Conducted EMI results from CFL

Ver1.1

20-03-2014

Configuration Parameters for SA

Signal analyser N9000A Agilent 9Khz-7.5Ghz

- Input freq. range : 10Khz-1Mhz
- CF step size : 99Khz
- Residual BW: 30Hz
- Video BW : 30Hz
- VBW: 3-dB RBW : 1.0
- Span: 106
- RBW Control[Gaussian, -3dB]
- Sweep ~274ms [FFT : 1001Pts]
- Attenuation: 0.00dB
- AMPTD Y ref: -40dBm

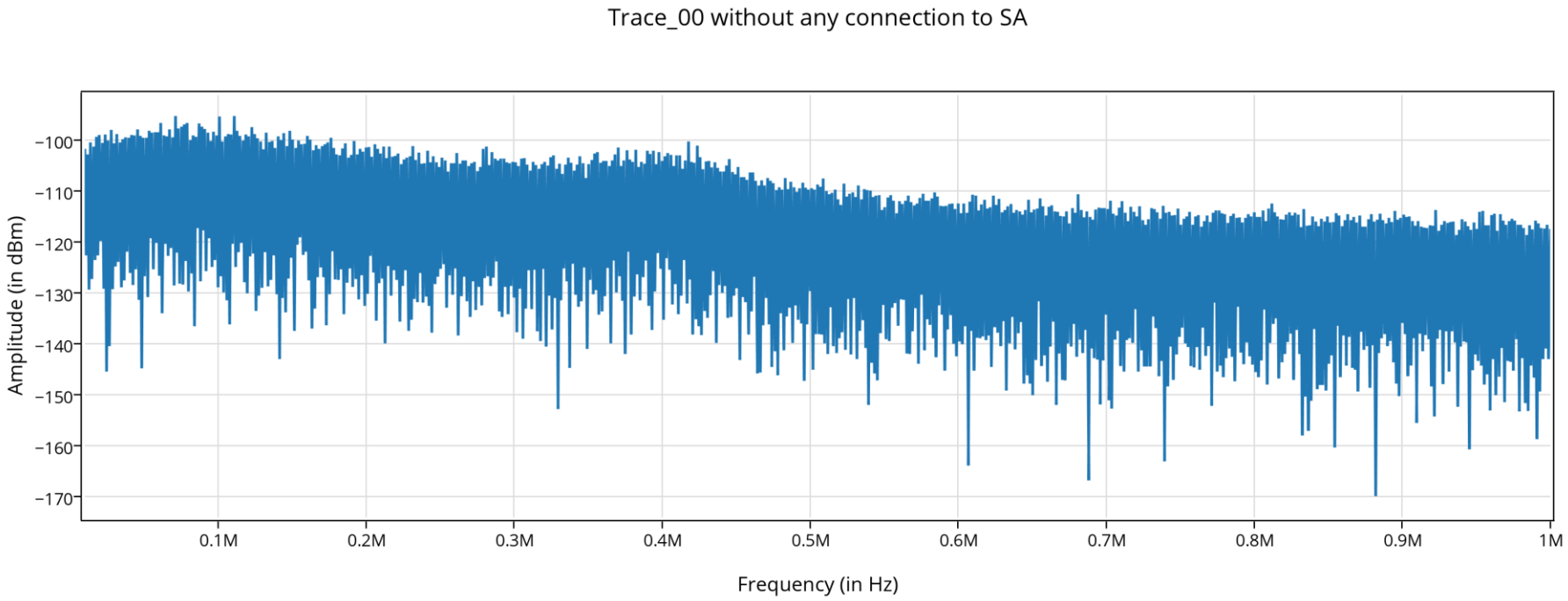
*BW Bandwidth

Hardware modifications

- HF probes Tektronix 20Mhz Input impedance of 1Mohm are used now.

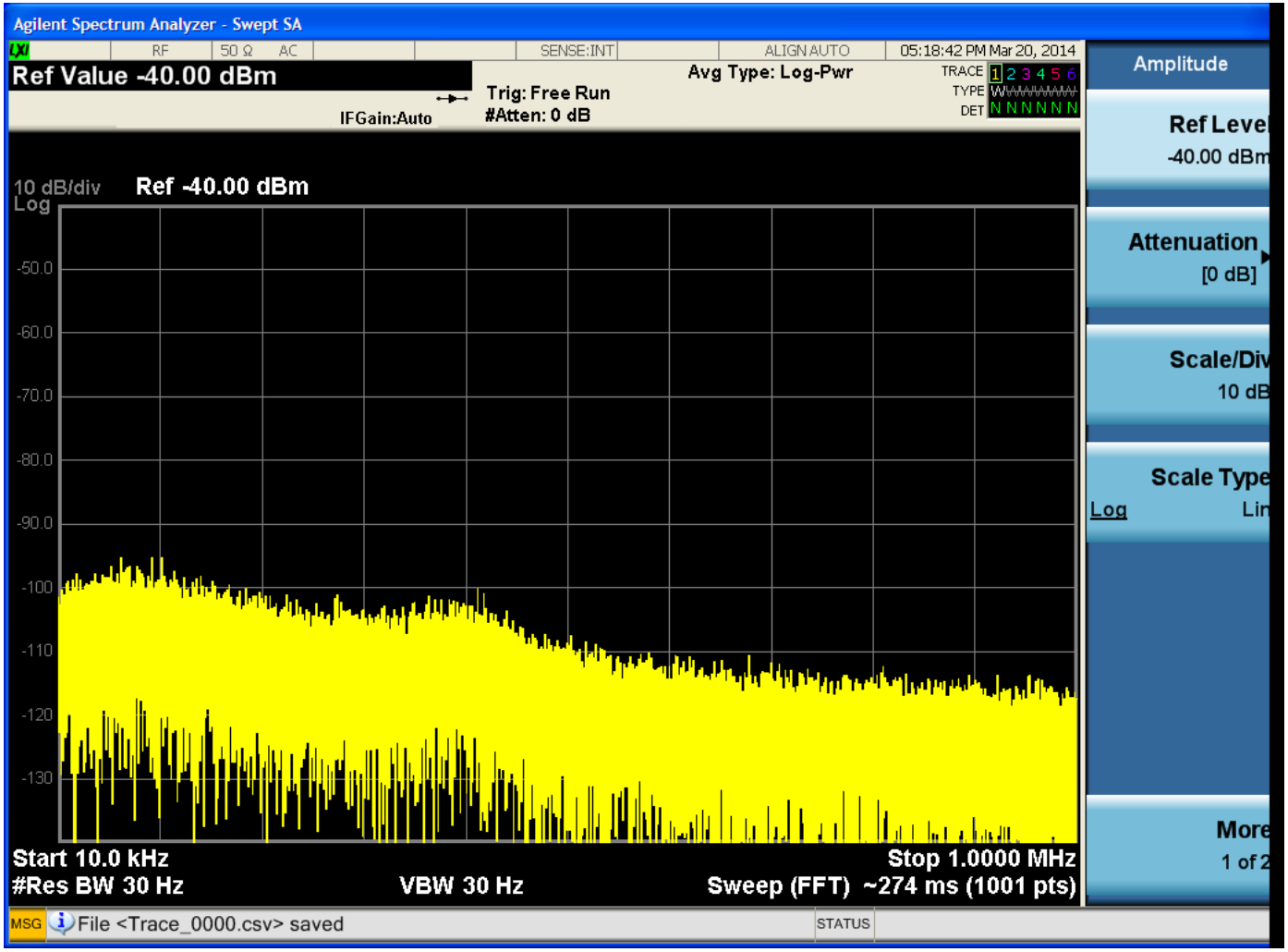
- Earlier 2 CFL lights were connected as a bunch now only one to identify individual signature.

