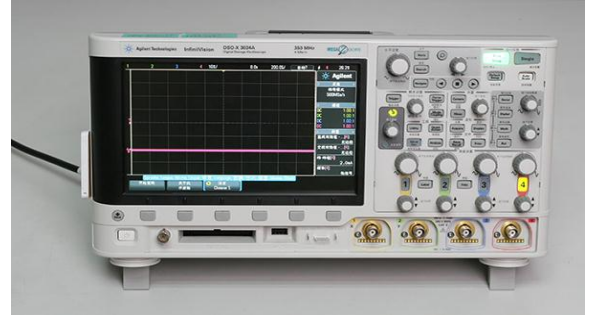


Signal Analyzer

N9020A MXA signal analyzer is one of the X-Series spectrum analyzers, it is the comprehensive utilization of equipment, evolutionary approach to measurement and signal analysis software to meet business and technical requirements of multiple products and projects.



Cellular communication

LTE FDD
 LTE TDD
 Multi-standard Radio
 GSM/EDGE/EDGE Evolution
 TD-SCDMA/HSPA
 CDMA2000/CDMA ONE
 1xEV-DO
 iDEN/WiDEN/MotoTalk
 W-CDMA/HSPA/HSPA+



Wireless connectivity

802.16e OFDMA
 (Mobile WiMAX™)LTE TDD
 802.16d OFDM
 (Fixed WiMAX)
 802.11 WLAN
 Bluetooth



Digital video

CMMB
 Digital cable TV
 DTMB (CCTB)
 DVB-T/H with T2
 ISDB-T/Tsb with Tmm



General purpose

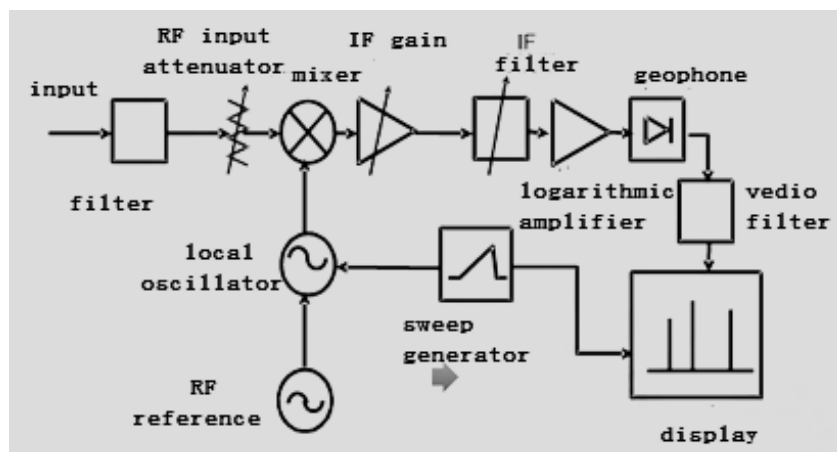
Analog demodulation
 Phase noise
 Noise figure
 VXA vector signal analysis
 EMC
 MATLAB software
 Pulse
 SCPI command language
 compatibility
 Remote language compatibility

❖ Instrument parameters

Device Name	N9020A MAX Signal Analyzer
Frequency	1 MHz
Noise level	-163 mdB per Hz
Absolute amplitude accuracy	±0.23 dB
Dynamic Range	78 dBm-CDMAACLR
Analysis bandwidth	40 MHz
Scan Points	1~40001

❖ Measurement method

The signal after filtering and attenuation, and local oscillator LO signal into the mixer after the mixing is converted into an intermediate frequency signal, because of the variable frequency oscillator LO, the input signal can be converted to a fixed intermediate frequency and amplified into the intermediate frequency filter device (center frequency is fixed), then enter a logarithmic amplifier, the IF signal is compressed, then



