

# VGA6000 Variable Gain Amplifier

10 MHz to 6000 MHz

## VGA6000

### Description

VGA6000 is a Variable Gain Amplifier optimized for any application requiring high performance, wide bandwidth variable gain control.

### Features

- Wide Band : 10 MHz to 6000 MHz
- P1dB Output Power: 15 dBm
- Output IP3: +33 dBm
- Gain : 12 dB to -19.75 dB
- Gain Resolution : 0.25 dB
- 50 Ohm I/O's

### Applications

- Cellular/3G & LTE/WiMAX/4G
- LO Driver Applications
- Microwave Radio
- Test & Measurement Equipment



## VGA6000

10 MHz to 6000 MHz

### Electrical Specifications

Parameter	Min.	Typ.	Max.	Units
Frequency Range	10		6000	MHz
Gain Setting	-19.75		12	dB
Gain Resolution		0.25		dB
Input Return Loss		-15		dB
Output Return Loss		-10		dB
Reverse Isolation		23		dB
Output Power for 1 dB Compression (P1dB)		15		dBm
Output Third Order Intercept (IP3)		33		dBm

### Max. Ratings

DC Voltage at input or output	25 Volt
RF input power	20 dBm
Operating Temperature	-40°C to 85°C

Exceeding any of the limits of this section may lead to permanent damage to the device. Furthermore, extended operation at these maximum ratings may reduce the life of this device.

