

DESCRIPTION

PMI MODEL EWDM-8G18G-65-70MV-2 IS A CW IMMUNE EW DETECTOR MODULE THAT OPERATES FROM 8.0 TO 18.0GHz. THIS MODEL FEATURES AN INTERNAL SWITCH USED TO SWITCH BETWEEN THE BIT IN AND RF IN WITH INPUT BLANKING ON BOTH PORTS. IN ADDITION AN RF OUTPUT PORT IS PROVIDED WITH A GAIN OF 33 dB MINIMUM. THE VIDEO OUTPUT IS DESIGNED TO DRIVE A 100 FT. CABLE.

RF SPECIFICATIONS

- FREQUENCY RANGE..... 8 GHz TO 18 GHz
- I /O VSWR 2.3:1 MAX
- INPUT POWER MAX 1 WATT CW, 100 WATT PEAK @PW= 1us & 1% DUTY
- SWITCH MODE..... (1) RF INPUT, (2) BIT, (3) CHOP
- ISOLATION..... 60 dB MIN ALL PORTS
- SWITCHING SPEED..... 100ns MAX
- LINEAR RF GAIN..... 42.5 dB MIN / 47.5 dB MAX
- NOISE FIGURE..... 6.5 dB MAX
- FREQUENCY FLATNESS..... ±2.5 dB
- 1 dB COMPRESSION..... +10 dBm MIN
- SATURATED POWER..... +20 dBm MAX
- SECOND HARMONIC..... -10 dBc MIN
- THIRD HARMONIC..... -20 dBc NOM

VIDEO OUTPUT SPECIFICATIONS

- TSS..... -71 dBm
- DYNAMIC RANGE..... -65 TO 0 dBm
- LOG SLOPE..... 70 mV/dB ±3 mV/dB
- LOG LINEARITY..... ±1.0 dB MAX
- LOG ACCURACY @ 25°C..... ±1.75 dB MAX
- ABSOLUTE LOG ACCURACY..... ±2.0 dB MAX
- DC OFFSET..... 0-100mV
- RISE TIME..... 28ns MAX (10-90% Tested from -50 to 0 dBm)
28ns MAX (10-90% Full Dynamic Range Guaranteed)
- FALL TIME..... 300ns MAX (10-90% Tested from -50 to 0 dBm)
300ns MAX (10-90% Full Dynamic Range Guaranteed)
- SETTLING TIME..... 50 ns MAX(FROM 10% TO WITHIN 70mV OF FINAL VALUE
@ -40 & -10 dBm)
- RECOVERY TIME..... 1us MAX (FROM 90% OF A -5 dBm, 100us PULSE TO WITHIN ±1.5dB OF BASELINE)
WITHOUT AMPLITUDE LOSS OF A FOLLOWING -65 dBm, 100ns PULSE
- VIDEO FREQUENCY FLATNESS..... ±1.75 dB MAX @ 25°C
- PULSE WIDTH PROCESS RANGE.... 100ns TO 100us
- VIDEO OUTPUT LOAD IMPEDANCE.. 95±1 OHMS
- VIDEO OUTPUT @ -65 dBm..... 320±123mV FOR ALL FREQUENCIES
- VIDEO OUTPUT DRIVE CAPABILITY.. DRIVING 100 ft RG180 INTO 95 OHMS LOAD
- PULSE DENSITY CAPABILITY..... NO PULSE AMPLITUDE LOSS
10% DUTY @ 100ns PW, 70% DUTY @ 100us PW
- NOISE LEVEL..... 25mV RMS MAX
- PULSE DROOP @ -65dBm..... 70mV MAX
- PROPAGATION DELAY..... 50ns MAX FROM 50% RF TO 10% VIDEO.
- CW IMMUNE POWER..... TSS TO -40dBm
- BASELINE SHIFT 200mV MAX @-40 dBm CW

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	-	PRELIMINARY	9/15/22	
	1	UPDATES	9/19/22	

- PULSE AMPLITUDE LOSS WITH PULSE POWER = -30dBm
@ CW POWER = -50dBm, NO LOSS
@ CW POWER = -40dBm, 2dB LOSS MAX
- CW IMMUNE TIME @ CW= -40dBm..... 4ms MAX
- CW RECOVERY TIME @CW= -40dBm.... 120us MAX
- DC POWER..... ±15V ±5% @ 0.7A MAX FOR +15V
0.2A MAX FOR -15V
- RIPPLE DC TO 10 MHz..... 100mV MAX
- CONNECTORS:
RF & VIDEO..... SMA FEMALE
DC POWER & CONTROL..... 9 PIN MICRO D-SUB FEMALE

ENVIRONMENTAL SPECIFICATIONS / E.S.S.

