

REPLACEMENT PART REFERENCE GUIDE, GP2X1A+

AN-10-032

Original Part :	GP2X1+	
Replacement Part :	GP2X1A+	

Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part.

MECHANICAL DIMENSIONS

Case Style: DQ1225

Both the GP2X1A+ and GP2X1+ uses the same case style DQ1225 case style.

CONCLUSION:

1) FORM-FIT-FUNCTIONAL ANALYSIS:

The Replacement Part GP2X1A+ has the same form and fit as the original part GP2X1+

The Replacement Part maximum power handling and operating temperature on the Absolute Maximum Table were changed. The Replacement Part's maximum input power as a splitter is now +40dBm at 25C instead of the Original Part's maximum input power as a splitter of 1.5W (+31.76dBm). Additionally, the Replacement Part's maximum operating temperature is now +105°C instead of the Original Part's maximum operating temperature of 85°C.

Replacement Part and Original Part feature the same expected performance. See section 2 for Min. Max and Typical performance and graphs.

2) RF PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

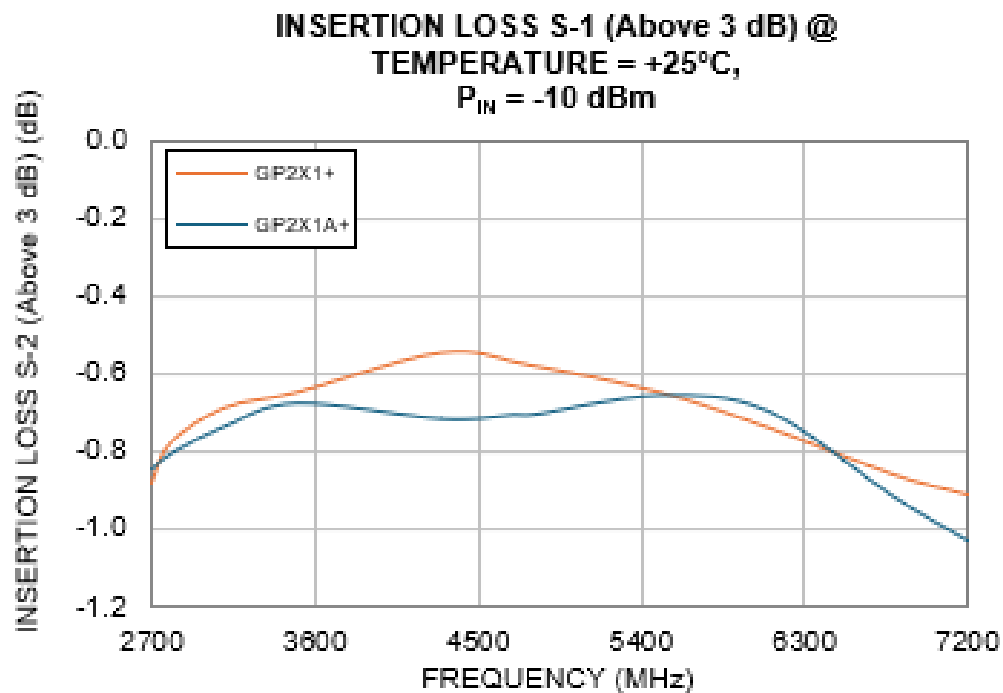
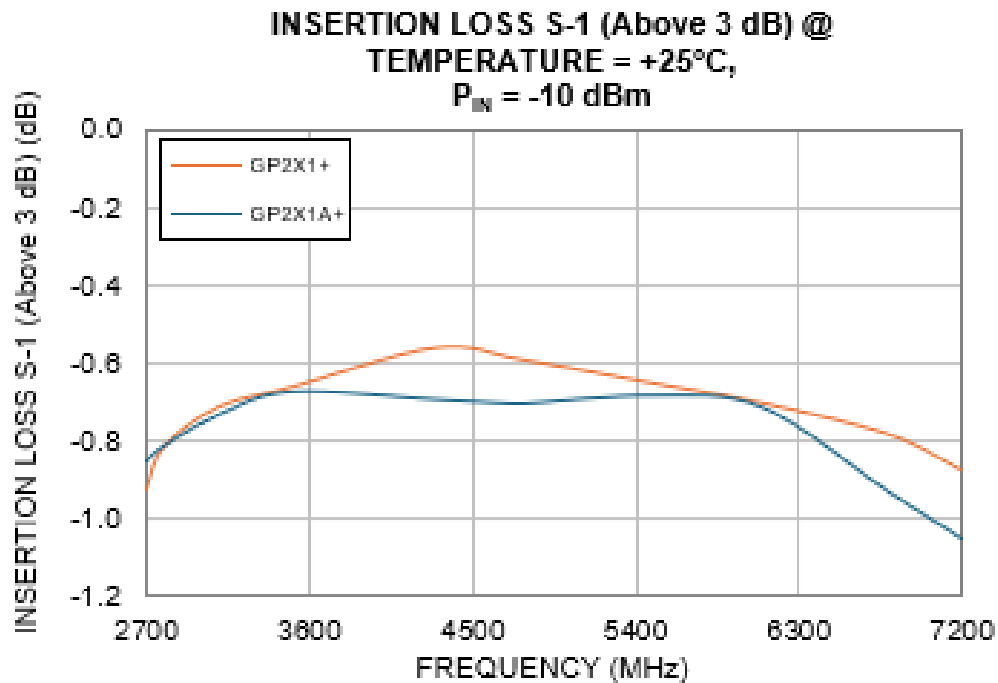
MODEL: GP2X1+, GP2X1A+

