Can the SSA3000X Plus, SSA3000X-R, or SVA1000X series analyzer automatically measure the quality factory (Q) of a filter?

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Yes.

NOTE: This is not currently available on the SSA3000X series.

The quality factor of a filter is defined as:

Q = Center frequency/Bandwidth

From the SSA3000X Plus, X-R, SVA1000X Series Manual:

When the measurement starts, the analyzer will search for the two points which are located at both sides of the current point with N dB fall or rise in amplitude and display the frequency difference between the two points in the active function area. "----" would be displayed if the search fails.
The parameters in the figure are shown as:

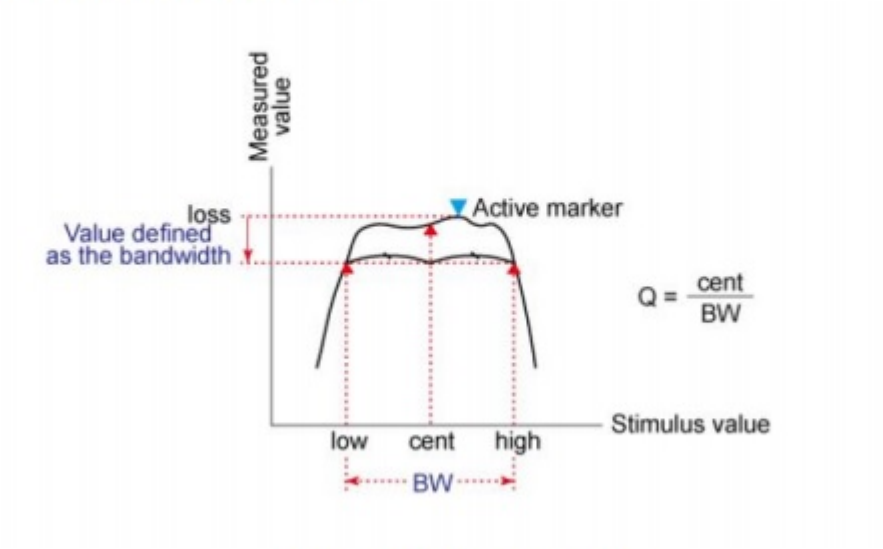
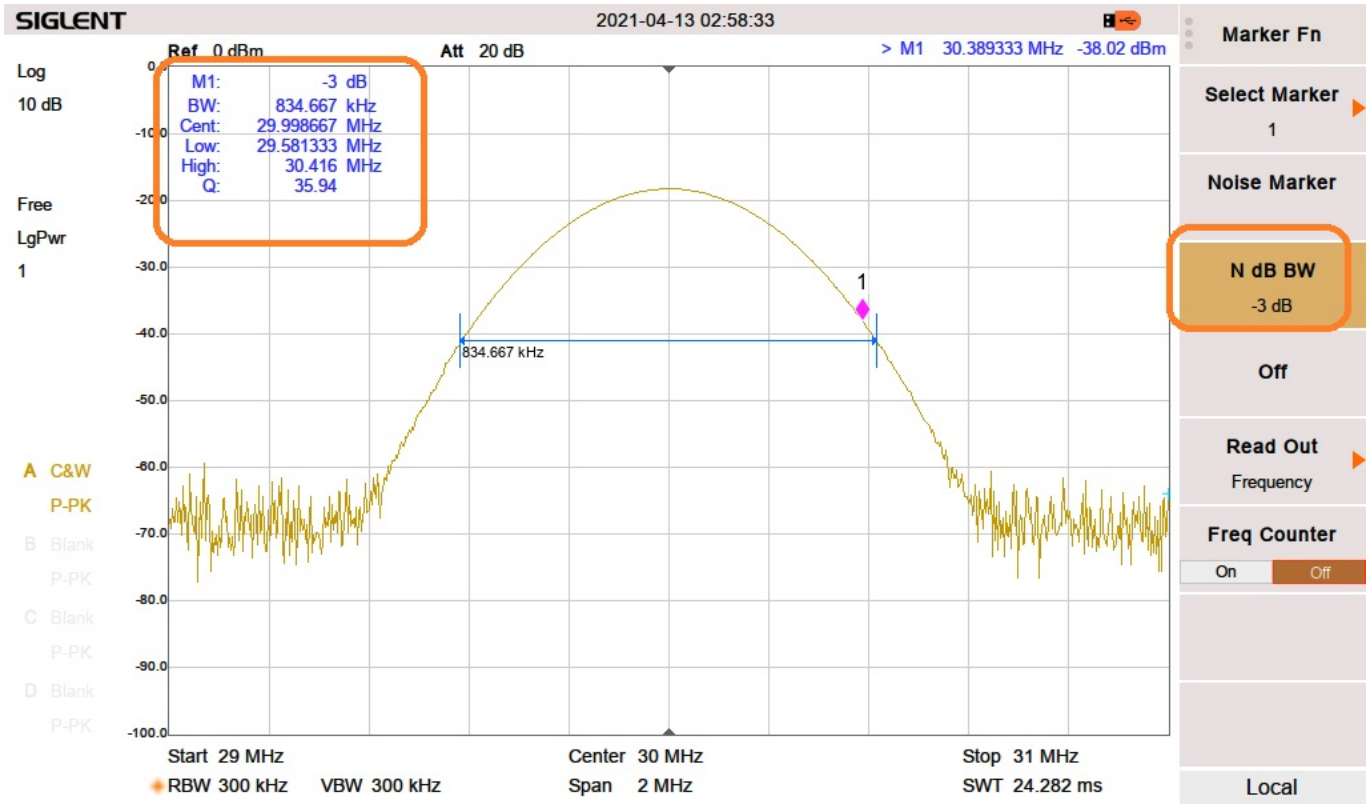


