

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	PRELIMINARY	6/5/2020	
	2	ADDED PG 3	6/25/2020	

DESCRIPTION:

PLANAR MONOLITHICS INDUSTRIES MODEL NUMBER PRX-20-1G18G-850M-SFF-V2 IS A CHANNELIZED RECEIVER WITH AN RF INPUT OF 1 TO 18 GHz. TWENTY OUTPUT CHANNELS ALLOW SIMULTANEOUS SIGNALS OF 850MHz IN A 1 TO 4.4 GHz IF BAND TO BE OUTPUT FOR DIGITIZATION. AN INTERNAL REFERENCE IS INCLUDED TO LOCK THE VARIOUS LO'S TO DOWN CONVERT THE SIGNAL INTO THE REQUIRED FREQUENCY BANDS.

SPECIFICATIONS @ 25°C:

RF INPUT

- FREQUENCY:..... 1 TO 18 GHz
- INPUT POWER:..... -60 TO 0 dBm TYP
- VSWR:..... 2.5:1 TYP

RF OUTPUTS

- FREQUENCY:..... J1, J5, J9, J13, J17: 1.00 - 1.85 GHz
J2, J6, J10, J14, J18: 1.85 - 2.70 GHz
J3, J7, J11, J15, J19: 2.70 - 3.55 GHz
J4, J8, J12, J16, J20: 3.55 - 4.40 GHz
- CHANNELS:..... 20
- GAIN:..... J1 TO J4: -3 dB TO +3 dB TYP
J5 TO J8: -3 dB TO +3 dB GOAL, -6 dB TO +3 dB TYP
J9 TO J12: -3 dB TO +3 dB GOAL, -9 dB TO +3 dB TYP
J13 TO J16: -3 dB TO +3 dB GOAL, -9 dB TO +3 dB TYP
J17 TO J20: -3 dB TO +3 dB GOAL, -10 dB TO +3 dB TYP
- PASSBAND:..... 870 - 1000 MHz TYP
- STOPBAND:..... 1.4 GHz MAX
- NOISE FIGURE:..... J1 TO J4: 25 dB TYP
J5 TO J8: 33 dB TYP
J9 TO J12: 35 dB TYP
J13 TO J16: 35 dB TYP
J17 TO J20: 38 dB TYP
- OUTPUT IP3:..... +30 dBm TYP

REFERENCE OUTPUT

- FREQUENCY:..... 10 MHz
- OUTPUT POWER:..... +20 dBm
- STABILITY:..... ± 0.1 PPM
- AGING:..... ± 30 PPB YEARLY

CONNECTORS:

- INPUT:..... SMA-F
- OUTPUTS:..... SMA-F
- REFERENCE OUTPUT:..... SMA-F
- POWER:..... 9-PIN D-SUB M
- POWER SUPPLY:..... +12V ± 5% @ 3A MAX
+7V ± 5% @ 5.5A MAX
-5V ± 5% @ 1A MAX

