# Appendix

# Main Test Instruments

| Conducted Emission | | | | | |
|---|---|---|---|---|---|
| Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. date (yyyy-mm-dd) | Cal.Duedate (yyyy-mm-dd) |
| Shielding Room | ZhongYu Electron | GB-88 | SEM001-06 | 2017/5/10 | 2020/5/9 |
| LISN | Rohde & Schwarz | ENV216 | SEM007-01 | 2018/9/2 | 2019/9/2 |
| LISN | ETS-LINDGREN | Feb-16 | SEM007-02 | 2019/3/2 | 2020/3/1 |
| Measurement Software | AUDIX | e3 V5.4.1221d | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM024-01 | 2018/7/12 | 2019/7/11 |
| 2 Line ISN | Fischer Custom Communications Inc. | FCC-TLISN-T2-02 | EMC0122 | 2019/2/11 | 2020/2/10 |
| EMI Test Receiver | Rohde & Schwarz | ESCI | SEM004-02 | 2019/3/2 | 2020/3/1 |

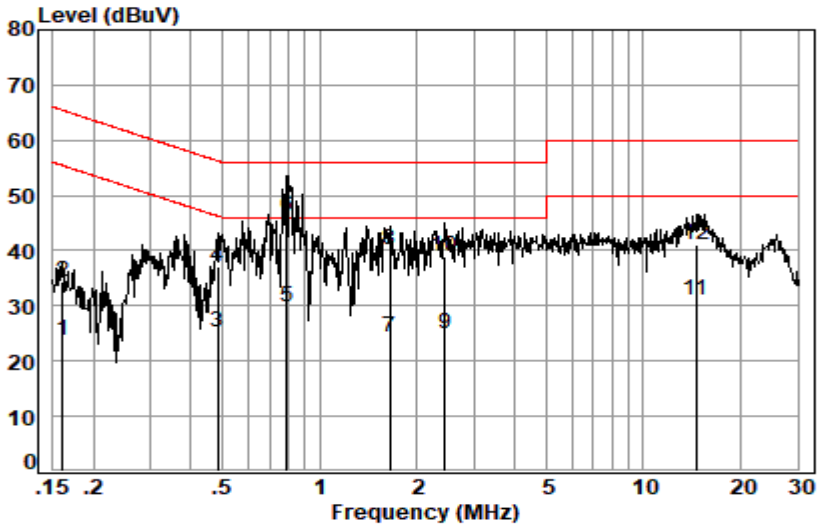
| RF conducted test | | | | | |
|---|---|---|---|---|---|
| Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. date (yyyy-mm-dd) | Cal.Duedate (yyyy-mm-dd) |
| DC Power Supply | Agilent Technologies Inc | 66311B | W009-09 | 2018/9/15 | 2019/9/15 |
| Signal Analyzer | Rohde & Schwarz | FSV | W025-05 | 2019/1/13 | 2020/1/12 |
| Coaxial Cable | SGS | N/A | SEM031-01 | 2018/7/13 | 2019/7/12 |
| Attenuator | Weinschel Associates | WA41 | SEM021-09 | N/A | N/A |
| Signal Generator | KEYSIGHT | N5173B | SEM006-05 | 2018/9/2 | 2019/9/2 |
| Temperature Chamber | GIANT FORCE | ICT-150-40-CP-AR | W027-03 | 2018/11/27 | 2019/11/27 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2018/9/2 | 2019/9/2 |

# Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|---|---|---|
| 1 | Total RF power, conducted | ±0.75dB |
| 2 | RF power density, conducted | ±2.84dB |
| 3 | Spurious emissions, conducted | ±0.75dB |
| 4 | Conduct emission test | ±3.12 dB (9KHz- 30MHz) |
| 5 | Temperature test | ±1°C |
| 6 | Humidity test | ±3% |
| 7 | DC and low frequency voltages | ±0.5% |

# AC Power Line Conducted Emissions

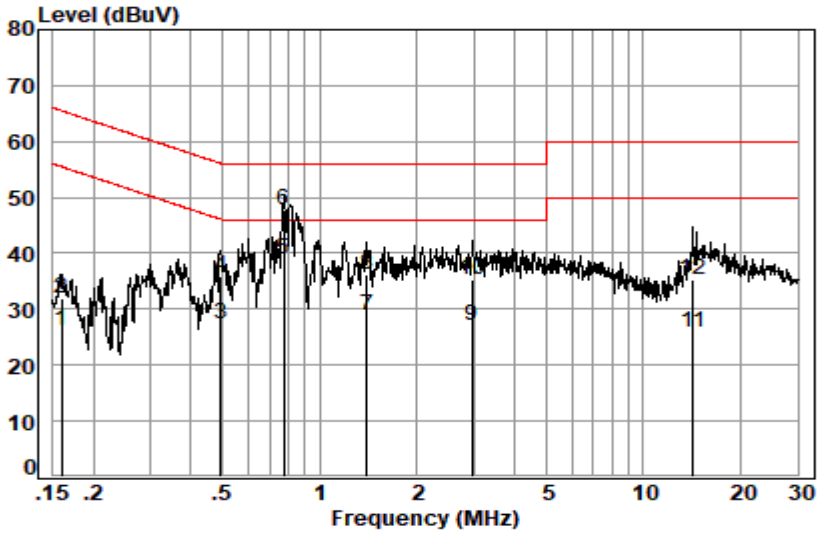
Live Line:




Site : Shielding Room
Condition: Line
Job No. : 16053CR
Test mode: d

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.1607 | 0.01 | 9.66 | 14.20 | 23.87 | 55.43 | -31.56 | Average |
| 2 | 0.1607 | 0.01 | 9.66 | 24.81 | 34.48 | 65.43 | -30.95 | QP |
| 3 | 0.4837 | 0.06 | 9.67 | 15.39 | 25.12 | 46.27 | -21.15 | Average |
| 4 | 0.4837 | 0.06 | 9.67 | 27.25 | 36.98 | 56.27 | -19.29 | QP |
| 5 | 0.7918 | 0.08 | 9.74 | 20.04 | 29.86 | 46.00 | -16.14 | Average |
| 6 | 0.7918 | 0.08 | 9.74 | 36.46 | 46.28 | 56.00 | -9.72 | QP |
| 7 | 1.6450 | 0.14 | 9.73 | 14.36 | 24.23 | 46.00 | -21.77 | Average |
| 8 | 1.6450 | 0.14 | 9.73 | 30.40 | 40.27 | 56.00 | -15.73 | QP |
| 9 | 2.4346 | 0.16 | 9.71 | 14.96 | 24.83 | 46.00 | -21.17 | Average |
| 10 | 2.4346 | 0.16 | 9.71 | 29.15 | 39.02 | 56.00 | -16.98 | QP |
| 11 | 14.5942 | 0.21 | 10.32 | 20.64 | 31.17 | 50.00 | -18.83 | Average |
| 12 | 14.5942 | 0.21 | 10.32 | 30.44 | 40.97 | 60.00 | -19.03 | QP |

Neutral Line:




Site : Shielding Room
Condition: Neutral
Job No. : 16053CR
Test mode: d

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.1598 | 0.01 | 9.64 | 16.43 | 26.08 | 55.47 | -29.39 | Average |
| 2 | 0.1598 | 0.01 | 9.64 | 22.28 | 31.93 | 65.47 | -33.54 | QP |
| 3 | 0.4941 | 0.06 | 9.64 | 17.57 | 27.27 | 46.10 | -18.83 | Average |
| 4 | 0.4941 | 0.06 | 9.64 | 26.27 | 35.97 | 56.10 | -20.13 | QP |
| 5 | 0.7752 | 0.08 | 9.70 | 29.04 | 38.82 | 46.00 | -7.18 | Average |
| 6 | 0.7752 | 0.08 | 9.70 | 38.04 | 47.82 | 56.00 | -8.18 | QP |
| 7 | 1.3958 | 0.12 | 9.70 | 19.09 | 28.91 | 46.00 | -17.09 | Average |
| 8 | 1.3958 | 0.12 | 9.70 | 26.51 | 36.33 | 56.00 | -19.67 | QP |
| 9 | 2.9463 | 0.16 | 9.68 | 17.36 | 27.20 | 46.00 | -18.80 | Average |
| 10 | 2.9463 | 0.16 | 9.68 | 25.36 | 35.20 | 56.00 | -20.80 | QP |
| 11 | 14.2882 | 0.21 | 10.32 | 15.37 | 25.90 | 50.00 | -24.10 | Average |
| 12 | 14.2882 | 0.21 | 10.32 | 24.72 | 35.25 | 60.00 | -24.75 | QP |

*Remarks:*

1. *The following Quasi-Peak and Average measurements were performed on the EUT:*
2. *Final Test Level =Receiver Reading + LISN Factor + Cable Loss.*

# Duty Cycle

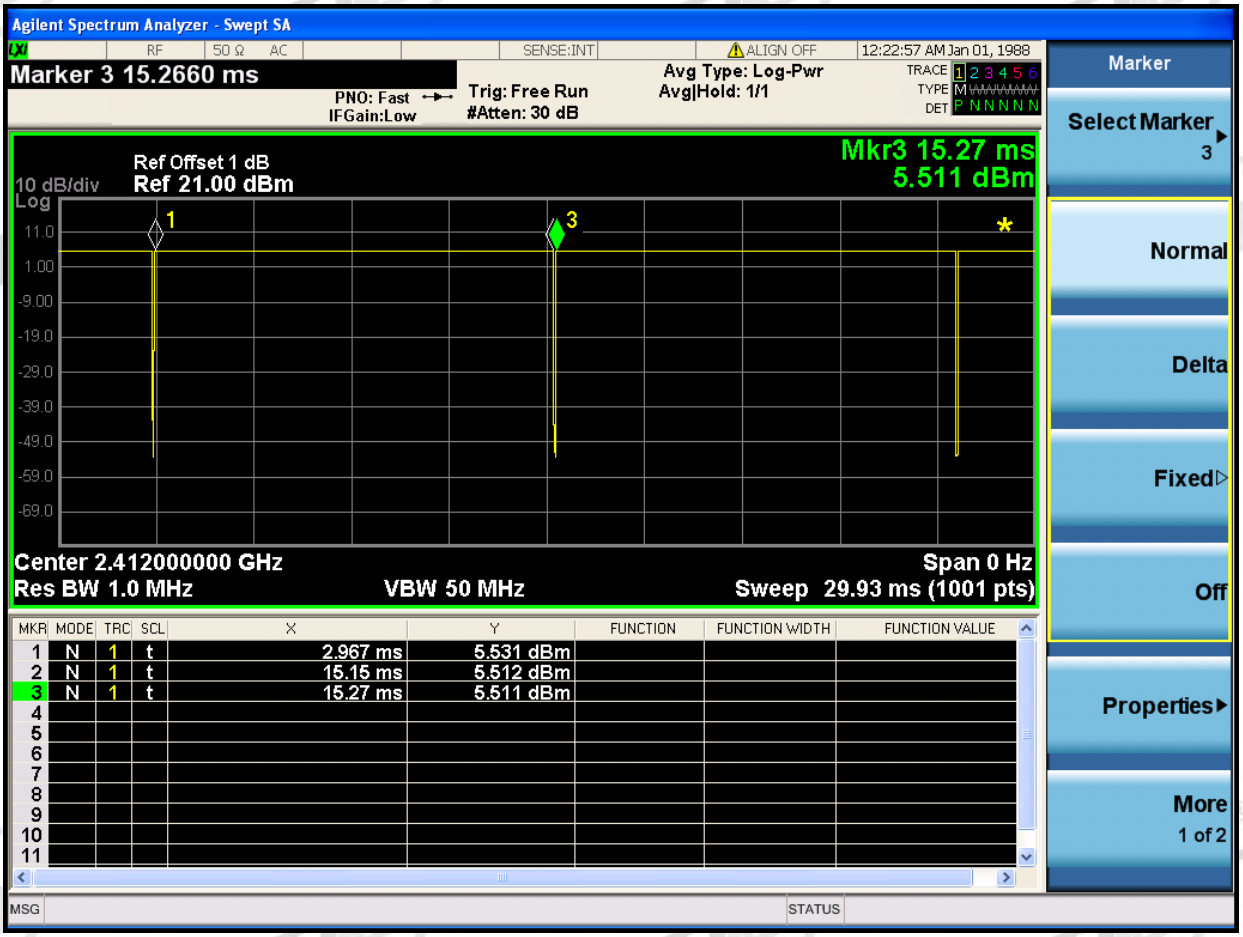
## Test Results

| Test Mode | TX Freq. [MHz] | Duty cycle [%] | |
|---|---|---|---|
| | | Ant 1 | Ant 2 |
| 11B | CH1 | 99.21 | 99.45 |
| 11G | CH1 | 97.35 | 98.11 |
| 11N20 | CH1 | 96.04 | 98.15 |
| 11N20_MIMO | CH1 | 96.02 | 95.17 |
| 11N40 | CH3 | 93.83 | 95.20 |
| 11N40_MIMO | CH3 | 94.29 | 94.01 |