Parameter	Freq (MHz)		GP2X1+			GP2X1A+		
	From	To	Min.	Avg.	Max.	Min.	Avg.	Max.
INSERTION LOSS ¹ - Above 3dB (dB)	2700	2700		0.6	1.9		0.9	1.3
	2800	2800						
	3500	3500					0.7	1
	5500	5500					0.7	1.1
	7200	7200					0.9	1.6
ISOLATION (dB)	2700	2700	10	22		18	25	
	2800	2800						
	3500	3500				18	25	
	5500	5500				21	31	
	7200	7200				11	17	
AMPLITUDE UNBALANCE (dB)	2700	2700		0.1	0.4		0.02	0.2
	2800	2800						
	3500	3500					0.03	0.3
	5500	5500					0.02	0.3
	7200	7200					0.04	0.3
PHASE UNBALANCE (Deg)	2700	2700		4.5	10		0.5	3
	2800	2800						
	3500	3500					0.5	4
	5500	5500					0.7	7
	7200	7200					1	9
RETURN LOSS - PORT 1, 2 ² (dB)	2700	2700		18			28	
	2800	2800						
	3500	3500					24	
	5500	5500					26	
	7200	7200					18	
RETURN LOSS - SUM (dB)	2700	2700		20			34	
	2800	2800						
	3500	3500					34	
	5500	5500					26	
	7200	7200					24	

1. Typical insertion loss displayed are the worst case among Port 1 and Port 2.

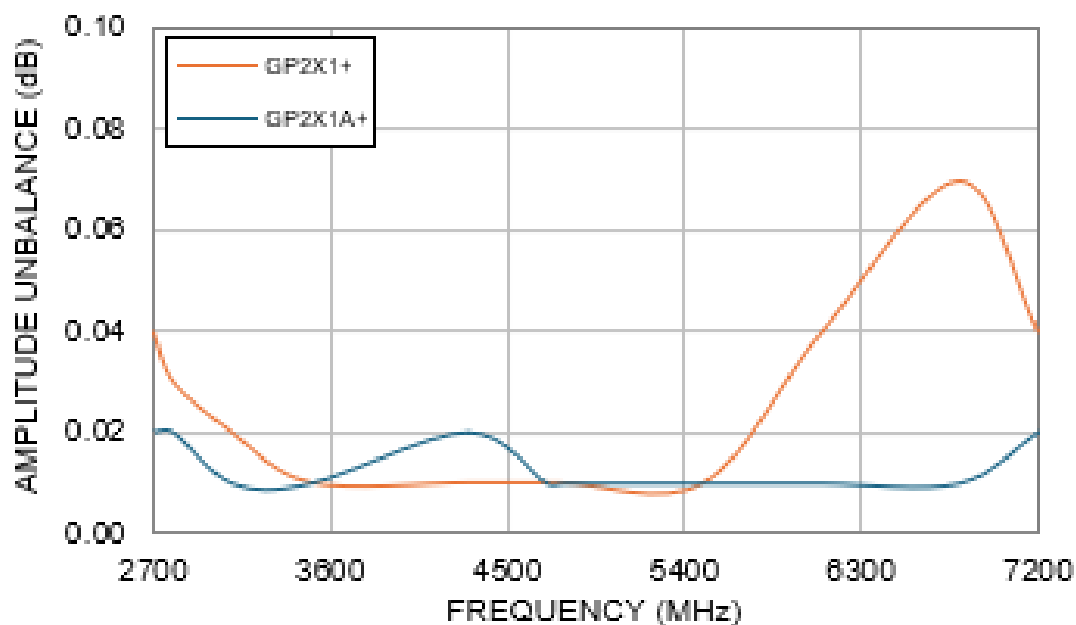
2. Typical return loss displayed are the worst case among Port 1 and Port 2.