(ESS TEST PERFORMED 100%, REPORT PROVIDED FOR 1 UNIT PER LOT)

- MTBF..... 5000H @50°C
- STABILIZATION BAKE..... 24 HOURS @ +85°C
- THERMAL SHOCK..... -10°C TO +85°C, 10 CYCLES
1 HOUR DWELL TIME AT EACH TEMP, RATE OF TEMP CHANGE 15°C/MIN
- RANDOM VIBRATION..... 20Hz TO 2000Hz, RANDOM
16.8 GRMS IN ALL 3 AXIS FOR 15 MINUTES MIN.
- BURN IN..... 48 HOURS @ +85°C DC POWER ON
- OPERATING TEMPERATURE..... -10°C TO +85°C
- FINISH:..... GRAY PAINT, NO PAINT ON MOUNTING SURFACE

PMI CONFIDENTIAL AND PROPRIETARY

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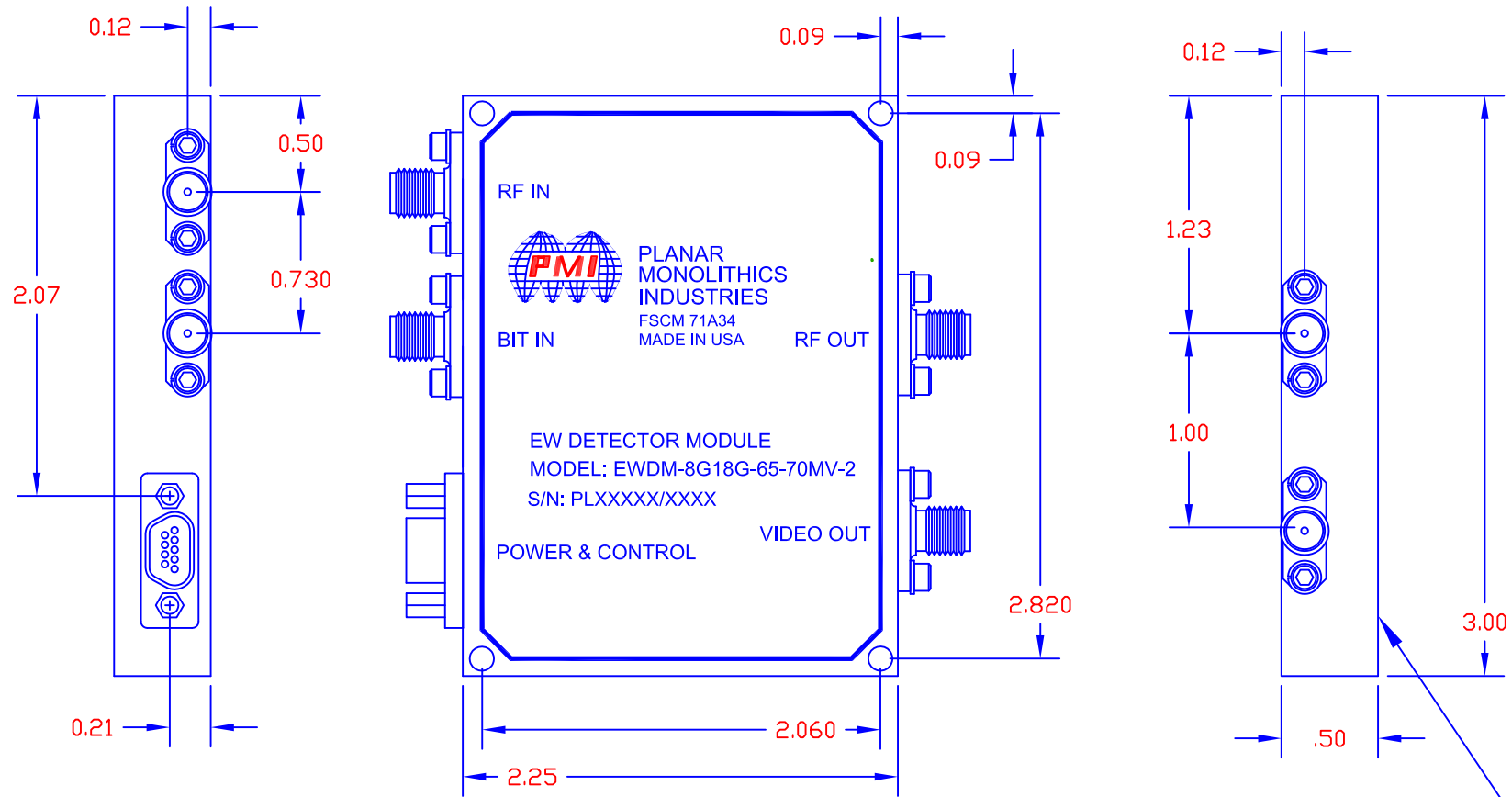