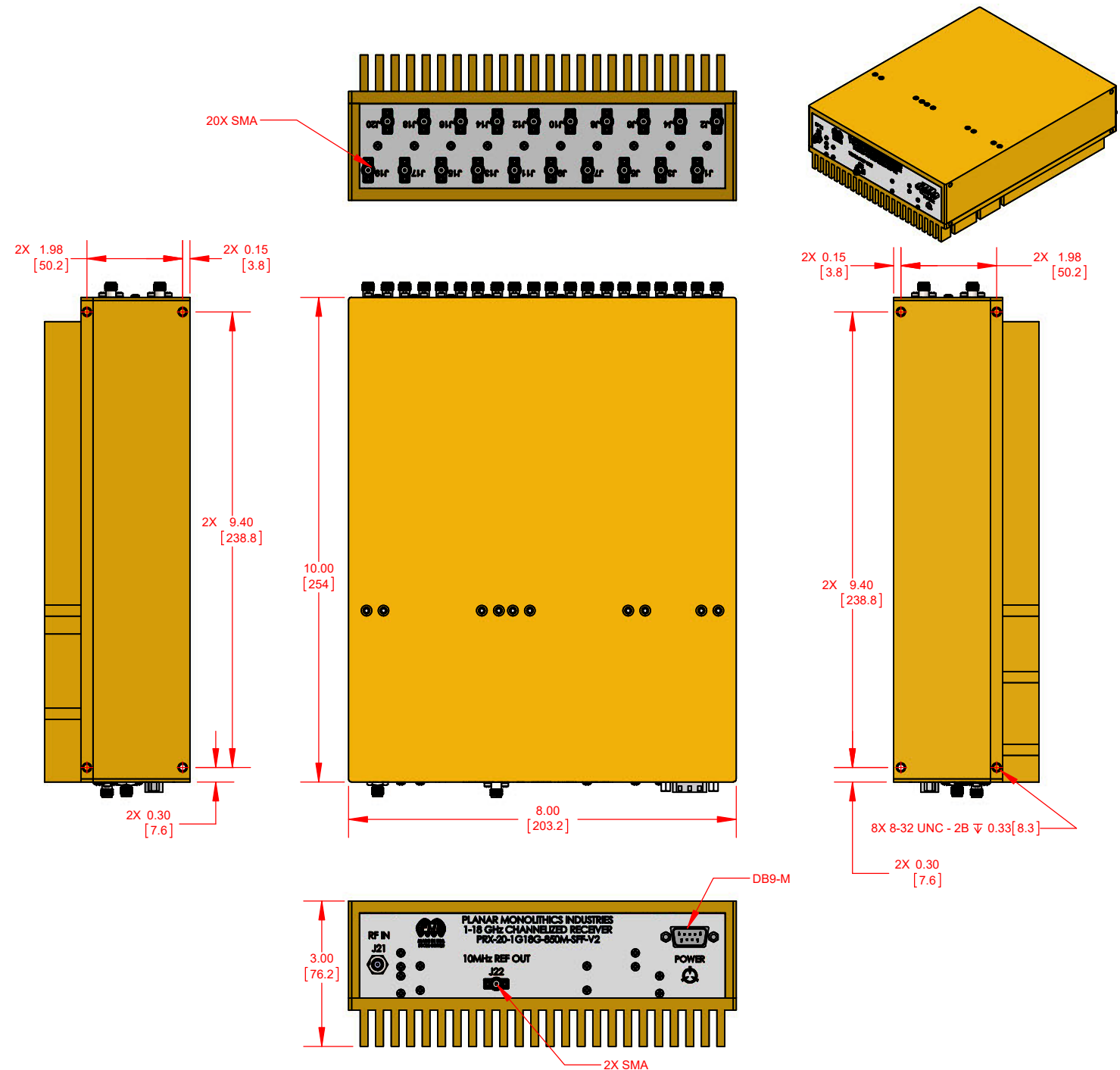
- SIZE:..... 10.00" X 8.00" X 3.00"
- FINISH:..... GOLD ANODIZED, MIL-A-8625 TYPE II, CLASS 2
DYED GOLD, NICKEL ACETATE SEAL PER
MIL-A-8625 PARAGRAPH 3.8.1.2

ENVIRONMENTAL RATINGS:

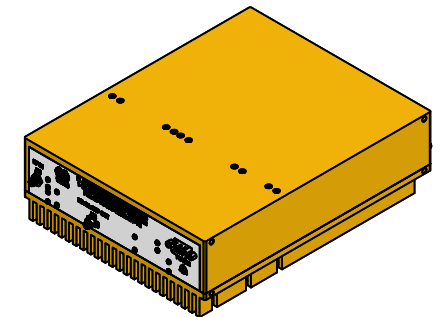
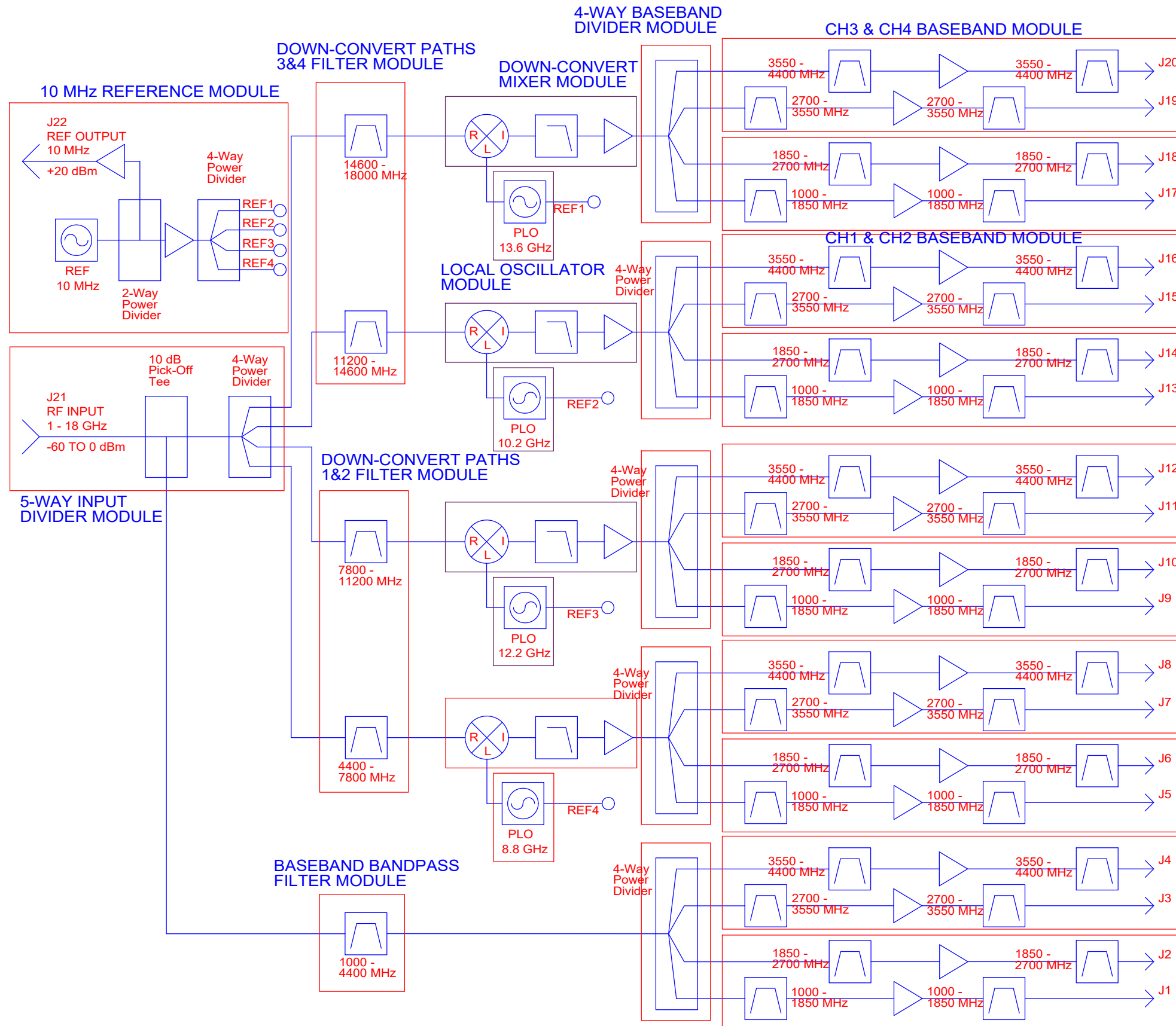
- TEMPERATURE:..... -40°C TO +85°C (OPERATING)
WITH 145 CFM AIRFLOW ACROSS HEATSINK
-40°C TO +85°C (STORAGE)
- HUMIDITY:..... MIL-STD-810, 0 TO 95% NON-CONDENSING
- VIBRATION:..... DESIGNED TO MEET CHART 5.4 IN DOCUMENT 3000135-07
- ALTITUDE:..... MIL-STD-810, 15000 FT
- ACOUSTIC:..... DESIGNED TO MEET CHART 5.5 IN DOCUMENT 3000135-07