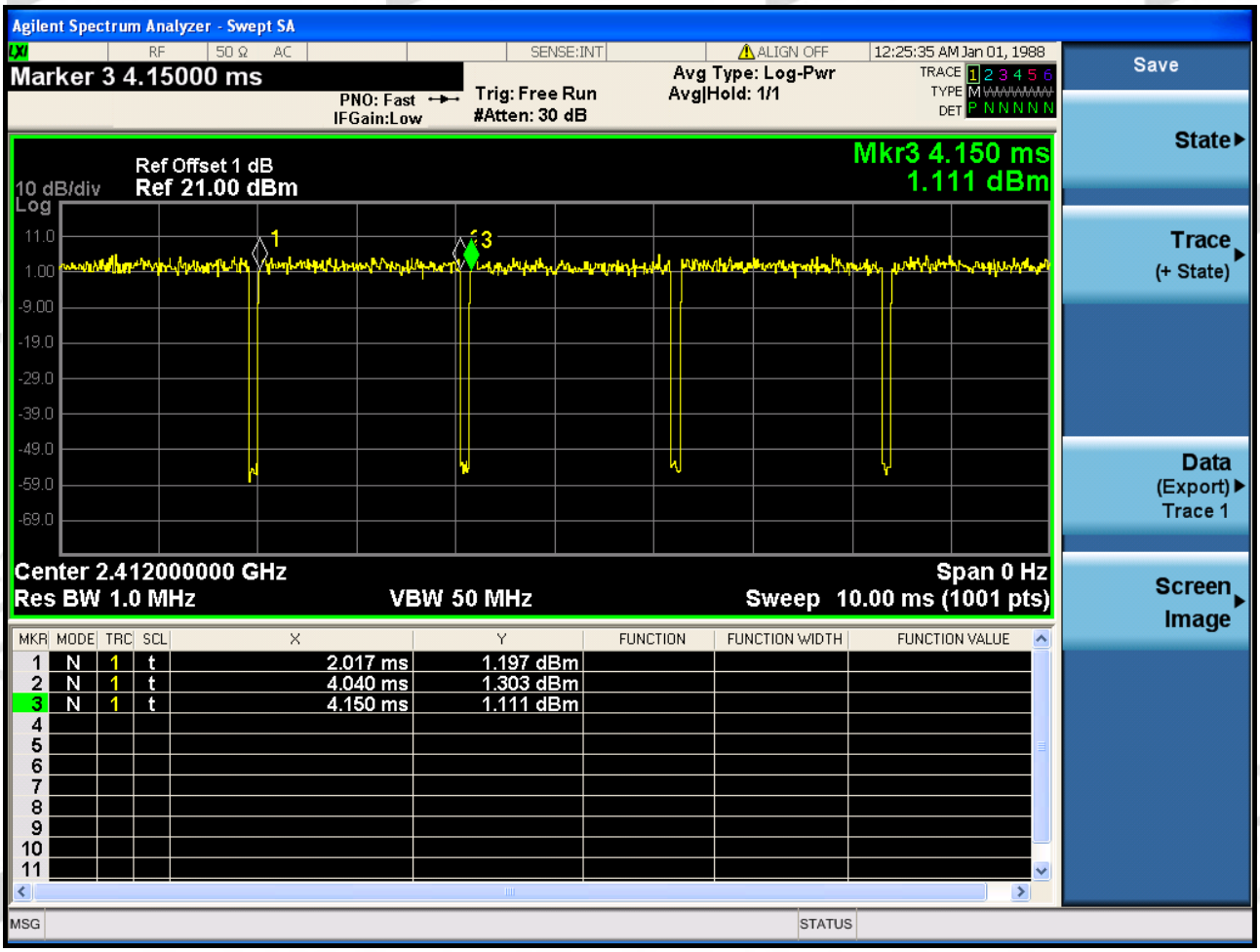
## Test Plots

**ANT1**

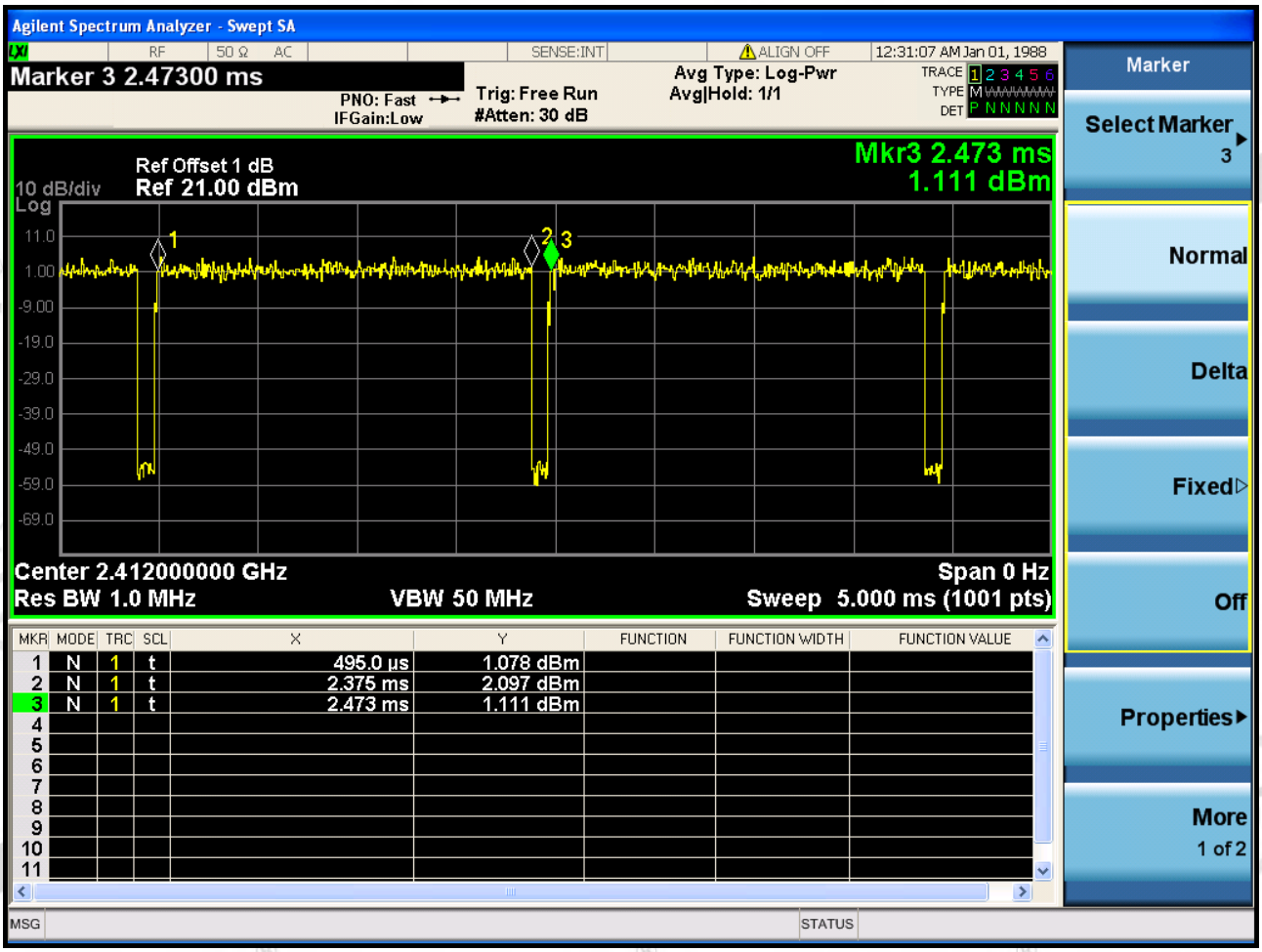
**11B**



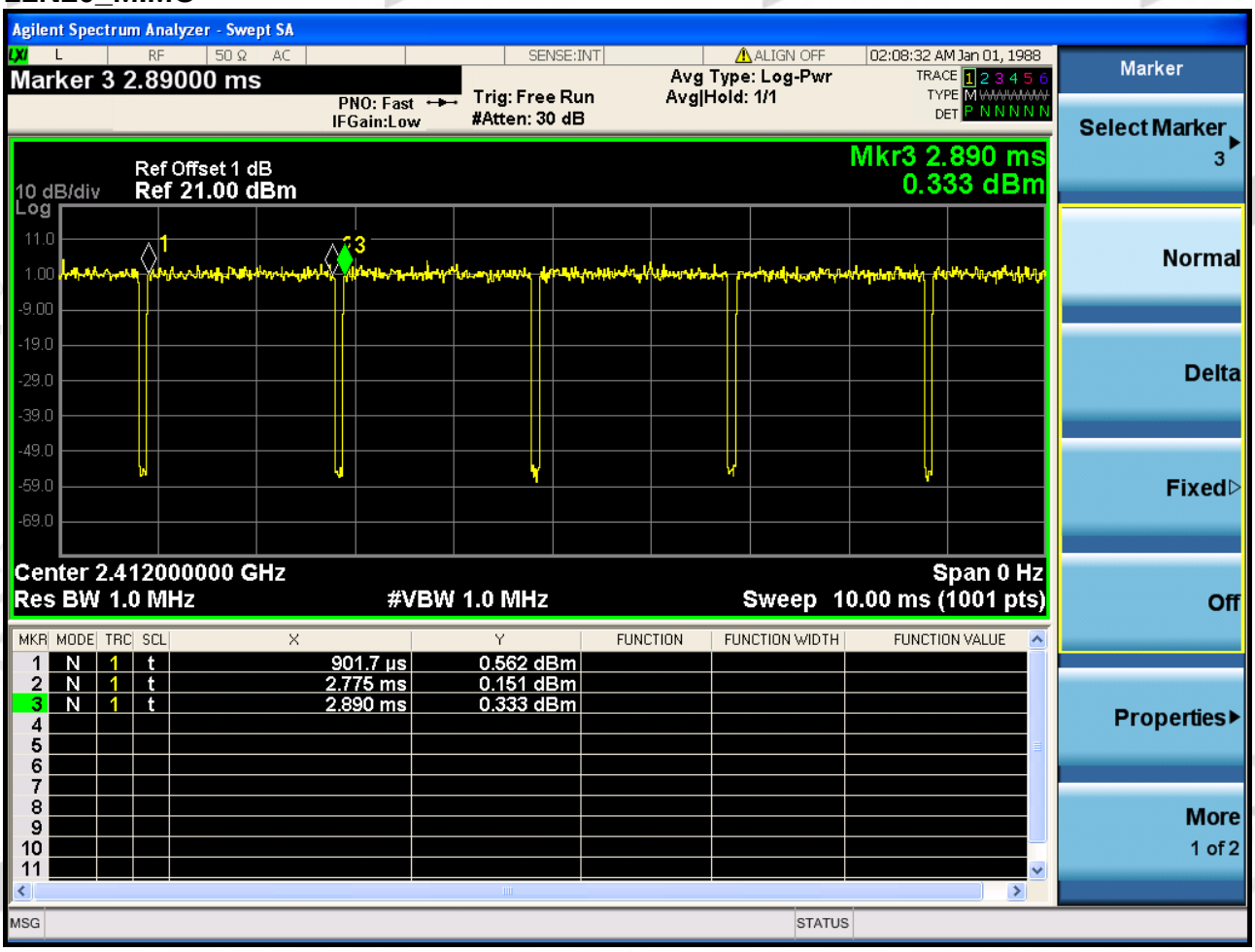
## 11G


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN OFF
12:25:35 AM Jan 01, 1988
Marker 3 4.15000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Ref 21.00 dBm
Log
Mkr3 4.150 ms
1.111 dBm
11.0
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
Center 2.412000000 GHz
Res BW 1.0 MHz
VBW 50 MHz
Span 0 Hz
Sweep 10.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 2.017 ms 1.197 dBm
2 N 1 t 4.040 ms 1.303 dBm
3 N 1 t 4.150 ms 1.111 dBm
4
5
6
7
8
9
10
11
MSG
STATUS
Save
State
Trace (+ State)
Data (Export) Trace 1
Screen Image

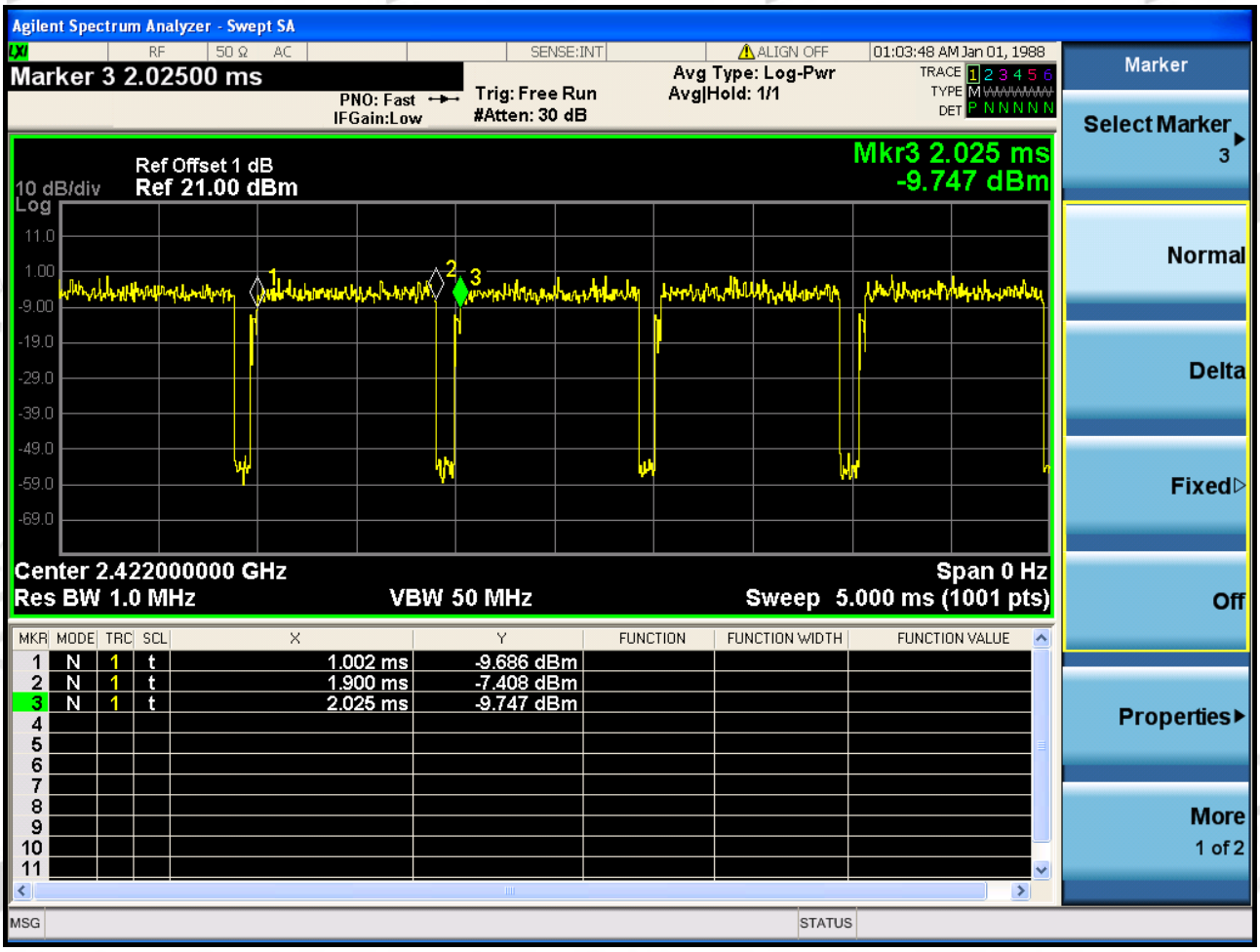
**11N20**


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN OFF
12:31:07 AM Jan 01, 1988
Marker 3 2.47300 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Log
Ref 21.00 dBm
Mkr3 2.473 ms
1.111 dBm
11.0
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
Center 2.412000000 GHz
Res BW 1.0 MHz
VBW 50 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 495.0 µs 1.078 dBm
2 N 1 t 2.375 ms 2.097 dBm
3 N 1 t 2.473 ms 1.111 dBm
4
5
6
7
8
9
10
11
MSG
STATUS
Marker
Select Marker 3
Normal
Delta
Fixed
Off
Properties
More 1 of 2

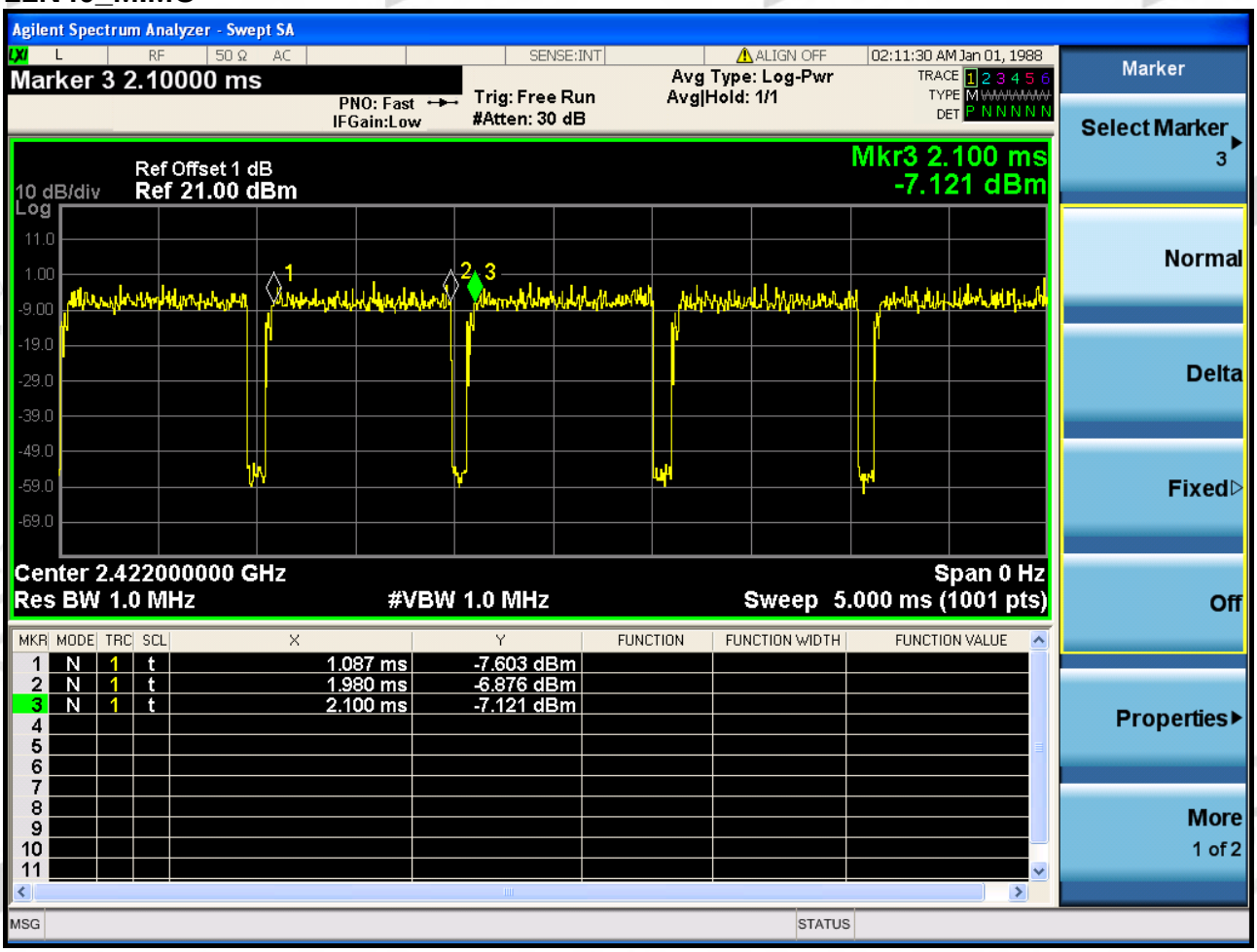
## 11N20_MIMO


Agilent Spectrum Analyzer - Swept SA
Marker 3 2.89000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
02:08:32 AM Jan 01, 1988
Ref Offset 1 dB
10 dB/div
Ref 21.00 dBm
Log
Mkr3 2.890 ms
0.333 dBm
Center 2.412000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 10.00 ms (1001 pts)
1 N 1 t 901.7 µs 0.562 dBm
2 N 1 t 2.775 ms 0.151 dBm
3 N 1 t 2.890 ms 0.333 dBm
Marker
Select Marker 3
Normal
Delta
Fixed
Off
Properties
More 1 of 2

**11N40**

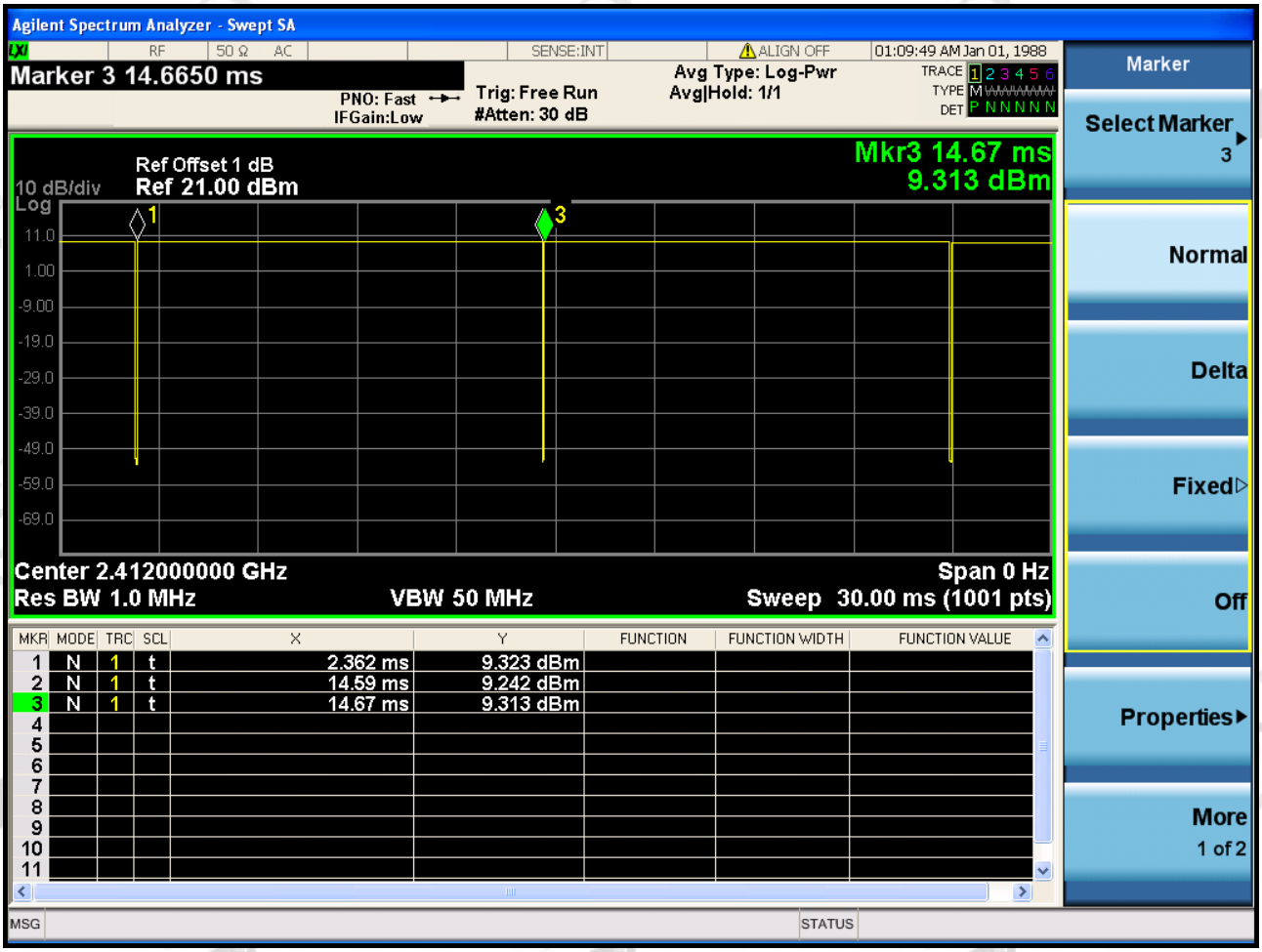

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN OFF
01:03:48 AM Jan 01, 1988
Marker 3 2.02500 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Ref 21.00 dBm
Log
Mkr3 2.025 ms
-9.747 dBm
11.0
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
Center 2.422000000 GHz
Res BW 1.0 MHz
VBW 50 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 1.002 ms -9.686 dBm
2 N 1 t 1.900 ms -7.408 dBm
3 N 1 t 2.025 ms -9.747 dBm
4
5
6
7
8
9
10
11
MSG
STATUS
Marker
Select Marker 3
Normal
Delta
Fixed
Off
Properties
More 1 of 2

