

7. GNSS APPLICATION

7-1 SUMMARY

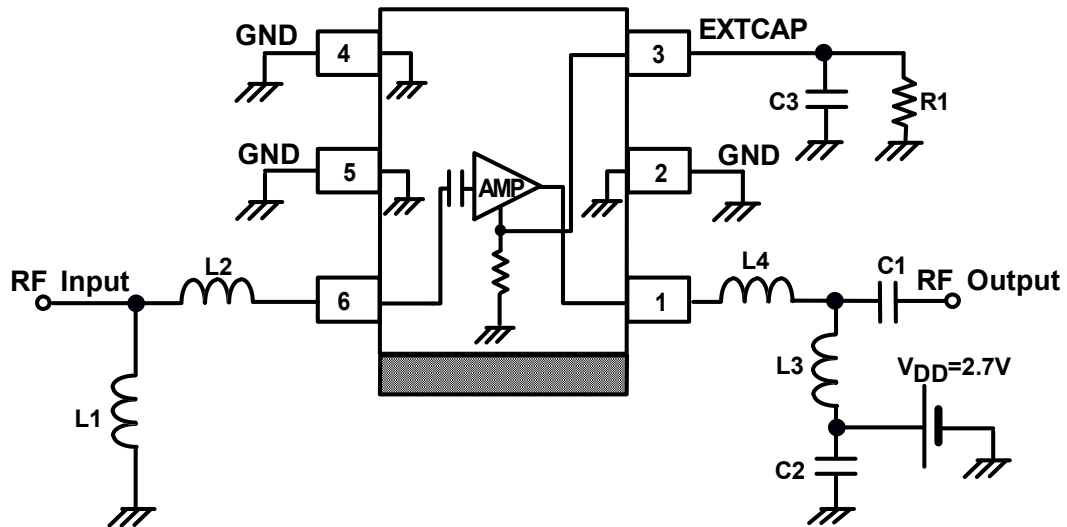
The characteristics of GNSS 1.5GHz have evaluated as follows. The evaluation circuit structure and measured data are reviewed.

7-2 MEASURED DATA

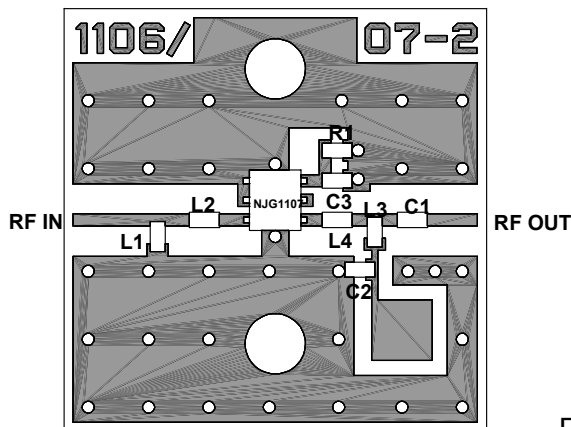
General conditions: $T_a=+25^{\circ}\text{C}$, $V_{DD}=2.7\text{V}$, $\text{freq}=1575\text{MHz}$, $Z_s=Z_l=50\Omega$

PARAMETERS	SYMBOL	CONDITIONS	DATA	UNITS
Operating current	I_{DD}	RF OFF	3.2	mA
Small signal gain	Gain		16.96	dB
Noise Figure	NF	$f_{RF}=1575\text{MHz}$	1.13	dB
Output 3 rd order intercept point	OIP3	$f_{RF}=1575.0+1575.1\text{MHz}$ Pin=-35dBm	+14.0	dBm
Input 3 rd order intercept point	IIP3	$f_{RF}=1575.0+1575.1\text{MHz}$ Pin=-35dBm	-2.96	dBm
Input VSWR	$VSWR_i$		1.50	
Output VSWR	$VSWR_o$		1.37	

