

To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Evaluation Board Information

μ PG2012TK

Single Control SPDT SW IC Evaluation Board

- Evaluation Board Pattern Layout
- Circuit Description
- Insertion Loss Data
(Including loss of the test fixture)
- Isolation Data
- Input and Output Return Loss Data
- 1 GHz and 2.5 GHz Pin vs. Pout Data
- Loss of The Test Fixture vs. Frequency Data

Caution	GaAs Products	<p>This product uses gallium arsenide (GaAs). GaAs vapor and powder are hazardous to human health if inhaled or ingested, so please observe the following points.</p> <ul style="list-style-type: none">• Follow related laws and ordinances when disposing of the product. If there are no applicable laws and/or ordinances, dispose of the product as recommended below.<ol style="list-style-type: none">1. Commission a disposal company able to (with a license to) collect, transport and dispose of materials that contain arsenic and other such industrial waste materials.2. Exclude the product from general industrial waste and household garbage, and ensure that the product is controlled (as industrial waste subject to special control) up until final disposal.• Do not burn, destroy, cut, crush, or chemically dissolve the product.• Do not lick the product or in any way allow it to enter the mouth.
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This document outlines general applications for this product. The application circuits and circuit constants provided in this document are simply examples and should not be used for mass production design. Be aware also that there is no intention to standardize the restrictions and characteristics of these application circuits.

The characteristics of high-frequency devices in particular vary depending on the external components and mounting pattern used.

Customers are requested to confirm all characteristics when designing a system based in part or wholly on the information in this document.

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"Standard": Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots

"Special": Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

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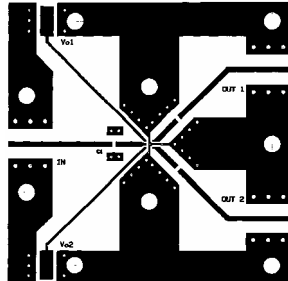
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M8E 00.4-0110