Test_00

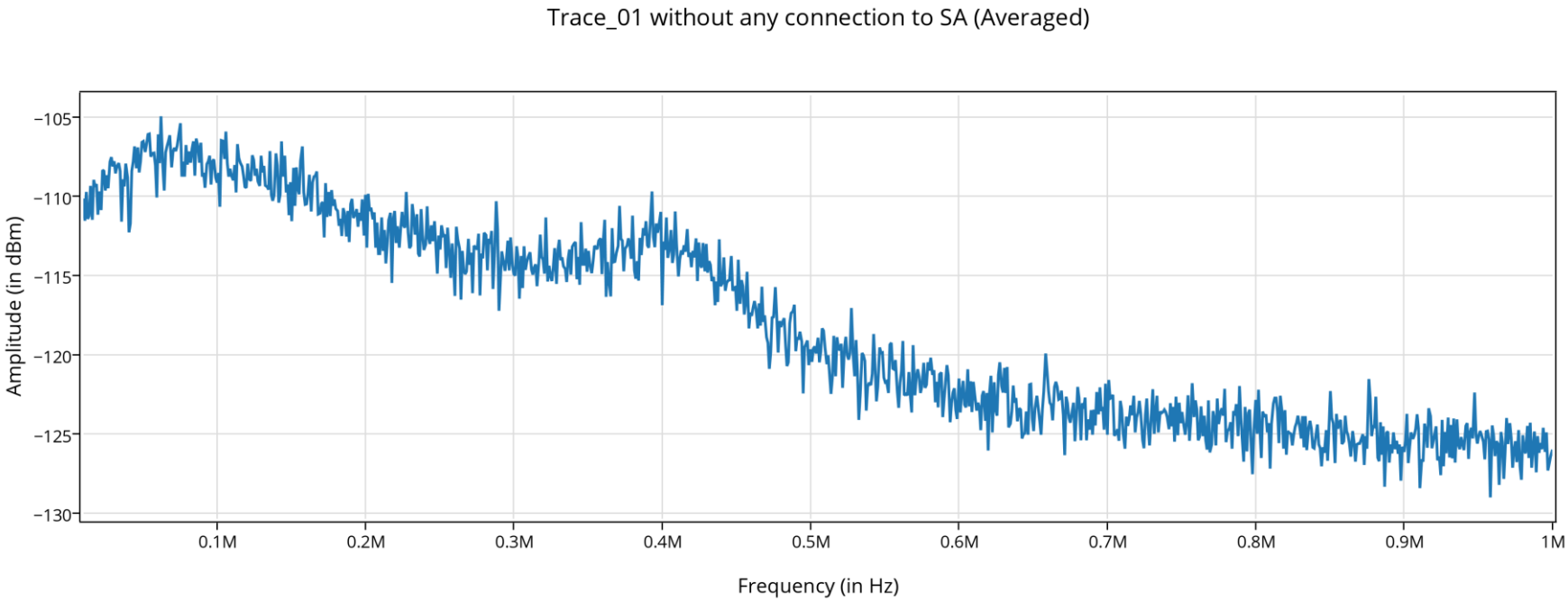


Source: Trace_00

Test_00

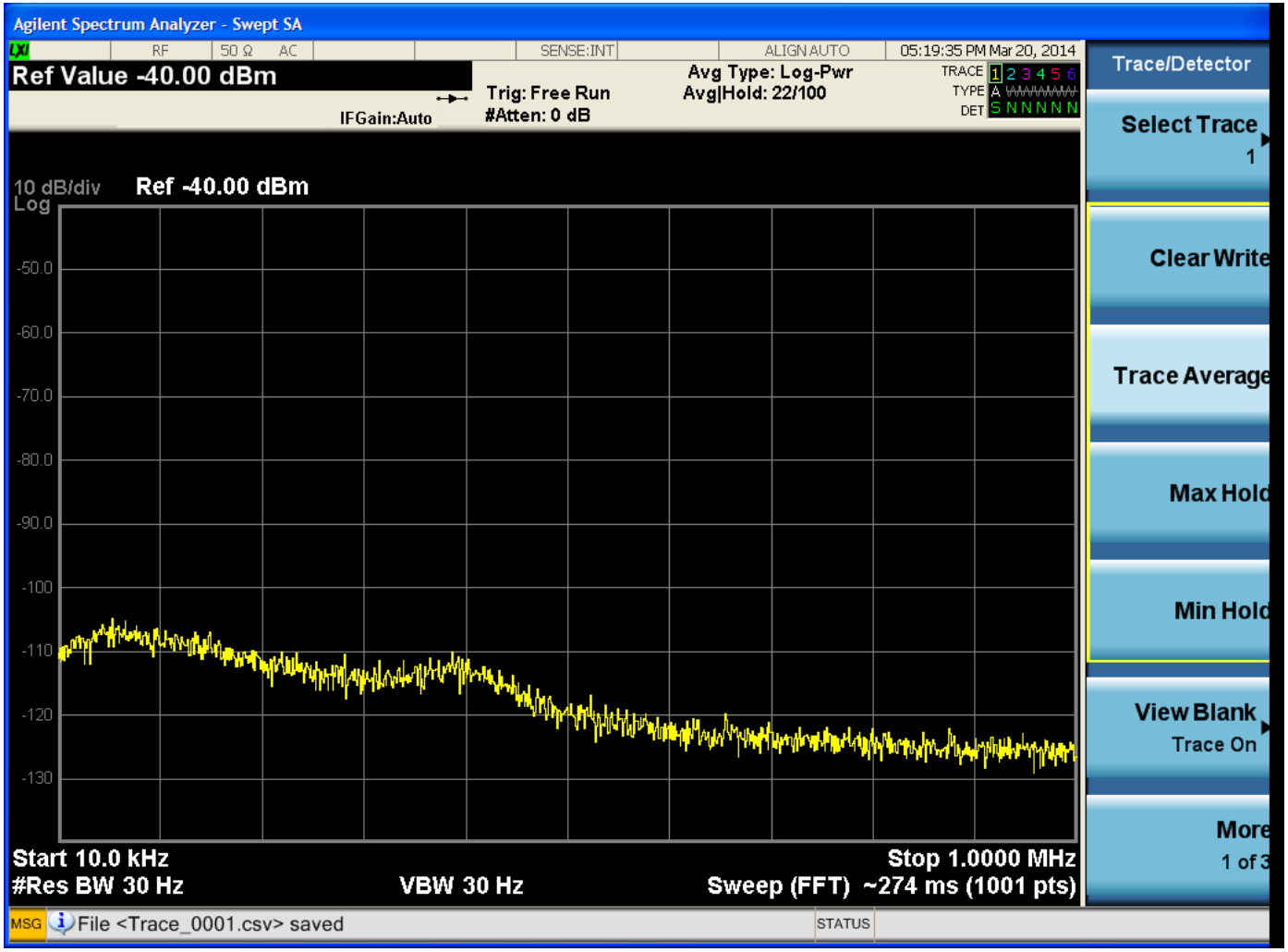

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:18:42 PM Mar 20, 2014
Ref Value -40.00 dBm
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE
DET N N N N N
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
Amplitude
Ref Level
-40.00 dBm
Attenuation
[0 dB]
Scale/Div
10 dB
Scale Type
Log
Lin
More
1 of 2
MSG
File <Trace_0000.csv> saved
STATUS