APPROVALS		DATE	TITLE			
DRAWN <i>JPH</i>		9/15/22	PRODUCT FEATURE EWDM-8G18G-65-70MV-2			
CHECKED			SIZE	FSCM NO.	DWG NO.	REV.
			A	71A34	PRELIMINARY	1
ISSUED			SCALE	N:S	SHEET	1 OF 3

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

MECHANICAL OUTLINE

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MICRO-D CONNECTOR PINS	
PIN NO.	FUNCTION
1	+15VDC
2	GND
3	NC
4	SW CONTROL TTL 1
5	SW CONTROL 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	TTL LOW	TTL HIGH
BIT INPUT CHOP	TTL HIGH	TTL HIGH

ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
X.XX ±0.01
X.XXX ±0.005

NO PAINT ON MOUNTING SURFACE

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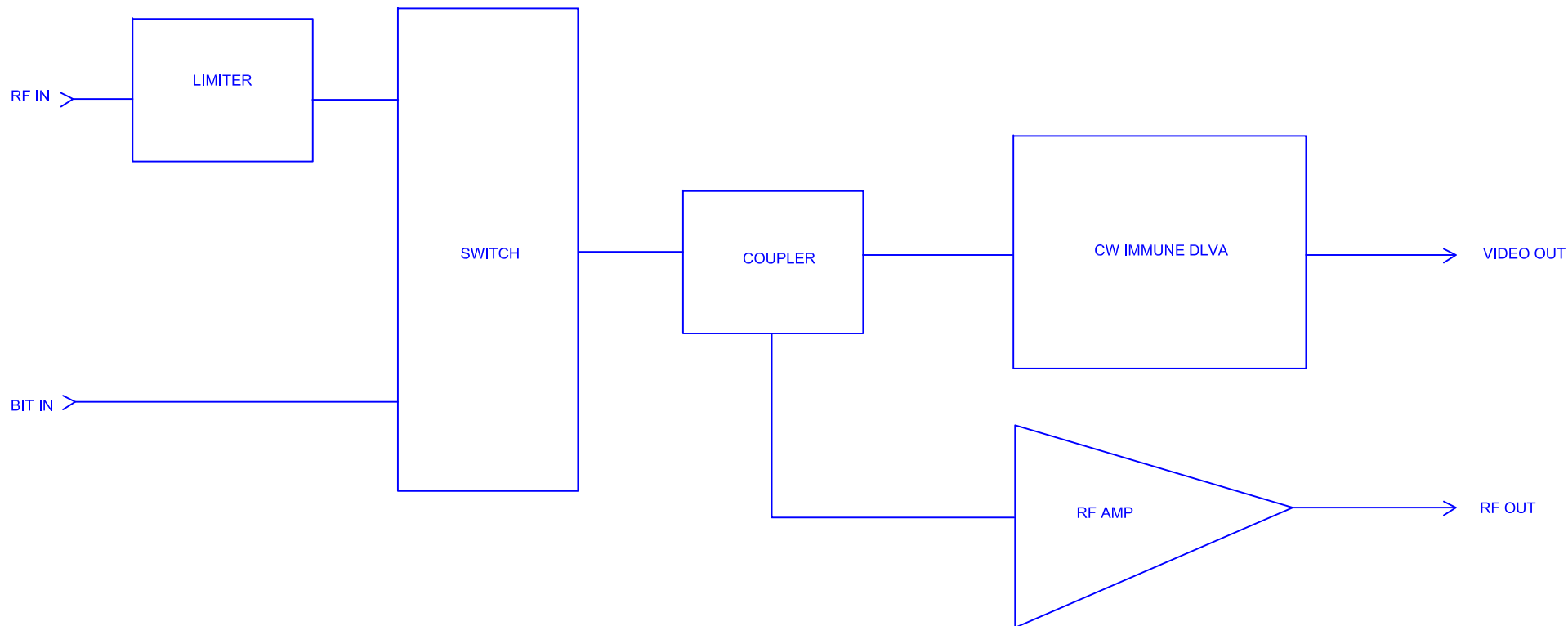
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ISSUED			SIZE A	FSCM NO. 71A34	DWG NO. PRELIMINARY
			SCALE N:S	SHEET 2 OF 3	

FUNCTIONAL BLOCK DIAGRAM

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ISSUED			SIZE	FSCM NO.	DWG NO.
			A	71A34	PRELIMINARY
			SCALE	N:S	SHEET
					3 OF 3
					REV. 1