Evaluation Board Pattern Layout

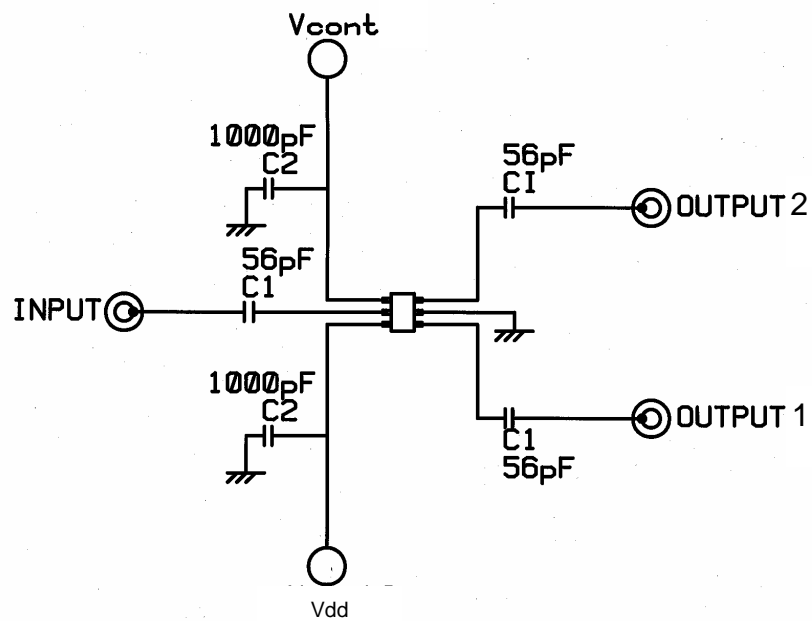


scale 1 : 1

size 38 mm × 38 mm

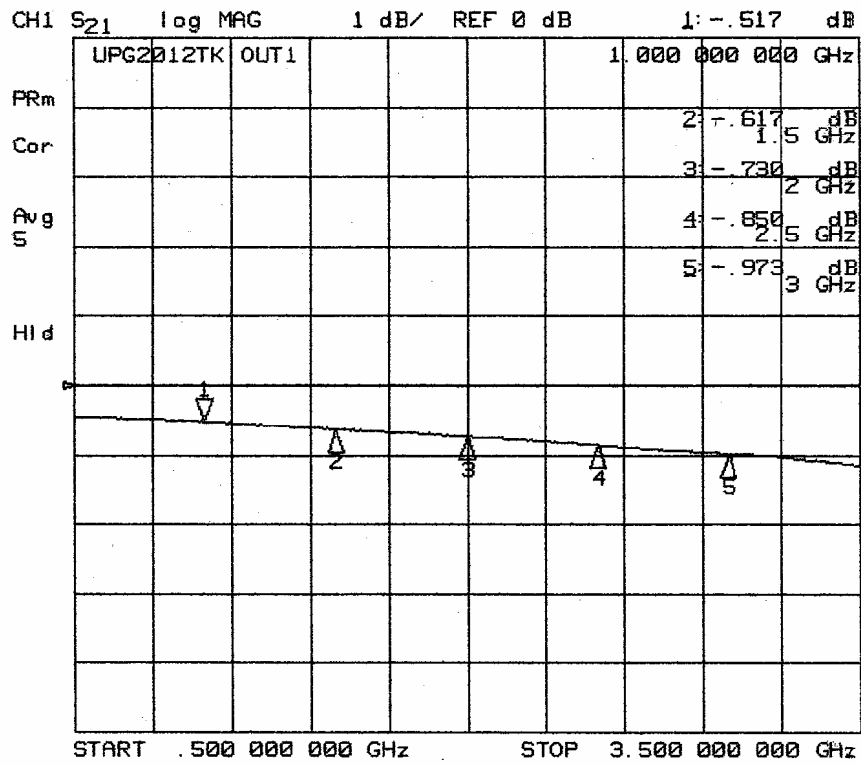
material FR4 (ELC4756/Sumitomo)
h = 0.4 mm, $\epsilon_r = 4.6$

Circuit Description

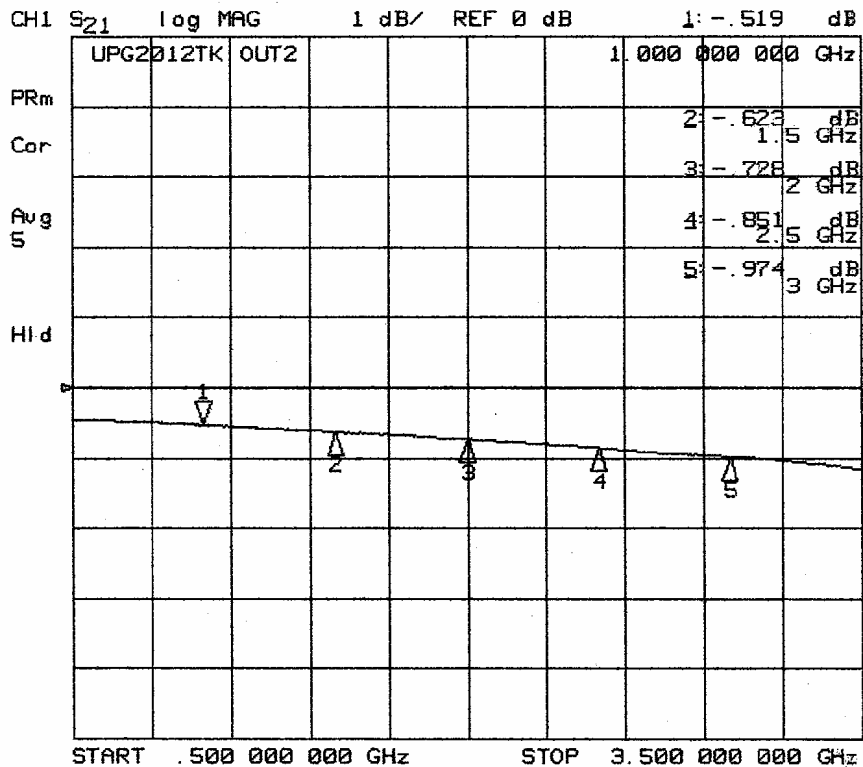


Parts	Model No.	Value	Maker	Symbol
Chip Capacitance	GRM1552C1H560JZ01B	56 pF	Murata	C1
	GRM155B11H102KA01B	1000 pF	Murata	C2
PC Terminal	A2-2PA-2.54DSA	—	Hirose	—
RF Connector	142-0721-821	—	Jhonson	—
Substrate	FR4 (t = 0.4 mm)	—	Sumitomo	—