Test_01

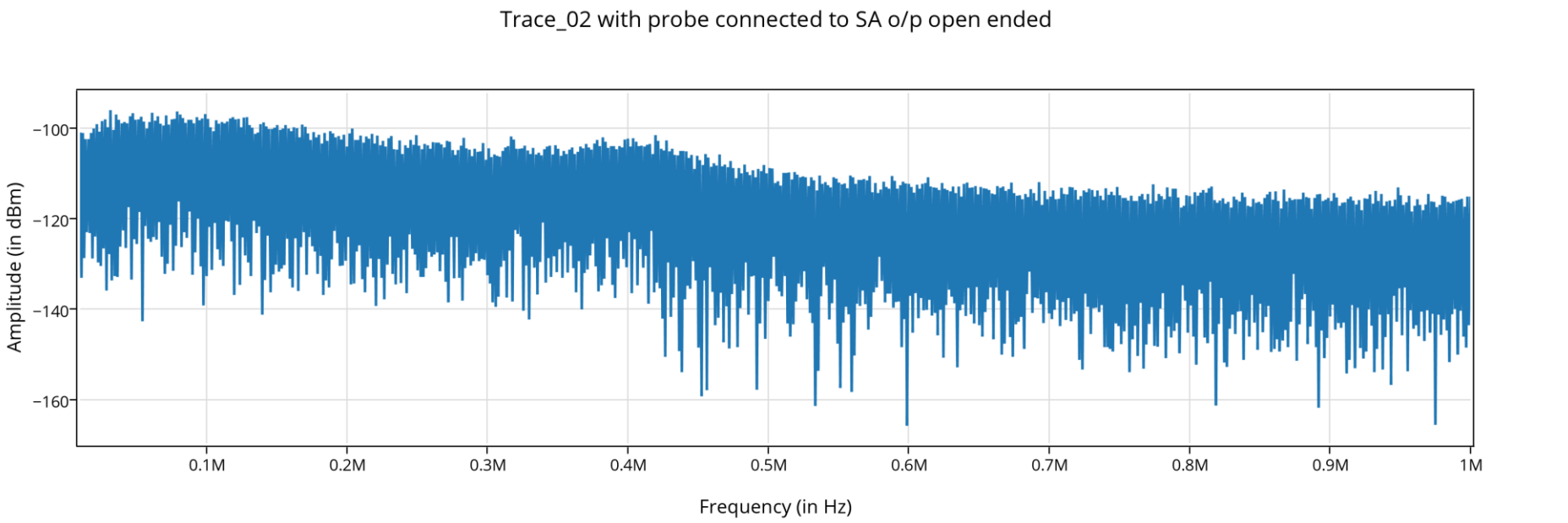


Source: Trace_01

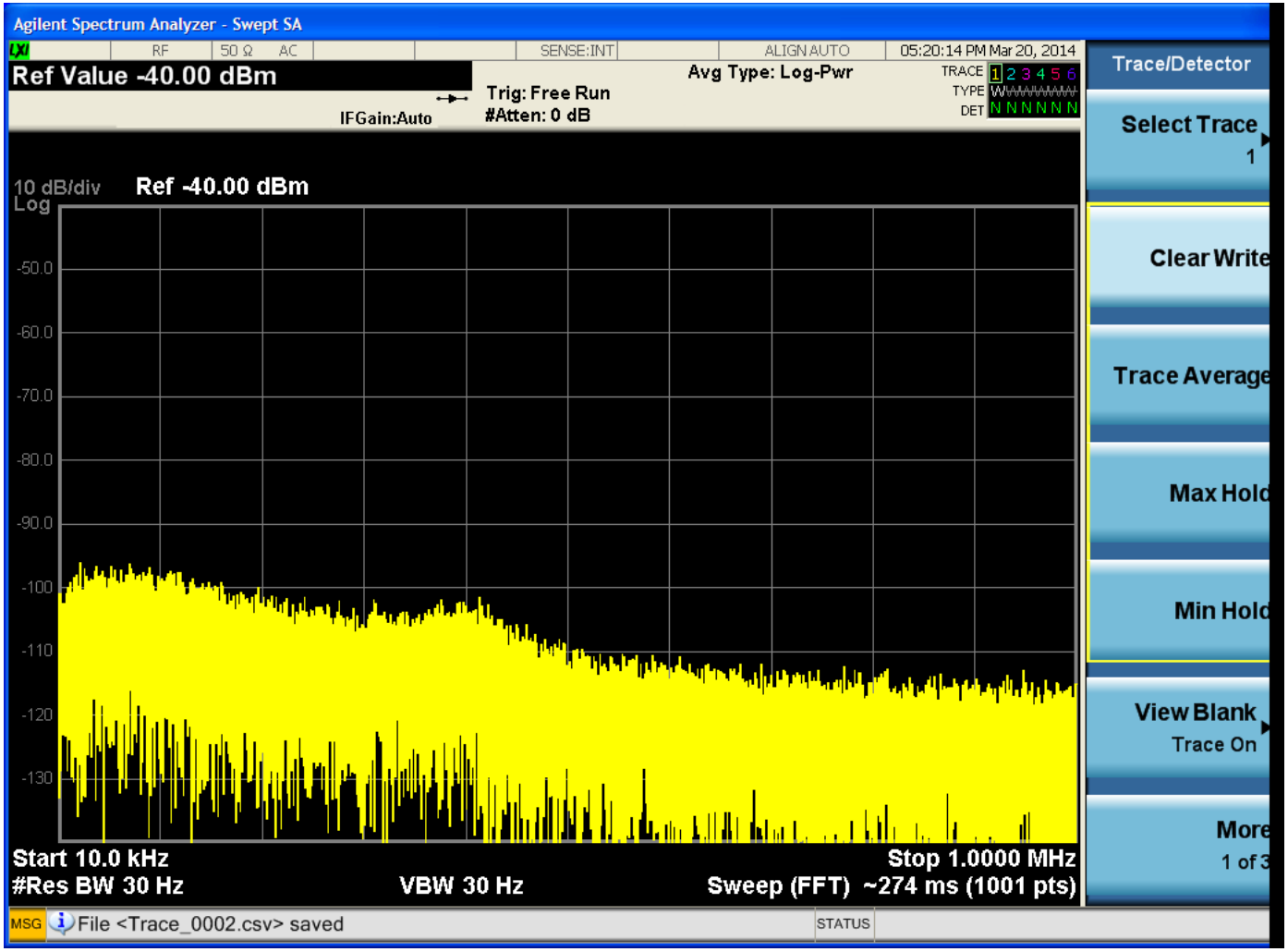
Test_01


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:19:35 PM Mar 20, 2014
Ref Value -40.00 dBm
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 22/100
TRACE 1 2 3 4 5 6
TYPE A
DET S N N N N N
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
MSG
File <Trace_0001.csv> saved
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

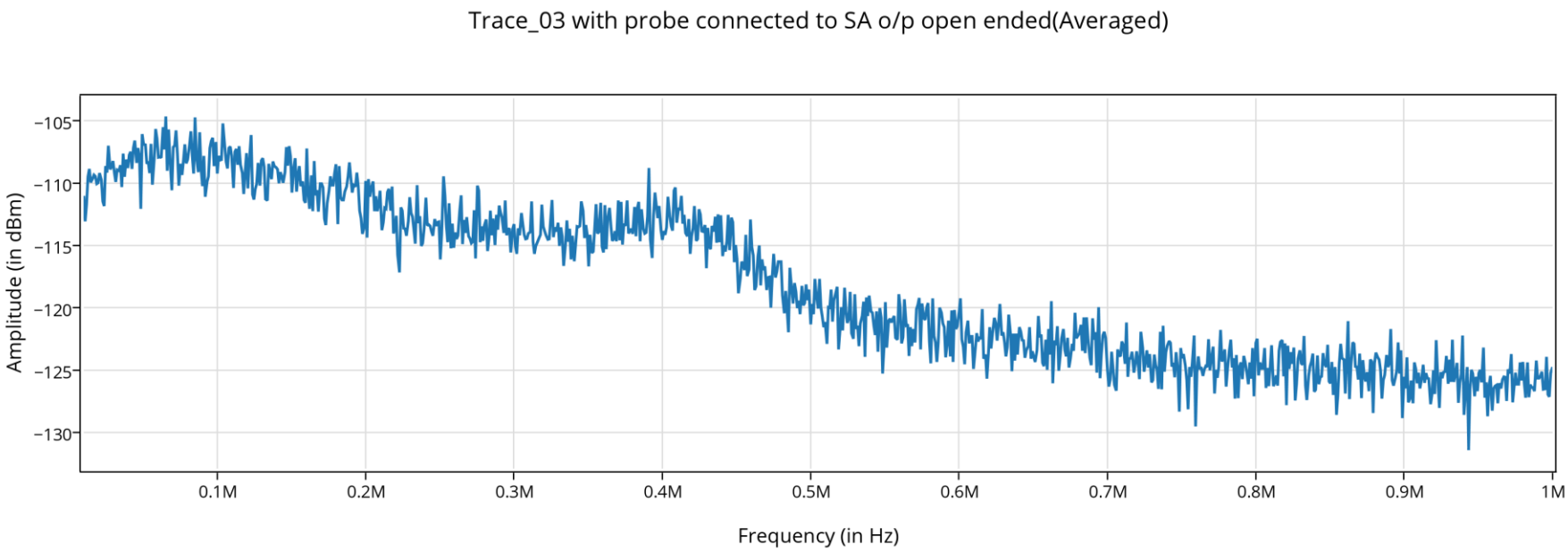
Test_02


Trace_02 with probe connected to SA o/p open ended
Amplitude (in dBm)
−100
−120
−140
−160
0.1M
0.2M
0.3M
0.4M
0.5M
0.6M
0.7M
0.8M
0.9M
1M
Frequency (in Hz)
Source: Trace_02