## 11N40_MIMO

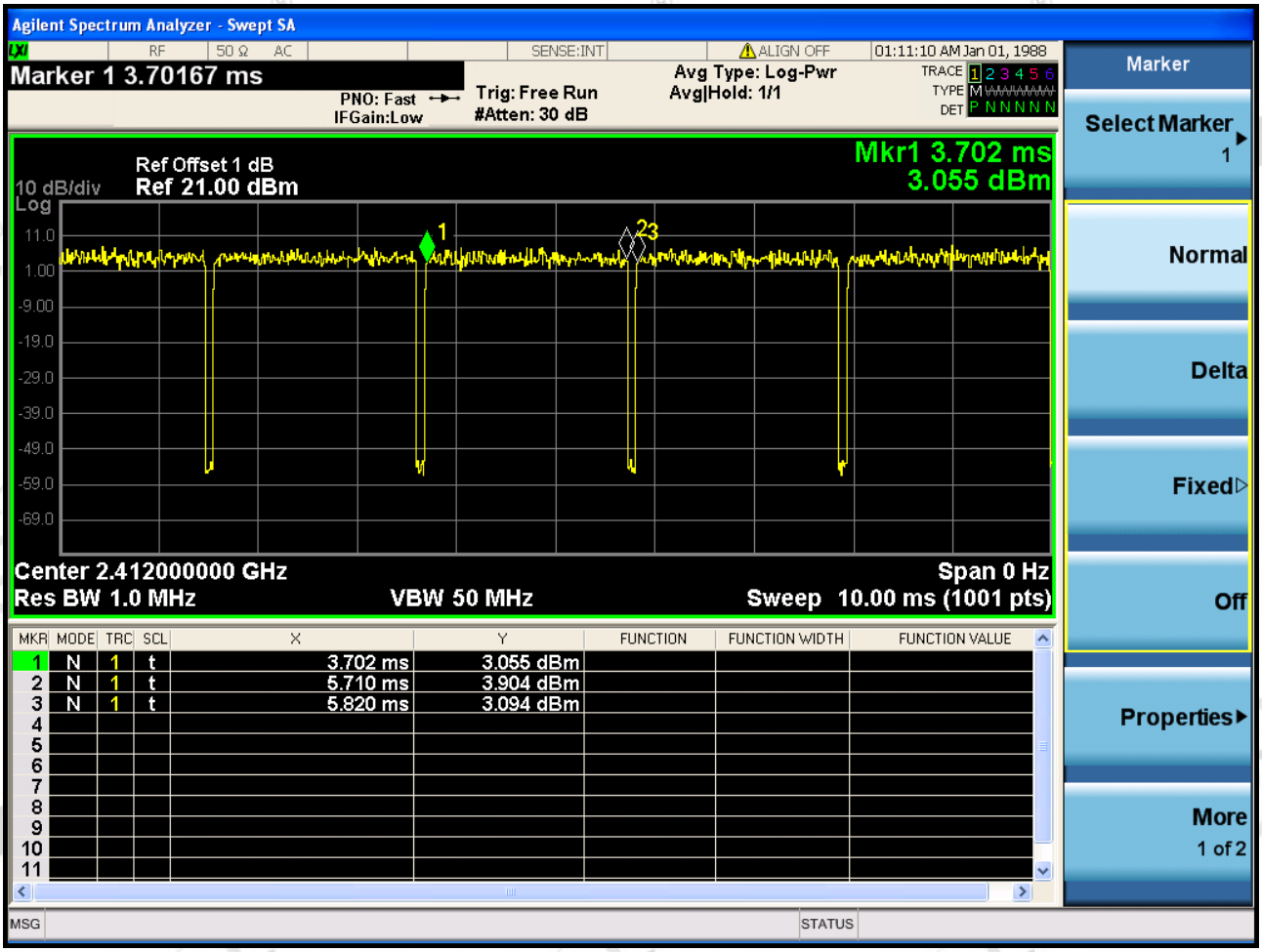

Agilent Spectrum Analyzer - Swept SA
Marker 3 2.10000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
02:11:30 AM Jan 01, 1988
Ref Offset 1 dB
10 dB/div
Ref 21.00 dBm
Log
Mkr3 2.100 ms
-7.121 dBm
Center 2.422000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 1.087 ms -7.603 dBm
2 N 1 t 1.980 ms -6.876 dBm
3 N 1 t 2.100 ms -7.121 dBm
Marker
Select Marker 3
Normal
Delta
Fixed
Off
Properties
More 1 of 2
MSG
STATUS

**ANT2**

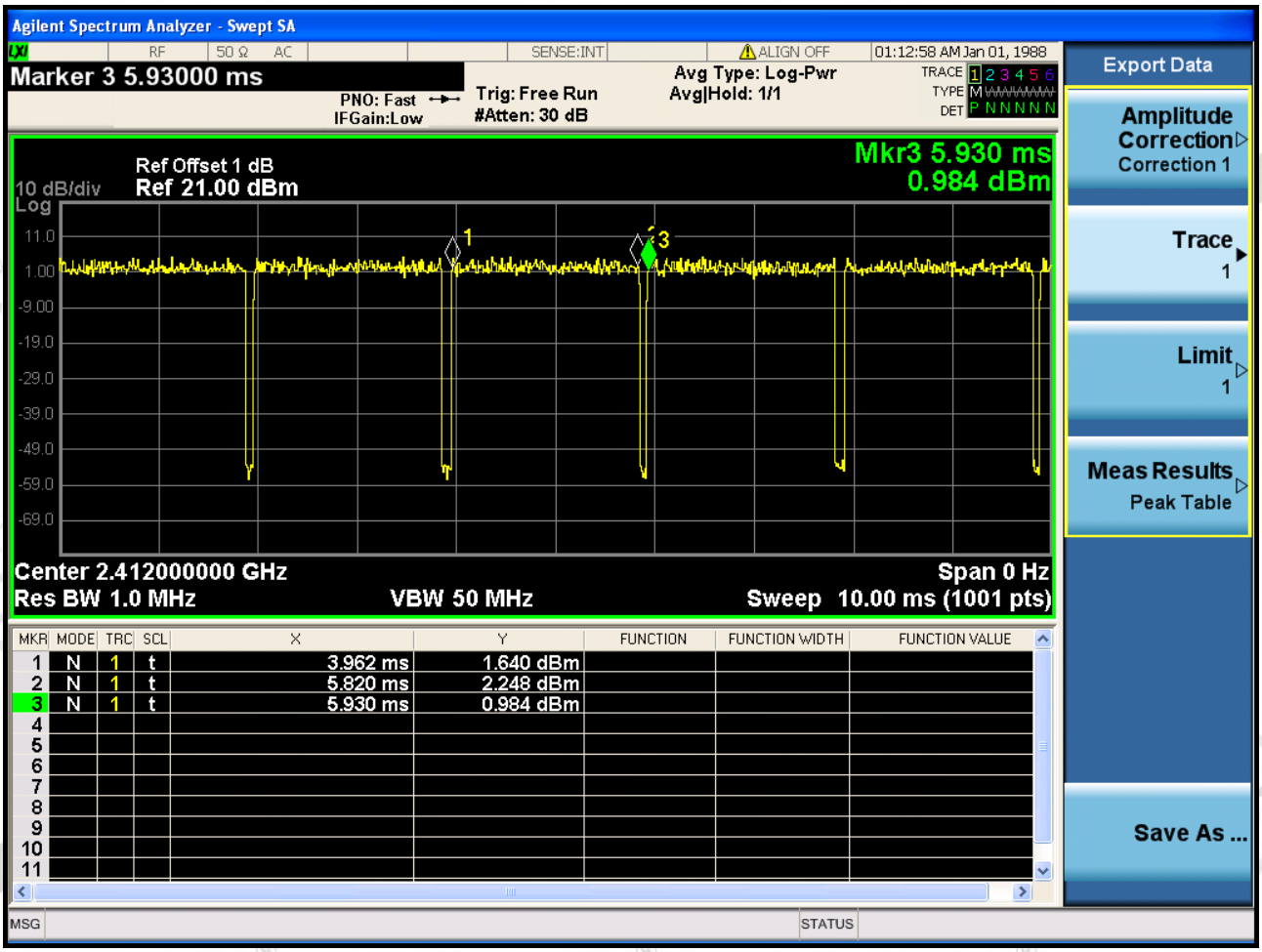
**11B**


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN OFF
01:09:49 AM Jan 01, 1988
Marker 3 14.6650 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Log
Ref 21.00 dBm
Mkr3 14.67 ms
9.313 dBm
11.0
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
Center 2.412000000 GHz
Res BW 1.0 MHz
VBW 50 MHz
Span 0 Hz
Sweep 30.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 2.362 ms 9.323 dBm
2 N 1 t 14.59 ms 9.242 dBm
3 N 1 t 14.67 ms 9.313 dBm
Marker
Select Marker 3
Normal
Delta
Fixed
Off
Properties
More 1 of 2
MSG
STATUS

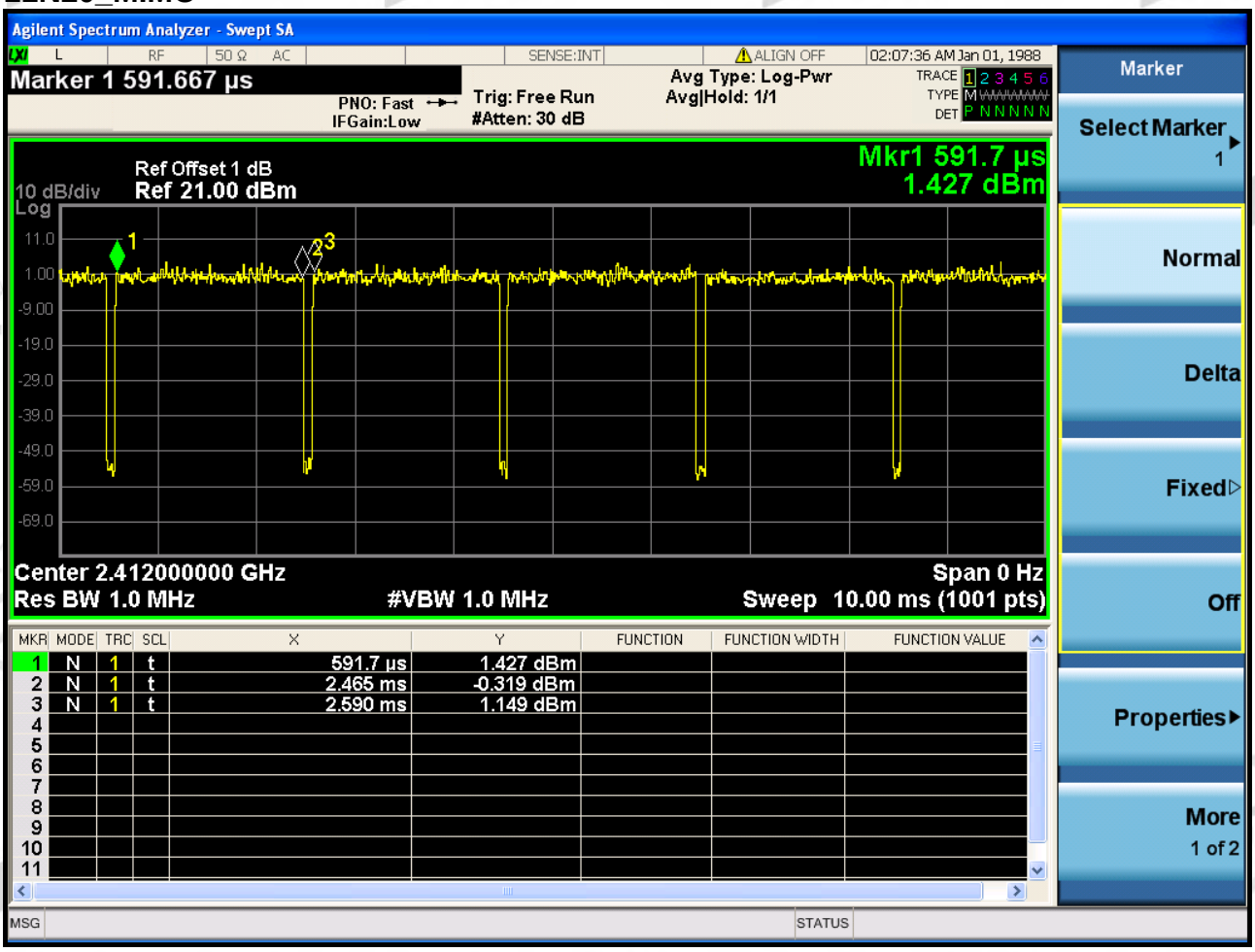
**11G**


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN OFF
01:11:10 AM Jan 01, 1988
Marker 1 3.70167 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Ref 21.00 dBm
Log
Mkr1 3.702 ms
3.055 dBm
11.0
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
Center 2.412000000 GHz
Res BW 1.0 MHz
VBW 50 MHz
Span 0 Hz
Sweep 10.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 3.702 ms 3.055 dBm
2 N 1 t 5.710 ms 3.904 dBm
3 N 1 t 5.820 ms 3.094 dBm
MSG
STATUS
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

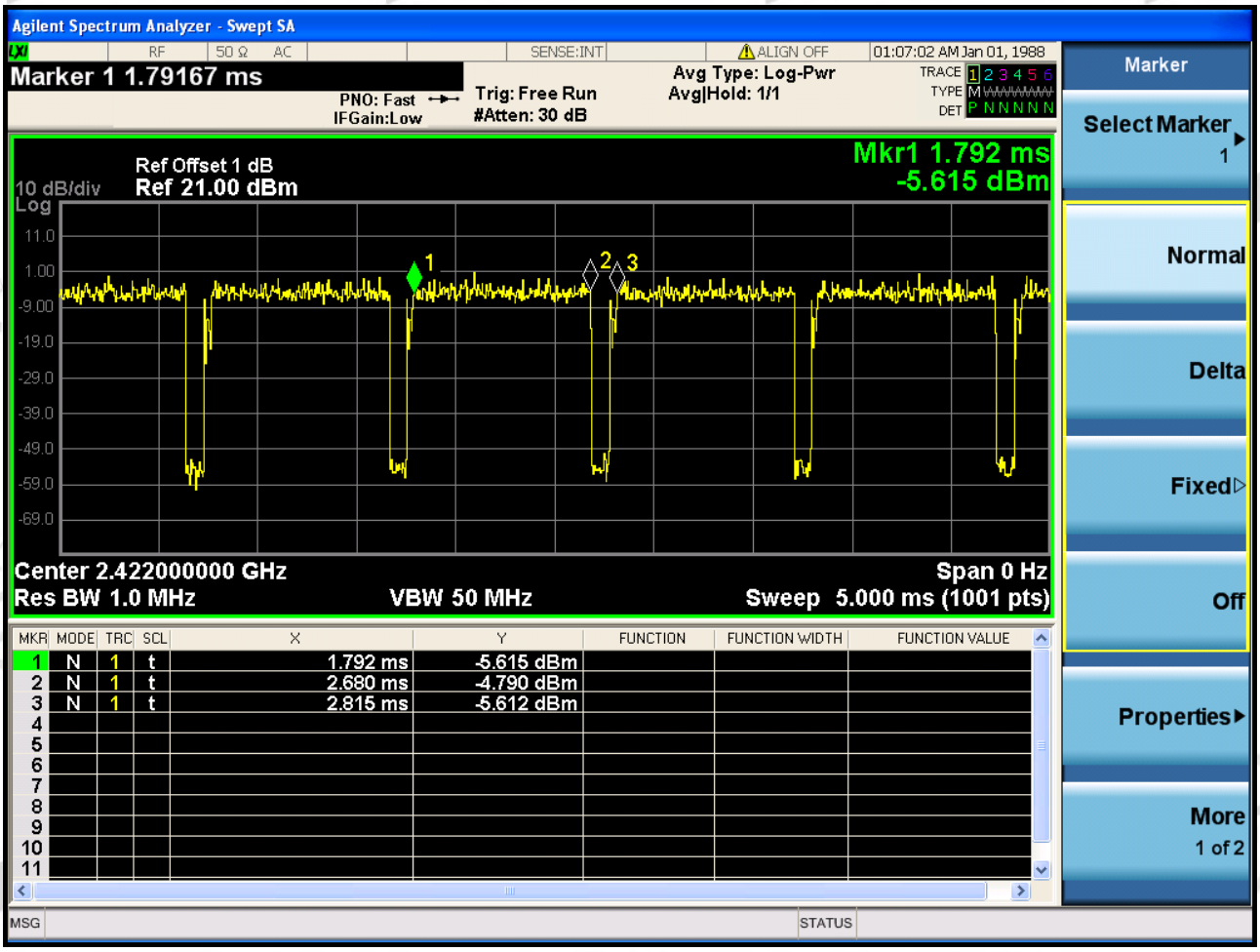
**11N20**


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN OFF
01:12:58 AM Jan 01, 1988
Marker 3 5.93000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Log
Ref 21.00 dBm
Mkr3 5.930 ms
0.984 dBm
11.0
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
Center 2.412000000 GHz
Res BW 1.0 MHz
VBW 50 MHz
Span 0 Hz
Sweep 10.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 3.962 ms 1.640 dBm
2 N 1 t 5.820 ms 2.248 dBm
3 N 1 t 5.930 ms 0.984 dBm
4
5
6
7
8
9
10
11
MSG
STATUS
Export Data
Amplitude Correction
Correction 1
Trace 1
Limit 1
Meas Results
Peak Table
Save As ...

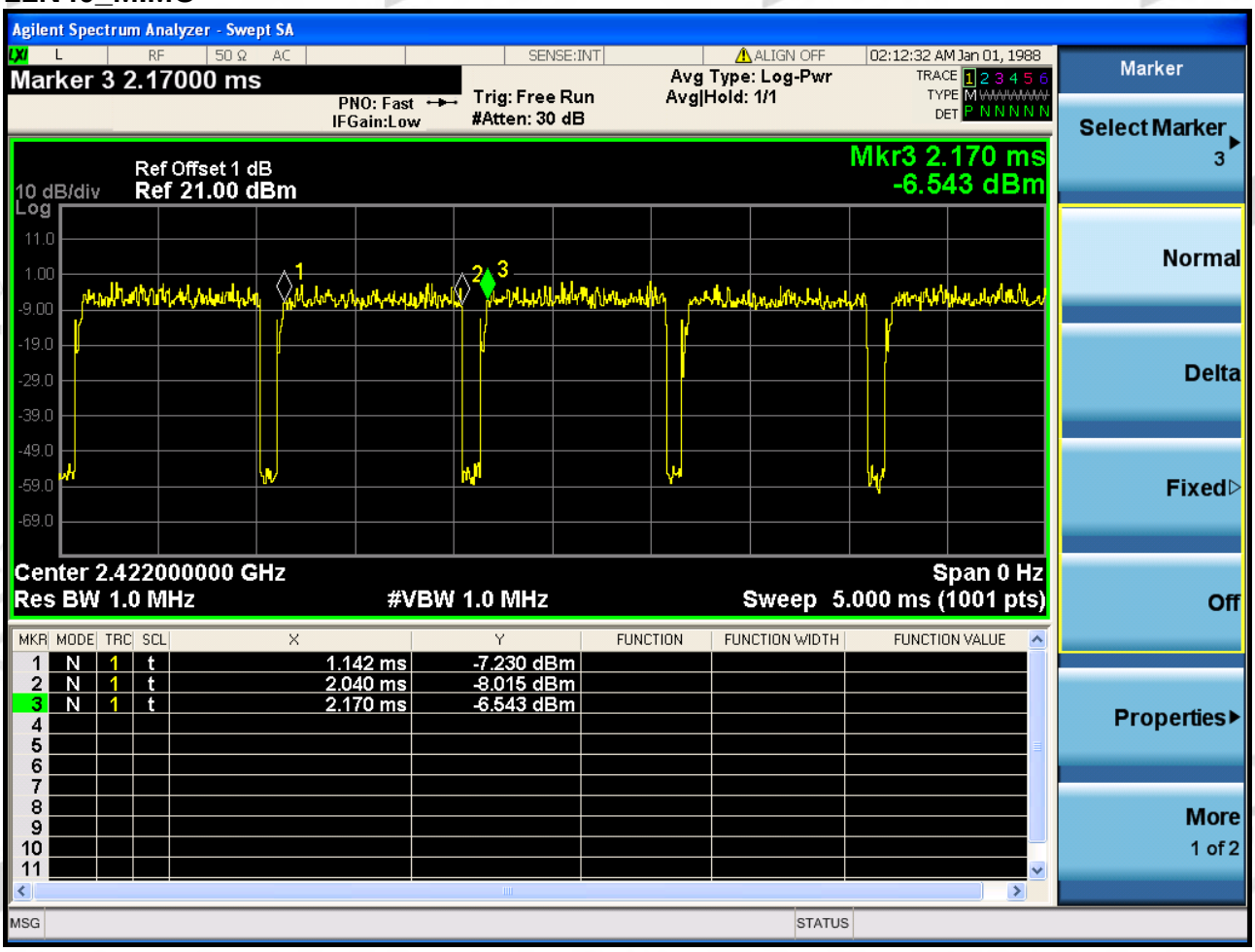
## 11N20_MIMO


Agilent Spectrum Analyzer - Swept SA
Marker 1 591.667 µs
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
02:07:36 AM Jan 01, 1988
Ref Offset 1 dB
10 dB/div
Ref 21.00 dBm
Log
Mkr1 591.7 µs
1.427 dBm
Center 2.412000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 10.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 591.7 µs 1.427 dBm
2 N 1 t 2.465 ms -0.319 dBm
3 N 1 t 2.590 ms 1.149 dBm
Marker
Select Marker
Normal
Delta
Fixed
Off
Properties
More
1 of 2
MSG
STATUS