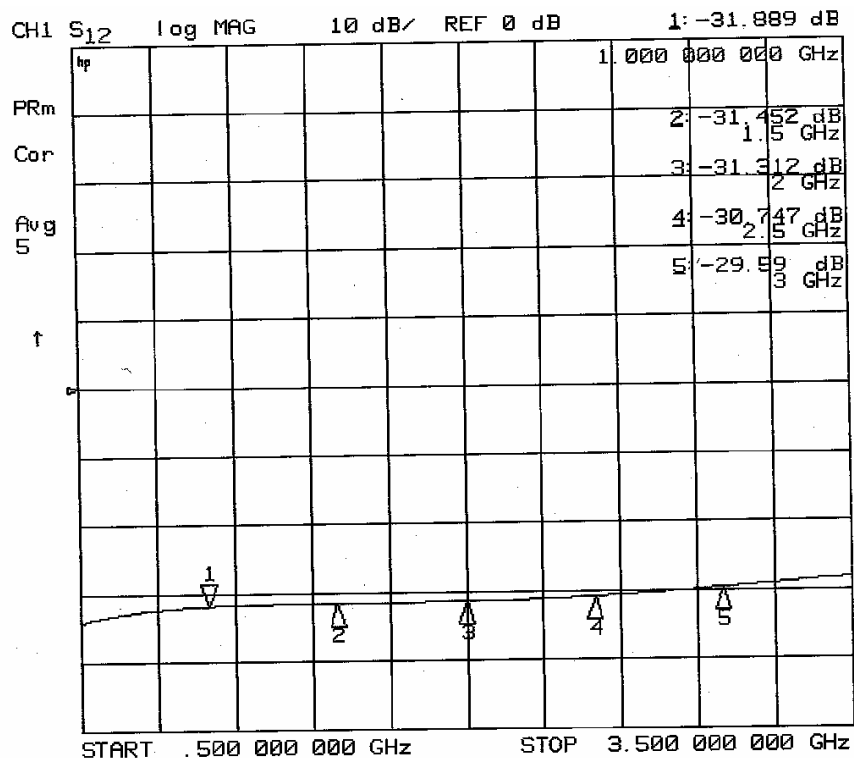
IN-OUT1 Insertion Loss



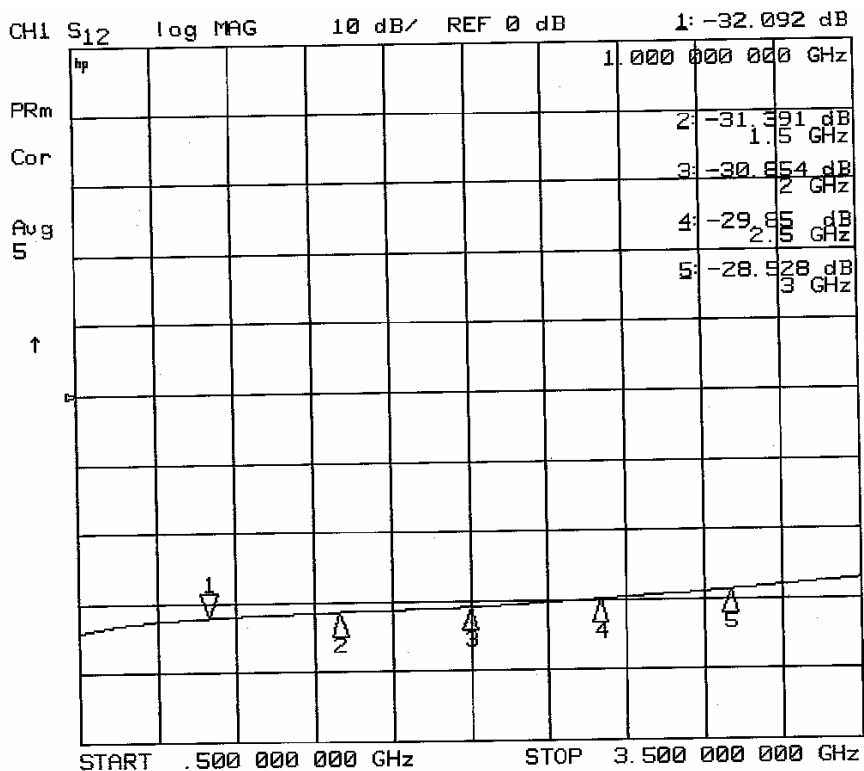
IN-OUT2 Insertion Loss



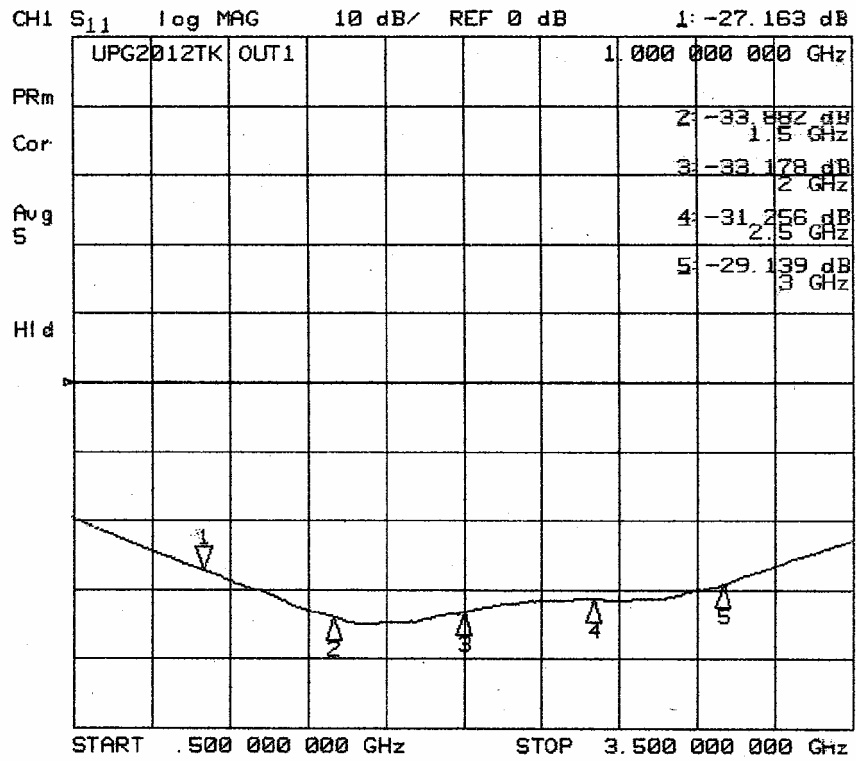
OUT1-OUT2 Isolation



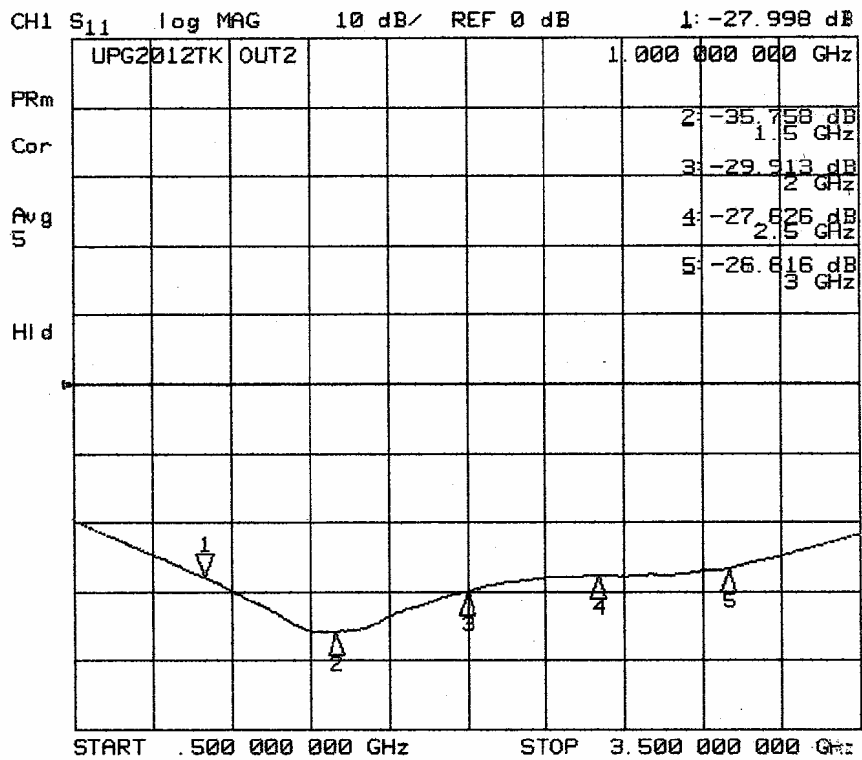
OUT2-OUT1 Isolation



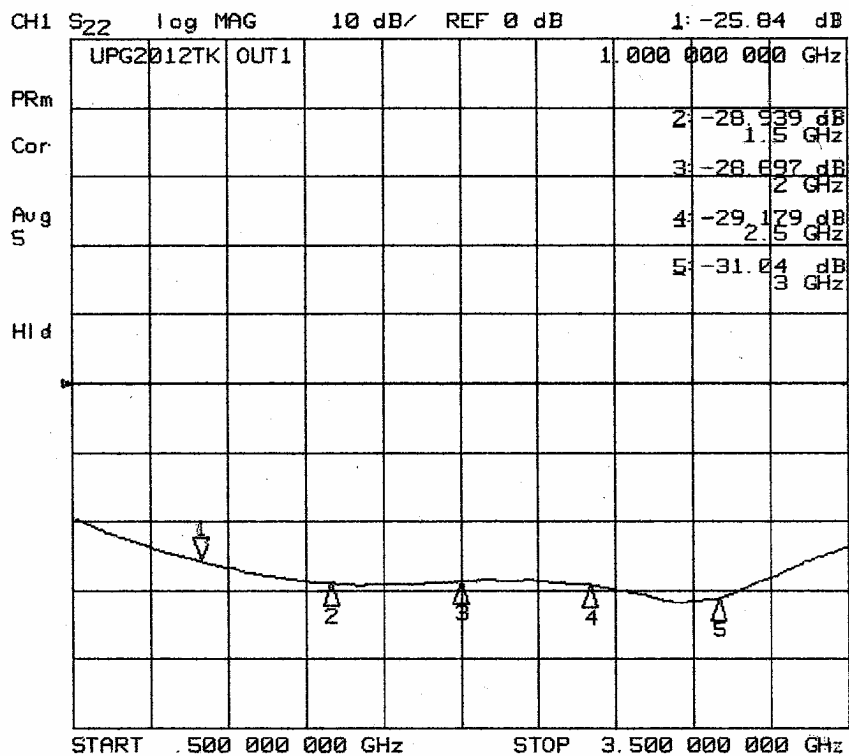
IN-OUT1 Input Return Loss



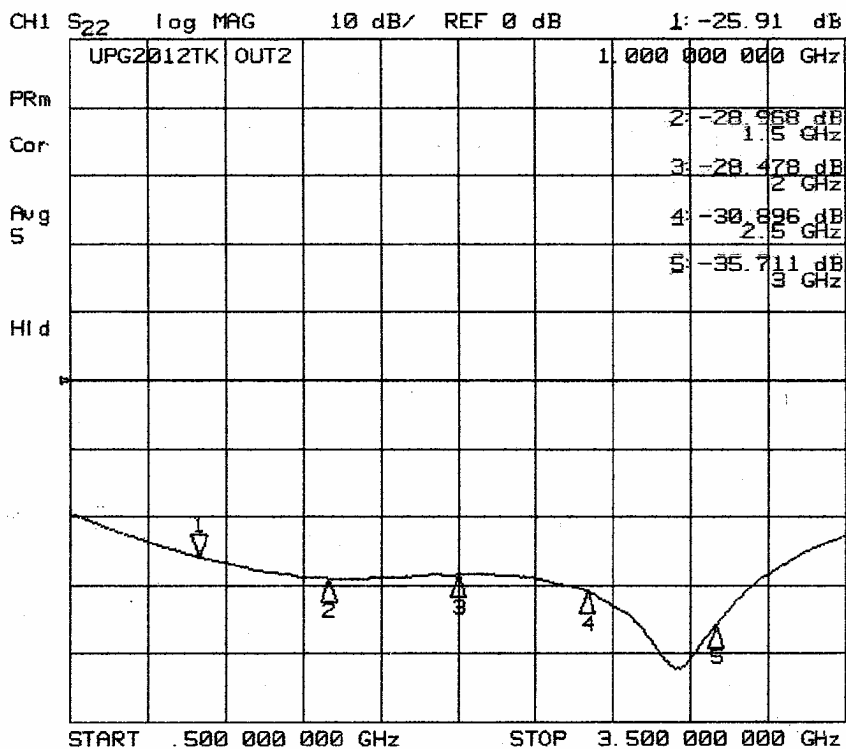
IN-OUT2 Input Return Loss



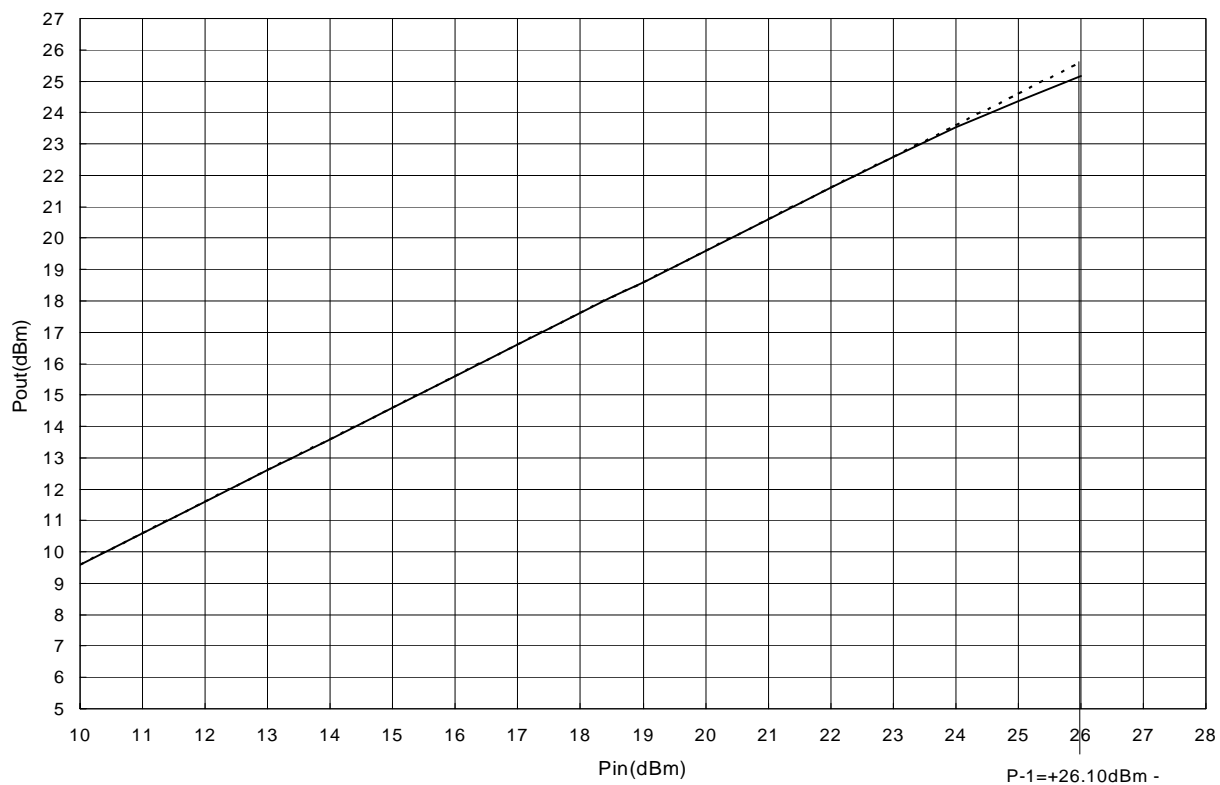
IN-OUT1 Output Return Loss



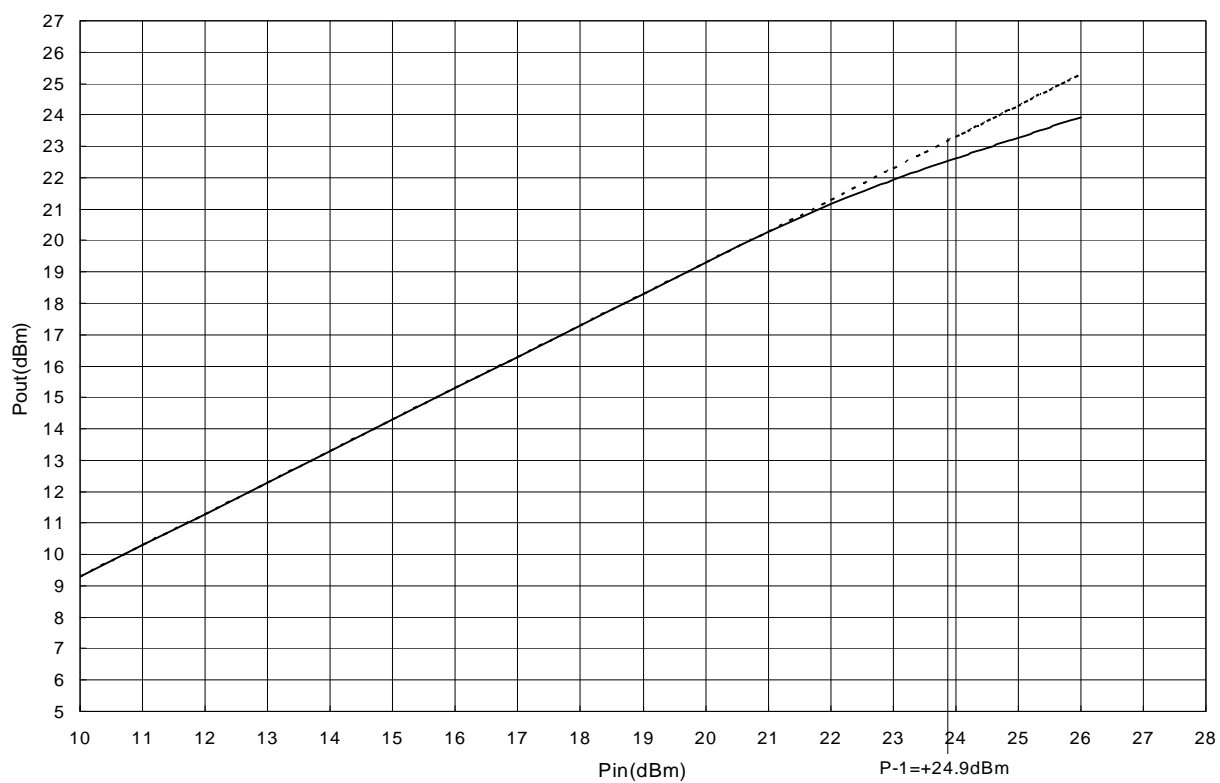
