

REPLACEMENT PART REFERENCE GUIDE, GP2XA+

AN-10-031

Original Part :	GP2X+	
Replacement Part :	GP2XA+	

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

MECHANICAL DIMENSIONS

Case Style: DQ1225

Both the GP2XA+ and GP2X+ uses the same case style DQ1225 case style.

CONCLUSION:

1) FORM-FIT-FUNCTIONAL ANALYSIS:

The Replacement Part GP2XA+ has the same form and fit as the original part GP2X+

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:

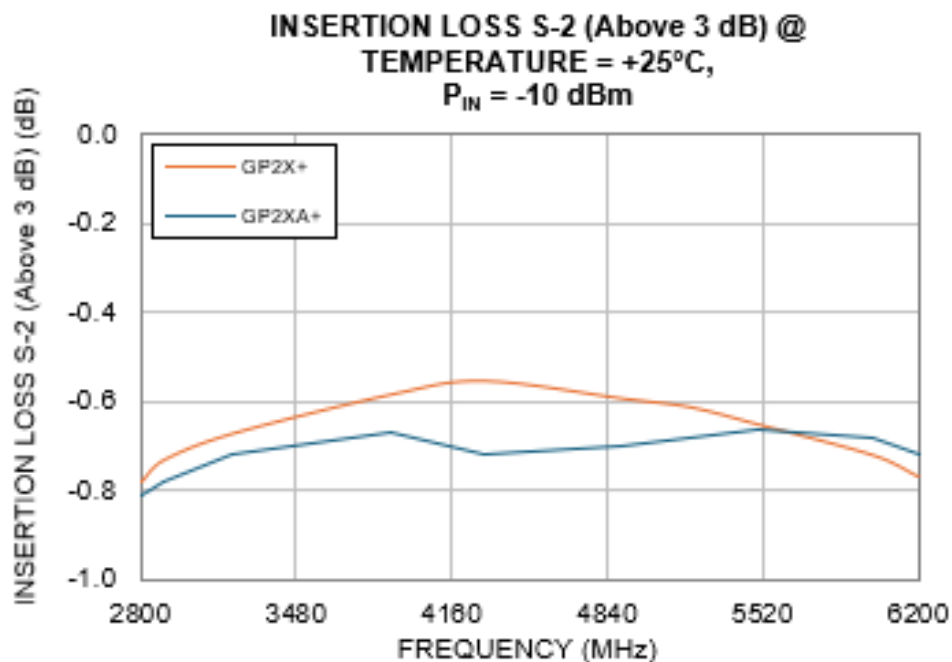
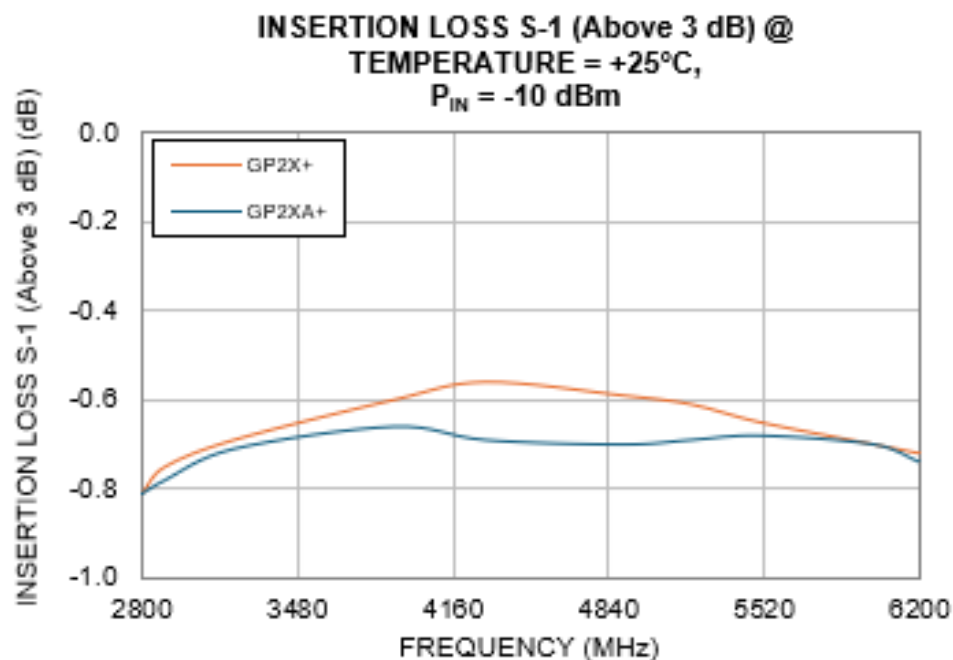
MODEL: GP2X+, GP2XA+