**11N40**


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN OFF
01:07:02 AM Jan 01, 1988
Marker 1 1.79167 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Ref 21.00 dBm
Log
Mkr1 1.792 ms
-5.615 dBm
11.0
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
Center 2.422000000 GHz
Res BW 1.0 MHz
VBW 50 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 1.792 ms -5.615 dBm
2 N 1 t 2.680 ms -4.790 dBm
3 N 1 t 2.815 ms -5.612 dBm
4
5
6
7
8
9
10
11
MSG
STATUS
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

## 11N40_MIMO


Agilent Spectrum Analyzer - Swept SA
Marker 3 2.17000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
02:12:32 AM Jan 01, 1988
Ref Offset 1 dB
10 dB/div
Ref 21.00 dBm
Log
Mkr3 2.170 ms
-6.543 dBm
Center 2.422000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
1 N 1 t 1.142 ms -7.230 dBm
2 N 1 t 2.040 ms -8.015 dBm
3 N 1 t 2.170 ms -6.543 dBm
Marker
Select Marker
Normal
Delta
Fixed
Off
Properties
More
1 of 2

# Conducted Output Power

## Test Results

**Measurement Data of Peak Power:**

| Mode | Test Channel | Peak Output Power (dBm) | | | Limit (dBm) | Result |
|---|---|---|---|---|---|---|
| | | ANT1 | ANT2 | SUM | | |
| 802.11B | Lowest | 15.35 | 19.05 | --- | 30.00 | Pass |
| | Middle | 14.92 | 18.91 | --- | 30.00 | Pass |
| | Highest | 15.14 | 18.91 | --- | 30.00 | Pass |
| 802.11G | Lowest | 17.58 | 18.90 | --- | 30.00 | Pass |
| | Middle | 17.03 | 18.72 | --- | 30.00 | Pass |
| | Highest | 17.15 | 18.90 | --- | 30.00 | Pass |
| 802.11N20 | Lowest | 17.39 | 17.04 | --- | 30.00 | Pass |
| | Middle | 16.82 | 16.72 | --- | 30.00 | Pass |
| | Highest | 17.09 | 17.11 | --- | 30.00 | Pass |
| 802.11N40 | Lowest | 18.11 | 17.01 | --- | 30.00 | Pass |
| | Middle | 17.59 | 16.82 | --- | 30.00 | Pass |
| | Highest | 17.83 | 16.63 | --- | 30.00 | Pass |
| 802.11N20_MIMO | Lowest | 17.18 | 15.83 | 19.57 | 30.00 | Pass |
| | Middle | 16.58 | 15.53 | 19.10 | 30.00 | Pass |
| | Highest | 16.87 | 15.77 | 19.37 | 30.00 | Pass |
| 802.11N40_MIMO | Lowest | 17.59 | 17.75 | 20.68 | 30.00 | Pass |
| | Middle | 17.45 | 17.60 | 20.54 | 30.00 | Pass |
| | Highest | 17.74 | 17.45 | 20.61 | 30.00 | Pass |

# DTS (6 dB) Bandwidth&99% Occupied Bandwidth

## Test Results

**For Antenna 1:**

| Mode | Test Channel | Occupied Bandwidth (MHz) | 6dB Emission Bandwidth (MHz) | Limit (kHz) | Result |
|---|---|---|---|---|---|
| 802.11B | Lowest | 13.13 | 13.09 | ≥500 | Pass |
| | Middle | 12.51 | 12.50 | ≥500 | Pass |
| | Highest | 13.01 | 13.02 | ≥500 | Pass |
| 802.11G | Lowest | 16.94 | 16.72 | ≥500 | Pass |
| | Middle | 16.46 | 16.38 | ≥500 | Pass |
| | Highest | 16.63 | 16.49 | ≥500 | Pass |
| 802.11N20 | Lowest | 18.04 | 17.85 | ≥500 | Pass |
| | Middle | 17.60 | 17.55 | ≥500 | Pass |
| | Highest | 17.78 | 17.68 | ≥500 | Pass |
| 802.11N20 MIMO | Lowest | 18.09 | 17.87 | ≥500 | Pass |
| | Middle | 17.60 | 17.57 | ≥500 | Pass |
| | Highest | 17.75 | 17.68 | ≥500 | Pass |
| 802.11N40 | Lowest | 36.24 | 36.13 | ≥500 | Pass |
| | Middle | 35.84 | 35.70 | ≥500 | Pass |
| | Highest | 36.52 | 36.32 | ≥500 | Pass |
| 802.11N40 MIMO | Lowest | 36.15 | 36.10 | ≥500 | Pass |
| | Middle | 35.77 | 35.75 | ≥500 | Pass |
| | Highest | 36.53 | 36.33 | ≥500 | Pass |

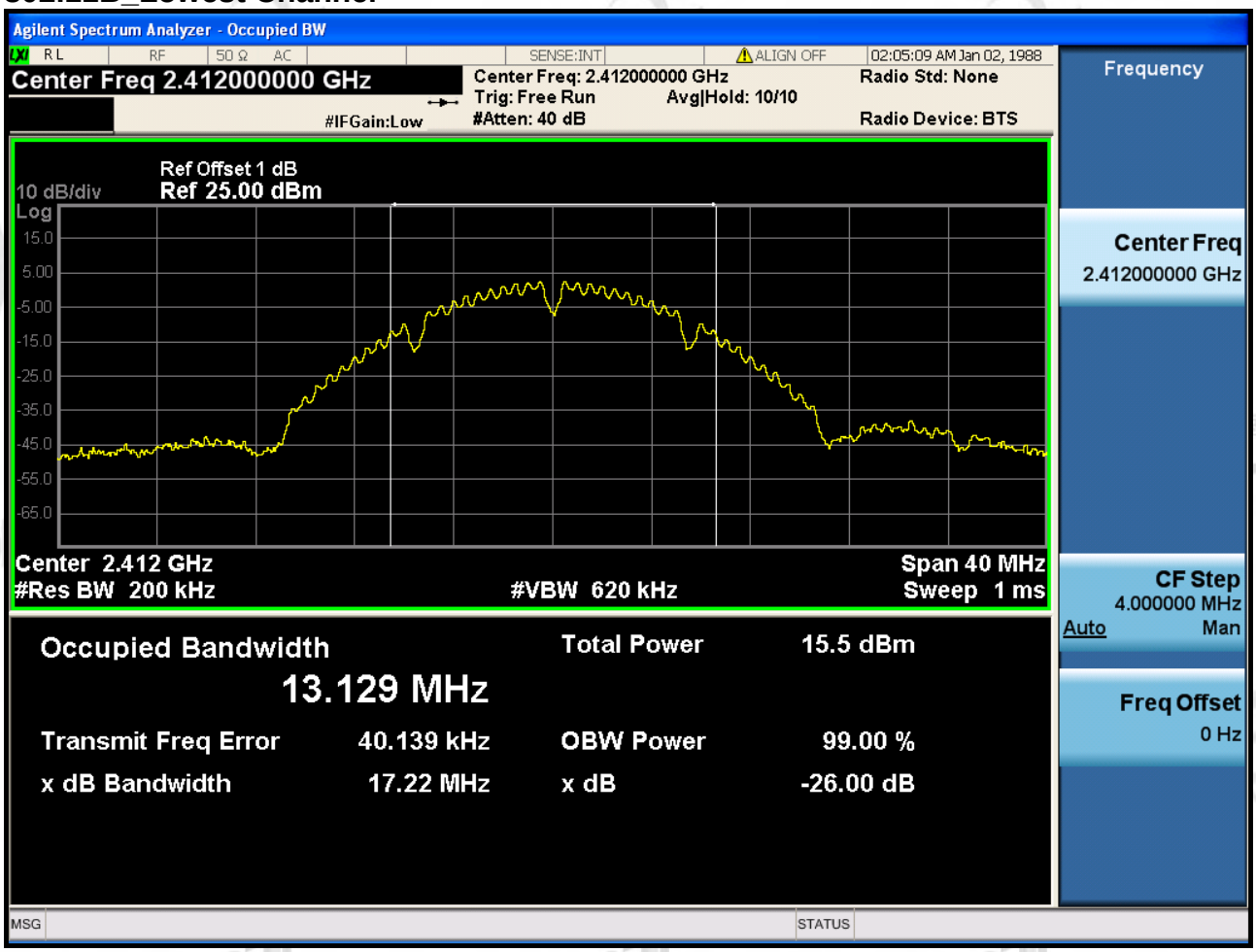
**For Antenna 2:**

| Mode | Test Channel | Occupied Bandwidth (MHz) | 6dB Emission Bandwidth (MHz) | Limit (kHz) | Result |
|---|---|---|---|---|---|
| 802.11B | Lowest | 12.72 | 12.72 | ≥500 | Pass |
| | Middle | 12.66 | 12.63 | ≥500 | Pass |
| | Highest | 12.33 | 12.33 | ≥500 | Pass |
| 802.11G | Lowest | 16.73 | 16.58 | ≥500 | Pass |
| | Middle | 16.62 | 16.50 | ≥500 | Pass |
| | Highest | 16.46 | 16.40 | ≥500 | Pass |
| 802.11N20 | Lowest | 17.87 | 17.75 | ≥500 | Pass |
| | Middle | 17.82 | 17.70 | ≥500 | Pass |
| | Highest | 17.62 | 17.58 | ≥500 | Pass |
| 802.11N20 MIMO | Lowest | 17.91 | 17.75 | ≥500 | Pass |
| | Middle | 17.83 | 17.71 | ≥500 | Pass |
| | Highest | 17.64 | 17.58 | ≥500 | Pass |
| 802.11N40 | Lowest | 36.10 | 36.00 | ≥500 | Pass |
| | Middle | 36.14 | 36.09 | ≥500 | Pass |
| | Highest | 36.22 | 36.15 | ≥500 | Pass |
| 802.11N40 MIMO | Lowest | 36.03 | 35.96 | ≥500 | Pass |
| | Middle | 36.18 | 36.11 | ≥500 | Pass |
| | Highest | 36.21 | 36.14 | ≥500 | Pass |