IN-OUT2 Output Return Loss



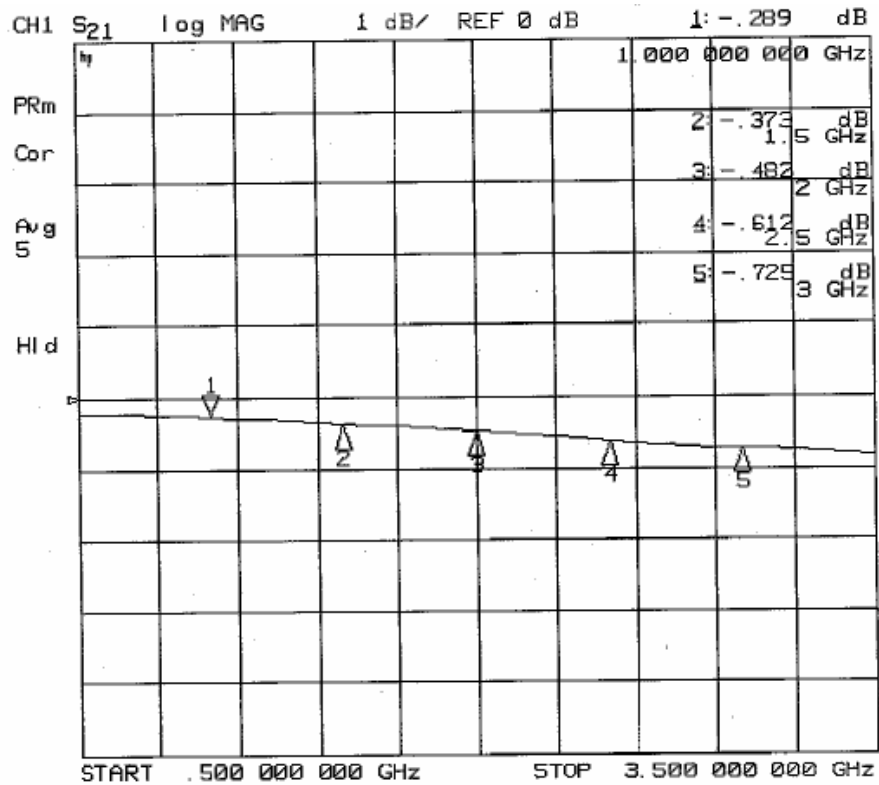
1.0 GHz P_{in} vs. P_{out}



2.5 GHz P_{in} vs. P_{out}

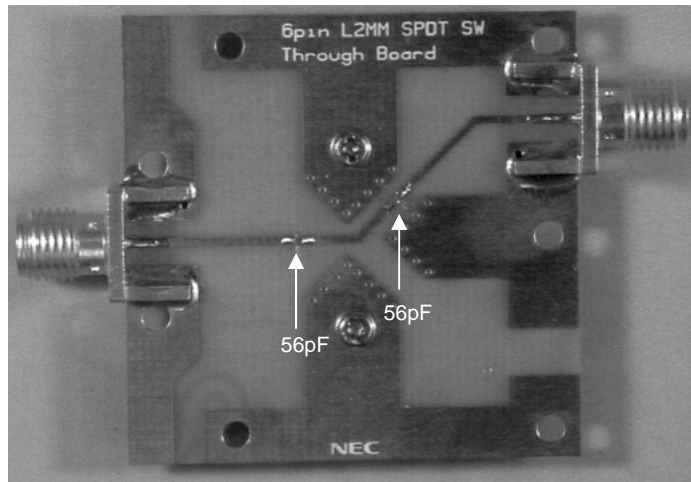


Loss of The Test Fixture vs. Frequency



STIMULUS MHz	CH1 S21	
.500 000 000	-.231	dB
.600 000 000	-.231	dB
.700 000 000	-.246	dB
.800 000 000	-.254	dB
.900 000 000	-.271	dB
1.000 000 000	-.289	dB
1.100 000 000	-.306	dB
1.200 000 000	-.316	dB
1.300 000 000	-.337	dB
1.400 000 000	-.351	dB
1.500 000 000	-.373	dB
1.600 000 000	-.403	dB
1.700 000 000	-.413	dB
1.800 000 000	-.433	dB
1.900 000 000	-.455	dB
2.000 000 000	-.482	dB
2.100 000 000	-.503	dB
2.200 000 000	-.519	dB
2.300 000 000	-.555	dB
2.400 000 000	-.583	dB
2.500 000 000	-.612	dB
2.600 000 000	-.648	dB
2.700 000 000	-.673	dB
2.800 000 000	-.697	dB
2.900 000 000	-.707	dB
3.000 000 000	-.725	dB
3.100 000 000	-.732	dB
3.200 000 000	-.752	dB
3.300 000 000	-.769	dB
3.400 000 000	-.796	dB

**Through Board
(Including DC Block Capacitances)**



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