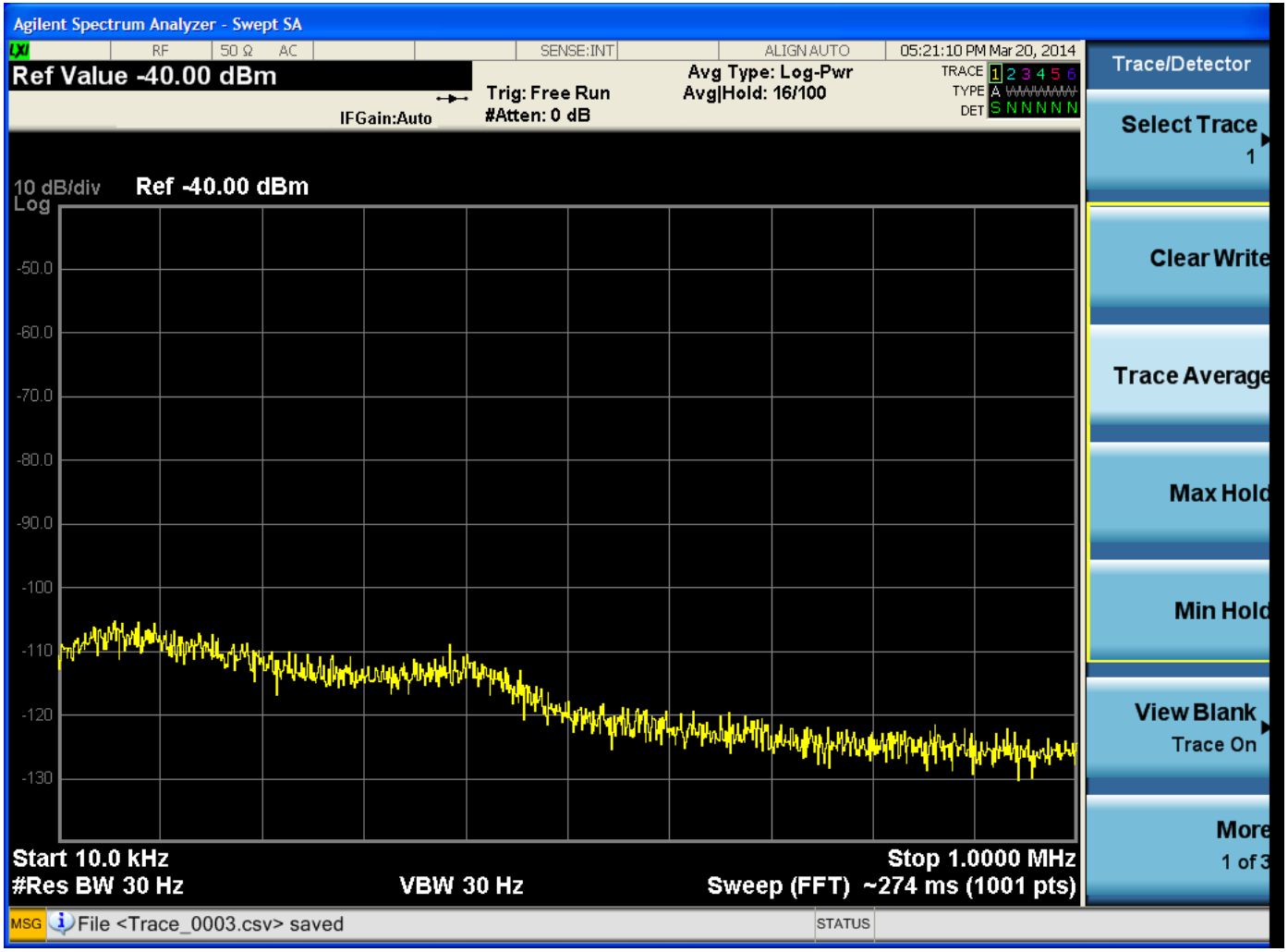
Test_02


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:20:14 PM Mar 20, 2014
Ref Value -40.00 dBm
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE
DET N N N N N
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
MSG
File <Trace_0002.csv> saved
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

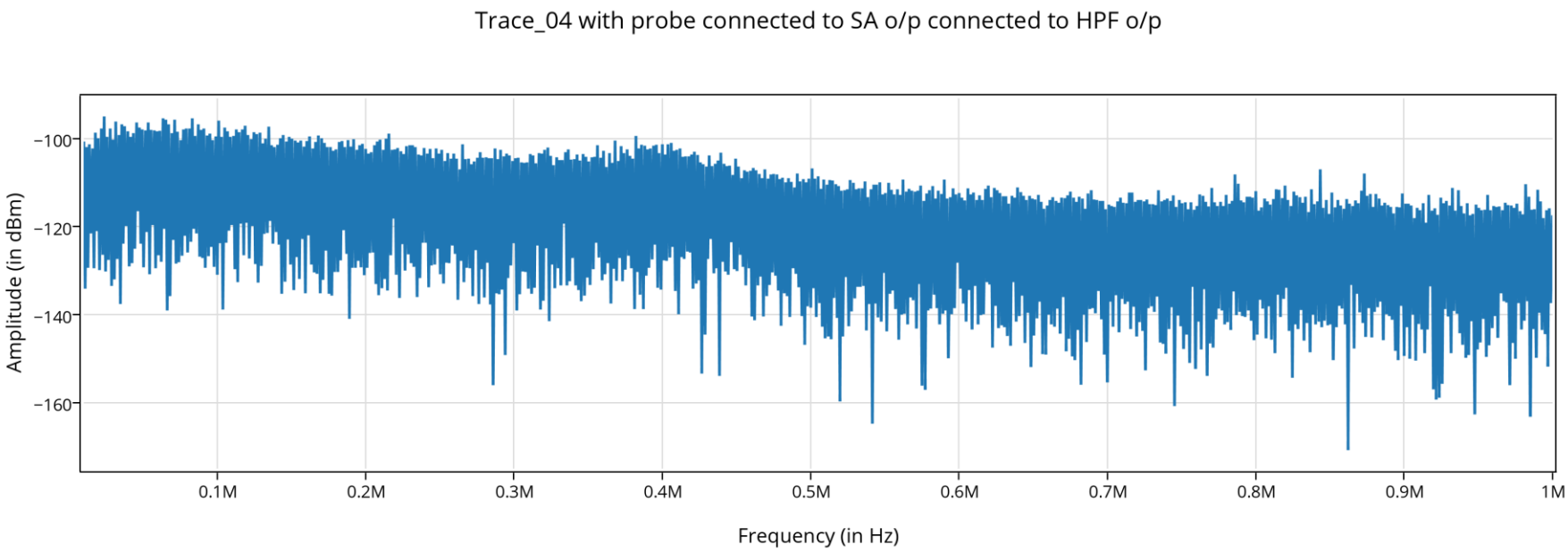
Test_03


Trace_03 with probe connected to SA o/p open ended(Averaged)
Amplitude (in dBm)
−105
−110
−115
−120
−125
−130
0.1M
0.2M
0.3M
0.4M
0.5M
0.6M
0.7M
0.8M
0.9M
1M
Frequency (in Hz)
Source: Trace_03