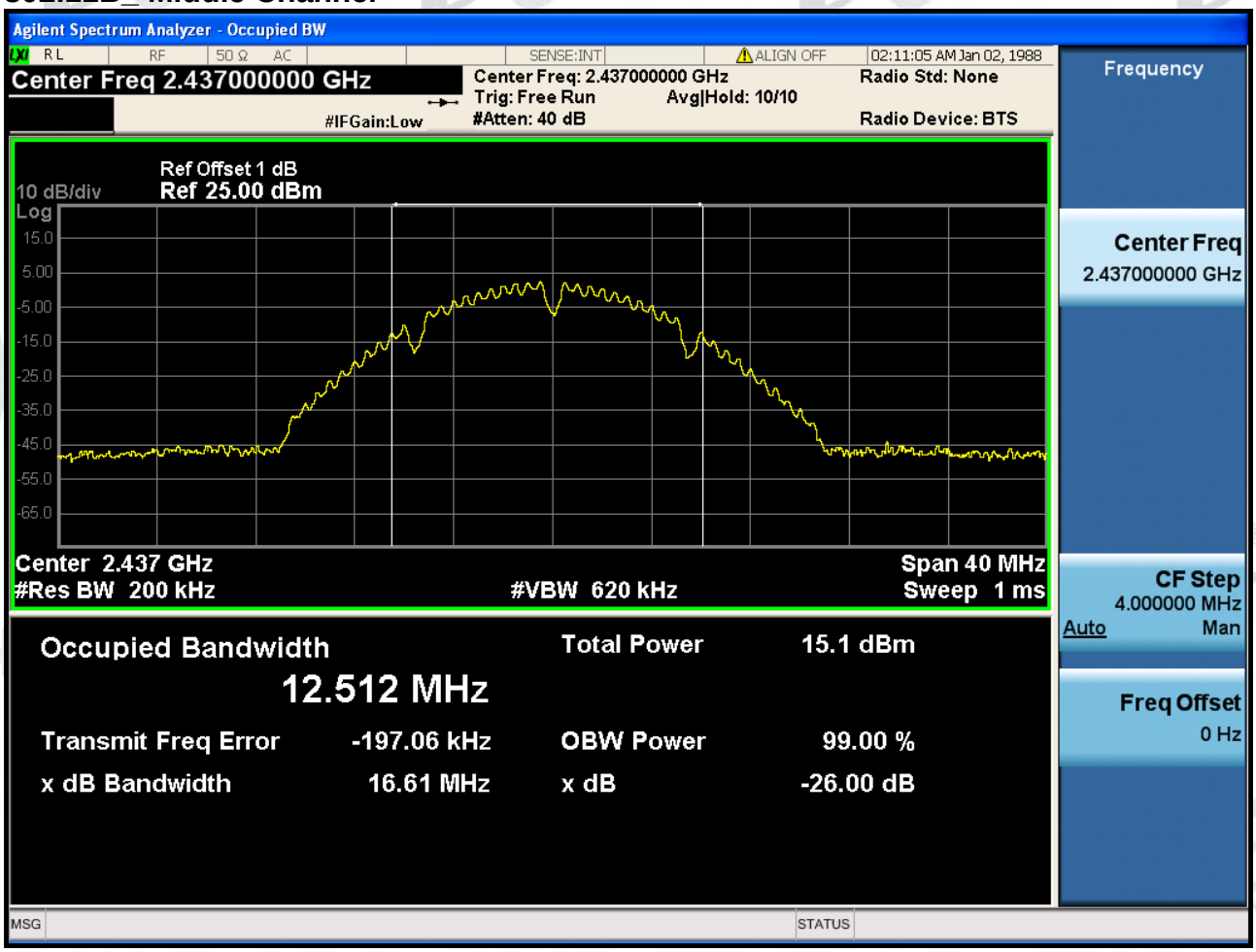
## Test plots For Occupied Bandwidth

### ANT1

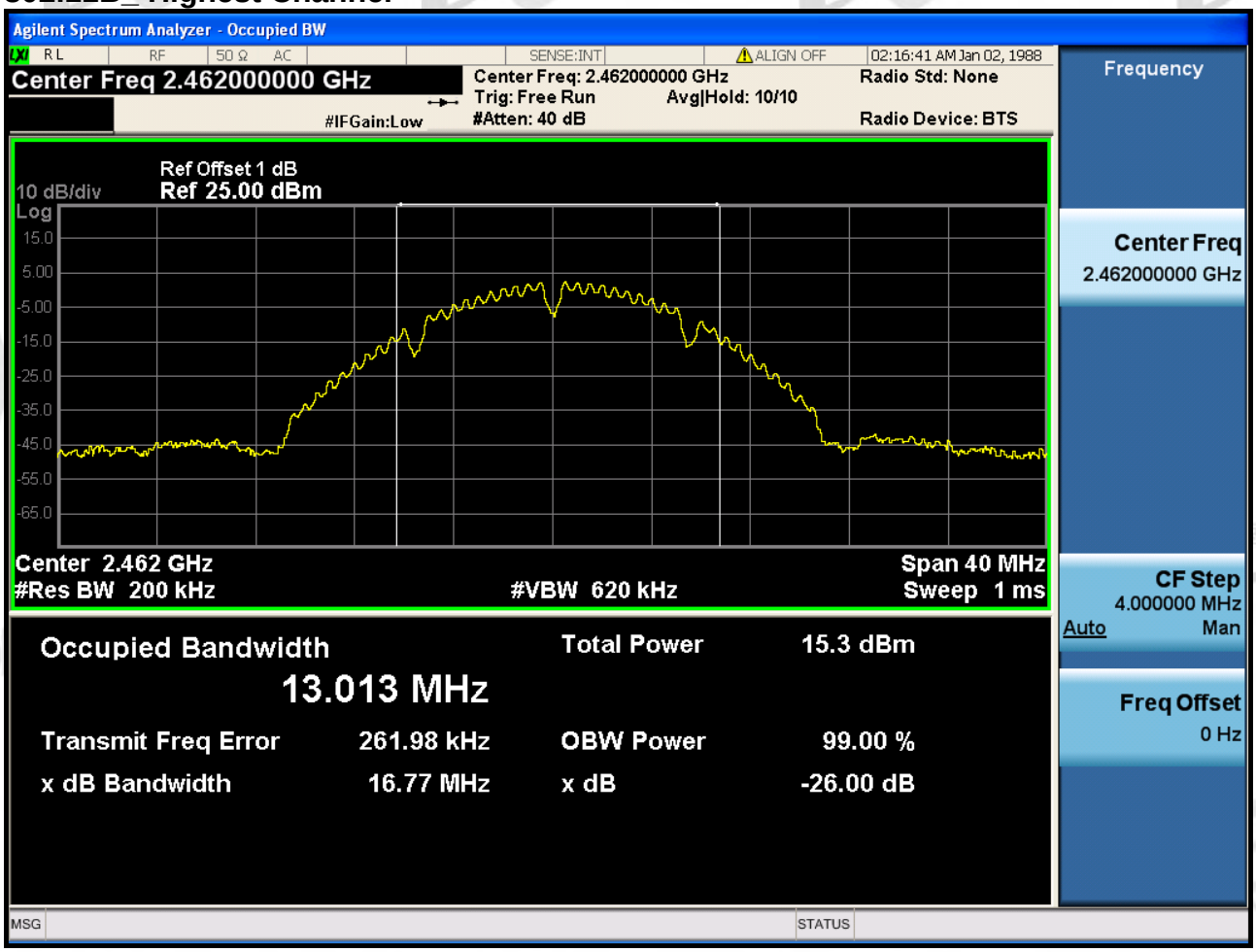
### 802.11B_Lowest Channel



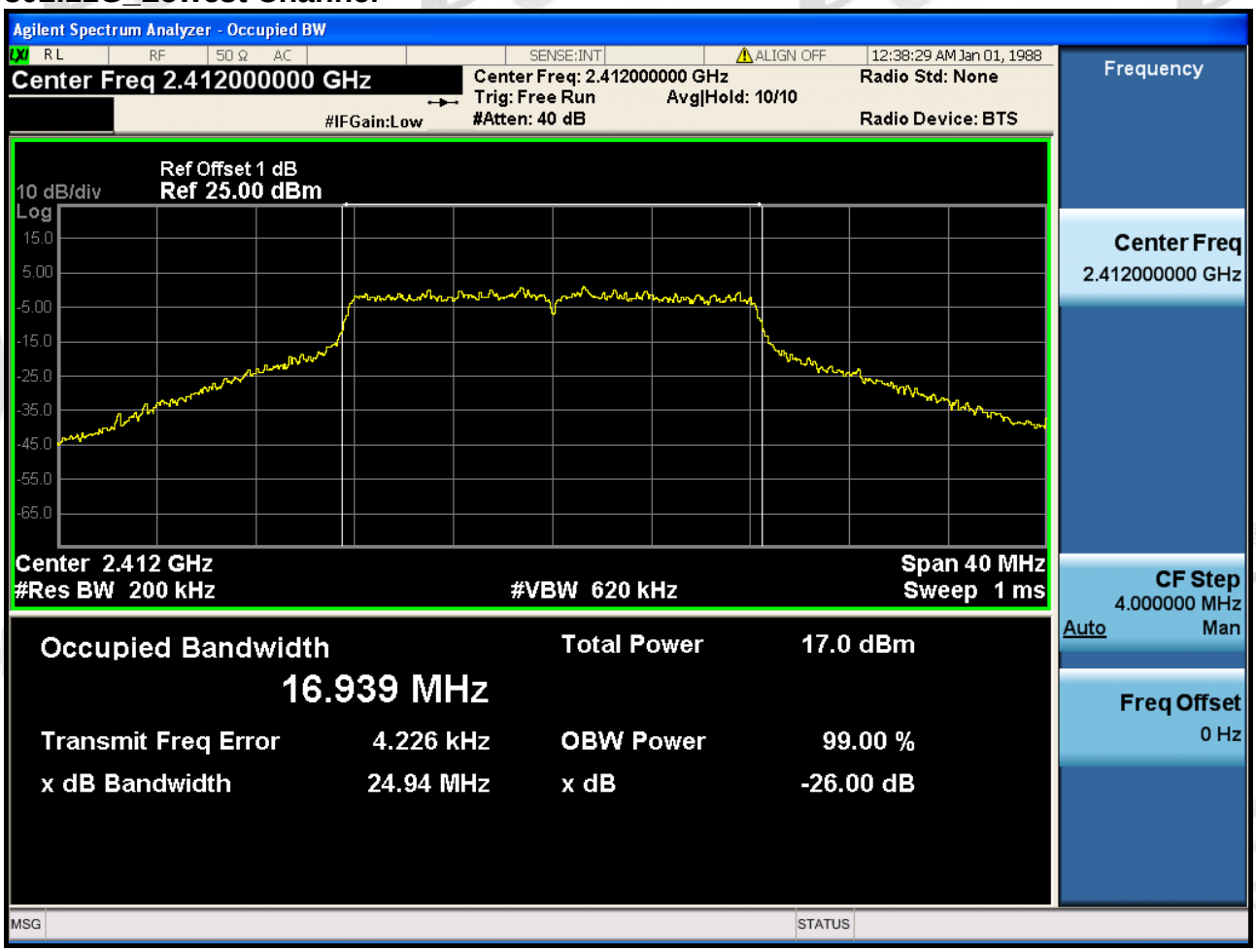
## 802.11B_ Middle Channel



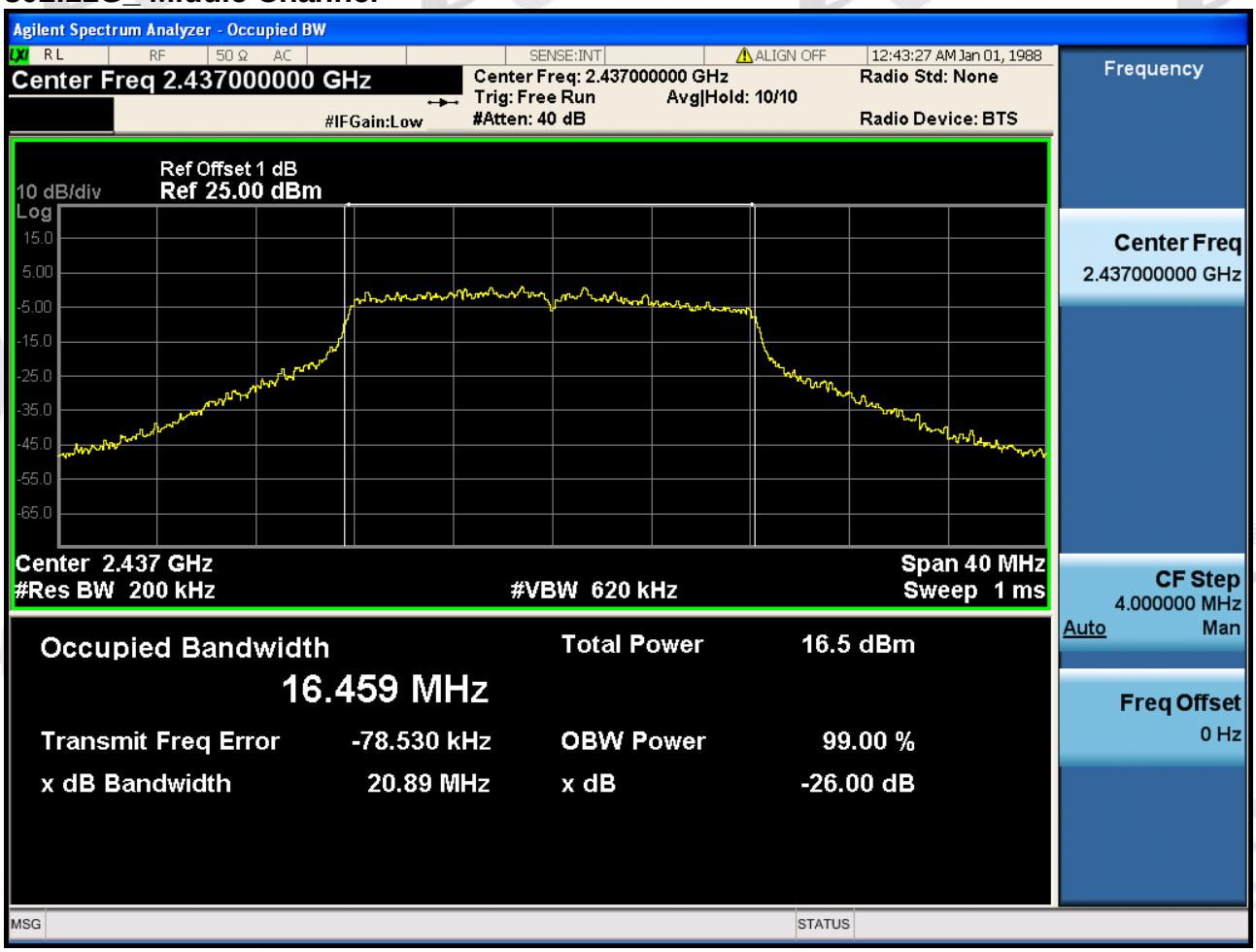
## 802.11B_ Highest Channel



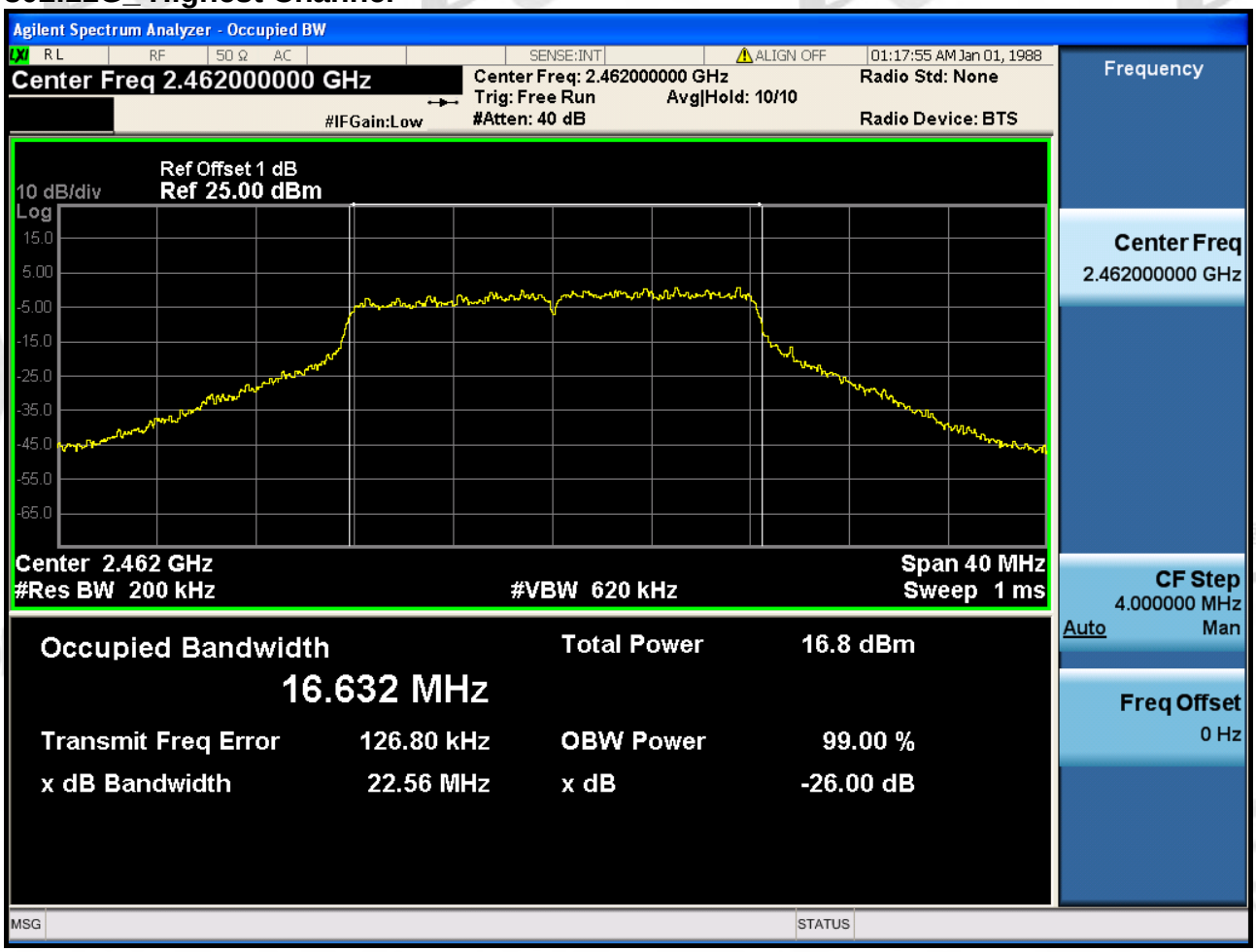
## 802.11G_Lowest Channel



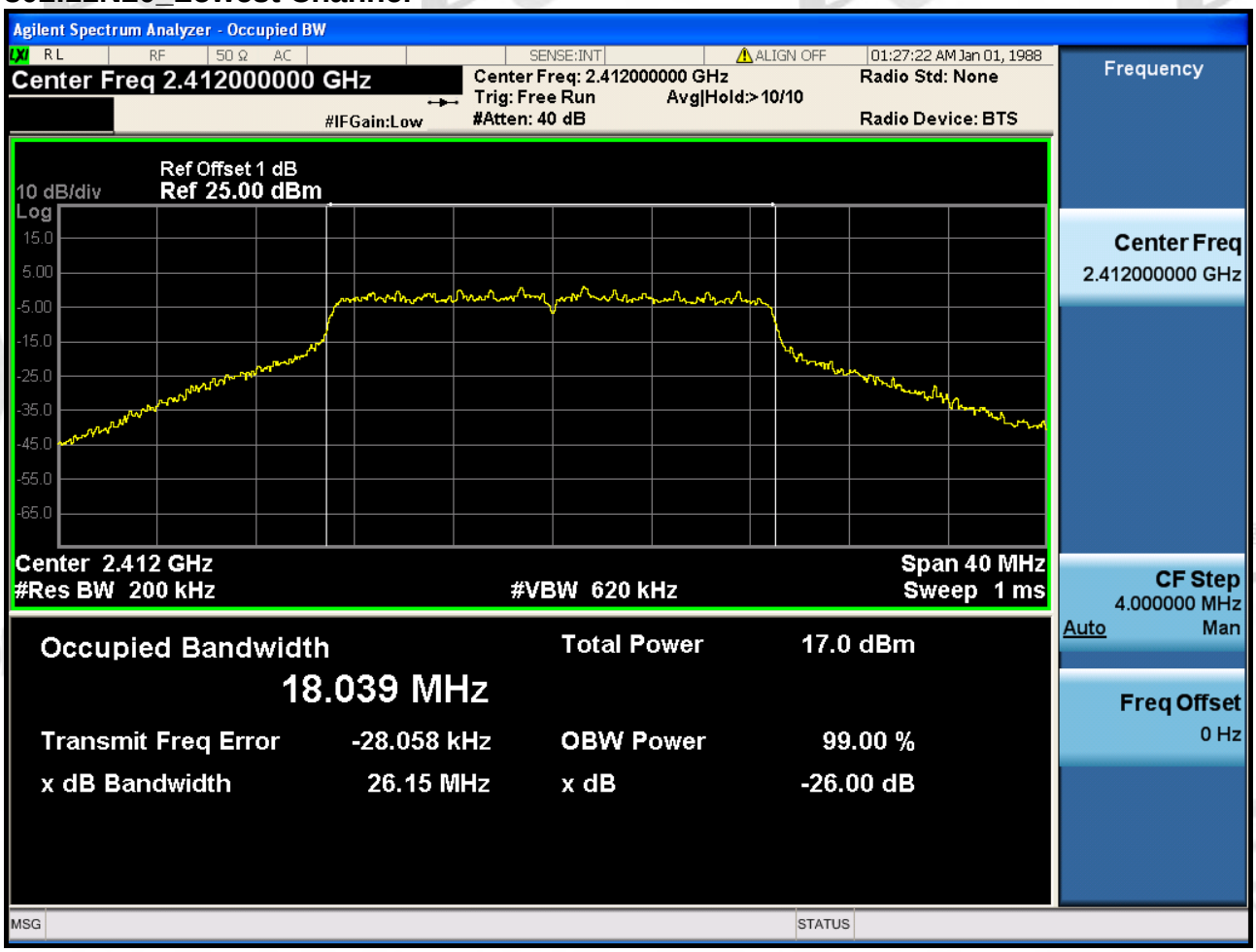
