

**DESCRIPTION**

PMI MODEL NO. EWDM-2G6G-65-70MV-2 IS A CW IMMUNE EW DETECTOR MODULE OPERATING OVER THE 2.0 TO 6.0 GHz FREQUENCY RANGE. THIS MODEL FEATURES AN INTERNAL SWITCH USED TO SWITCH BETWEEN THE "BIT IN" AND "RF IN" WITH INPUT BLANKING ON BOTH PORTS. IN ADDITION, TWO AMPLIFIED RF OUTPUTS ARE PROVIDED A 7 dB GAIN CHANNEL AND A 33 dB GAIN CHANNEL. THE VIDEO OUTPUT IS DESIGNED TO DRIVE A 150 ft. CABLE, WHILE MAINTAINING HIGH SPEED, AND EXCELLENT ACCURACY.

**SPECIFICATIONS**

- Input Frequency: ..... 2 - 6 GHz
- Input VSWR: ..... 2.0:1, Max.
- Noise Figure: ..... 6 dB, Max.
- Input Power: ..... (1) 1 W CW, Max.  
 ..... (2) 100 W Peak @ PW = 1 us & Duty Cycle = 1%, Max.
- Control & DC Supply Connector: ..... D-type Female 9 pin
- RF Connectors & Video Output (5 Places): ..... SMA (F)
- TTL Control Logic Interface: ..... See Logic Table
- Finish: ..... Gray epoxy paint, bottom surface free of paint

**SP3T SWITCH SPECIFICATIONS:**

- Switch Mode: ..... See Logic Table
- Isolation: ..... 60 dB, Min., among all ports
- Switching Speed: ..... 100 ns, Max.

**OUTPUT TO 8-WAY POWER COMBINER SPECIFICATIONS:**

- Linear Gain: ..... +33 dB, Min; 38dB Max.
- Frequency Flatness: ..... ±1.5 dB, Max.
- 1 dB Compression Point: ..... +10 dBm, Min.
- Noise Figure: ..... 5 dB, Max.
- Second Harmonic: ..... -12 dBc, Min.
- Third Harmonic: ..... -15 dBc, Min.
- I/O VSWR: ..... 2.0:1, Max., Impedance = 50 Ohm

**OUTPUT TO SWITCH MATRIX SPECIFICATIONS:**

- Linear Gain: ..... +7 dB, Min; 11dB Max.
- Frequency Flatness: ..... ±1.2 dB, Max.
- 1 dB Compression Point: ..... +10 dBm, Min.
- Second Harmonic: ..... -12 dBc, Min.
- Third Harmonic: ..... -15 dBc, Min.
- I/O VSWR: ..... 2.0:1, Max., Impedance = 50 Ohm

**DC POWER SPECIFICATIONS:**

- DC Supply Voltage : ..... ±15 V ±5%
- Ripple From DC to 10 MHz : ..... 100 mV, Max.
- Current: ..... 1.0 A. For +15 VDC, Max.  
 ..... 0.5 A. For -15 VDC, Max.

**ENVIROMENTAL SPECIFICATIONS**

- Operating Temperature: ..... 0 °C +85 °C
- Stabilization Bake: ..... 24 Hours @ +85 °C
- Thermal Shock: ..... High temperature 85 °C, low temperature 0 °C  
 ..... 5 cycles, dwell time 2 hours
- Random Vibration: ..... 20 Hz to 2000 Hz, random at 16.8 Grms, in all three axis for 15 minutes, Min.
- Burn In: ..... +85 °C for 48 hours with DC power on

ALL DIMENSIONS ARE IN INCHES  
 TOLERANCES:  
 .XXX ±0.020  
 X.XXX ±0.010

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	-	PRELIMINARY	12/7/18	JM
	1	SPEC UPDATES	7-25-19	JM

