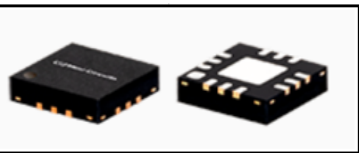
# *REPLACEMENT PART REFERENCE GUIDE, GP2XA+* AN-10-031

| | |
|---|---|
| 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 he 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.

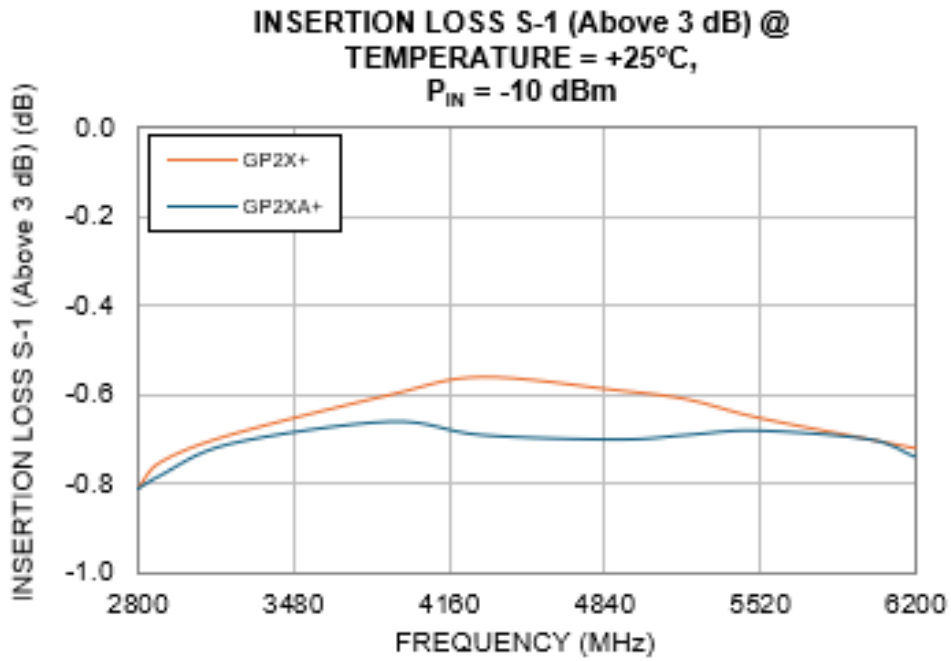
## 2) RF PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