DB9 PINOUT	
PIN	FUNCTION
1	GND
2	GND
3	GND
4	-5V
5	GND
6	+7V
7	+7V
8	+12V
9	+12V

NOTE SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE
NOTE: CHANGES TO DRAWING OR SPECIFICATIONS MUST BE APPROVED BY END USER.



<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± 0.02 ± XXX ± 0.01</p>		<p>APPROVALS</p> <p>DATE</p> <p>6/5/2020</p>	<p>PMI CONFIDENTIAL AND PROPRIETARY</p> <p>PLANAR MONOLITHICS INDUSTRIES, INC.</p> <p>7311-F GROVE ROAD FREDERICK, MARYLAND 21704 USA TEL: (301)-862-5019, FAX: (301)-662-1731 WEB: www.pmi-rf.com, EMAIL: sales@pmi-rf.com ISO 9001 CERTIFIED</p>
<p>DRAWN D. DURBIN</p> <p>REDRAWN</p>	<p>ISSUED</p>	<p>TITLE</p> <p>OUTLINE</p> <p>PRX-20-1G18G-850M-SFF-V2</p>	<p>SIZE</p> <p>B</p> <p>FSCM NO.</p> <p>05XQ0</p> <p>DWG NO.</p> <p>PRELIMINARY</p> <p>REV.</p> <p>2</p>
<p>SCALE 1:3</p>		<p>SHEET 1 OF 3</p>	



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TITLE		OUTLINE	
		PRX-20-1G18G-850M-SFF-V2	
SIZE	FSCM NO.	DWG NO.	REV.
B	05XQ0	PRELIMINARY	2
SCALE N/A		SHEET 2 OF 3	

Filter	-1 dB Insertion Loss (dB)	Low Side 1 dB Passband (MHz)	High Side 1 dB Passband (MHz)	Passband Width (MHz)	Low Side -60 dBc Rejection (MHz)	High Side -60 dBc Rejection (MHz)	Stopband Width (MHz)	Notes
1 - 4.4 GHz Filter								
1-4.4 GHz	2.2	860	4650	3790	760	5120	4360	Prototype Performance
	3	≤ 1000	≥ 4400	≥ 3400	750	5150	4400	Prototype Signed up to Specs
1-4.4 GHz	2	≤ 1000	≥ 4400	≥ 3400	800	5000	4200	Choice #3
1-4.4 GHz	2	≤ 1000	≥ 4400	≥ 3400	850	4950	4100	Choice #2
1-4.4 GHz	2.75	≤ 1000	≥ 4400	≥ 3400	890	4950	4060	Choice #1
4.4 - 7.8 GHz Filter								
4.4-7.8 GHz	3.5	4190	7880	3690	3650	9600	5950	Prototype Performance
	3	≤ 4400	≥ 7800	≥ 3400	3650	9100	5450	Prototype Signed up to Specs
4.4-7.8 GHz	2	≤ 4400	≥ 7800	≥ 3400	4000	8200	4200	Choice #1
4.4-7.8 GHz	2	≤ 4400	≥ 7800	≥ 3400	4000	8200	4200	Choice #2
7.8 - 11.2 GHz Filter								
7.8-11.2 GHz	2.5	7640	11430	3790	6760	12440	5680	Prototype Performance
	3	≤ 7800	≥ 11200	≥ 3400	6500	13000	6500	Prototype Signed up to Specs
7.8-11.2 GHz	2	≤ 7800	≥ 11200	≥ 3400	7400	11600	4200	Choice #1
7.8-11.2 GHz	2	≤ 7800	≥ 11200	≥ 3400	7200	11800	4600	Choice #2
11.2 - 14.6 GHz Filter								
11.2-14.6 GHz	4	11070	14680	3610	9660	16170	6510	Prototype Performance
	3	≤ 11200	≥ 14600	≥ 3400	9400	16900	7500	Prototype Signed up to Specs
11.2-14.6 GHz	2.2	≤ 11200	≥ 14600	≥ 3400	10800	15000	4200	Choice #1
11.2-14.6 GHz	2	≤ 11200	≥ 14600	≥ 3400	10600	15200	4600	Choice #2
14.6 - 18 GHz Filter								
14.6-18 GHz	3.3	14380	18270	3890	12280	19920	7640	Prototype Performance
	3	≤ 14600	≥ 18000	≥ 3400	12300	20800	8500	Prototype Signed up to Specs
14.6-18 GHz	2.5	≤ 14600	≥ 18000	≥ 3400	14200	18400	4200	Choice #1
14.6-18 GHz	2	≤ 14600	≥ 18000	≥ 3400	14000	18600	4600	Choice #2