3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE:

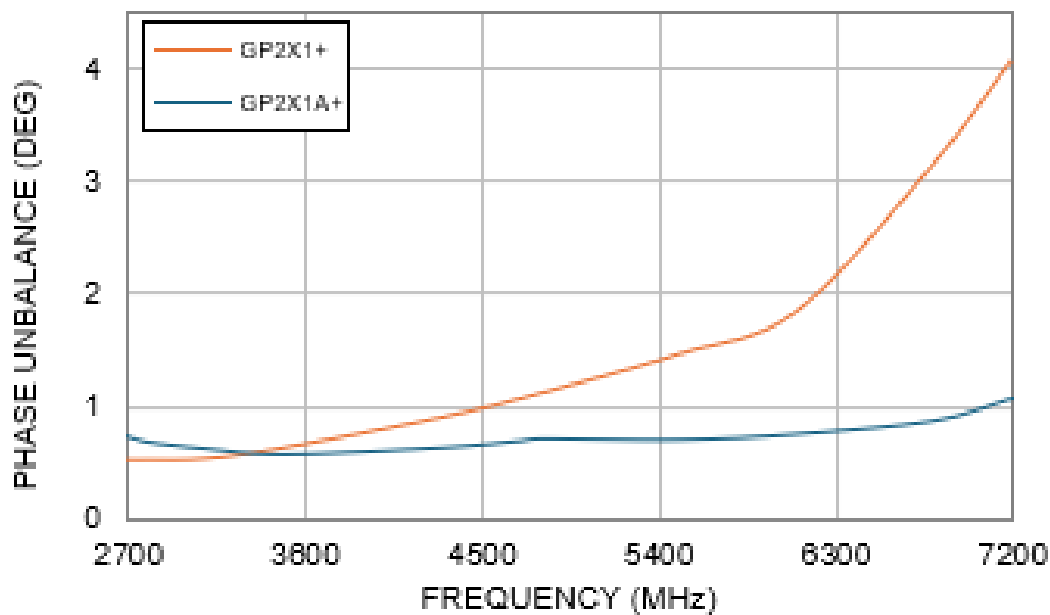


3. Total Loss = Single Path (S-1 or S-2) Insertion Loss + 3 dB Splitter Loss

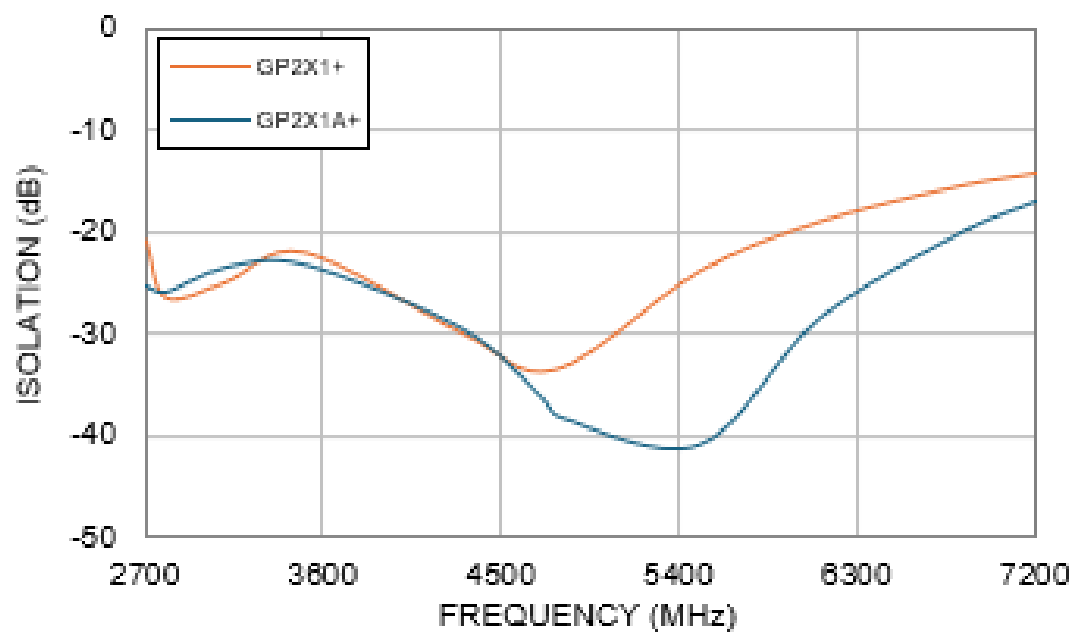