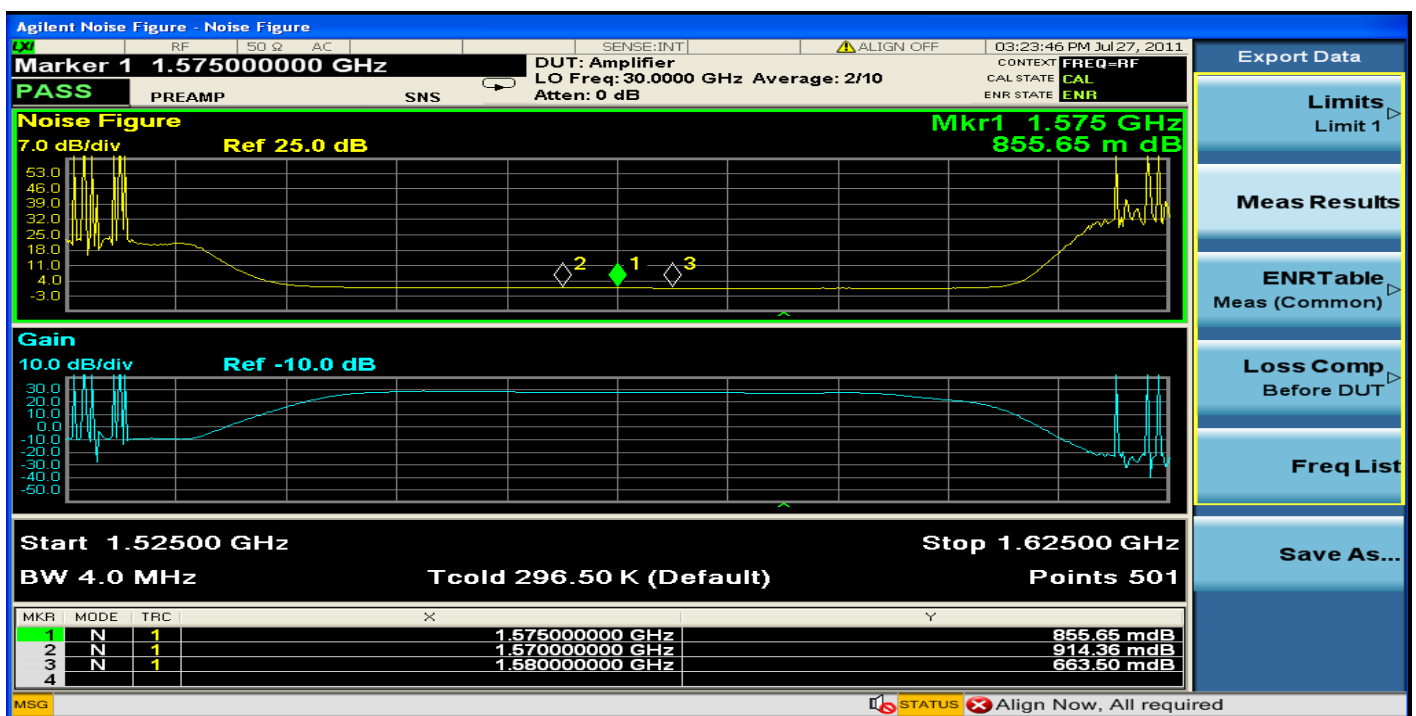
envelope detection, and the resulting signal is a video signal, for smoothing before envelope detection can pass filter can be lowered, i.e. video filter, the video signal in inside vertical deflection cathode ray tube, the amplitude of the signal is displayed at the same time, since the frequency value displayed is worth sweep voltage generator function, so the frequency of the signal, then, the measured information signal is displayed on the LCD.

❖ **Test object**

GPS active modules

❖ **Test item**

Signal analyzer in our lab can only be used to test noise right now. Test results following showed GPS under test can be used as a low-noise amplifier at 1.575 GHz nearby.



Frequency(GHz)	Noise factor(m dB)	Gain(dB)
1.575	855.65	27.509
1.570	914.36	27.168
1.580	663.50	27.650