Parameter	Freq (MHz)		GP2X+			GP2XA+		
	From	To	Min.	Avg.	Max.	Min.	Avg.	Max.
INSERTION LOSS ¹ - Above 3dB (dB)	2800	2800		0.6	1.5		0.8	1.2
	2900	2900						
	4500	4500					0.7	1.1
	6200	6200					0.7	1.3
ISOLATION (dB)	2800	2800	15	24		18	26	
	2900	2900						
	4500	4500				25	32	
	6200	6200				17	24	
AMPLITUDE UNBALANCE (dB)	2800	2800		0.05	0.3		0.02	0.3
	2900	2900						
	4500	4500					0.03	0.3
	6200	6200					0.03	0.3
PHASE UNBALANCE (Deg)	2800	2800		4	9		0.5	3
	2900	2900						
	4500	4500					0.6	6
	6200	6200					0.8	8
RETURN LOSS - PORT 1, 2 ² (dB)	2800	2800		20			31	
	2900	2900						
	4500	4500					21	
	6200	6200					24	
RETURN LOSS - SUM (dB)	2800	2800		20			37	
	2900	2900						
	4500	4500					32	
	6200	6200					30	

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

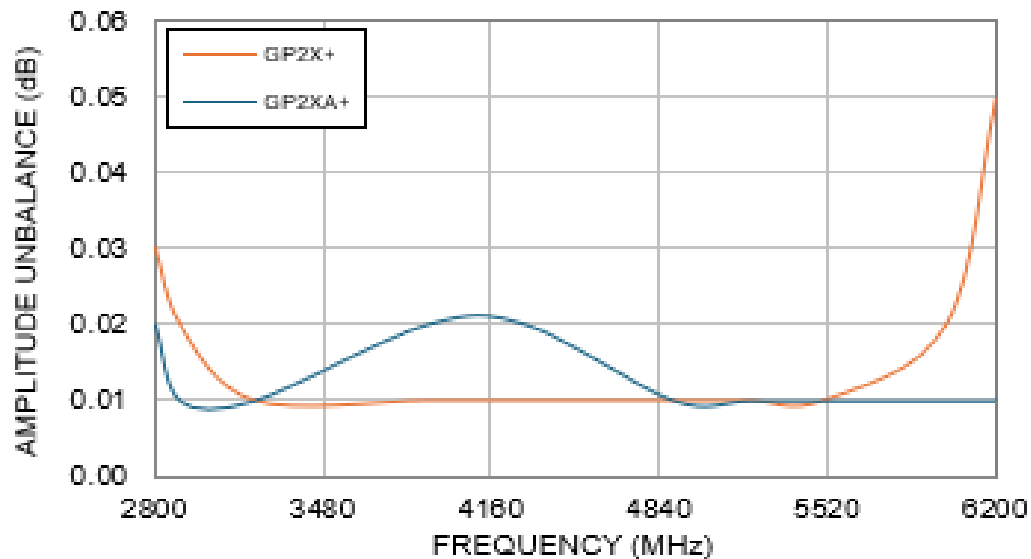
2. Typical return loss displayed are the worst case among Port 1 and Port 2.

3) TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE:

