

DESCRIPTION:

PMI MODEL NUMBER PIQ-85M18G-360/20-CD-2 IS A VECTOR MODULATOR COVERING THE FREQUENCY RANGE OF 85 MHz TO 18 GHz. THIS UNIT PROVIDES AN ATTENUATOR RESOLUTION OF 0.08 dB AND A PHASE SHIFT RESOLUTION OF 0.703125°. THE ATTENUATION IS PHASE INVARIANT AND THE PHASE IS AMPLITUDE INVARIANT MAKING IT IDEAL FOR NULLING UNWANTED SIGNALS. THE UNIT CAN BE SPECIFICALLY CALIBRATED FOR ANY NUMBER OF 100 MHz BANDS WITHIN THE FREQUENCY RANGE.

SPECIFICATIONS:

- FREQUENCY:..... 0.100 TO 18.0 GHz, 0.085 TO 18.0 GHz GOAL
- PHASE RANGE, 0.100-0.5 GHz:..... 180° NOMINAL, 360° GOAL
- PHASE RANGE, 0.5-18 GHz:..... 360° NOMINAL
- ATTENUATOR DYNAMIC RANGE:..... 20 dB MINIMUM
- ATTENUATOR RESOLUTION:..... 0.1 dB MAXIMUM (0.08 dB NOMINAL)
- INSERTION LOSS:..... -3 dB $\pm$ 4 dB
- AMPLITUDE VARIATION:..... $\pm$ 4 dB ACROSS FREQUENCY RANGE
- AMPLITUDE VARIATION, NARROW BAND:..... $\pm$ 0.5dB ACROSS OVER ANY 50 MHz 0.1 - 0.5 GHz
 $\pm$ 0.5dB ACROSS OVER ANY 100 MHz 0.5 - 18 GHz
- PHASE VARIATION, NARROW BAND:..... $\pm$ 2° ACROSS OVER ANY 50 MHz 0.1 - 0.5 GHz
 $\pm$ 2° ACROSS OVER ANY 100 MHz 0.5 - 18 GHz
(NOT INCLUDING THE PHASE ERROR IN THE AGILENT N5230A PNA)
- PHASE RESOLUTION:..... 0.8° MAXIMUM (0.703125° NOMINAL)
- RETURN LOSS (INPUT/OUTPUT):..... 10dB MINIMUM
- RF INPUT POWER, OPERATING:..... +5 dBm NOMINAL FOR PROTOTYPE
0 dBm TO +10 dBm MAXIMUM
- RF INPUT POWER (CW),
DAMAGE THRESHOLD:..... +30dBm CW MAXIMUM
- CONTROL TYPE
FREQUENCY SETTING:..... 8 BIT TTL FOR 100 MHz BANDS, SEE TABLE 1
PHASE SHIFT SETTING:..... 9 BIT TTL
ATTENUATOR SETTING:..... 8 BIT TTL
- BAND SWITCHING:..... INTEGRATED INPUT/OUTPUT SWITCH (NOMINAL)
- SWITCHING SPEED:..... 10 μ s TYPICAL
- POWER SUPPLIES:..... $\pm$ 15V, +5V
- GAIN FOR OUTPUT AMPLIFIER:..... 28 dB NOMINAL
- NOISE FIGURE FOR OUTPUT AMPLIFIER:..... 4 dB TYPICAL
- OIP3 FOR OUTPUT AMPLIFIER:..... 27.5 dBm TYPICAL
- OP1dB FOR OUTPUT AMPLIFIER:..... 16 dBm TYPICAL

- SIZE:..... 6" X 3" X 1"
- RF CONNECTORS:..... SMA (F)

- DIGITAL / POWER CONNECTOR:..... 37 PIN MALE MICRO-D MDM-37PH003P or EQUIV.
MATING CONNECTOR PROVIDED
- FINISH:..... PAINTED GRAY - EPOXY POLIMIDE COATING IAW MIL-C-22750,
TYPE I OVER EPOXY POLIMIDE PRIMER IAW MIL-P-23377, TYPE I, CLASS 1 OR 3.

ENVIRONMENTAL RATINGS:

- TEMPERATURE:..... -20°C TO +60°C (OPERATING)
PROTOTYPE 25° C AMBIENT

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL RELEASE	10/16/12	
	A1	FINALIZED SPECIFICATIONS	6/27/13	