Test_03

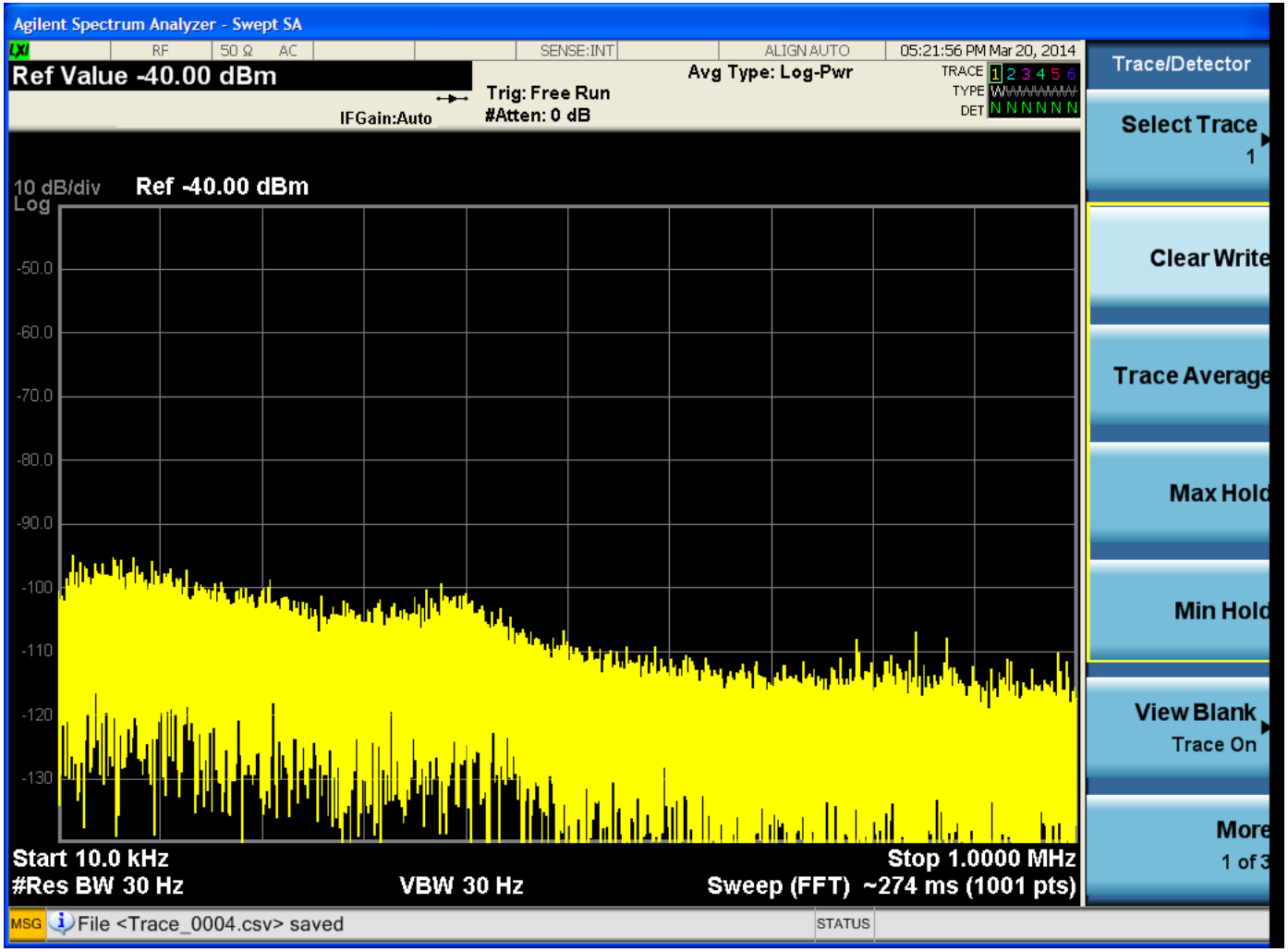

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:21:10 PM Mar 20, 2014
Ref Value -40.00 dBm
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 16/100
TRACE 1 2 3 4 5 6
TYPE A
DET S N N N N N
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
MSG
File <Trace_0003.csv> saved
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Test_04