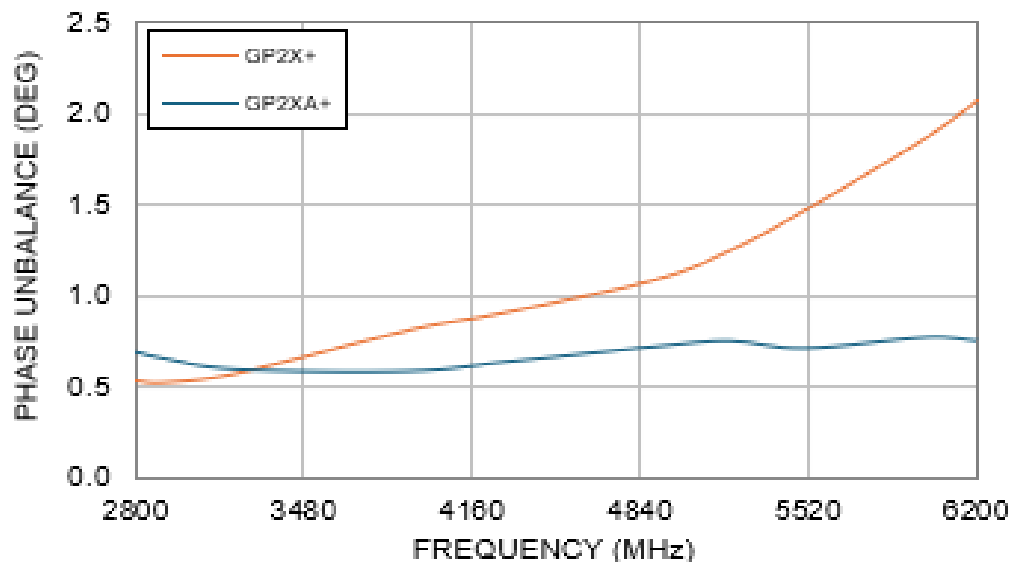


3. Total Loss = Single Path (S-1 or S-2) Insertion Loss + 3 dB Splitter Loss

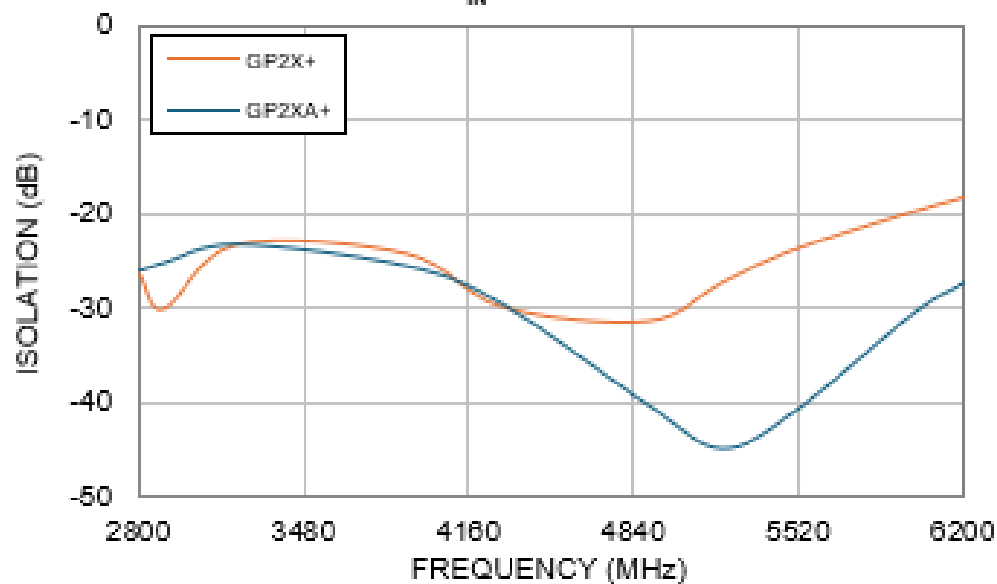
**AMPLITUDE UNBALANCE @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm**



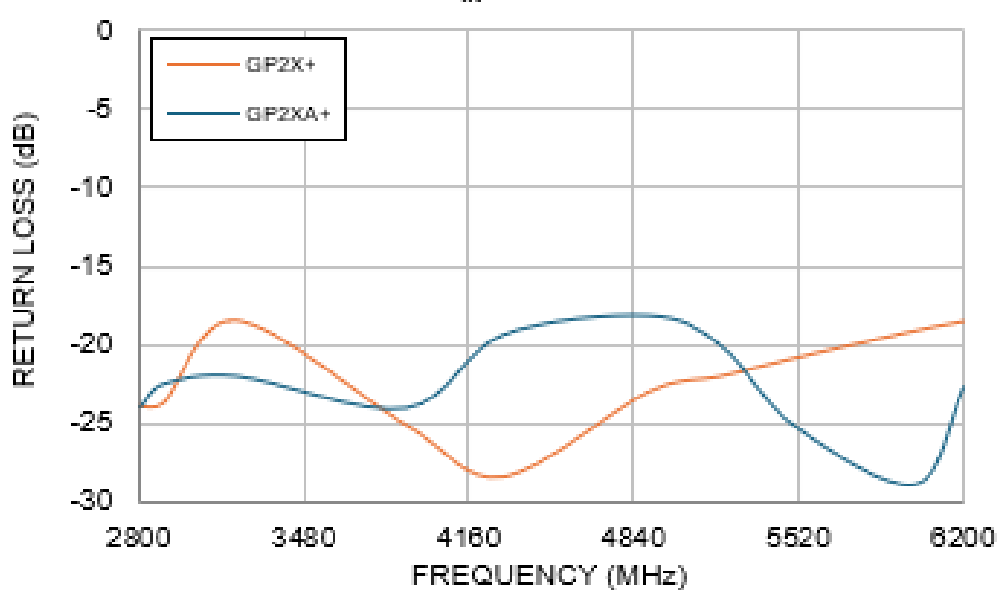
**PHASE UNBALANCE @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm**