7-3 APPLICATION CIRCUIT



7-4 PCB DESIGN

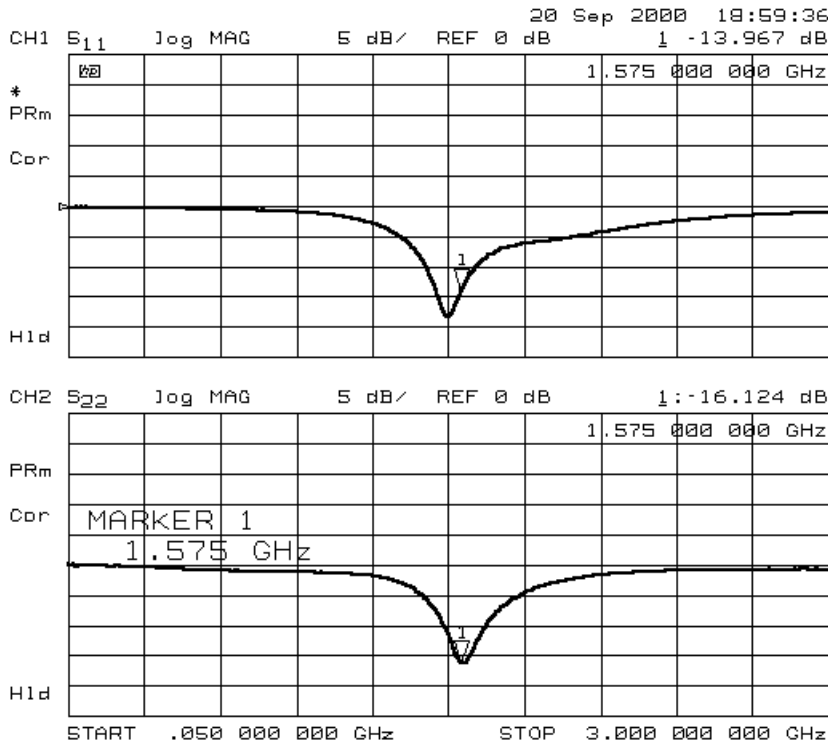


PCB: FR4 t=0.2mm
 MICROSTRIP LINE WIDTH=0.4mm($Z_0=50\Omega$)
 PCB SIZE: 14.0 x 14.0mm

PARTS LIST

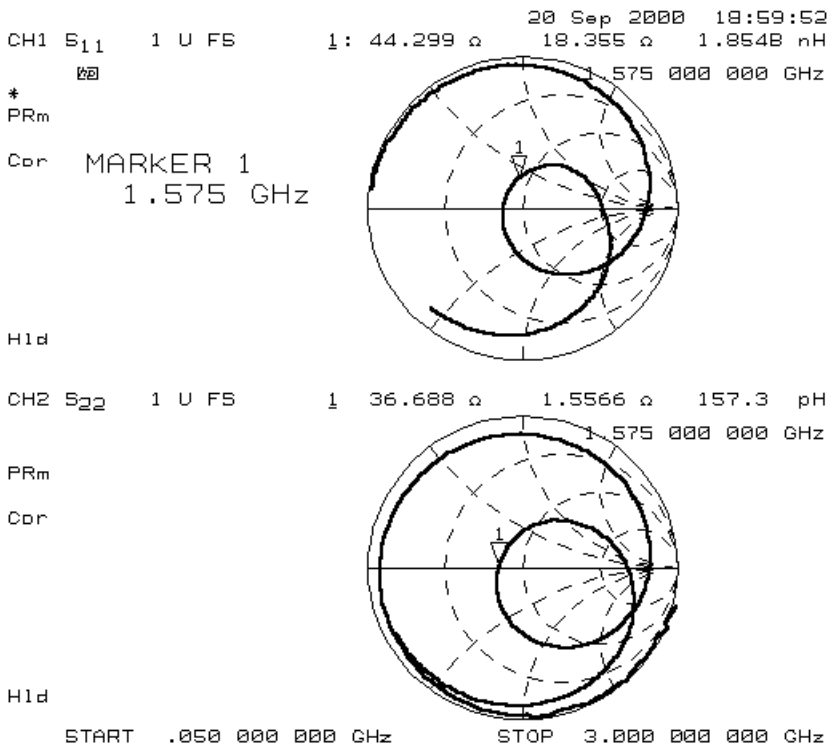
Parts ID	Constants	Comment
L1	6.8nH	Taiyo-yuden (HK1005)
L2	10nH	Taiyo-yuden (HK1005)
L3	6.8nH	Taiyo-yuden (HK1005)
L4	15nH	Taiyo-yuden (HK1005)
C1	8pF	Murata (GRM36)
C2	1000pF	Murata (GRM36)
C3	1000pF	Murata (GRM36)