MECHANICAL OUTLINE

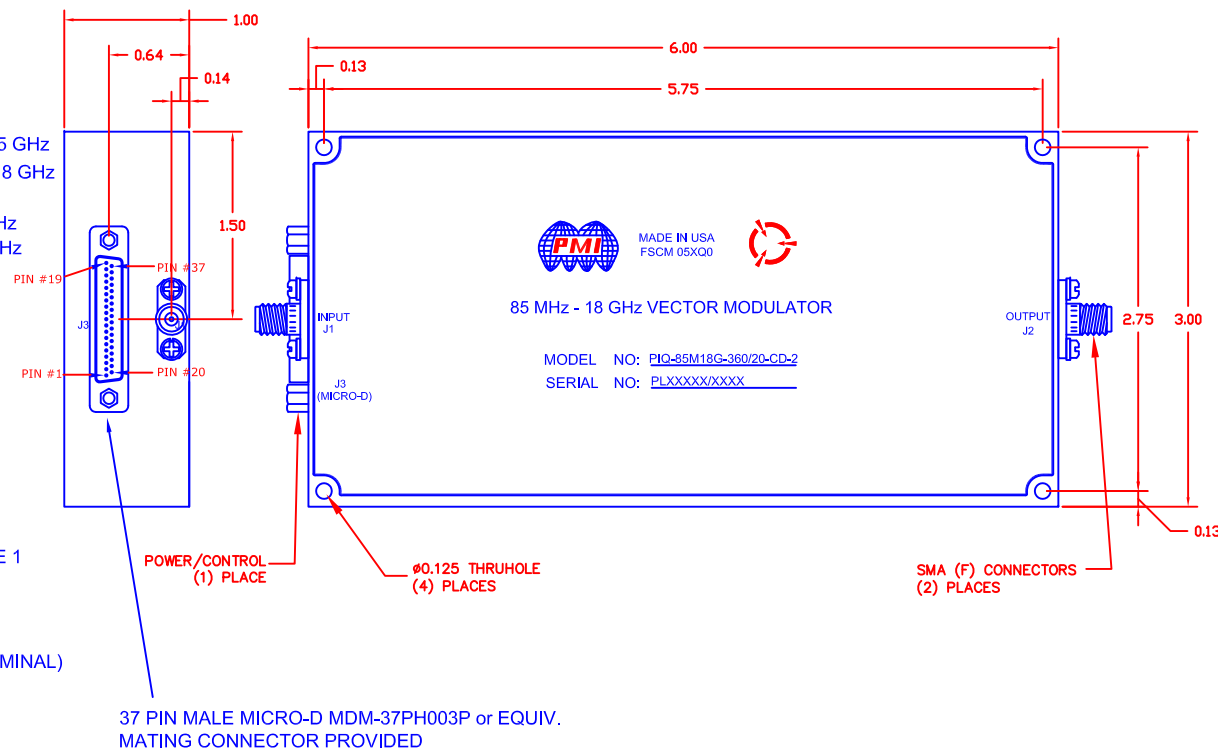


TABLE 1: FREQUENCY BANDS

FREQUENCY	BINARY COMMAND	DECIMAL
85 MHz - 100 MHz	00000000	0
100 MHz - 200 MHz	00000001	1
200 MHz - 300 MHz	00000010	2
...	...	...
17.9 GHz - 18 GHz	10011111	159

PMI CONFIDENTIAL AND PROPRIETARY

PLANAR MONOLITHICS INDUSTRIES, INC.

7311-F GROVE ROAD
FREDERICK, MARYLAND 21704 USA
TEL: 301-662-5019 FAX: 301-662-1731
WEBSITE: www.pmi-rf.com
E-MAIL: sales@pmi-rf.com
ISO 9001:2008 CERTIFIED