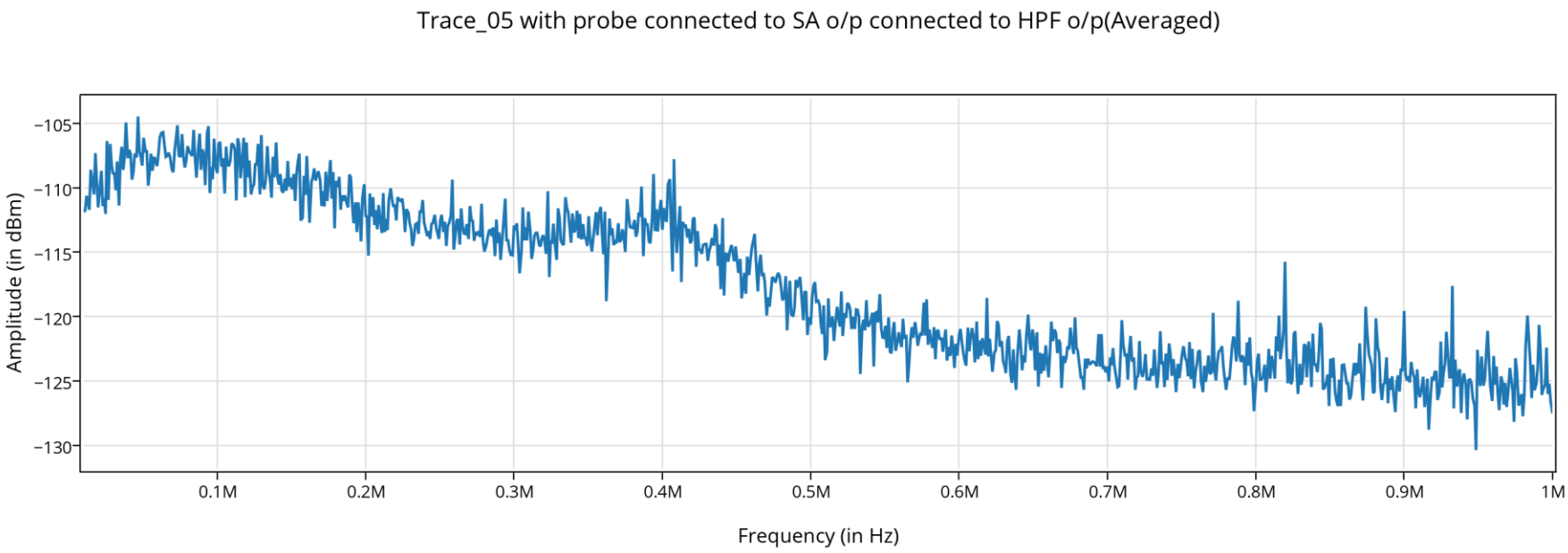


Source: Trace_04

Test_04

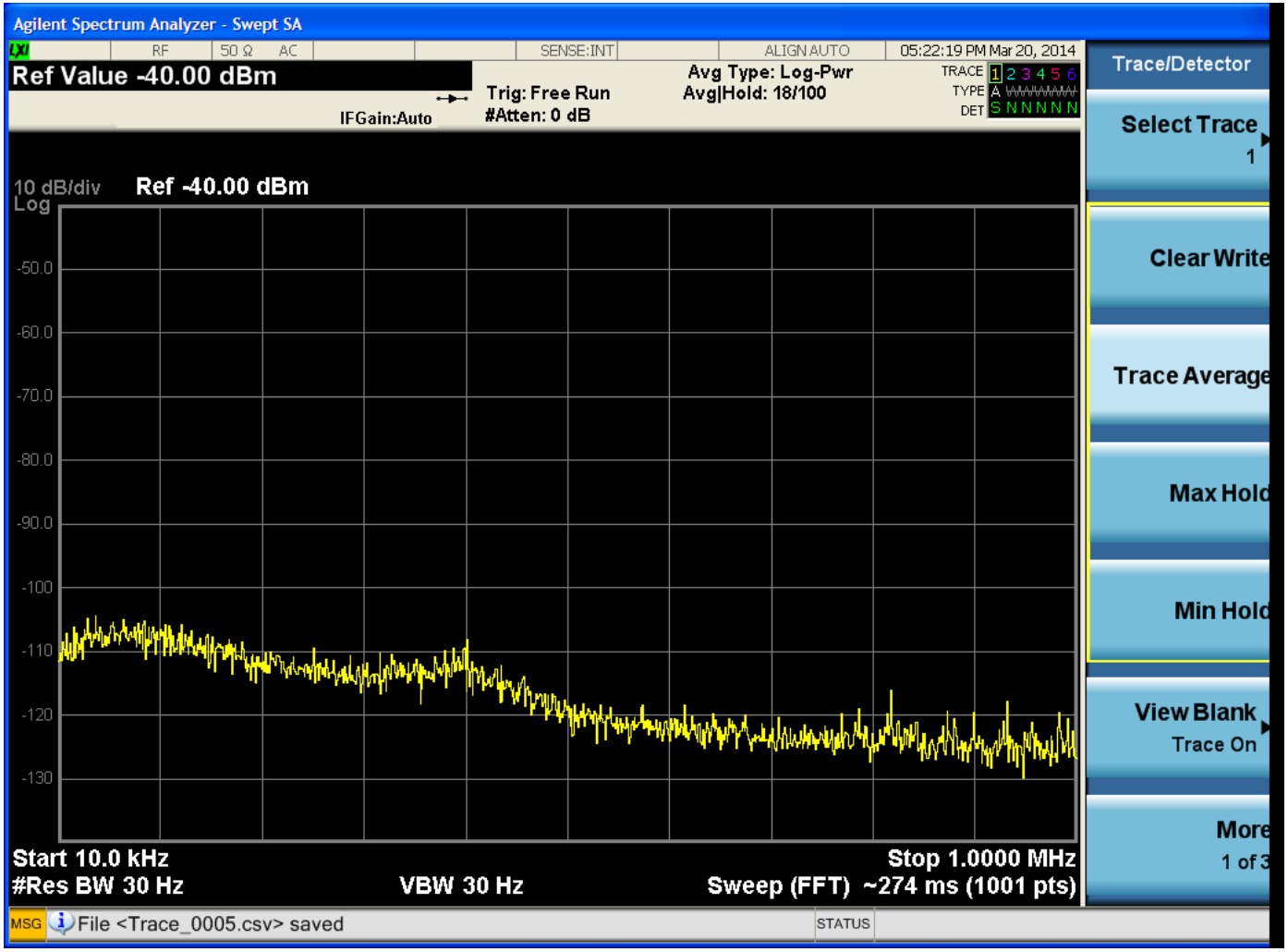

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:21:56 PM Mar 20, 2014
Ref Value -40.00 dBm
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE
DET N N N N N
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
MSG
File <Trace_0004.csv> saved
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Test_05