## 802.11G_ Middle Channel



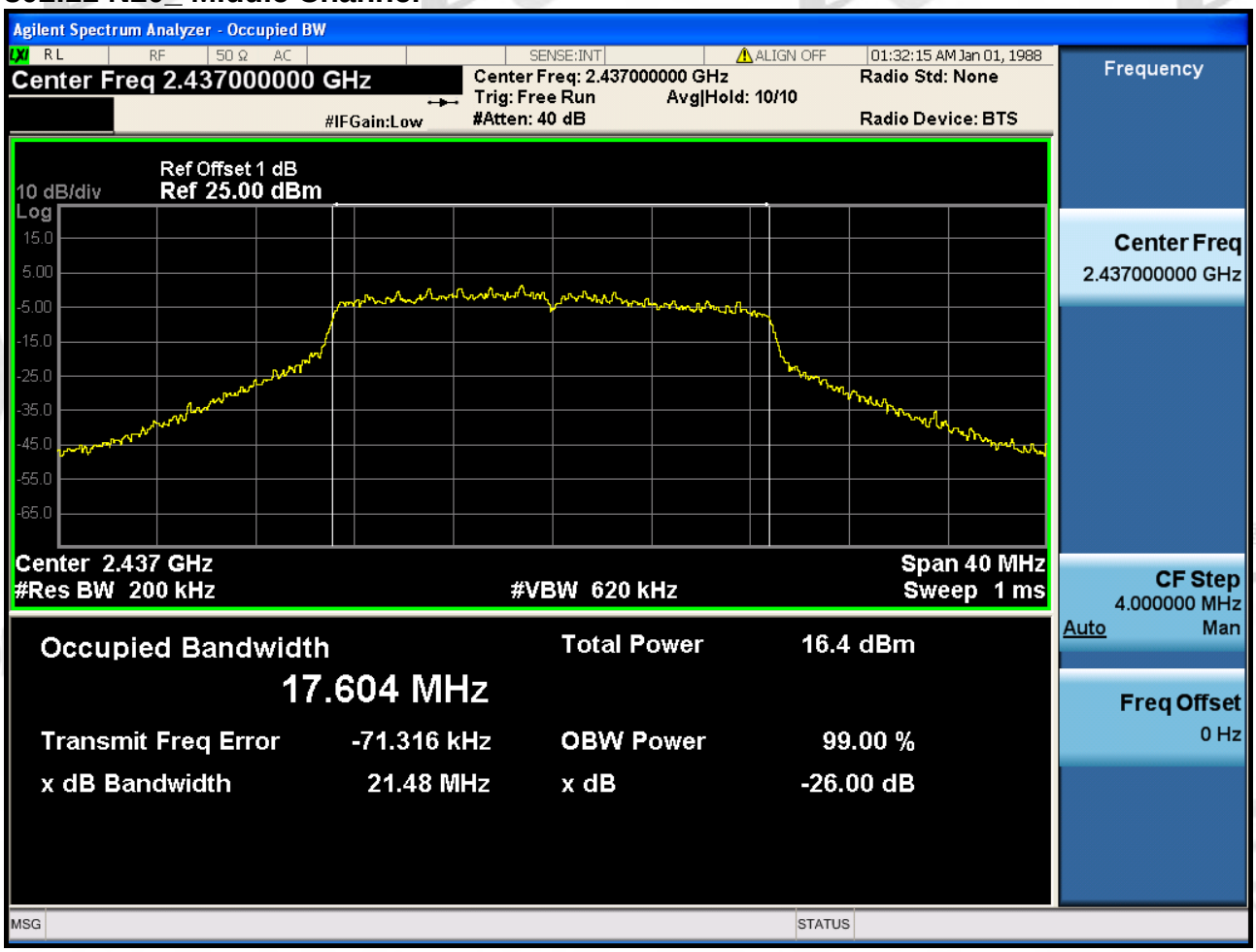
## 802.11G_ Highest Channel



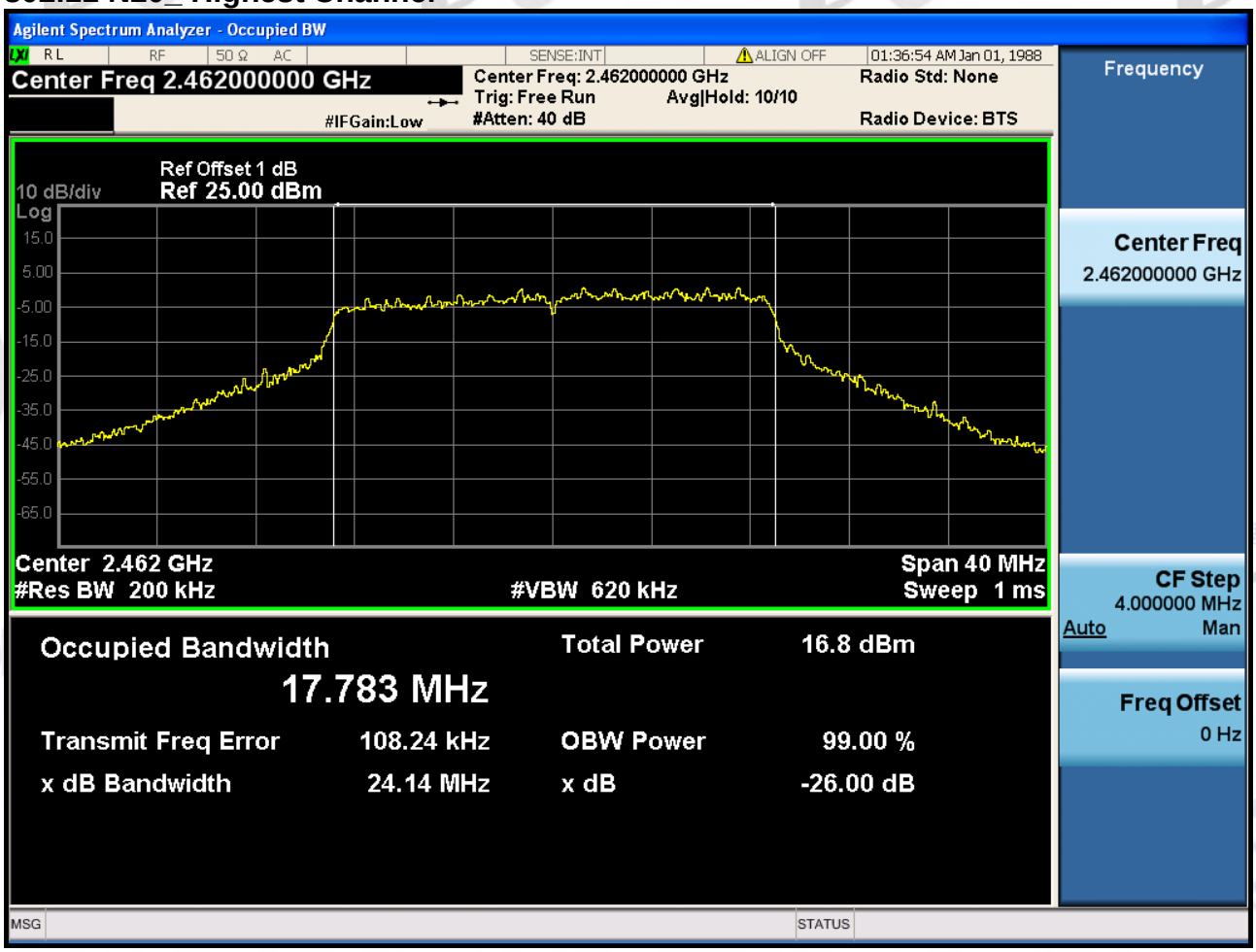
## 802.11N20_Lowest Channel



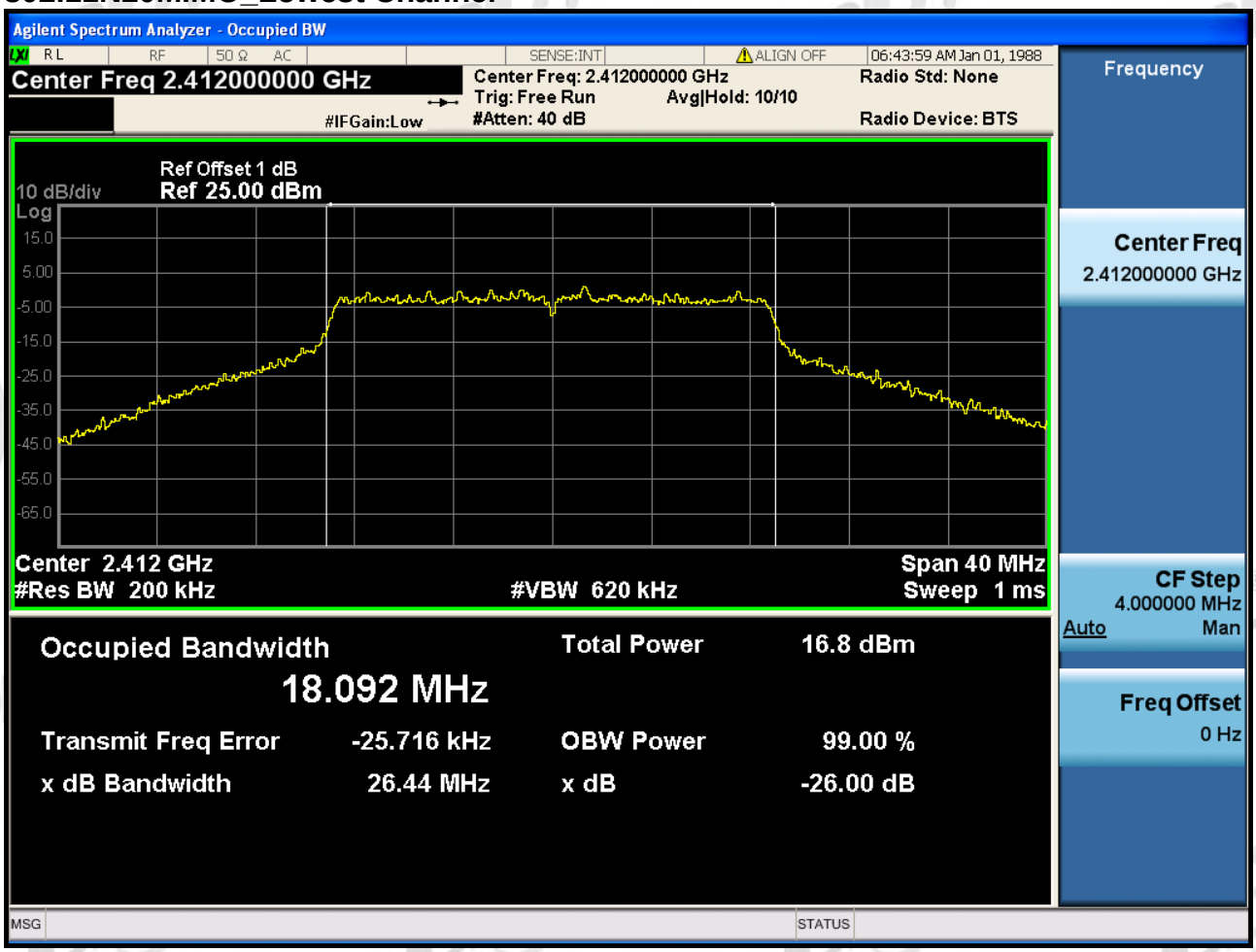
## 802.11 N20_ Middle Channel



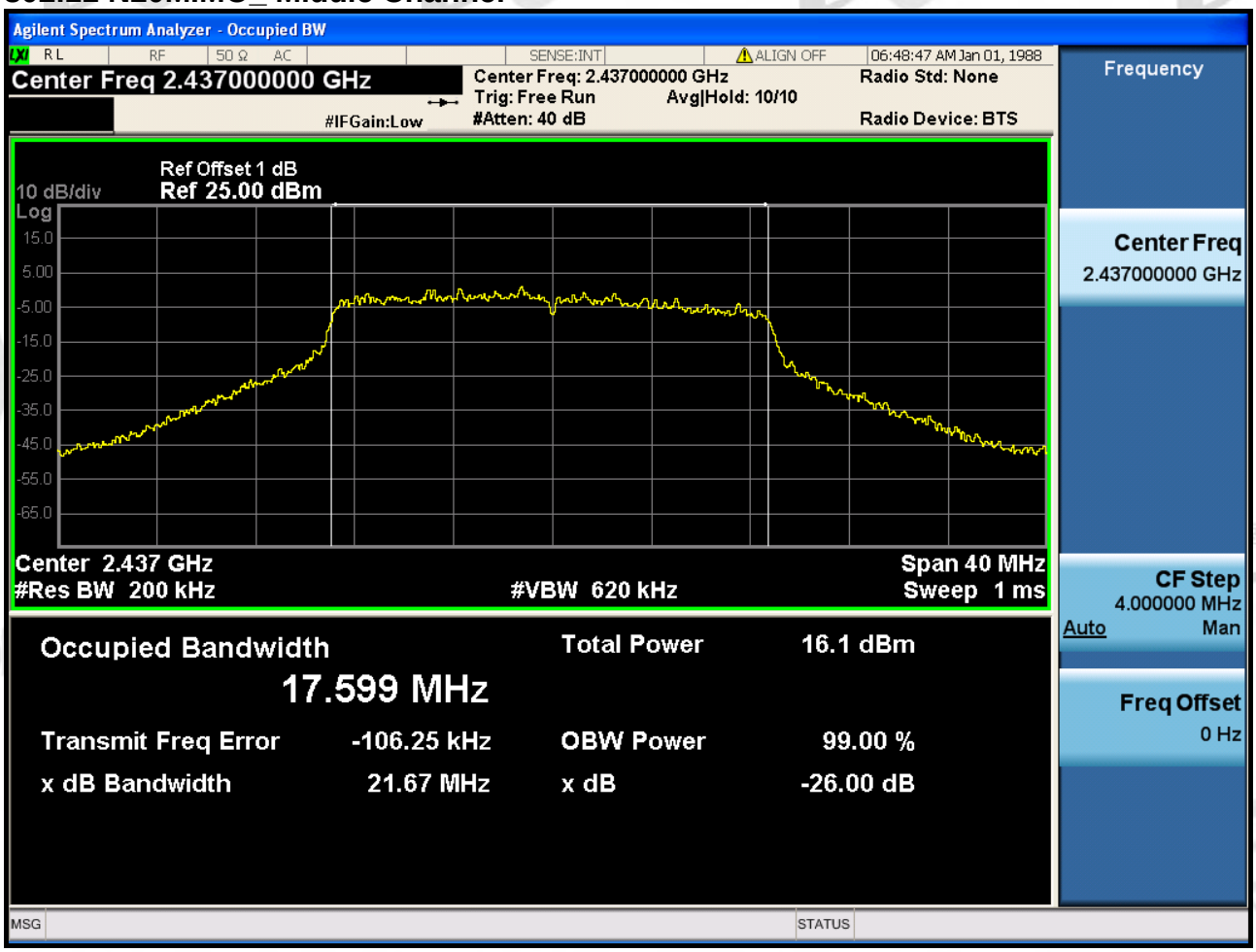
## 802.11 N20_ Highest Channel



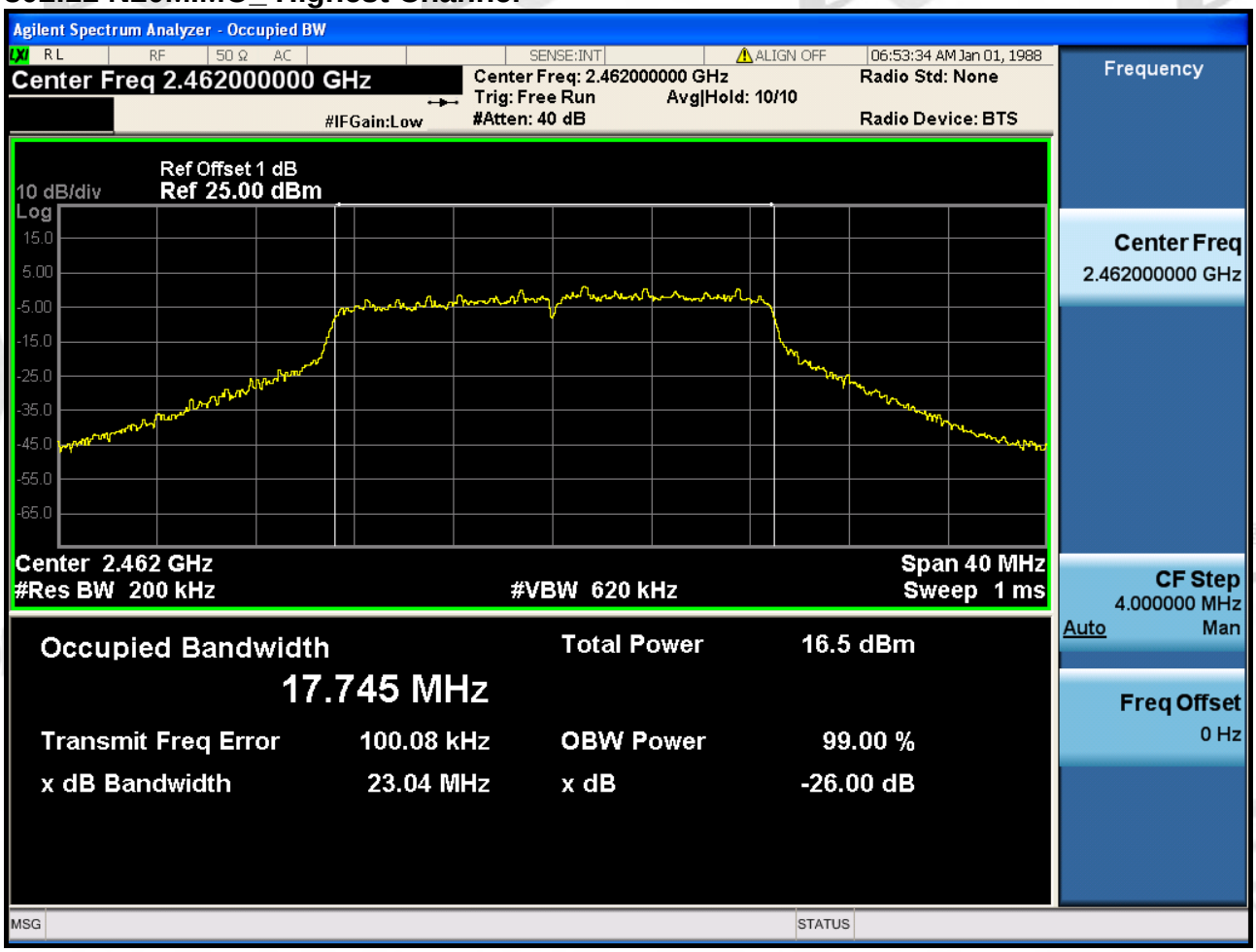
## 802.11N20MIMO_Lowest Channel



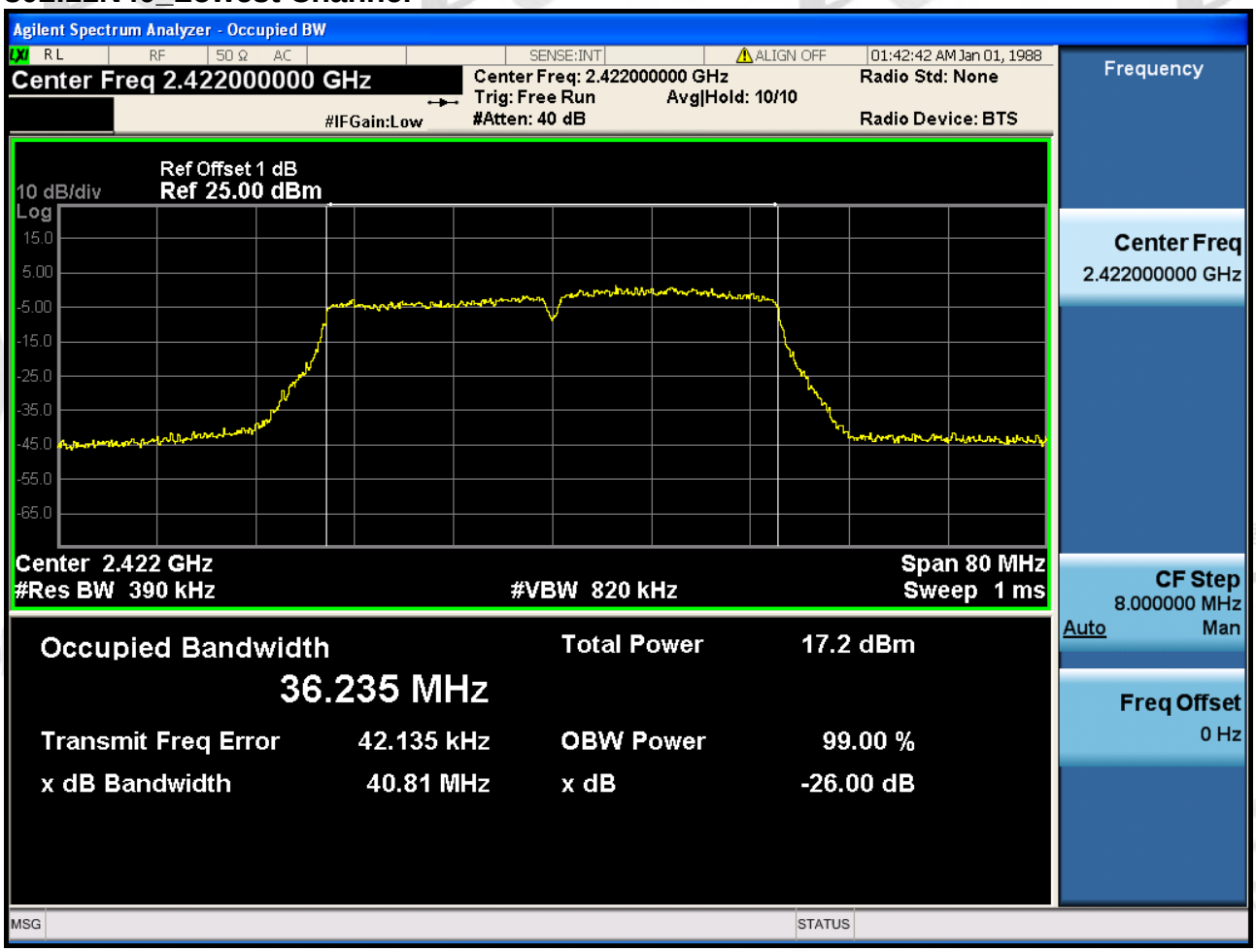