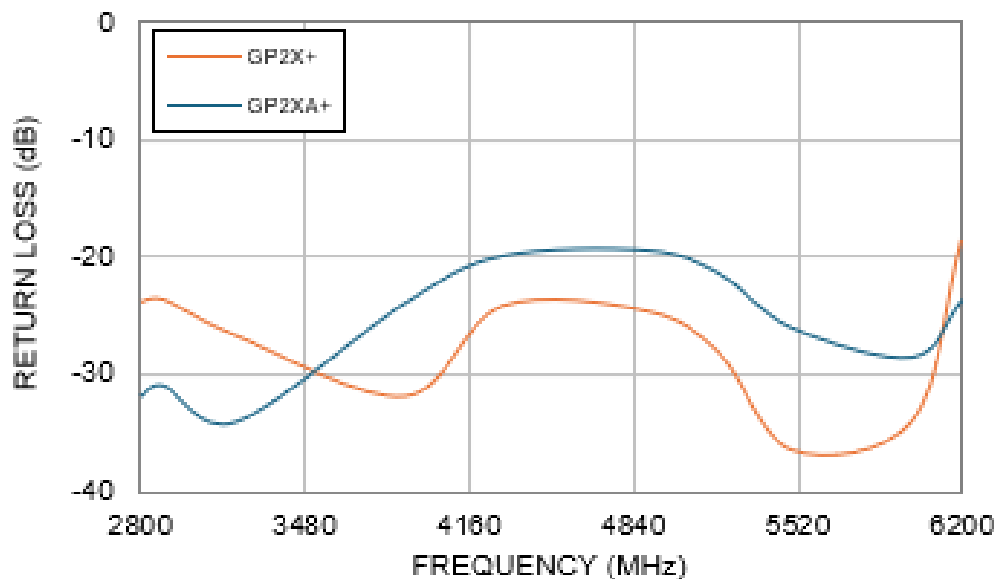
ISOLATION 1-2 @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm



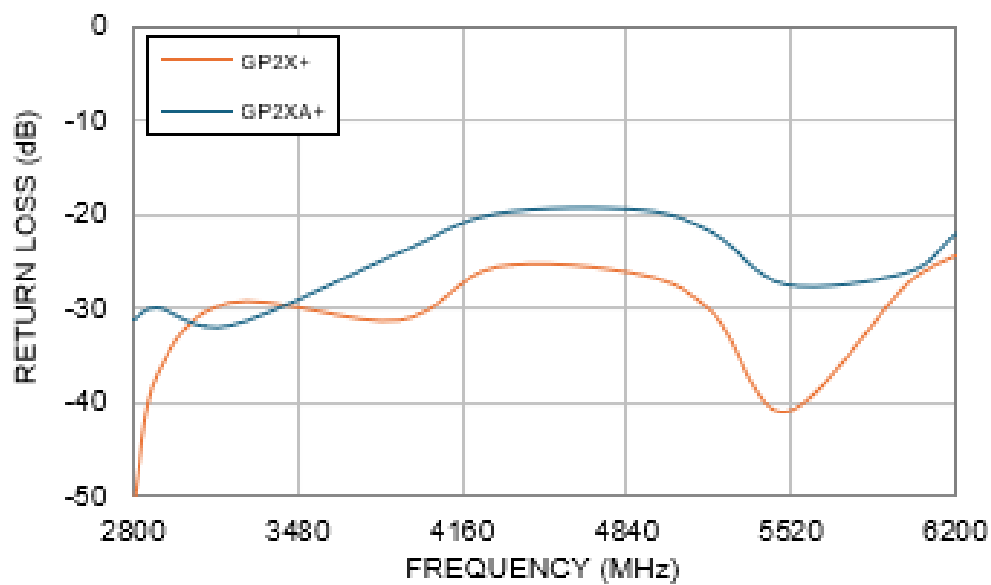
RETURN LOSS PORT S @
TEMPERATURE = +25°C,
 $P_{IN} = -10$ dBm



**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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