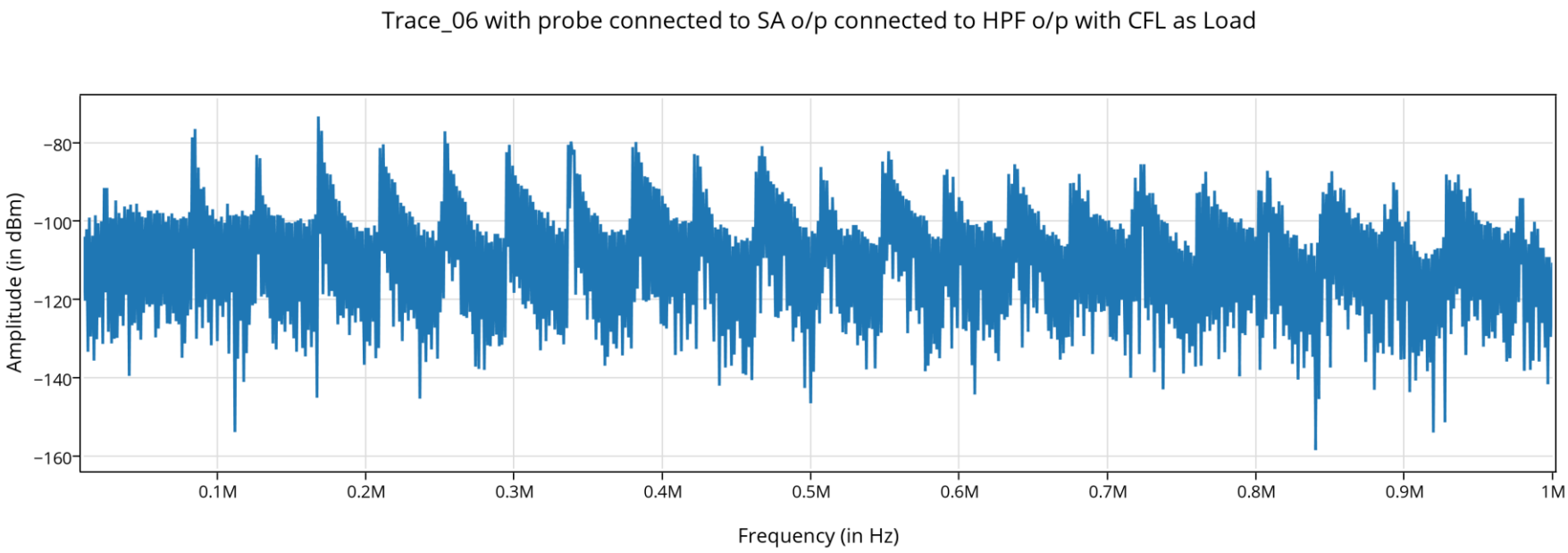


Source: Trace_05

Test_05

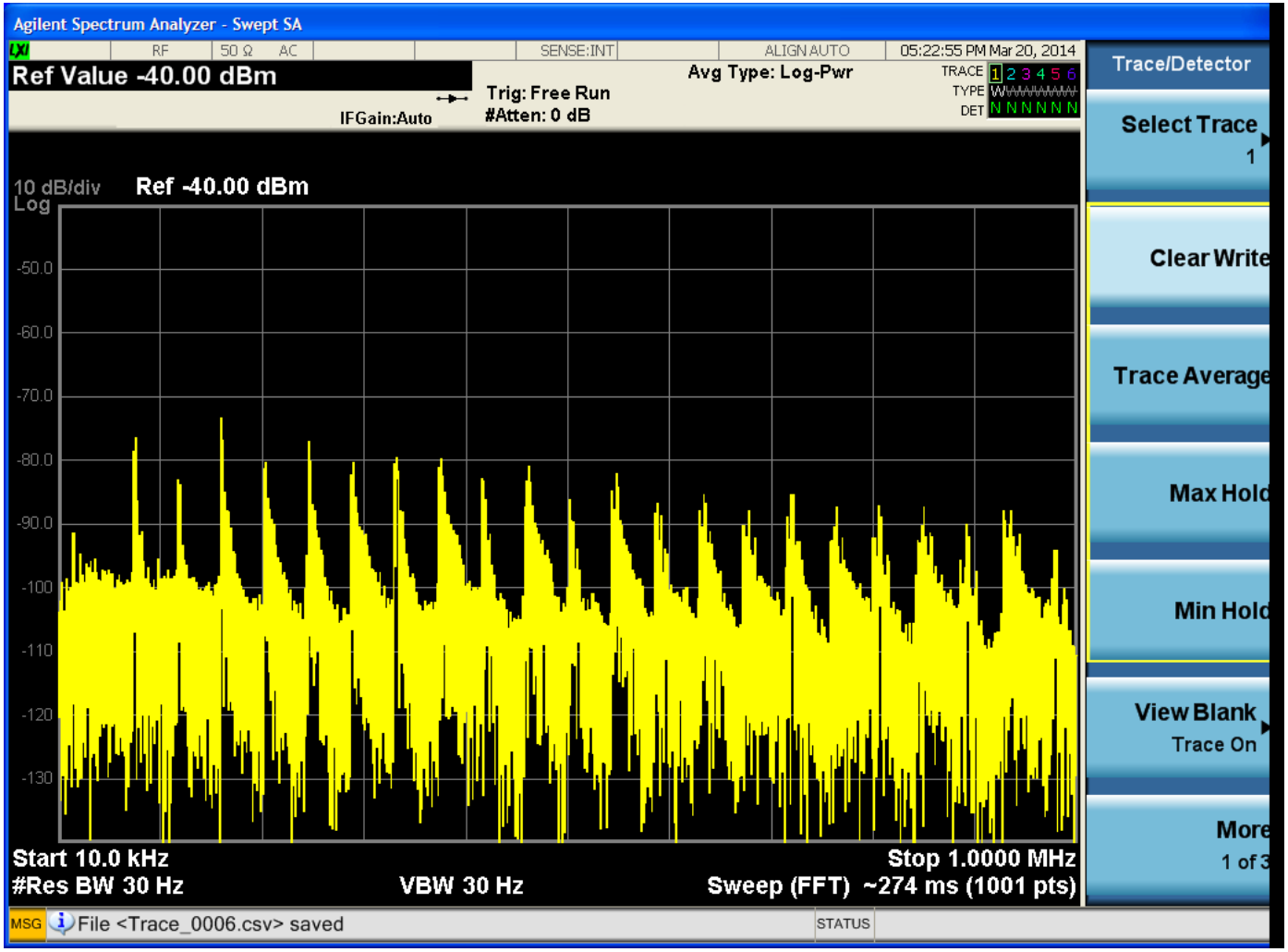

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:22:19 PM Mar 20, 2014
Ref Value -40.00 dBm
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 18/100
TRACE 1 2 3 4 5 6
TYPE A
DET S N N N N N
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
MSG
File <Trace_0005.csv> saved
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Test_06

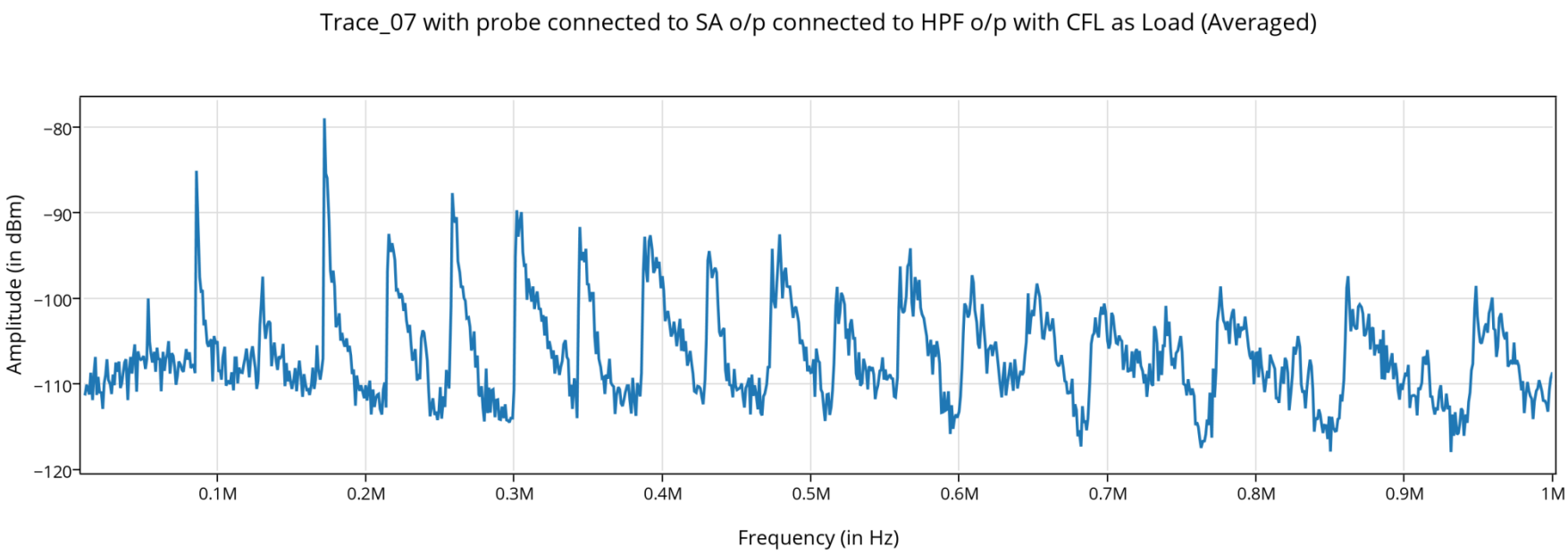


Source: Trace_06

Test_06

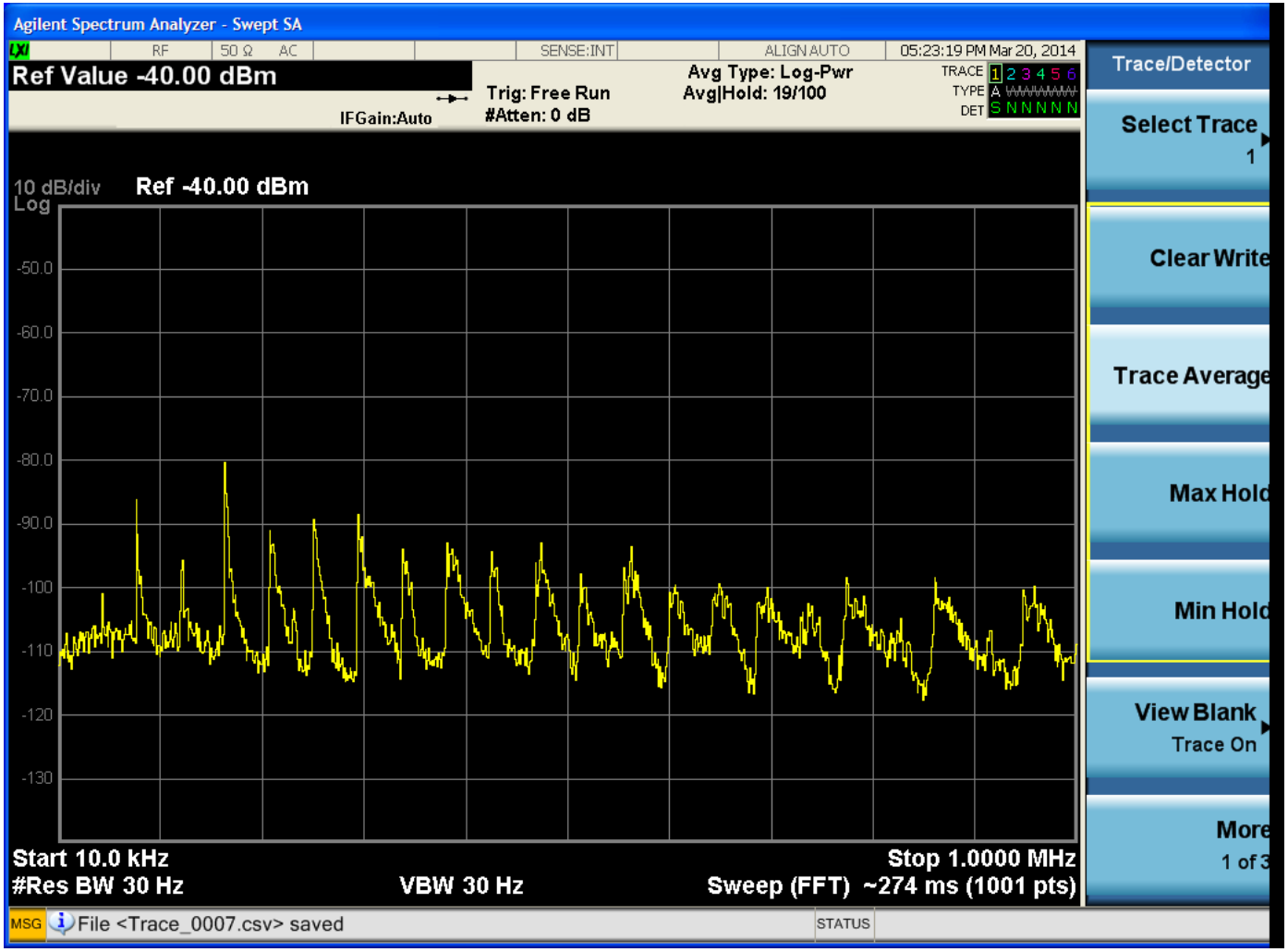

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:22:55 PM Mar 20, 2014
Ref Value -40.00 dBm
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE
DET N N N N N
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
MSG
File <Trace_0006.csv> saved
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Test_07

