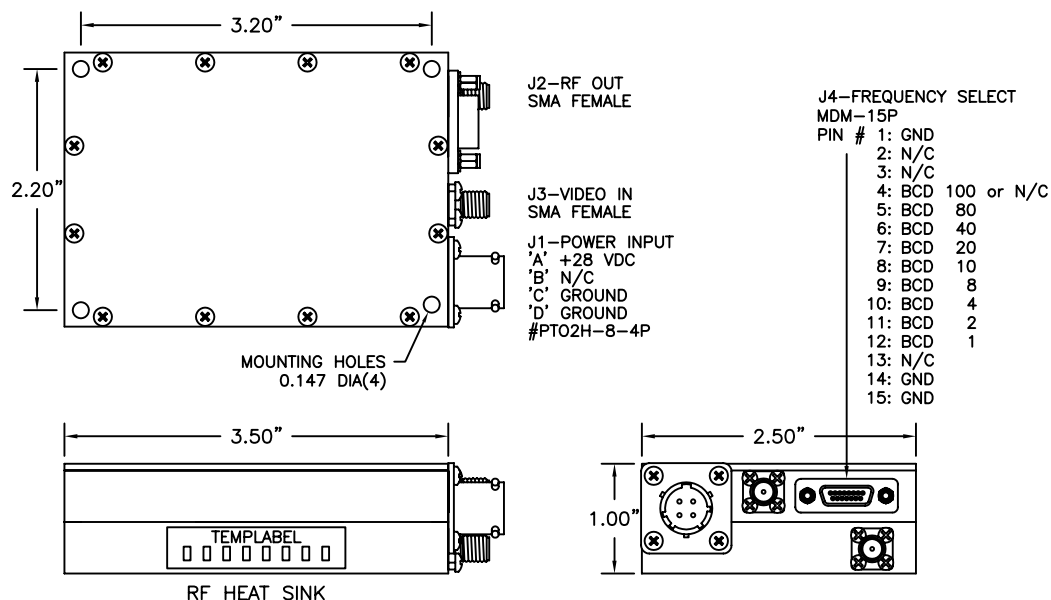
PHYSICAL CHARACTERISTICS

DIMENSIONS:

Per Outline Drawing

WEIGHT:

12 oz. Maximum

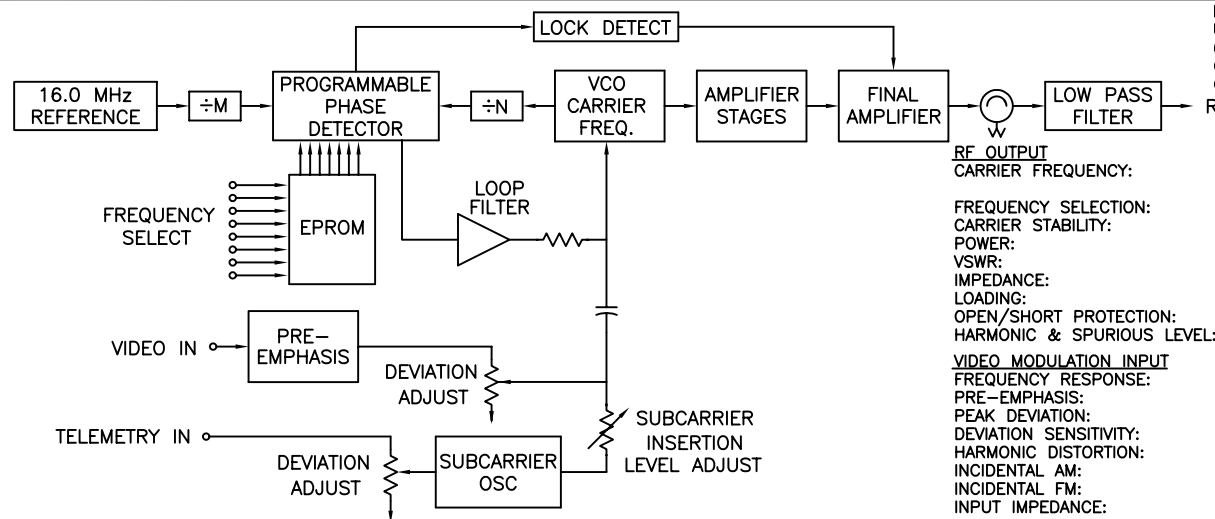


DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		VIDEO TRANSMITTER/P-E, 2/5-UHE/5/10/20 WATTS CHANNELIZED, DC COUPLED 1710.0 TO 2399.0 MHZ (3 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EVTC-09DED SERIES 

Video Transmitter Model EVTC-11DEA Series

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

Subcarrier Pre-Emphasis 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: 1710.0 to 1849.0; 2200.0 to 2299.0;
 2300.0 to 2399.0 MHz Channelized in 1.0 MHz Steps
 Via MDM-9P Connector
 FREQUENCY SELECTION: Within $\pm 0.002\%$ over -20°C to $+70^\circ\text{C}$
 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:

VIDEO MODULATION INPUT
 FREQUENCY RESPONSE: 10 Hz to 4.5 MHz ± 1.5 dB; 6 Hz to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

SUBCARRIER & S/C MODULATION INPUT
 SUBCARRIER FREQUENCY: 4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)
 SUBCARRIER STABILITY: Within $\pm 0.5\%$ Maximum over -20°C to $+70^\circ\text{C}$
 FREQUENCY RESPONSE: DC to 150 KHz
 PEAK DEVIATION: 300 KHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to ± 150 KHz/ ± 2.5 VDC
 DEVIATION NON-LINEARITY: $\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation
 HARMONIC DISTORTION: 5% Maximum from 10 Hz to 10 KHz
 INSERTION LEVEL: Adjustable up to -20 dBc Maximum
 INPUT IMPEDANCE: 10 KOhms Minimum

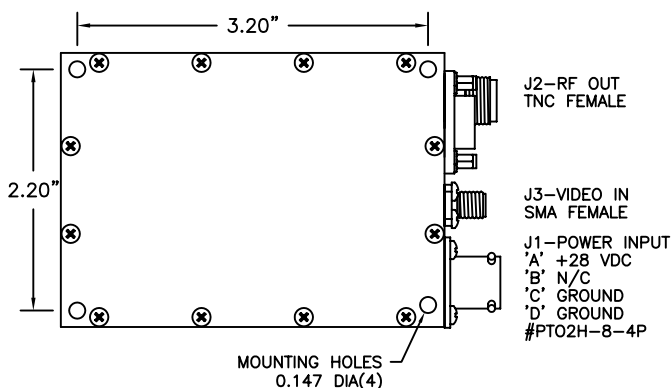
POWER REQUIREMENTS
 INPUT VOLTAGE: $+28 \pm 4$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):

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

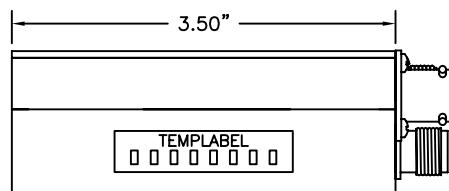
TEMPERATURE: Operating: -20°C to $+70^\circ\text{C}$; Storage: -54°C to $+125^\circ\text{C}$
 VIBRATION: 14 G's, Random, Standard Haystack, 20 Hz to 2 KHz, 3 Axes
 SHOCK: 1/2 Sine, 100 G's Pk, 11 ms, 3 Axes
 ACCELERATION: 100 G's, 3 Axes
 ALTITUDE: Unlimited
 HUMIDITY: To 95% at any Temperature forming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

PHYSICAL CHARACTERISTICS
 DIMENSIONS:
 WEIGHT: 14 oz. Maximum

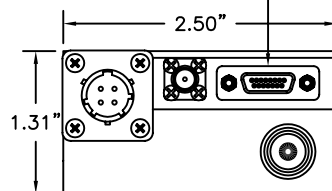


J4-FREQUENCY SELECT MDM-15P

PIN #	
1:	GND
2:	N/C
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:	N/C
14:	GND
15:	GND



RF HEAT SINK



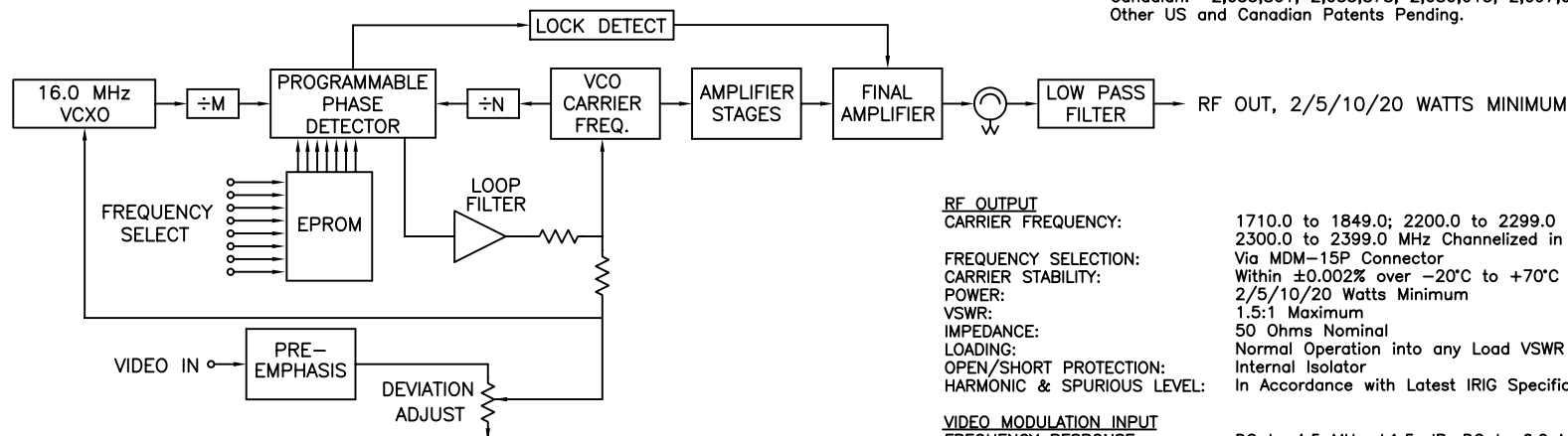
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		VIDEO TRANSMITTER, 2/5-UHE/5/10/20 WATTS SC/P-E, CHANNELIZED, AC COUPLED 1710.0 TO 2399.0 MHZ (3 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EVTC-11DEA SERIES