7-4-1 CHARACTERISTICS



S11

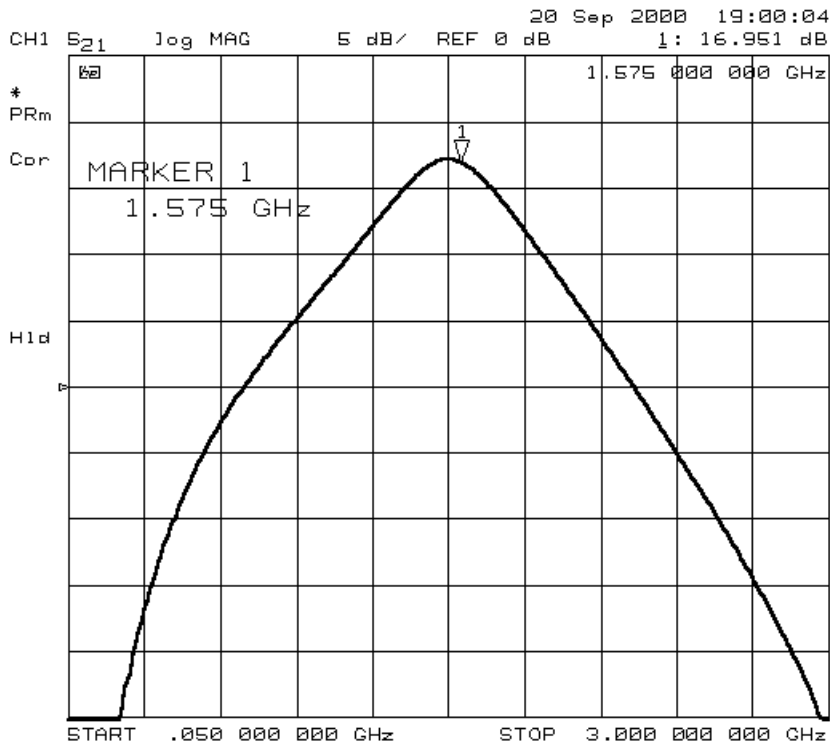
S22



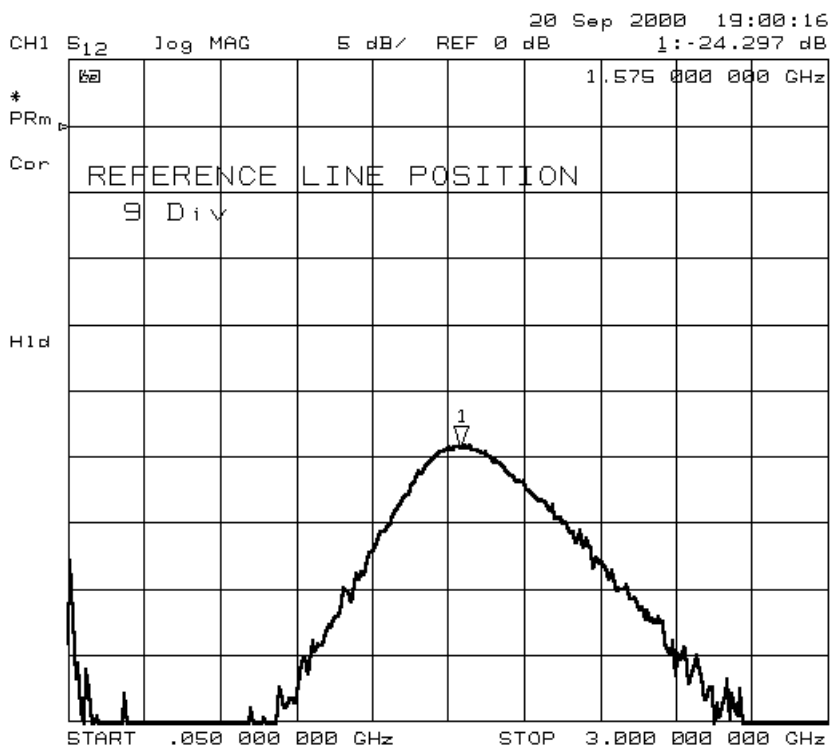
Zin

Zout

7-4-2 CHARACTERISTICS

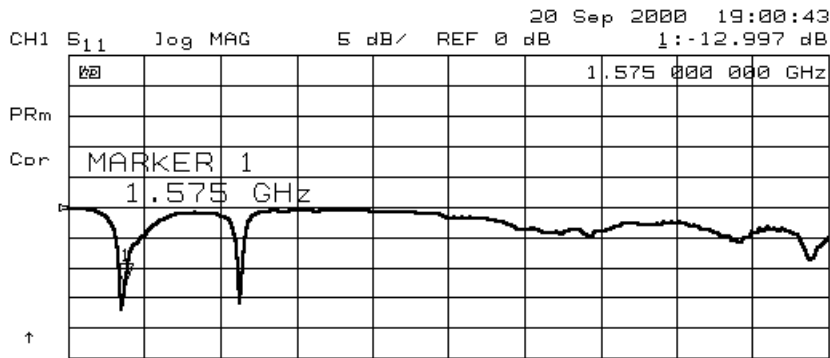


S21

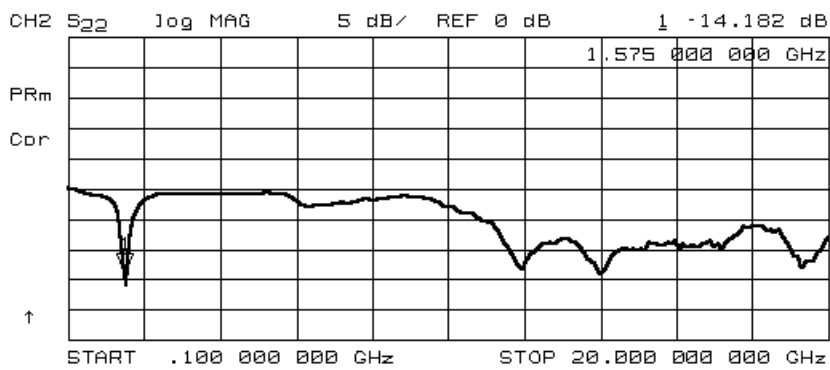


S12

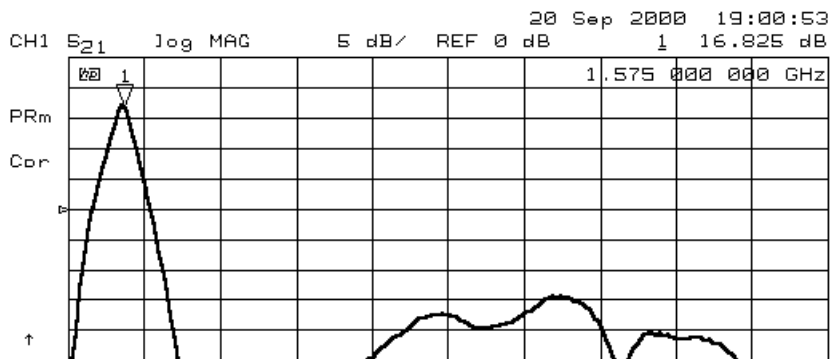
7-4-3 CHARACTERISTICS



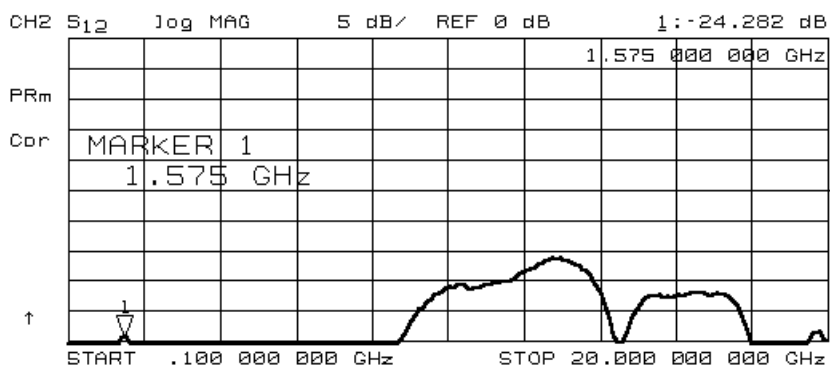
S11



S22



S21



S12