## 802.11 N20MIMO_ Middle Channel



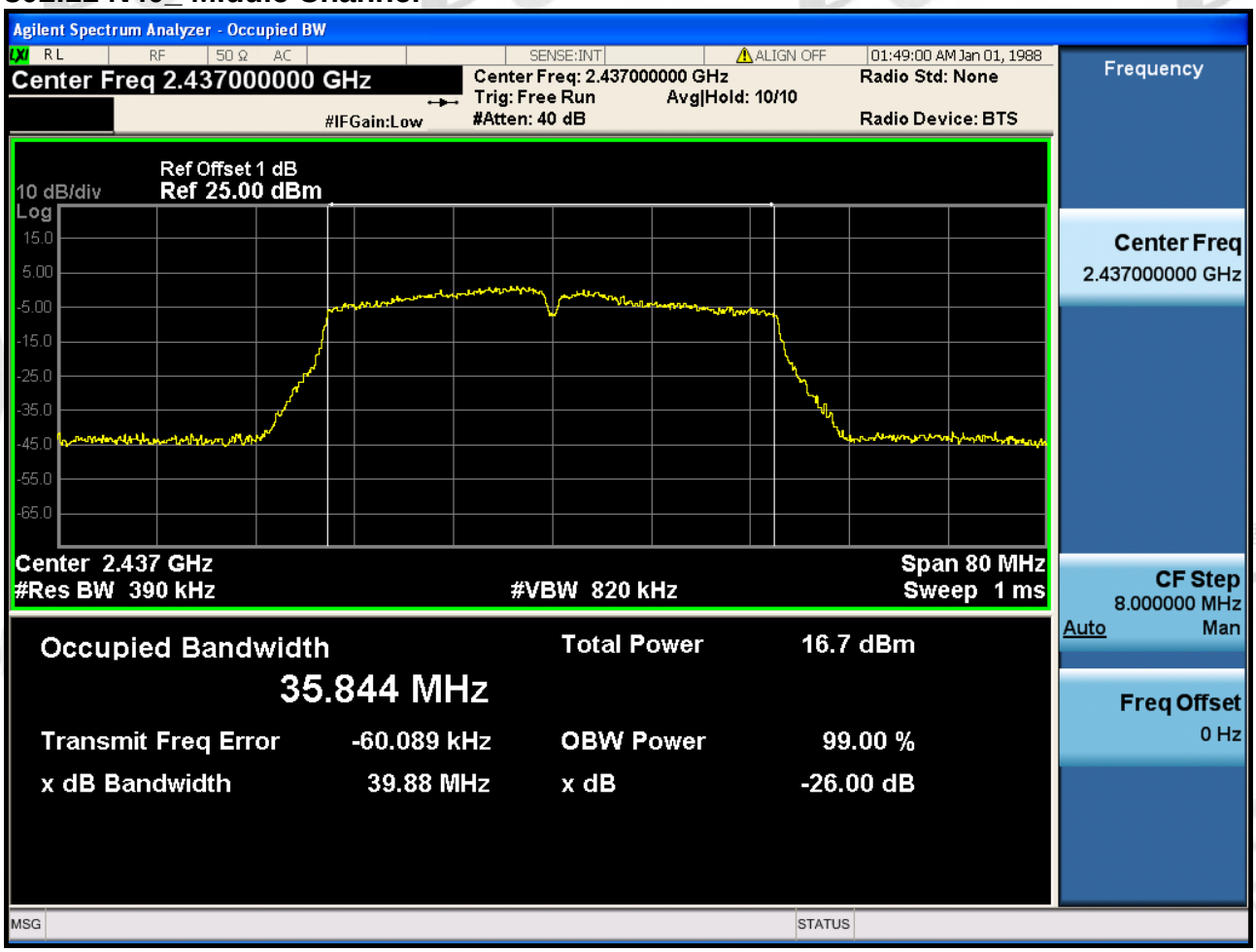
## 802.11 N20MIMO_ Highest Channel



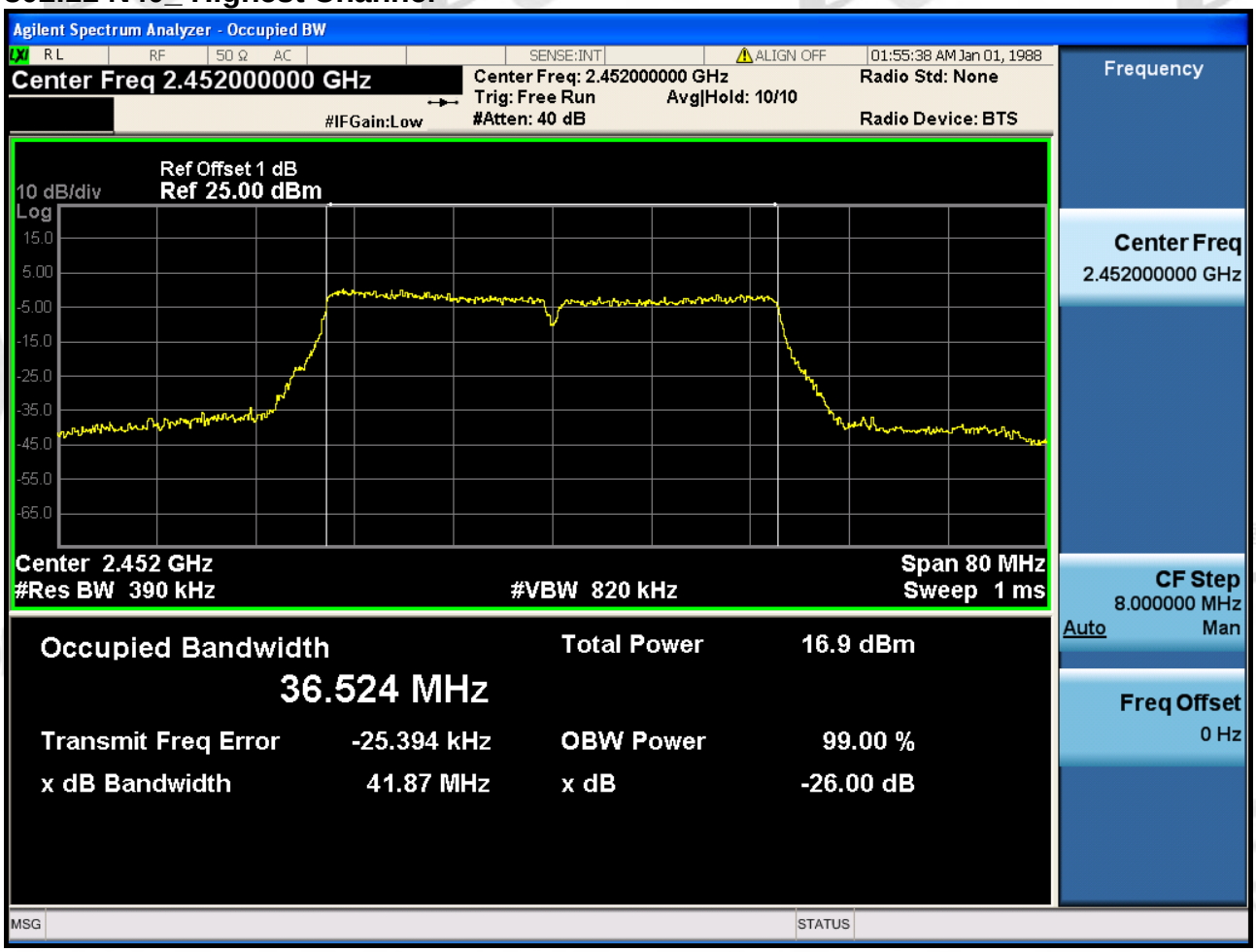
## 802.11N40_Lowest Channel



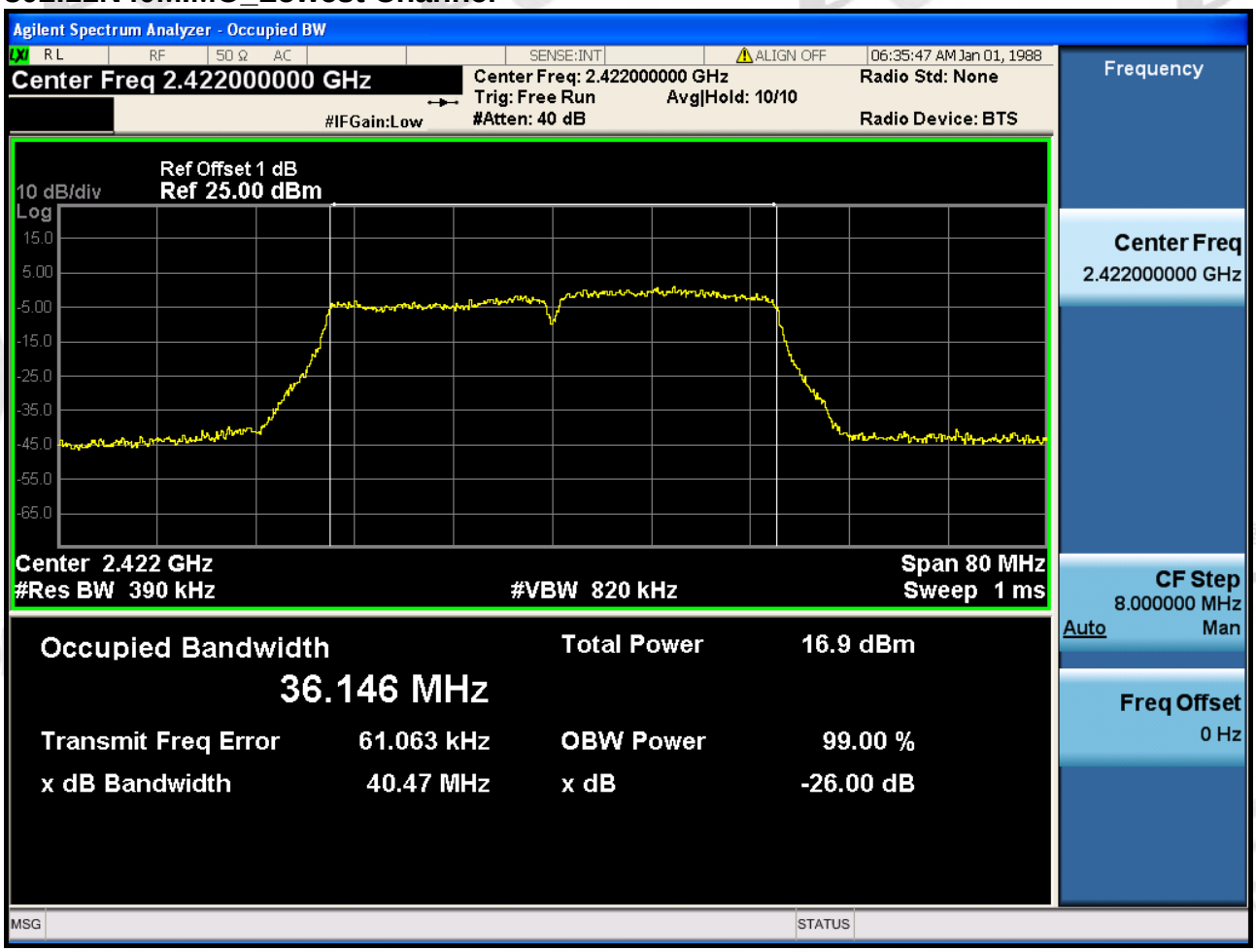
## 802.11 N40_ Middle Channel



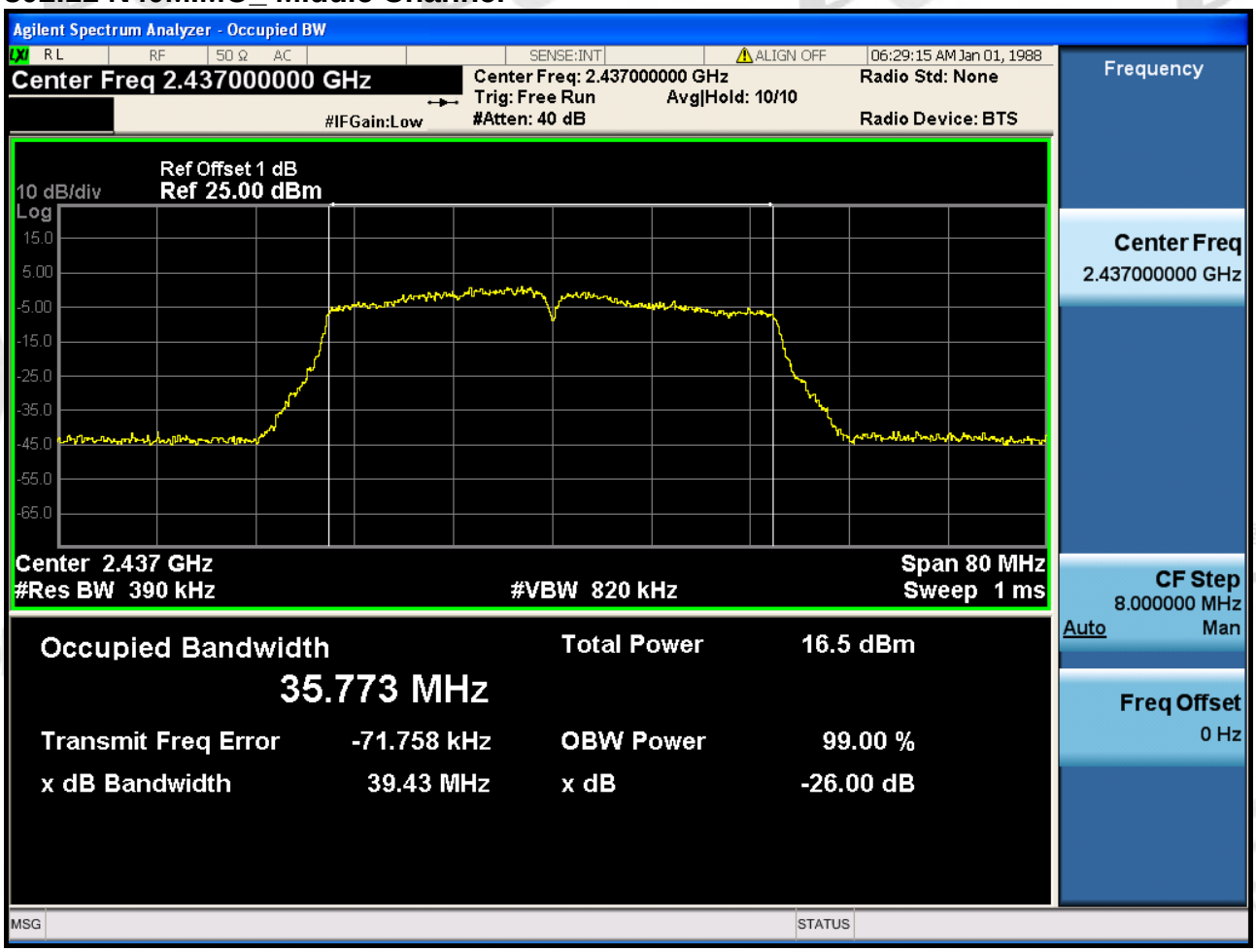
## 802.11 N40_ Highest Channel



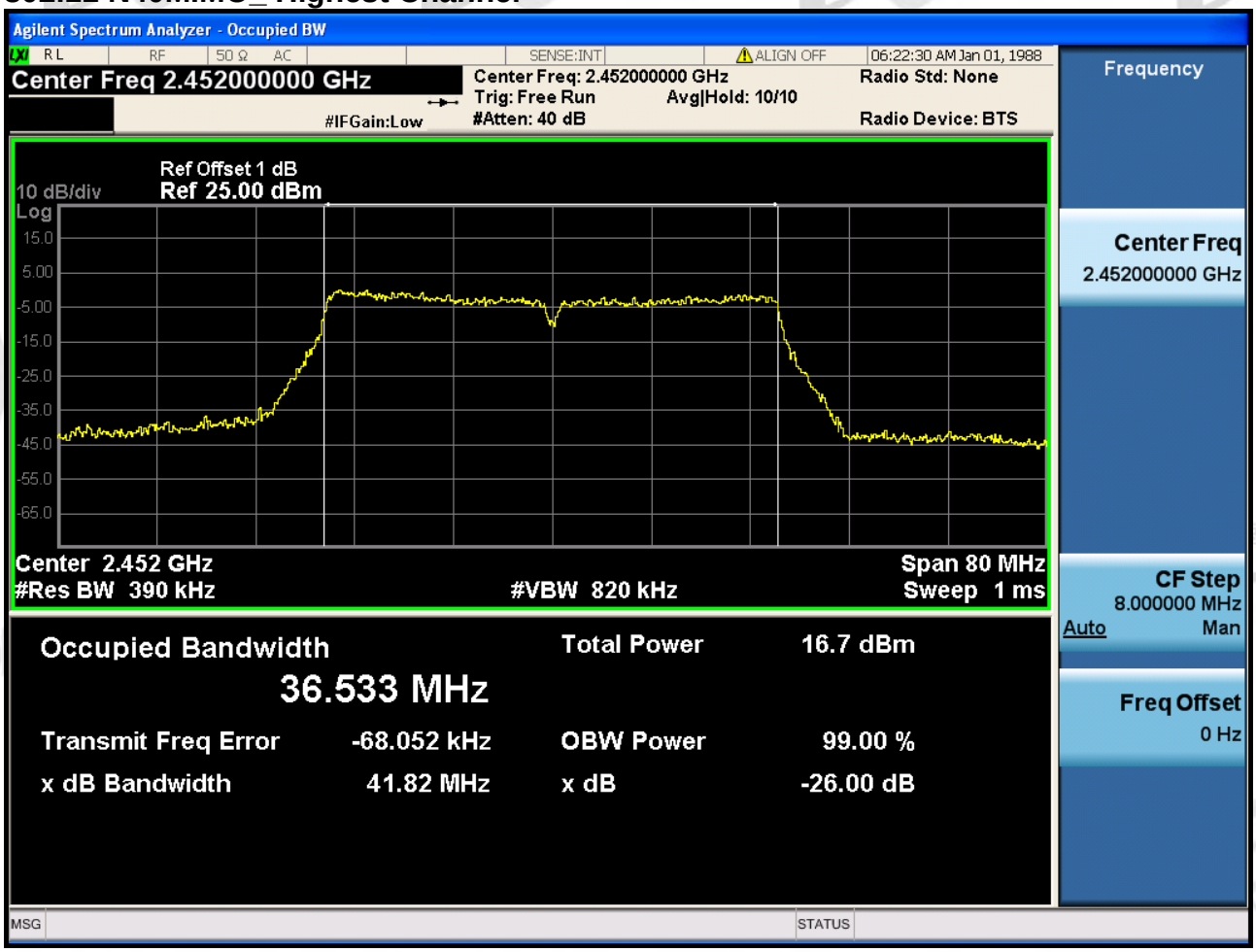