Video Transmitter Model EVTC-11DED Series

Standard or Ultra High Efficiency Pre-Emphasis 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.



RF OUTPUT

CARRIER FREQUENCY: 1710.0 to 1849.0; 2200.0 to 2299.0
 2300.0 to 2399.0 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

VIDEO MODULATION INPUT

FREQUENCY RESPONSE: DC to 4.5 MHz ± 1.5 dB; DC to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

POWER REQUIREMENTS

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

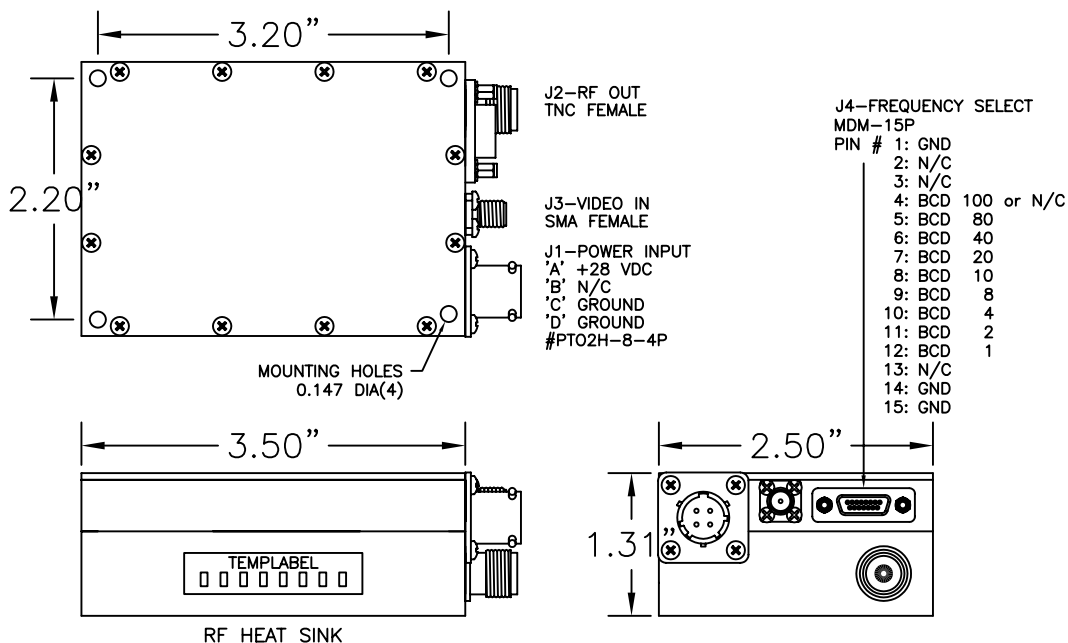
Power	Current
2 Watts	650 Milliamps
5 Watts	800 Milliamps (Ultra High Efficiency)
5 Watts	1.2 Amps
10 Watts	2.0 Amps
20 Watts	4.0 Amps

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: 14 oz. Maximum



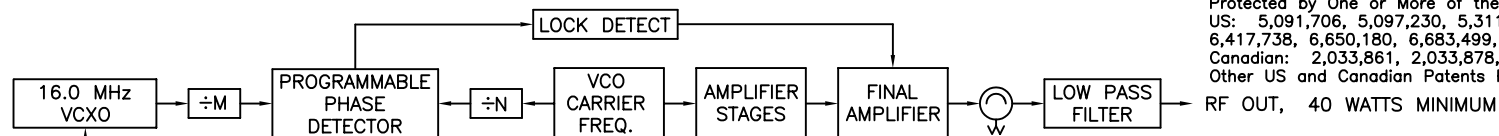
DATE	05 07 10	 EMHISER RESEARCH, INC. 2705 OLD HIGHWAY 40 WEST TEL: 775-345-2705 P.O. BOX 189 VERDI, NEVADA FAX: 775-345-2484 89439-0189 U.S.A. EMAIL: INFO@EMHISER.COM
DWN	L3	
APVD		
QC		VIDEO TRANSMITTER/P-E, 2/5-UHE/5/10/20 WATTS CHANNELIZED, DC COUPLED 1710.0 TO 2399.0 MHZ (3 BANDS)
CAGE CODE IDENT NO.	60666	MODEL NO. EVTC-11DED SERIES 

Video Transmitter Model EVTC-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.



RF OUTPUT
 CARRIER FREQUENCY: 1710.0 to 1849.0; 2200.0 to 2299.0
 2300.0 to 2399.0 MHz Channelized in 1.0 MHz Steps
 Via MDM-15P Connector
 FREQUENCY SELECTION: Within $\pm 0.002\%$ over -20°C to $+70^\circ\text{C}$
 CARRIER STABILITY: 40 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:

VIDEO MODULATION INPUT
 FREQUENCY RESPONSE: DC to 4.5 MHz ± 1.5 dB; DC to 6.0 MHz ± 3.0 dB
 PRE-EMPHASIS: Specify
 PEAK DEVIATION: 8 MHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to 8 MHz Pk-Pk/1V Pk-Pk at Crossover
 HARMONIC DISTORTION: 2% Maximum
 INCIDENTAL AM: 5% Maximum
 INCIDENTAL FM: 10 KHz RMS Maximum
 INPUT IMPEDANCE: 75 Ohms, Shunted by 30pF Maximum

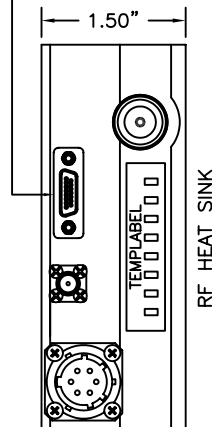
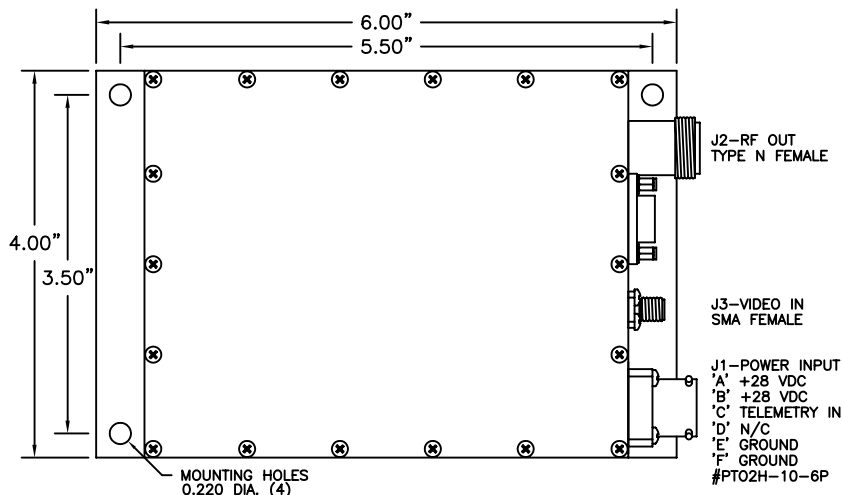
SUBCARRIER & S/C MODULATION INPUT
 SUBCARRIER FREQUENCY: 4.83, 5.2, 5.8, 6.2, 6.8, 7.5, or 8.5 MHz (Specify)
 SUBCARRIER STABILITY: Within $\pm 0.5\%$ Maximum over -20°C to $+70^\circ\text{C}$
 FREQUENCY RESPONSE: DC to 150 KHz
 PEAK DEVIATION: 300 KHz Pk-Pk
 DEVIATION SENSITIVITY: Factory Set to ± 150 KHz/ ± 2.5 VDC
 DEVIATION NON-LINEARITY: $\pm 3\%$ Maximum; 5 Hz - 150 KHz Rate to ± 150 KHz Deviation
 HARMONIC DISTORTION: 5% Maximum from 10 Hz to 10 KHz
 INSERTION LEVEL: Adjustable up to -20 dBc Maximum
 INPUT IMPEDANCE: 10 Kohms Minimum

POWER REQUIREMENTS
 INPUT VOLTAGE: $+28 \pm 4$ VDC: Reverse Polarity Protected
 INPUT CURRENT (MAXIMUM):
 Band Current
 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: 28 oz. Maximum

J4-FREQUENCY SELECT
 MDM-15P
 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



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	VIDEO TRANSMITTER/SC/P-E, 40 WATTS CHANNELIZED, DC COUPLED 1710.0 TO 2399.0 MHZ (3 BANDS)
		MODEL NO. EVTC-36DED SERIES