

## DESCRIPTION

PMI MODEL NUMBER PUC-4G18G-CD-1 IS AN AMPLIFIED UP/DOWN-CONVERTER FOR THE FREQUENCY RANGE OF 4GHz TO 18GHz WITH AN IF RANGE OF 10MHz to 100MHz. IT FEATURES A 32dB PROGRAMMABLE ATTENUATOR WITH 10-BIT RESOLUTION, AND AN OUTPUT AMPLIFIER TO PROVIDE CONVERSION GAIN. IT ALSO FEATURES AN IF TRANSFER SWITCH TO SELECT THE UPPER OR LOWER SIDEBAND.

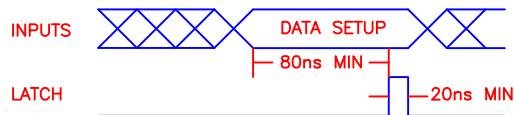
## SPECIFICATIONS

- FREQUENCY RANGE: 4 to 18GHz
- CONVERSION GAIN: 10 dB,  $\pm 3$ dB MAX (RF= 0dBm, IF modulation =+14dBm)
- MAX INPUT POWER: 20dBm MAX
- VSWR: 2.0:1 MAX (RF= 0dBm, IF modulation =+14dBm)
- CARRIER SUPPRESSION: 20dBc MIN, 25dBc TYP
- SIDE BAND SUPPRESSION: 15dBc MIN, 20dBc TYP
- IF FREQUENCY RANGE: 10MHz to 100MHz
- POWER SUPPLY: +15V @ 400mA MAX  
-15V @ 100mA MAX
- RF OUTPUT 1dB COMPRESSION: 12dBm TYP (RF= 2dBm, IF modulation =+14dBm)
- RF INPUT 1dB COMPRESSION: 5dBm TYP (IF modulation =+14dBm, >5dB Attenuation)
- SIDEBAND SWITCHING SPEED: 150ns MAX
- RF CONNECTORS: SMA FEMALE INPUTS AND OUTPUT
- DATA CONTROL INPUT: TRUE BINARY (NOT BCD)
- LOGIC LEVELS: TTL & LVTTL COMPATIBLE
- LATCH: SEE LATCH TRUTH TABLE
- SIZE: 6.50" X 2.50" X 0.50"
- FINISH: BLUE PAINT

## ATTENUATOR

- ATTENUATION RANGE: 0 TO 31.96dB
- NUMBER OF ATTENUATION BITS: 10-BITS (1024 STEPS)
- MAX ATTENUATION STEP SIZE: 0.03dB
- SWITCHING SPEED: 500ns MAX

## INPUT TIMING DIAGRAM



- NOTE1: ALLOW AT LEAST 80ns FOR DATA SETUP BEFORE LATCH LOGIC 1  
NOTE2: IF LATCH IS NOT USED LEAVE LATCH PIN UNCONNECTED (DEFAULT LOGIC 1)

## ENVIRONMENTAL RATINGS

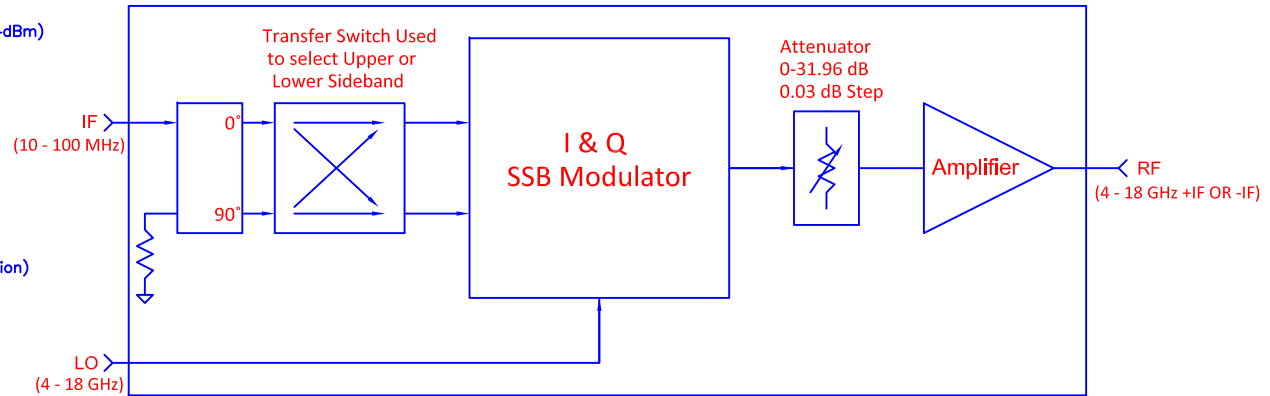
- TEMPERATURE: -40°C TO +85°C (OPERATING)  
-54°C TO +100°C (STORAGE)
- HUMIDITY: 95% MAX
- SHOCK: MIL-STD-202G, METHOD 213B COND. B
- VIBRATION: MIL-STD-202G, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202G, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202G, METHOD 107D COND. A

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ALL DIMENSIONS ARE IN INCHES  
TOLERANCES:  
X.XX  $\pm 0.020$   
X.XXX  $\pm 0.010$

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	7/8/14	

## BLOCK DIAGRAM



15-PIN CONNECTOR PIN-OUT	
PIN	FUNCTION
1	0.03dB (LSB)
2	0.06dB
3	0.12dB
4	0.25dB
5	0.50dB
6	1.00dB
7	2.00dB
8	4.00dB
9	8.00dB
10	16.00dB (MSB)
11	-15 VDC
12	GND
13	+15 VDC
14	SIDEBAND SELECT
15	LATCH

SIDEBAND SELECT TRUTH TABLE	
LOGIC 1	UPPER SIDEBAND
LOGIC 0	LOWER SIDEBAND
LATCH TRUTH TABLE	
LOGIC 1	DATA TRANSPARENT
LOGIC 0	DATA LOCKED

PMI CONFIDENTIAL AND PROPRIETARY

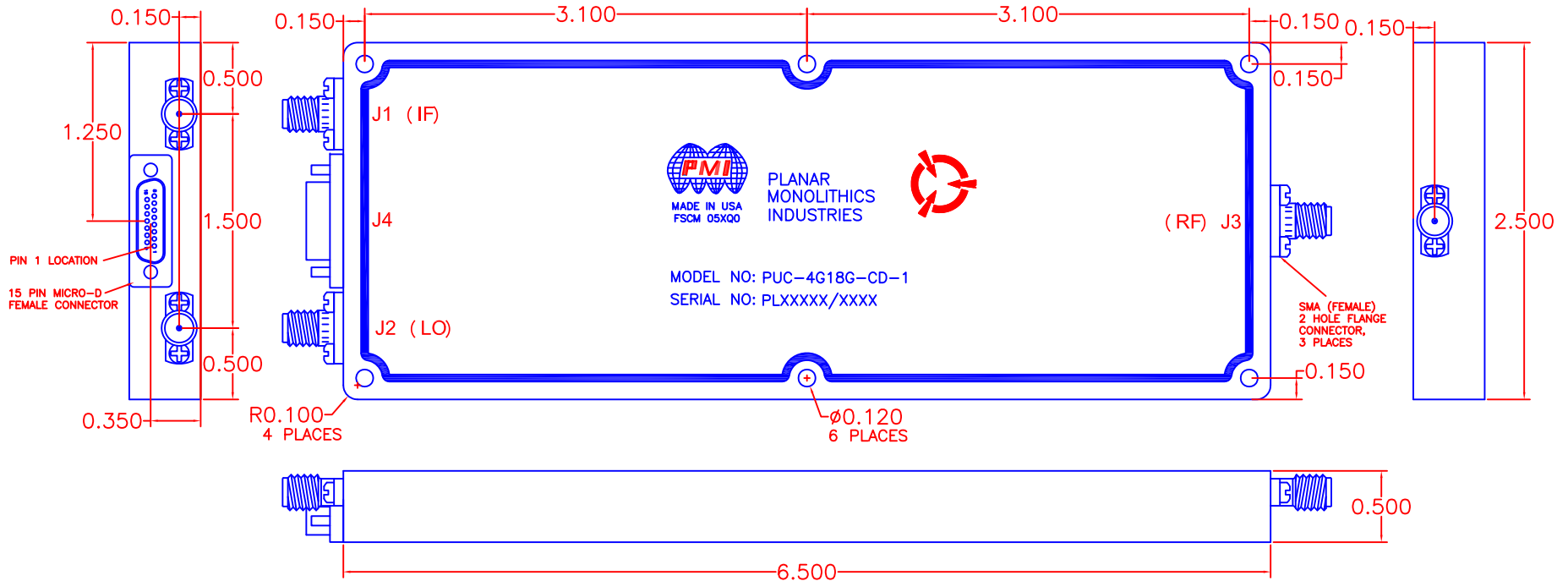
## PLANAR MONOLITHICS INDUSTRIES, INC.

7311-F GROVE ROAD  
FREDERICK, MARYLAND 21704 USA  
TEL: 301-662-5019 FAX: 301-662-1731  
WEBSITE: [www.pmi-rf.com](http://www.pmi-rf.com)  
E-MAIL: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)  
ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE			
DRAWN JGS		7/8/14	PRODUCT FEATURE PUC-4G18G-CD-1			
MODIFIED			SIZE A	FSCM NO. 05XQ0	DWG NO. 27022421	REV. A1
ISSUED			SCALE N:S	SHEET 1 OF 2		

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	7/8/14	



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](http://www.pmi-rf.com)  
 E-MAIL: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)  
 ISO 9001 CERTIFIED



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

APPROVALS		DATE	TITLE			
DRAWN	JGS	7/8/14	PRODUCT FEATURE			
MODIFIED			PUC-4G18G-CD-1			
ISSUED			SIZE	FSCM NO.	DWG NO.	REV.
			A	05XQ0	27022421	A1
			SCALE	N:S	SHEET	2 OF 2