Figure 2-12 N dB parameter

You can find the automatic Q measurement in the Measurement function menu.

Press the Maker Fn button > Select N dB BW marker type and set the amplitude level (dB) at which you wish to measure the bandwidth (BW).

The measurements will be shown in the upper left-hand-side as shown below:


SIGLENT
2021-04-13 02:58:33
Ref 0 dBm
Att 20 dB
> M1 30.389333 MHz -38.02 dBm
Log
10 dB
Free
LgPwr
1
M1: -3 dB
BW: 834.667 kHz
Cent: 29.998667 MHz
Low: 29.581333 MHz
High: 30.416 MHz
Q: 35.94
834.667 kHz
A C&W
P-PK
B Blank
P-PK
C Blank
P-PK
D Blank
P-PK
Start 29 MHz
RBW 300 kHz
VBW 300 kHz
Center 30 MHz
Span 2 MHz
Stop 31 MHz
SWT 24.282 ms
Marker Fn
Select Marker
1
Noise Marker
N dB BW
-3 dB
Off
Read Out
Frequency
Freq Counter
On
Off
Local

North American Headquarters

SIGLENT Technologies NA
6557 Cochran Rd Solon, Ohio 44139
Tel: 440-398-5800
Toll Free:877-515-5551
Fax: 440-399-1211
info@siglent.com
www.siglentamerica.com/

European Sales Offices

SIGLENT TECHNOLOGIES GERMANY GmbH
Staetzlinger Str. 70
86165 Augsburg, Germany
Tel: +49(0)-821-666 0 111 0
Fax: +49(0)-821-666 0 111 22
info-eu@siglent.com
www.siglenteu.com

Asian Headquarters

SIGLENT TECHNOLOGIES CO., LTD.
Blog No.4 & No.5, Antongda Industrial Zone,
3rd Liuxian Road, Bao'an District,
Shenzhen, 518101, China.
Tel:+ 86 755 3661 5186
Fax:+ 86 755 3359 1582
sales@siglent.com
www.siglent.com/ens