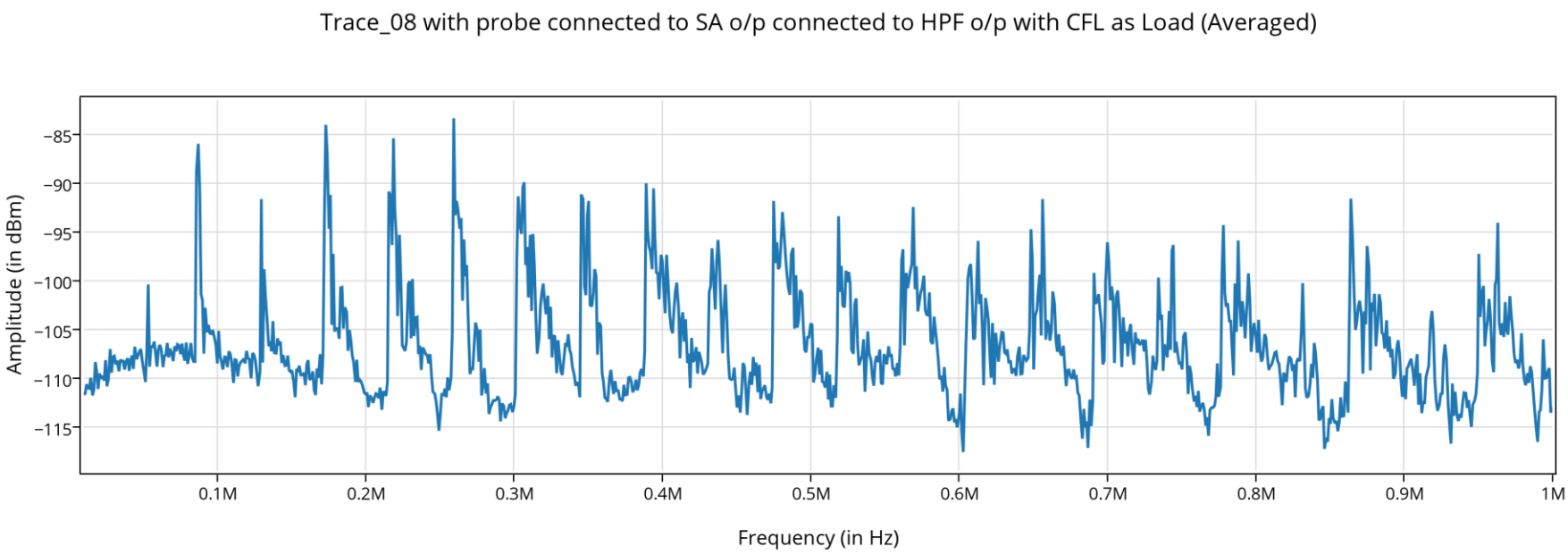


Source: Trace_07

Test_07

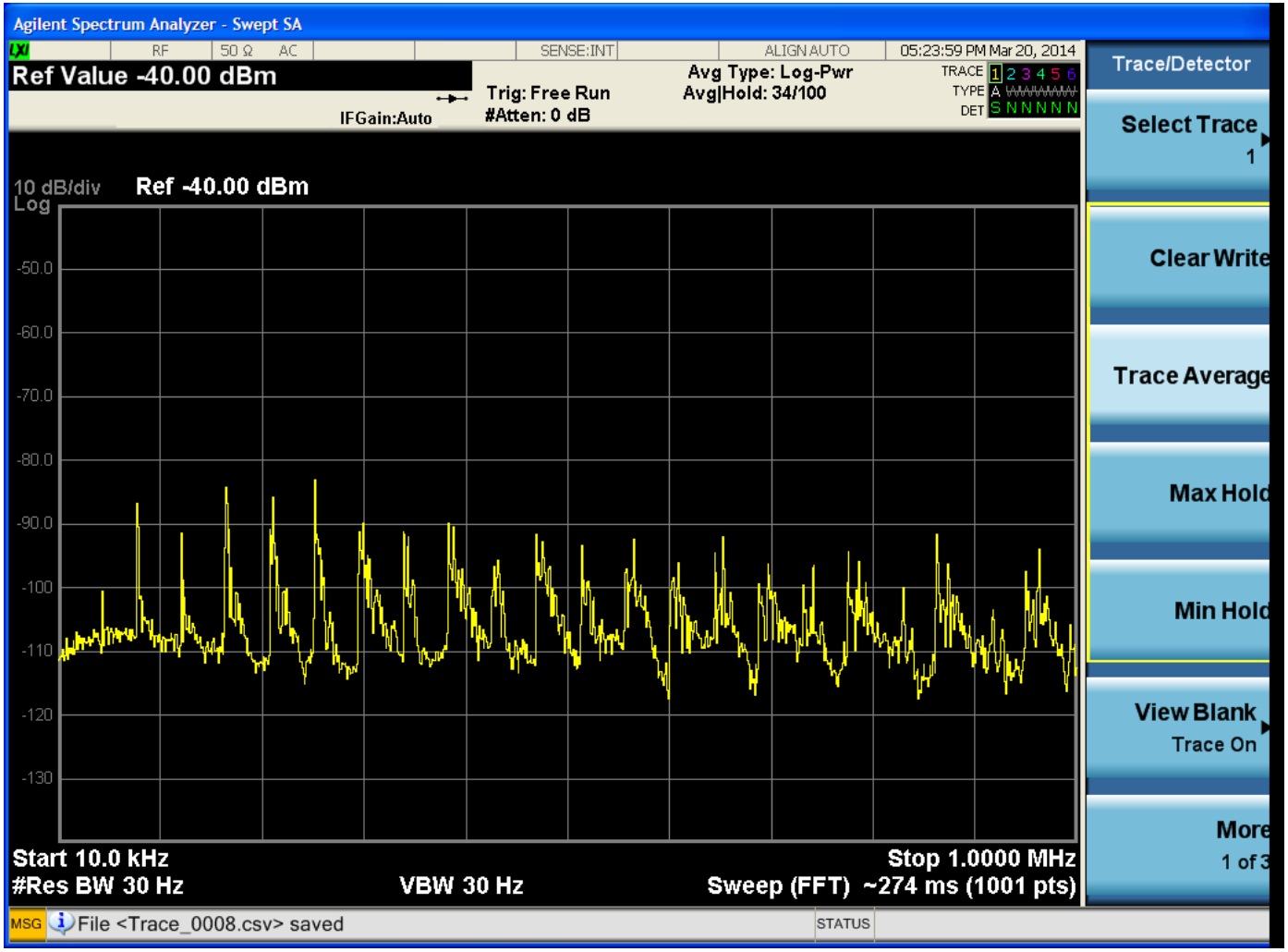

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:23:19 PM Mar 20, 2014
Ref Value -40.00 dBm
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 19/100
TRACE 1 2 3 4 5 6
TYPE A
DET S N N N N N
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
MSG
File <Trace_0007.csv> saved
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Test_08



Source: Trace_08

Test_08


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:23:59 PM Mar 20, 2014
Ref Value -40.00 dBm
IFGain:Auto
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 34/100
TRACE 1 2 3 4 5 6
TYPE A
DET S N N N N N
10 dB/div
Log
Ref -40.00 dBm
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
-130
Start 10.0 kHz
#Res BW 30 Hz
VBW 30 Hz
Stop 1.0000 MHz
Sweep (FFT) ~274 ms (1001 pts)
MSG
File <Trace_0008.csv> saved
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3