**AMPLITUDE UNBALANCE @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm**



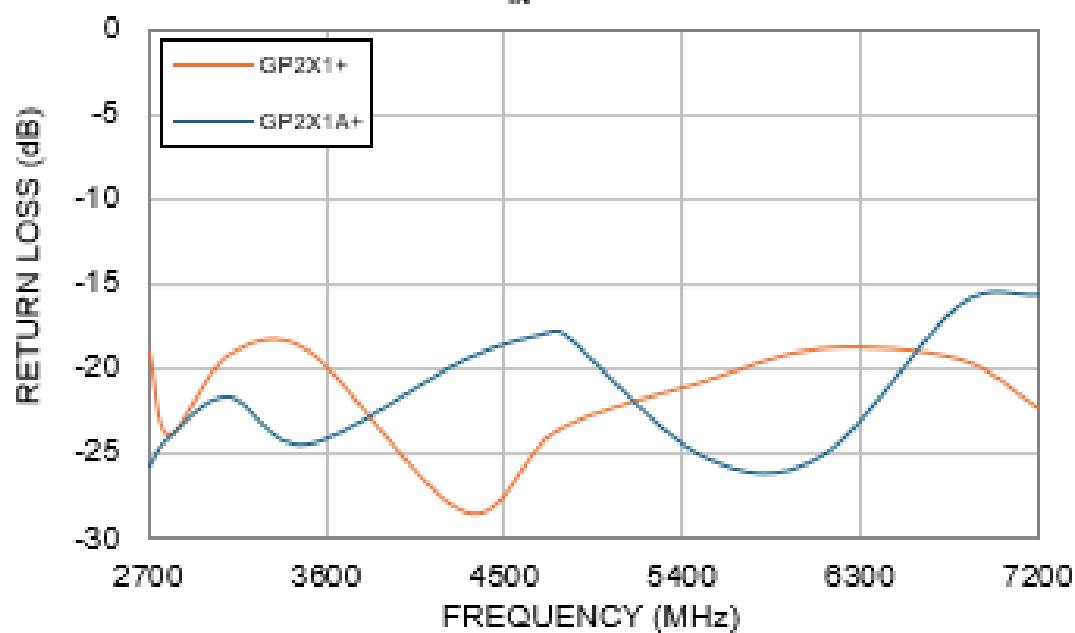
**PHASE UNBALANCE @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm**