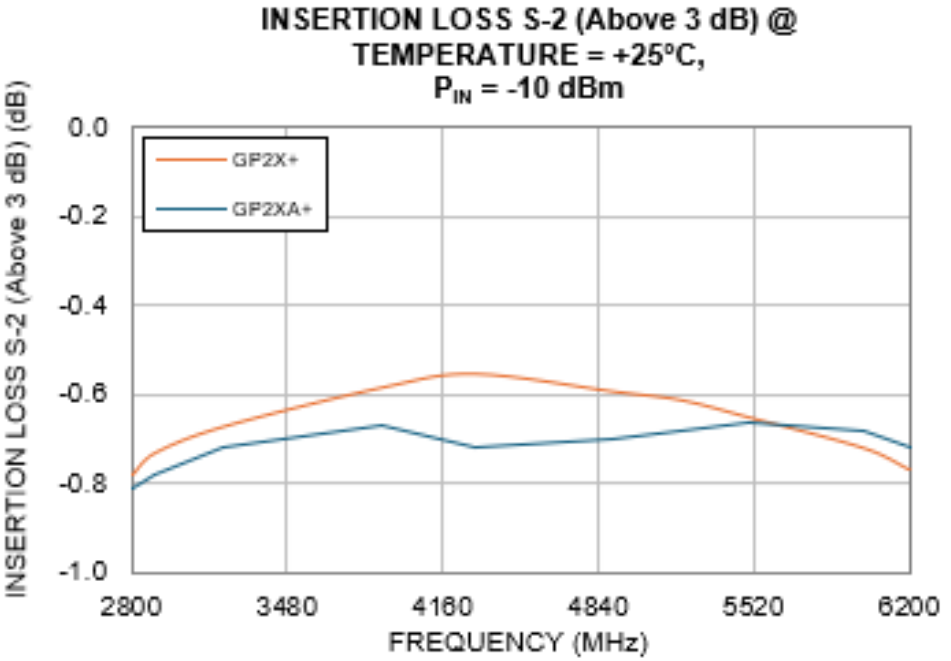
**MODEL: GP2X+, GP2XA+**

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

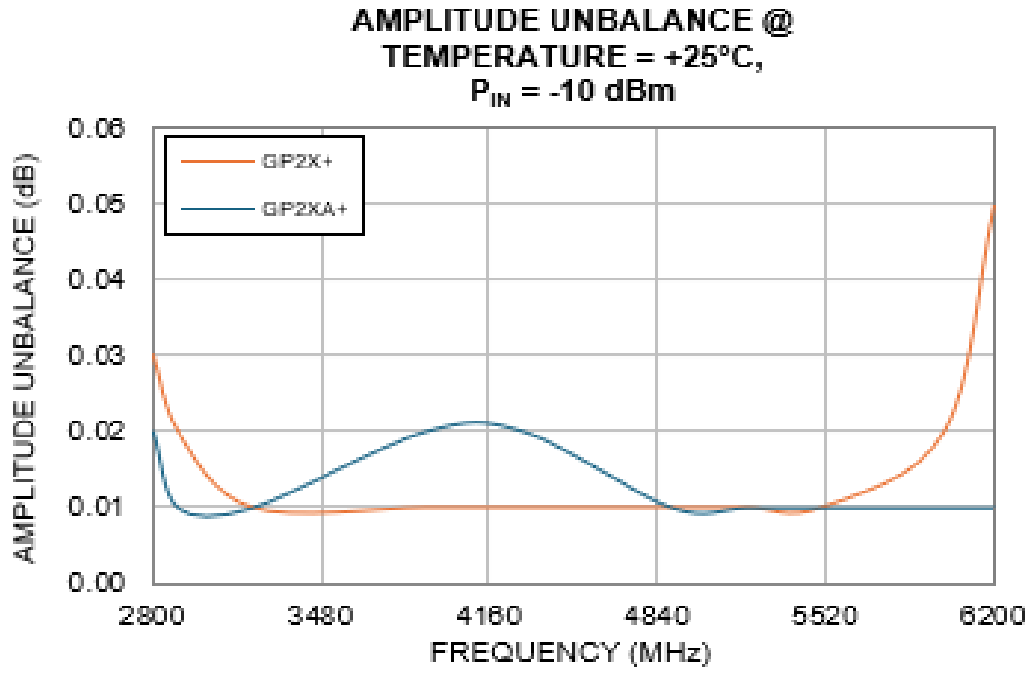
1. Typical insertion loss displayed are the worst case among Port 1 and Port 2.
2. Typical return loss displayed are the worst case among Port 1 and Port 2.

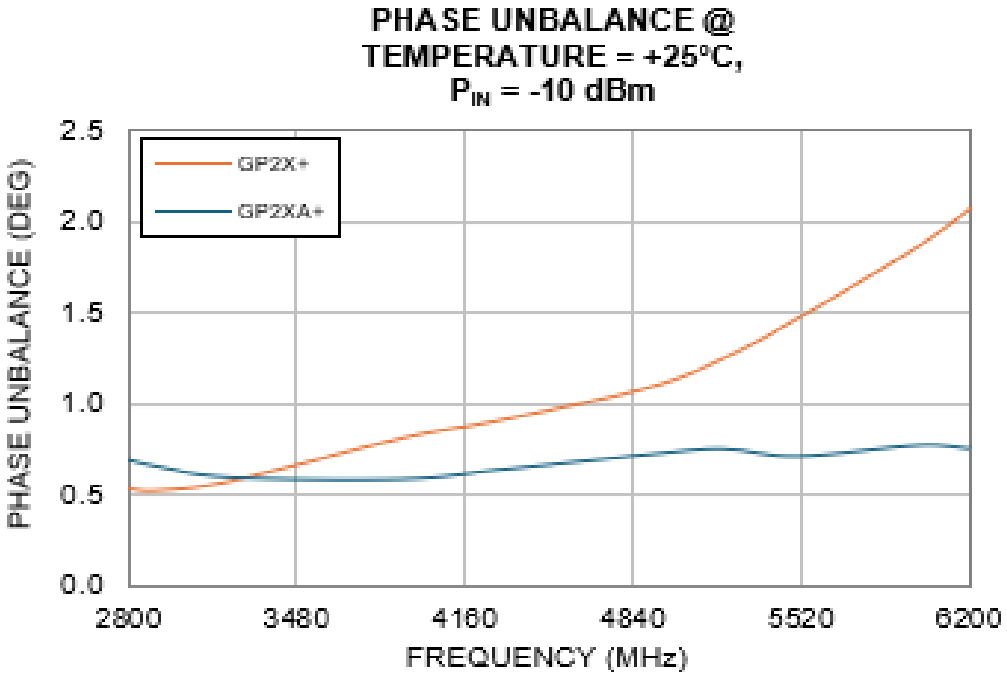
3) **TYPICAL PERFORMANCE GRAPHS AT ROOM TEMPERATURE**:



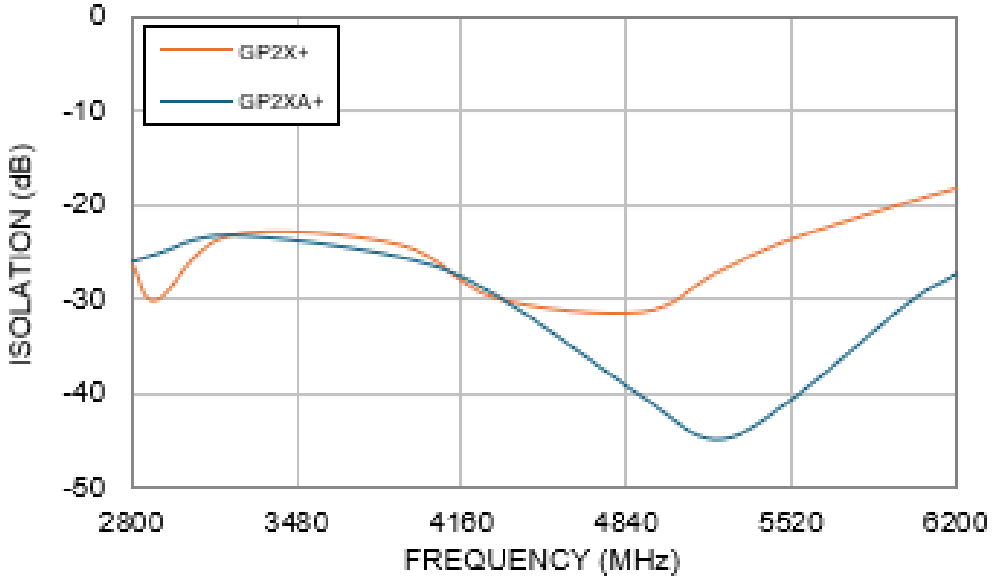



3. Total Loss = Single Path (S-1 or S-2) Insertion Loss + 3 dB Splitter Loss

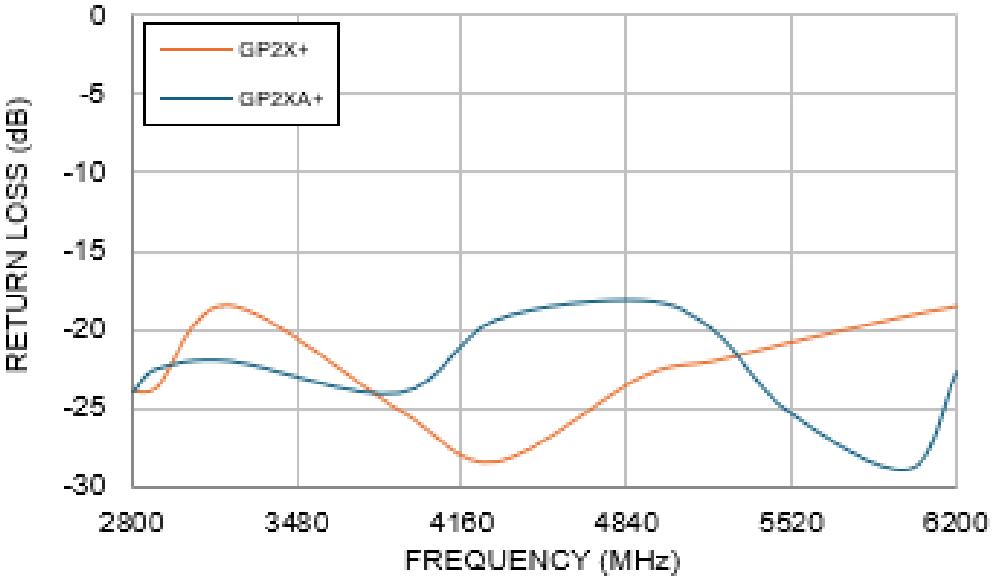


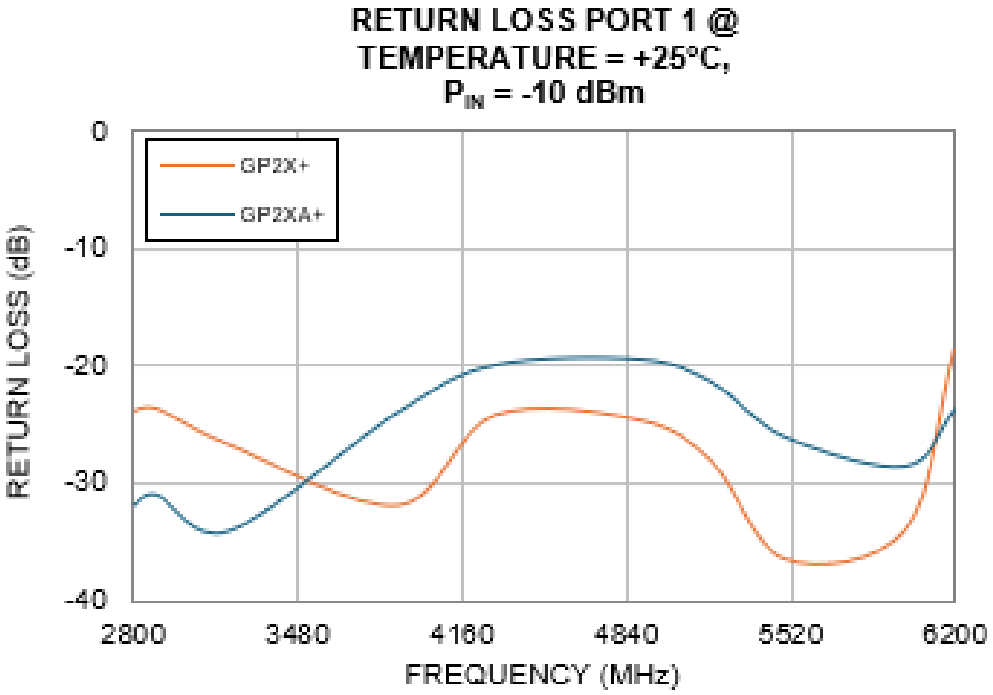