**LOG VIDEO OUTPUT SPECIFICATIONS:**

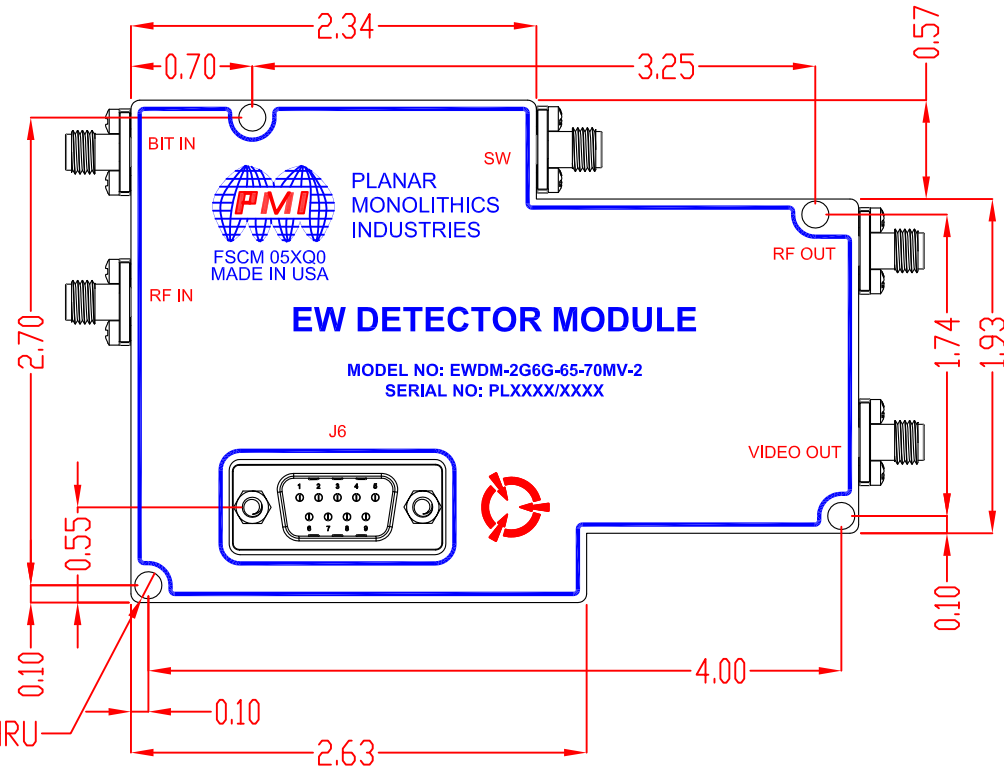
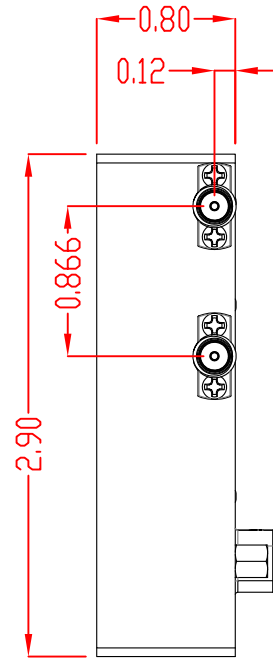
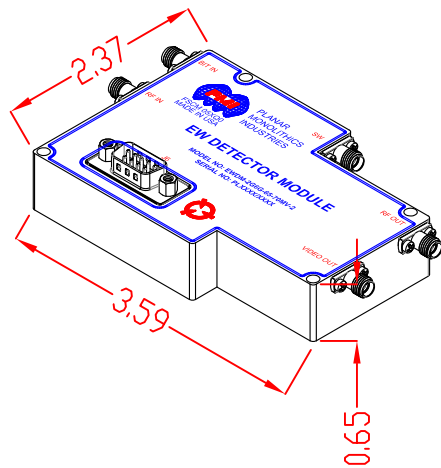
- TSS ..... -71dBm Min
- Dynamic Range ..... -65 to +0 dBm
- Log Slope, Fixed ..... 70 ±3mV/dB
- Log Linearity Deviation ..... ±0.75dB, Max  
 (Deviation From Straight Line @ 4GHz & 25 °C)
- Log Accuracy ..... ± 1.25 dB, Max  
 (Deviation From Straight Line Thru Average Slope @ frequency Range & 25 °C)
- Absolute Log Accuracy ..... ± 1.5 db, Max  
 (Deviation From Straight Line Thru Average Slope over Frequency Range & 0 °C to +85 °C)
- DC offset @ RF input is terminated & DC power is on. .... 0 ±70mV
- Rise Time, 10% to 90% of Pulse rising ..... 25ns (typ.); 28ns (max.)
- Falling Time, 90% to 10% of Pulse falling ..... 300ns (max.)
- Settling Time, Max. .... 50 ns Max To within ±70 mV of final value.
- Recovery Time, Max. .... 500 ns, Max  
 From 90% Falling To (0dBm,330us) ± 1dB Of Baseline.
- Video Frequency Flatness ..... ±0.75dB Max. At any Constant  