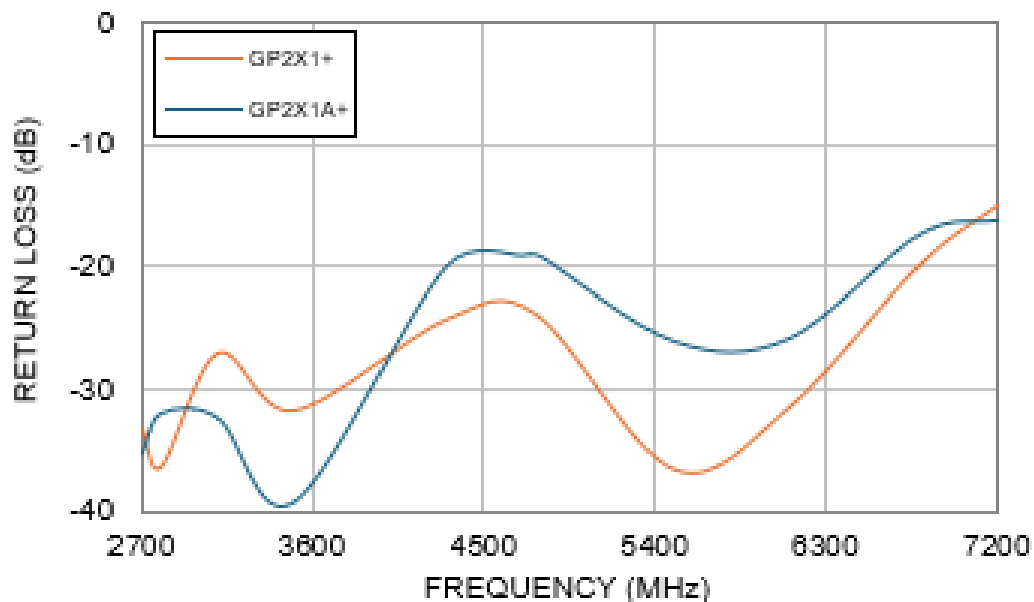
**ISOLATION 1-2 @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm**



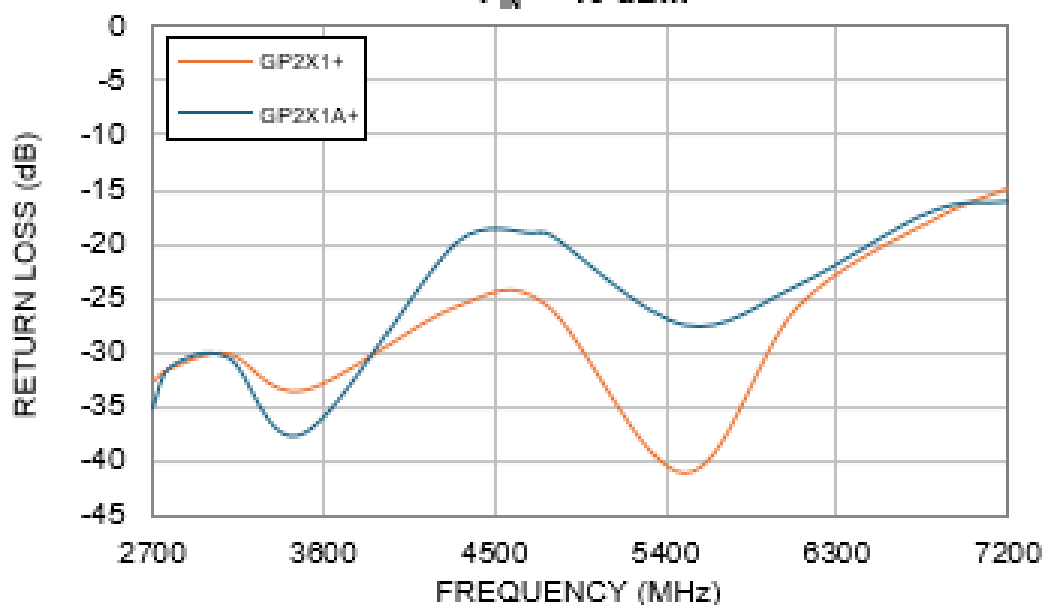
**RETURN LOSS PORT S @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm**



**RETURN LOSS PORT 1 @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm**



**RETURN LOSS PORT 2 @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm**





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