# Typical Characteristics

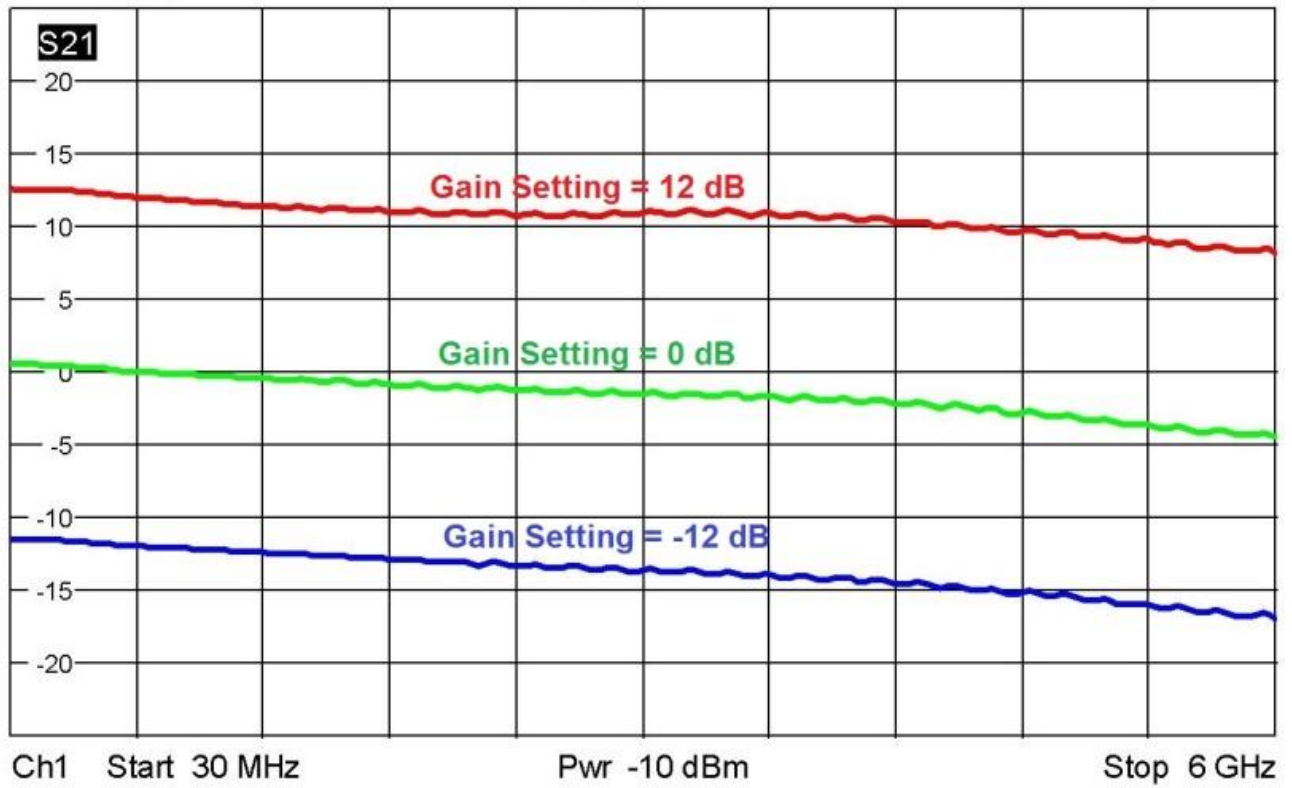


Figure 1, Small Signal Gain (S21) vs Frequency

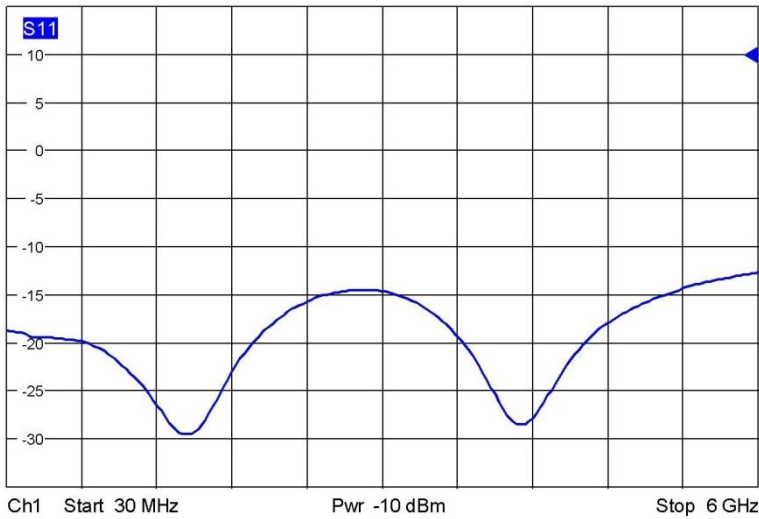


Figure 2, Input Return Loss (S11) vs Frequency

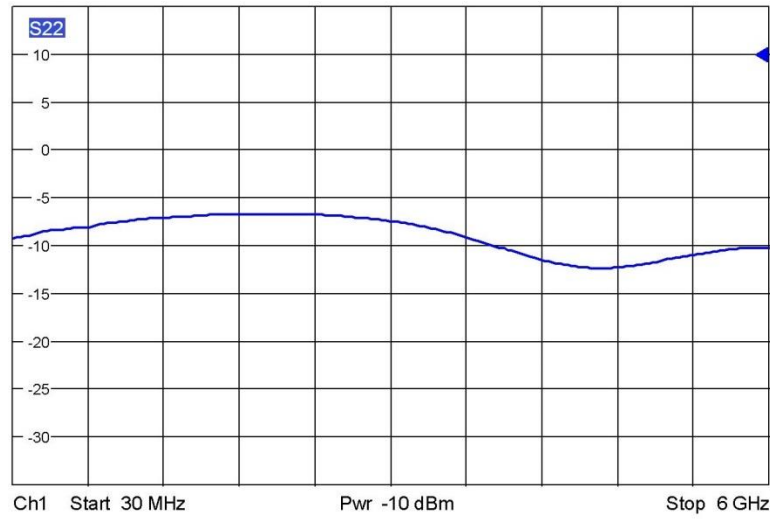


Figure 3, Output Return Loss (S22) vs Frequency

## VGA6000

10 MHz to 6000 MHz

### MATLAB Code Example

```
sys=serial('COM113','BaudRate',1000000,'DataBits',8,  
'Parity','none','FlowControl','none','Timeout',1);  
  
fopen(sys); % open COM port  
  
VGA6000_address = 20;  
  
ION_ON(sys,VGA6000_address); % turn module ON  
  
VGA(sys,VGA6000_address,12); % set gain 12 dB  
  
fclose(sys); % close COM port
```