FILTER IMPROVEMENTS FROM PROTOTYPE

Filter	-1 dB Insertion Loss (dB)	Low Side 1 dB Passband (MHz)	High Side 1 dB Passband (MHz)	Passband Width (MHz)	Low Side -60 dBc Rejection (MHz)	High Side -60 dBc Rejection (MHz)	Stopband Width (MHz)	Notes
1 - 1.85 GHz Filter								
1-1.85 GHz	2.7	903	1904	1001	751	2100	1349	Prototype Performance
	3				725	2125	1400	Prototype Signed up to Specs
1-1.85 GHz	2	985	1865	880	750	2100	1350	Choice #3
1-1.85 GHz	2.2	≤ 1000	≥ 1850	≥ 850	890	1980	1090	Choice #1
1-1.85 GHz	3.25	≤ 1000	≥ 1850	≥ 850	788	2048	1260	Choice #2
1.85 - 2.7 GHz Filter								
1.85-2.7 GHz	3.2	1778	2744	966	1613	2966	1353	Prototype Performance
	3.5				1575	2975	1400	Prototype Signed up to Specs
1.85-2.7 GHz	2.5	1835	2715	880	1600	2950	1350	Choice #3
1.85-2.7 GHz	2.2	≤ 1850	≥ 2700	≥ 850	1640	2910	1270	Choice #1
1.85-2.7 GHz	4	≤ 1850	≥ 2700	≥ 850	1637	2913	1276	Choice #2
2.7 - 3.55 GHz Filter								
2.7 - 3.55 GHz	2.9	2626	3668	1042	2437	3821	1384	Prototype Performance
	4.2				2425	3825	1400	Prototype Signed up to Specs
2.7-3.55 GHz	2.5	2685	3565	880	2400	3850	1450	Choice #2
2.7-3.55 GHz	2.2	≤ 2700	≥ 3550	≥ 850	2390	3910	1500	Choice #3
2.7-3.55 GHz	4.5	≤ 2700	≥ 3550	≥ 850	2488	3763	1275	Choice #1
3.55 - 4.4 GHz Filter								
3.55-4.4 GHz	3.9	3495	4460	965	3293	4663	1370	Prototype Performance
	4.2				3275	4675	1400	Prototype Signed up to Specs
3.55-4.4 GHz	3	3535	4415	880	3200	4750	1550	Choice #2
3.55-4.4 GHz	3.4	≤ 3550	≥ 4400	≥ 850	3265	4890	1600	Choice #3
3.55-4.4 GHz	4.2	≤ 3550	≥ 4400	≥ 850	3275	4675	1400	Choice #1

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