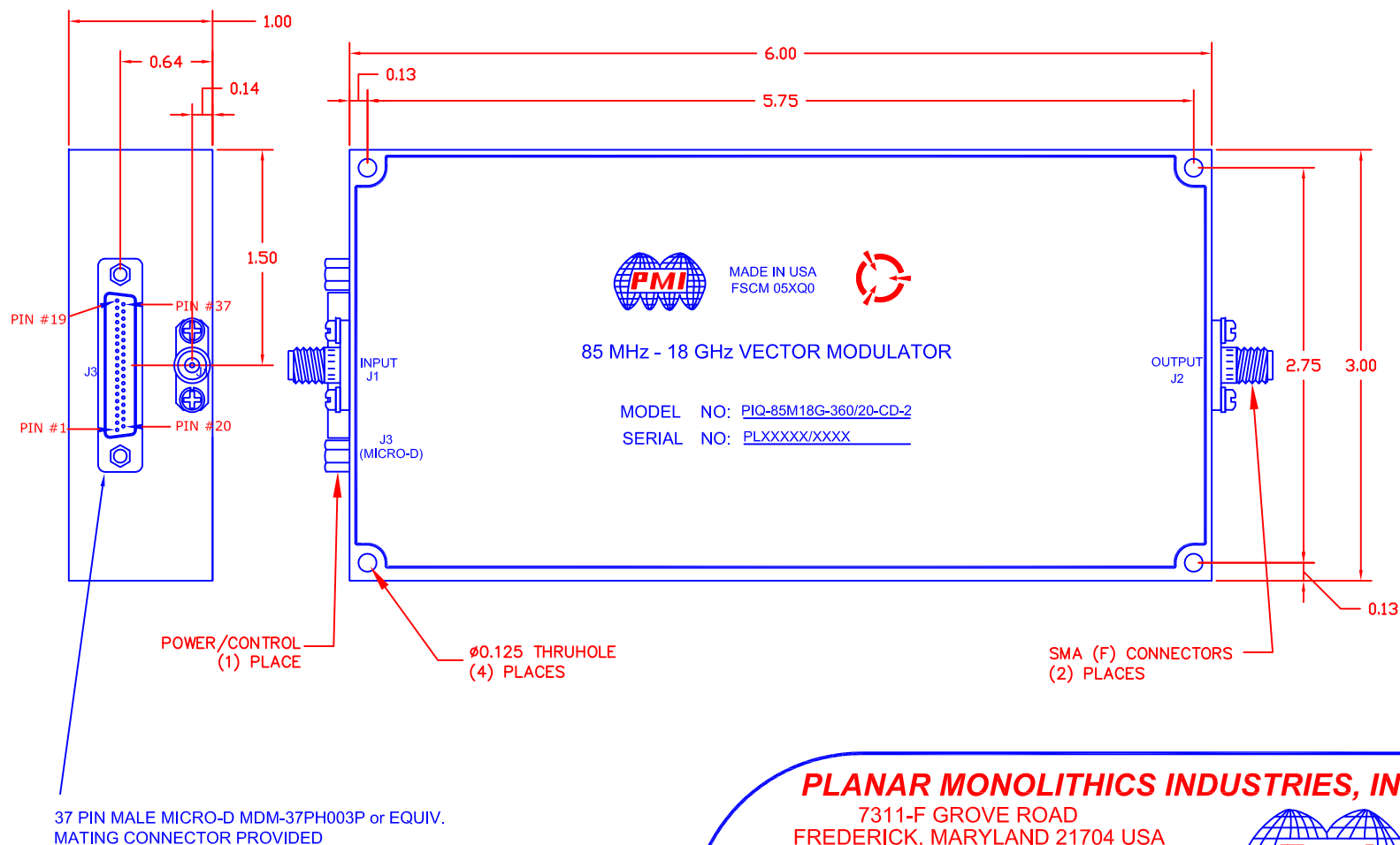
APPROVALS		DATE	TITLE			
DRAWN		7/9/12	PRODUCT FEATURE			
CHECKED			PIQ-85M18G-360/20-CD-2			
ISSUED			SIZE	FSCM NO.	DWG NO.	REV.
			A	05XQ0	27017001	A1
			SCALE	N: S	SHEET	1 OF 2

ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
X.XX $\pm$ 0.020
X.XXX $\pm$ 0.005

CONTROL CONNECTOR J3	
1	F0 FREQUENCY WORD (LSB)
2	F1 FREQUENCY WORD
3	F2 FREQUENCY WORD
4	F3 FREQUENCY WORD
5	F4 FREQUENCY WORD
6	F5 FREQUENCY WORD
7	F6 FREQUENCY WORD
8	F7 FREQUENCY WORD (MSB)
9	GND
10	P0 PHASE SHIFTER WORD (LSB)
11	P1 PHASE SHIFTER WORD
12	P2 PHASE SHIFTER WORD
13	P3 PHASE SHIFTER WORD
14	P4 PHASE SHIFTER WORD
15	P5 PHASE SHIFTER WORD
16	P6 PHASE SHIFTER WORD
17	P7 PHASE SHIFTER WORD
18	P8 PHASE SHIFTER WORD (MSB)
19	GND
20	A0 ATTENUATION WORD (LSB)
21	A1 ATTENUATION WORD
22	A2 ATTENUATION WORD
23	A3 ATTENUATION WORD
24	A4 ATTENUATION WORD
25	A5 ATTENUATION WORD
26	A6 ATTENUATION WORD
27	A7 ATTENUATION WORD (MSB)
28	GND
29	+15V
30	GND
31	-15V
32	GND
33	+5V
34	GND
35	N.C.
36	N.C.
37	N.C.

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL RELEASE	7/3/12	
	A1	FINALIZED SPECIFICATIONS	6/27/13	

MECHANICAL OUTLINE



PMI CONFIDENTIAL AND PROPRIETARY

PLANAR MONOLITHICS INDUSTRIES, INC.

7311-F GROVE ROAD
FREDERICK, MARYLAND 21704 USA
TEL: 301-662-5019 FAX: 301-662-1731
WEBSITE: www.pmi-rf.com
E-MAIL: sales@pmi-rf.com
ISO 9001:2008 CERTIFIED



APPROVALS		DATE		TITLE	
DRAWN		7/3/12		PRODUCT FEATURE	
CHECKED				PIQ-85M18G-360/20-CD-2	
ISSUED					
SIZE	FSCM NO.	DWG NO.	REV.		
A	05XQ0	27017001	A1		
SCALE N: S		SHEET		2 OF 2	

ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
X.XX ±0.020
X.XXX ±0.005

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION