

MICROWAVE PRECORRECTOR MODULE

Built in a 3" X 6" housing, this module consists of two compartments: a RF and DC & Control section; they are placed in opposite sides of the housing. Two harnesses, a seven and ten conductor, reach the interior of the module on the control side.

RF Section:

This section is implemented essentially by microwave broadband amplifiers (U1-U4 and U6-U7) and hybrids (HYB1-HYB7). All amplifiers are biased through resistors from the only power supply voltage and use quarter-wavelength transformers and a capacitor for de-coupling.

DC and Control Section:

A variety of electronic components are used to control the RF signal processing that takes place in the RF section. Externally accessible potentiometers and switches allow adjustments and changes in the module modes of operation.

Correction is performed by subtraction of a pre-generated distortion from the one present at the output of the system. A RF input signal at about 0dBm-power level is applied to J1. This signal is amplified and split two ways; one goes through a linear path while the other goes through the circuitry that generates the desired pre-distortion. Both signals are combined and amplified to recover the losses of their processing. Finally, the signal goes through the broadband attenuator that performs the ALC and is routed out the module through J2. Table 1 summarizes each control accessible from the top of the module. Module control through external voltages delivered via connector P2 is also possible.

Table 1: Microwave precorrector adjustment controls.

NUMERICAL REFERENCE	NAME	FUNCTION
1	J1	RF Input
2	J2	RF Output
3	AUTO / MAN Switch	Sets the power control mode
4	D.G.	Control for pre-distortion signal amplitude
5	CANC1	Module internal cancellation adjustments
6	CANC2	Module internal cancellation adjustments
7	PH. ADJ	Adjust the phase of the pre-distortion
8	AUTO	Adjust output power in ALC mode
9	MAN	Adjust output power in manual mode
10	PWR LMTR	Adjust maximum output power achievable by the system
11	PC ON / OFF	Sets pre-correction On or Off
12	P1	+12V, ALC voltage (connector)
13	P2	External voltages for adjustments (connector)

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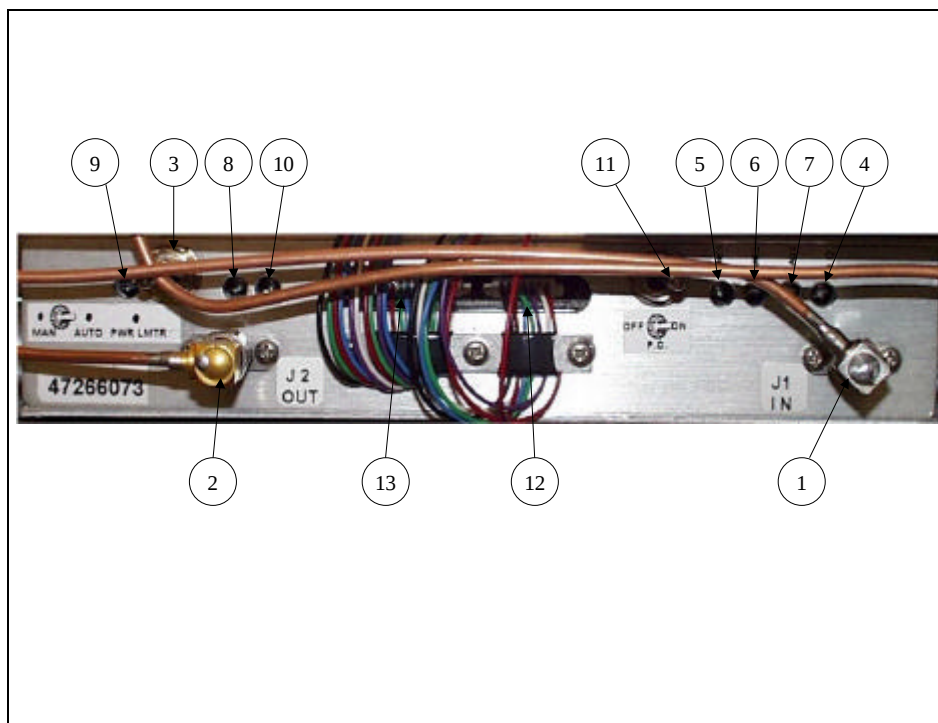


Figure 1: 47266073 microwave precorrector.

Table 2: DOC19-0119, REV P1.

Parameter	Specification	Notes/Test Conditions
RF		
Gain	-8 dB min / 3 dB max	1.8 to 3.6 GHz (function of ALC)
Input Return Loss	< -10 dB	1.8 to 3.6 GHz
Total Flatness	± 3 dB	1.8 to 3.6 GHz
Power Limiter	Pmax = nominal power +1 dB	ALC on or off
Distortion Generation	-60 dBc to -32 dBc	1.8 to 3.6 GHz 1 carrier, 64 QAM, spectrum analyzer @ 100 KHz RBW
Cancellation	>25 dBc	1.8 to 3.6 GHz 1 carrier, 64 QAM, spectrum analyzer @ 100 KHz RBW
Phase Range	>45° adjustment	1.8 to 3.6 GHz
DC		
Power Supply	12 $\pm$ 0.5 V	
Current	.6 A	S21 = 2dB; Maximum pre-distortion
GENERAL		
Impedance / Connector		
Input	50 Ω / Female SMA	
Output	50 Ω / Female SMA	
Operating Temperature	0° C to 50° C	



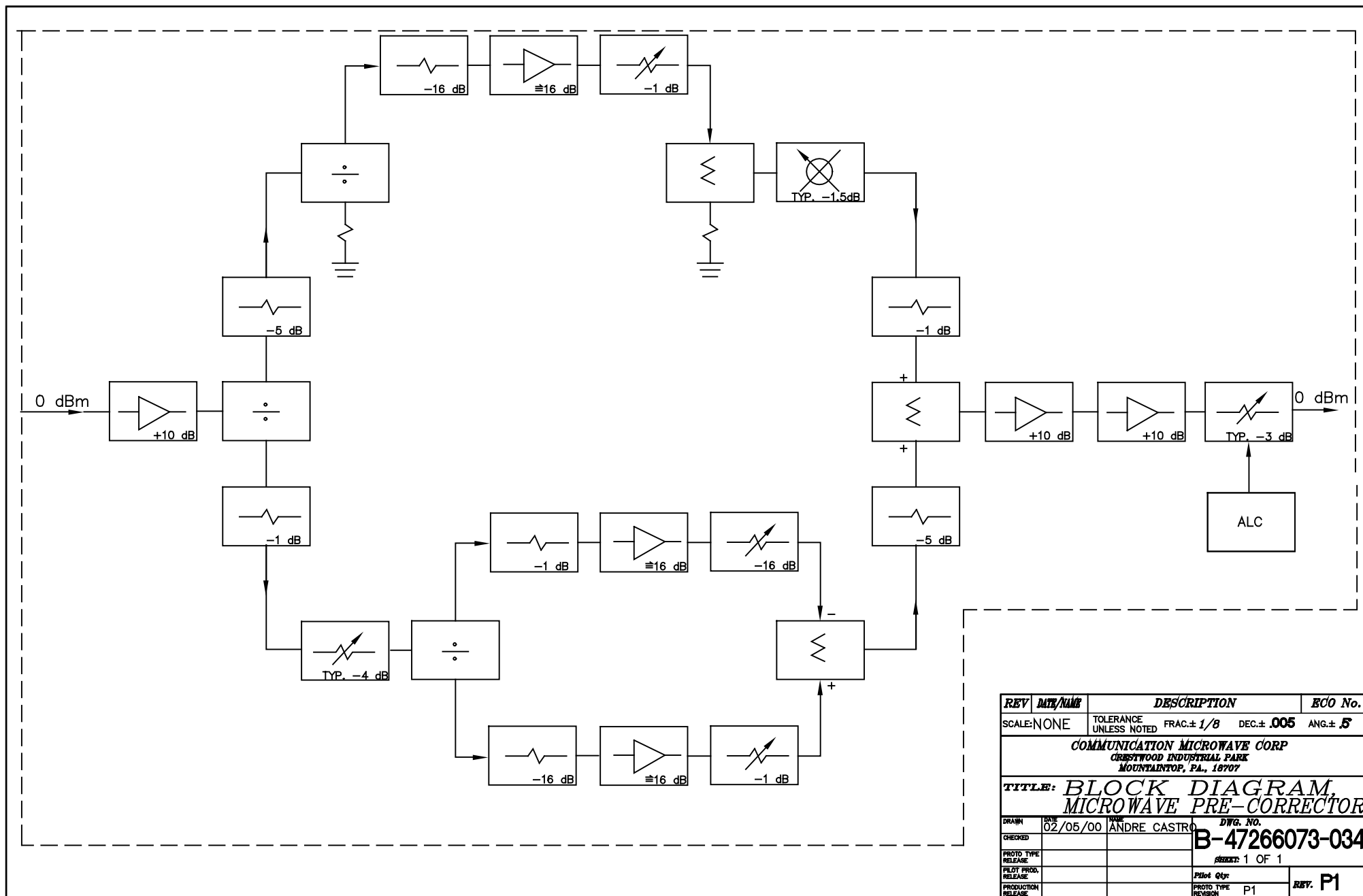
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REV	DATE	NAME	DESCRIPTION	ECO No.
SCALE: NONE			TOLERANCE UNLESS NOTED	
			FRAC. $\pm 1/8$	DEC. $\pm .005$
			ANG. $\pm 5'$	
COMMUNICATION MICROWAVE CORP				
CRESTWOOD INDUSTRIAL PARK				
MOUNTAINTOP, PA., 18707				
TITLE: BLOCK DIAGRAM,				
MICROWAVE PRE-CORRECTOR				
DRAWN	DATE	NAME	DWG. No.	
CHECKED	02/05/00	ANDRE CASTRO		
PROTO TYPE				
RELEASE				
PILOT PROD.				
RELEASE				
PRODUCTION				
RELEASE				
			PILOT Qty:	
			PROTO TYPE	
			REVISION	
			P1	
			REV. P1	