 Input Power From -65 dBm to 0 dBm, as  
 frequency is varied from 2-6 GHz (25 °C)
- CW immunity ..... A. CW immune power T.S.S to -40dBm baseline shift: 200mv,  
 Max.  
 B. At Pulse Power = -30dBm When CW Power = -50dBm, Pulse  
 Amplitude No Loss.  
 When CW Power = -40 dBm, Pulse Amplitude Loss 2dB Max.
- CW immune time at CW = -40 dBm ..... ≤ 4 ms
- CW recovery time at CW = -40 dBm ..... ≤ 50 us
- Pulse Response, Input signal ..... 100 ns to 300 us
- Output Load Impedance ..... 75 ±1 Ohm
- Output Video driver capability ..... Driving 150 ft RG11 into 75 ohm load.
- Pulse Density Capability ..... 10% duty cycle 100ns; 70% duty cycle 300us at peak power  
 -10dBm with 1dB variable for pulse amplitude and baseline.
- COUPLED MODE ..... Pseudo AC COPULED MODE
- Noise level (Vp-p) ..... 160mv (typ.)
- Droop of the output video pulse at Power >~65dBm for Pulse Width 300us. .... 70mv (1db max.)
- Propagation Delay, Max. .... 50 ns (Excluding Cable) @Switch is on "ON" position  
 from 50% input RF TO 10% output video. not including video  
 cable.

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 ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE		
DRAWN JM		12/7/18	PRODUCT FEATURE EWDM-2G6G-65-70MV-2		
CHECKED			SIZE A	FSCM NO. 05X00	DWG NO. PRELIMINARY
ISSUED			SCALE N:S		REV. 1
				SHEET	1 OF 3

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D-SUB CONNECTOR PINS	
PIN NO.	FUNCTION
1	+15VDC
2	GND
3	NC
4	SWITCH CTL TTL 1
5	SWITCH CTL TTL 2
6	+15VDC
7	-15VDC
8	-15VDC
9	GND

SWITCH CONTROL TTL LOGIC TABLE		
COMMAND MODES	PIN 4	PIN 5
RF Input Mode	TTL LOW	TTL LOW
BIT Input Mode	TTL HIGH	TTL LOW
RF Input Chop Mode	TTL LOW	TTL HIGH
BIT Input Chop Mode	TTL HIGH	TTL HIGH

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 XXXX ±0.010

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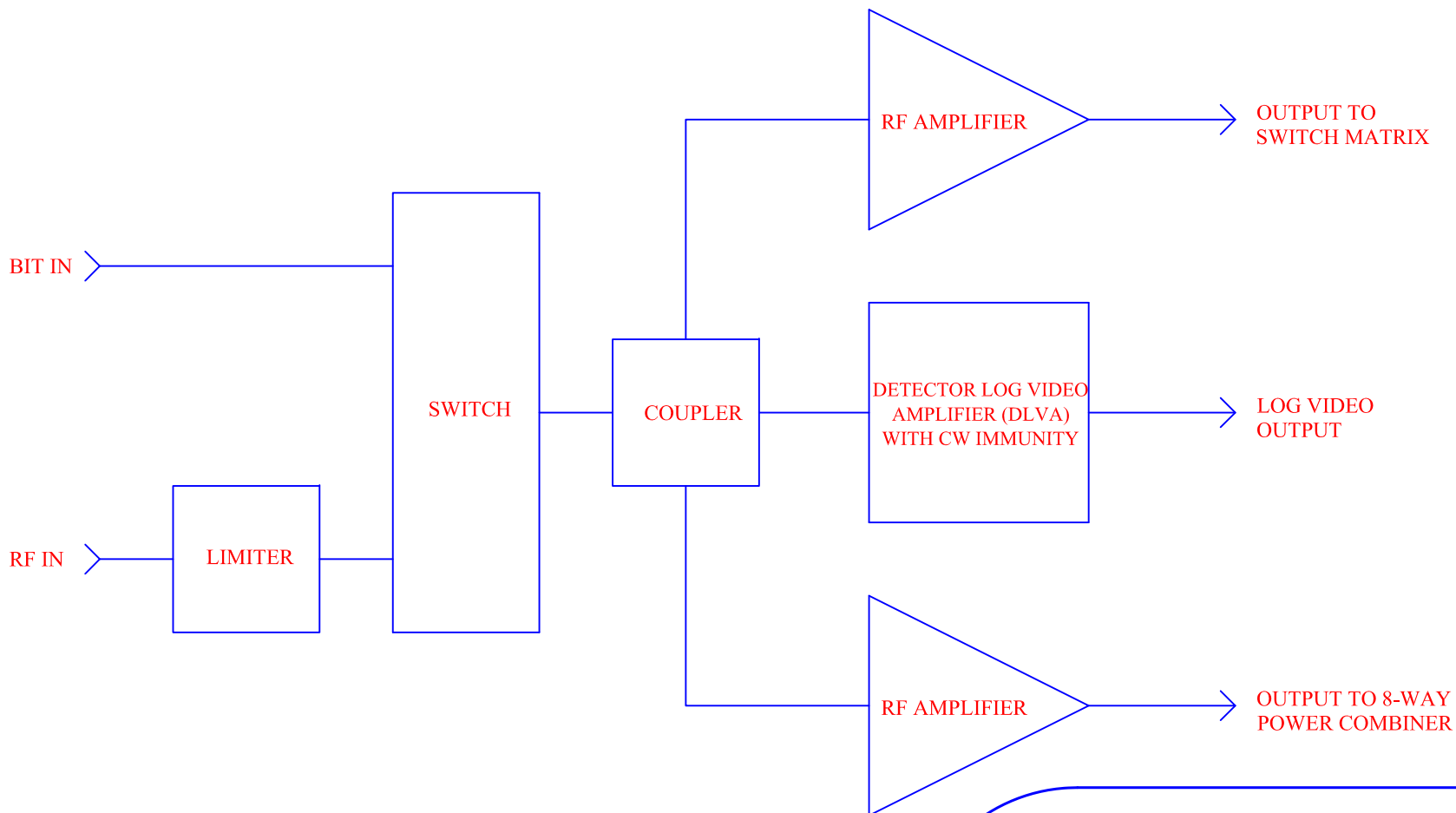
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APPROVALS		DATE	TITLE		
DRAWN JM		12/7/18	PRODUCT FEATURE		
CHECKED			EWDM-2G6G-65-70MV-1		
ISSUED			SIZE A	FSCM NO. 05XQ0	DWG NO. PRELIMINARY
			SCALE N:S	SHEET 2 OF 3	
					REV. 1

**FUNCTIONAL BLOCK DIAGRAM**

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DRAWN		JM	PRODUCT FEATURE			
CHECKED		12/7/18	EWDM-2G6G-65-70MV-2			
ISSUED			SIZE	FSCM NO.	DWG NO.	REV.
			A	05X00	PRELIMINARY	1
			SCALE	N:S	SHEET	3 OF 3