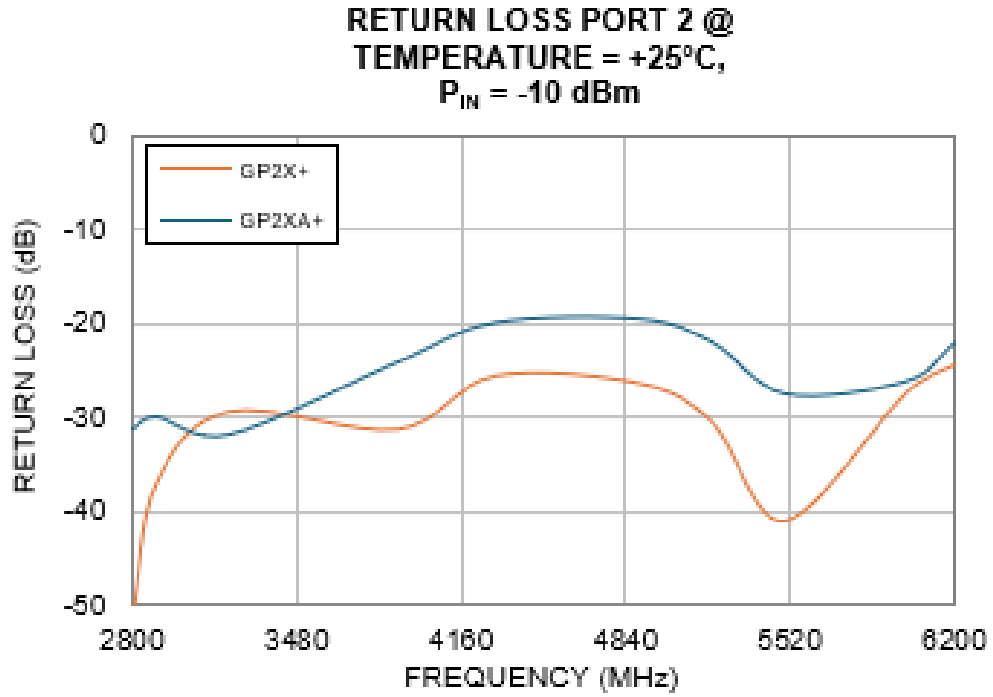
**ISOLATION 1-2 @ TEMPERATURE = +25°C, $P_{IN}$ = -10 dBm**




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





## IMPORTANT NOTICE