## 802.11N40MIMO_Lowest Channel



## 802.11 N40MIMO_ Middle Channel

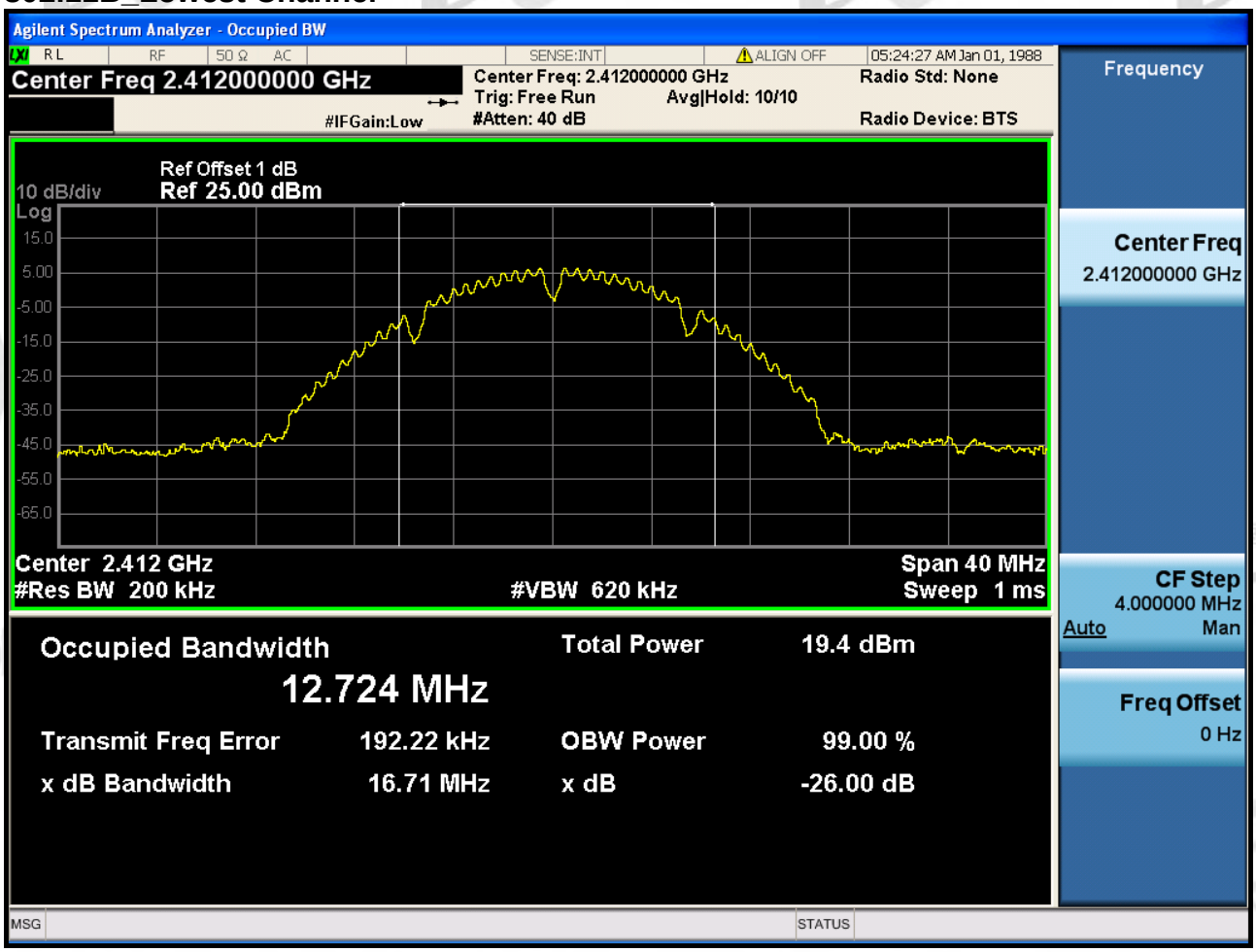


## 802.11 N40MIMO_ Highest Channel

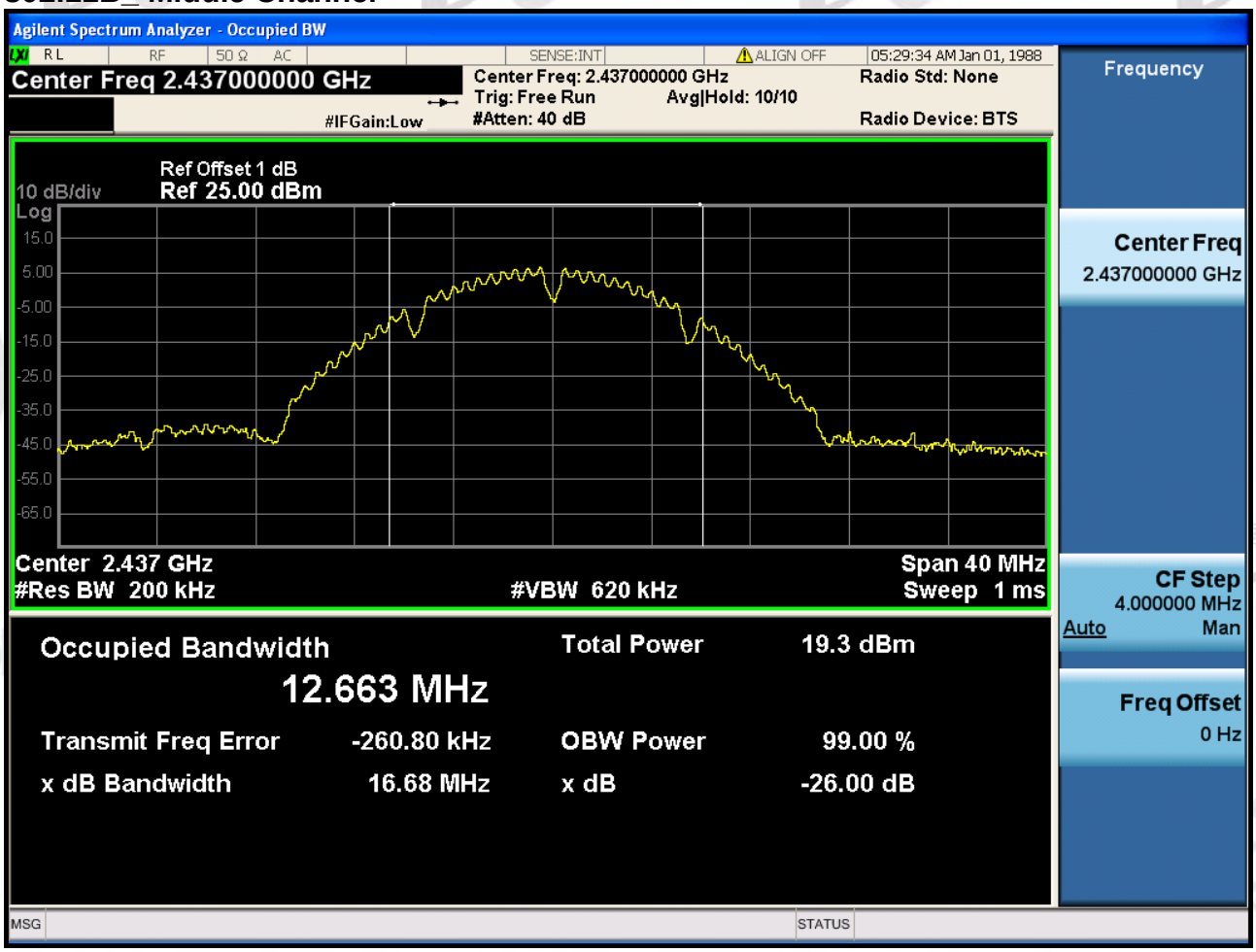


**ANT2**

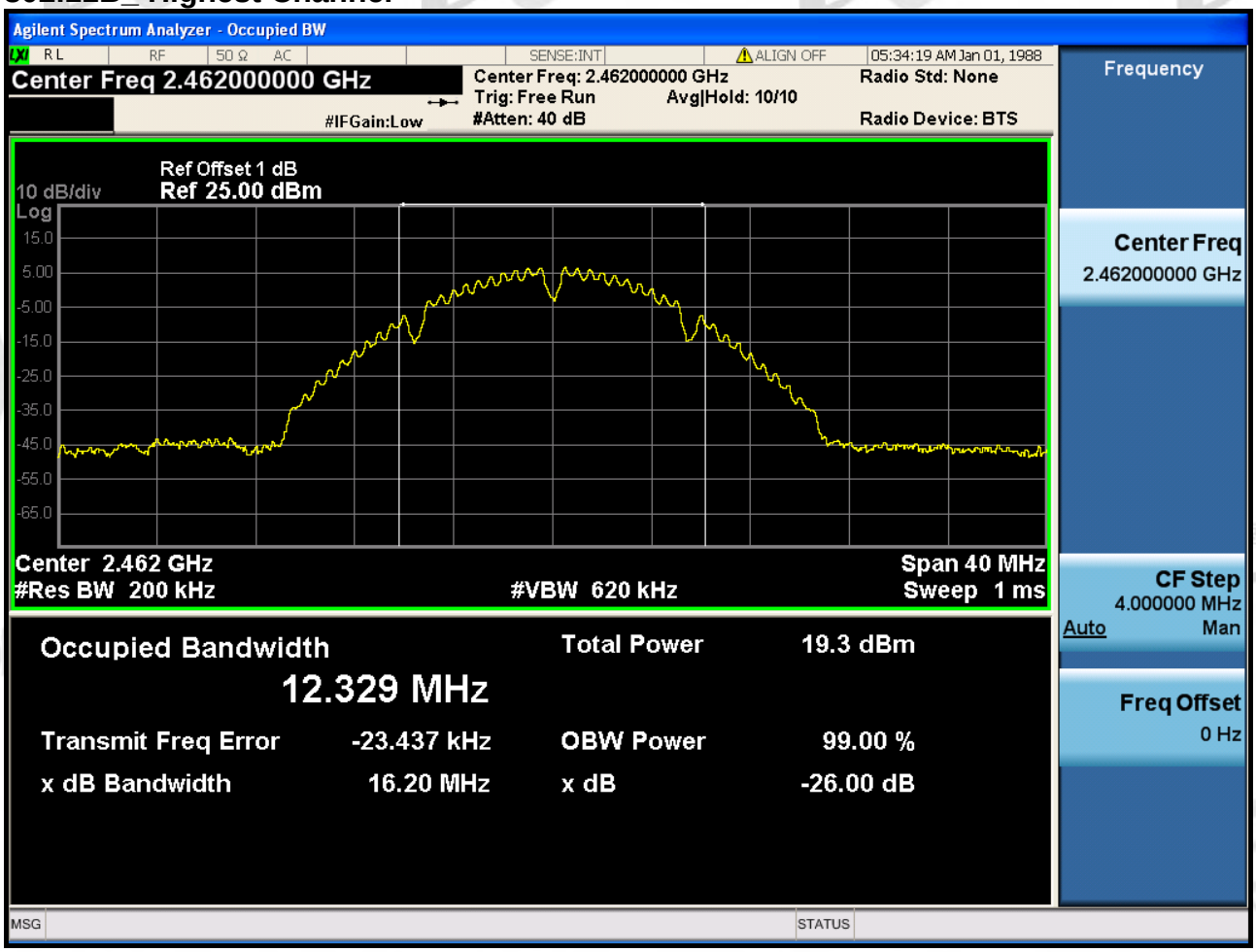
**802.11B_Lowest Channel**



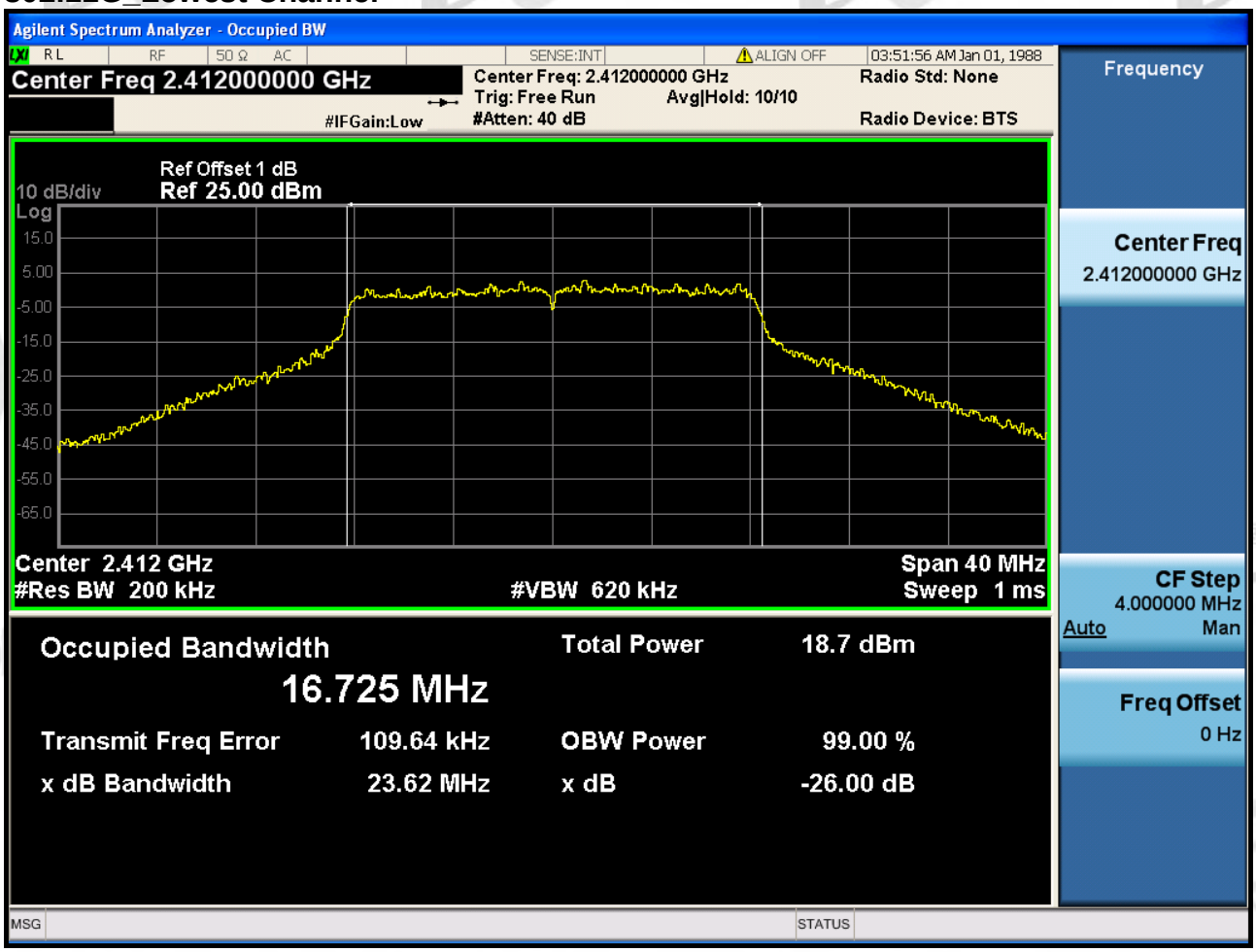
## 802.11B_ Middle Channel



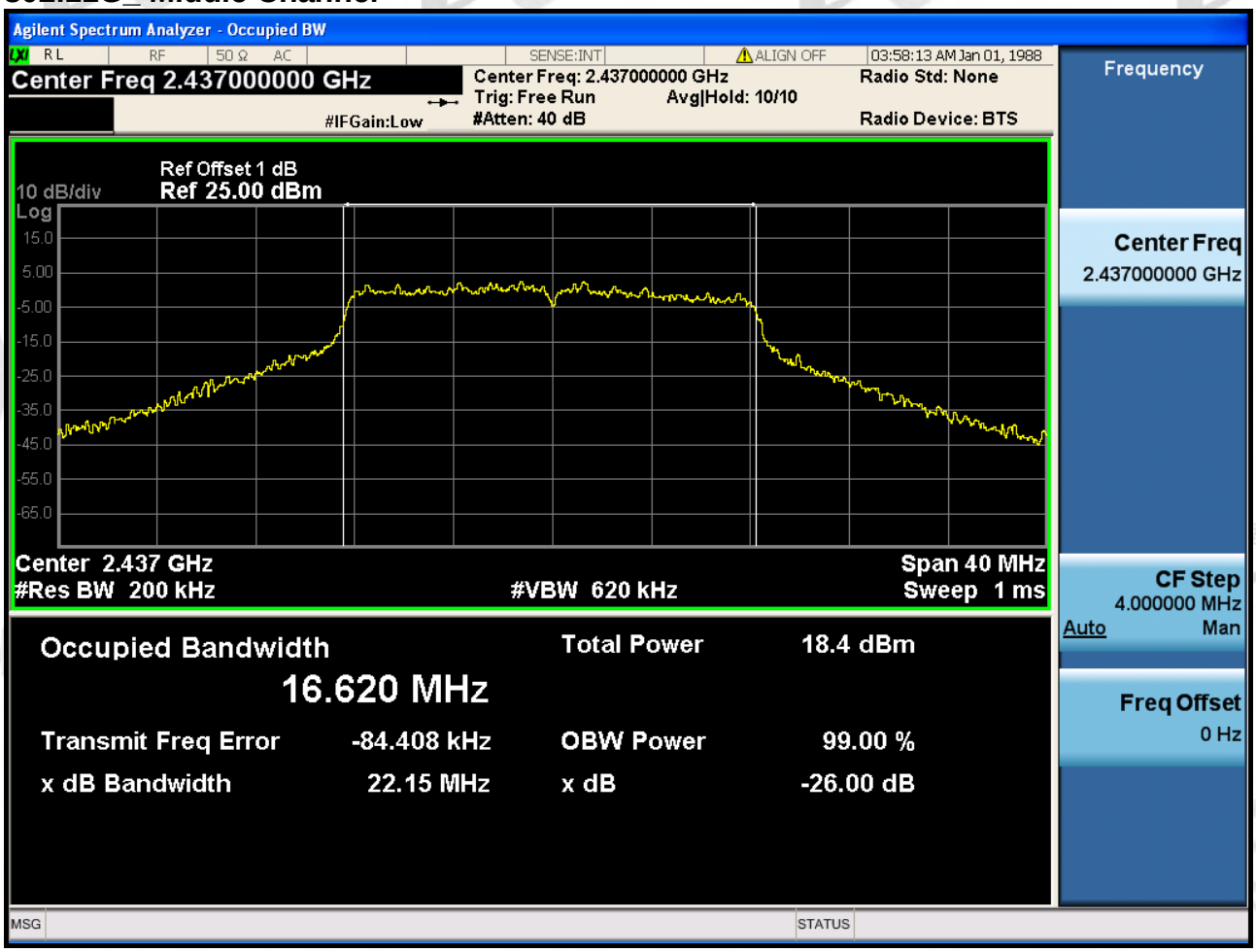
## 802.11B_ Highest Channel



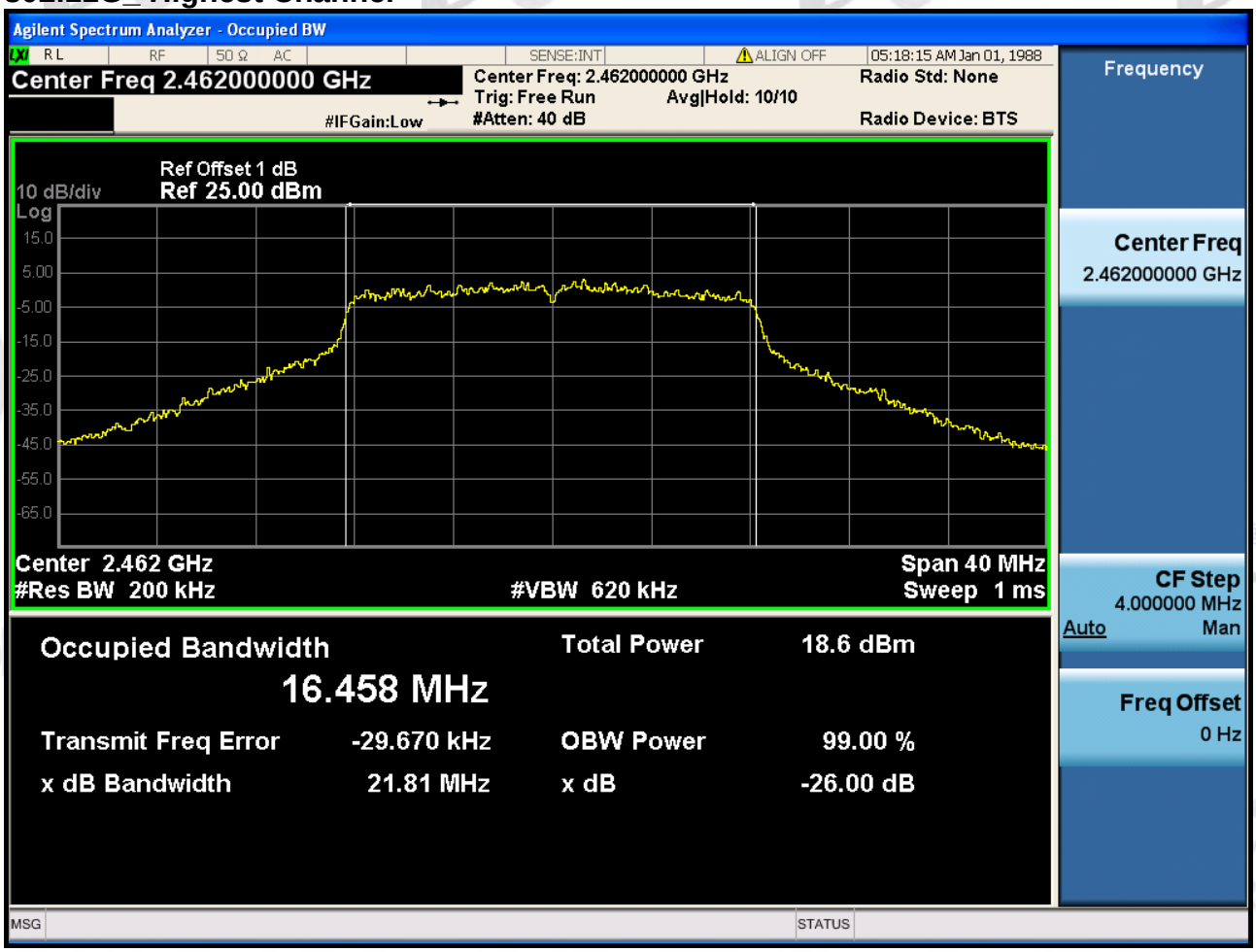
## 802.11G_Lowest Channel



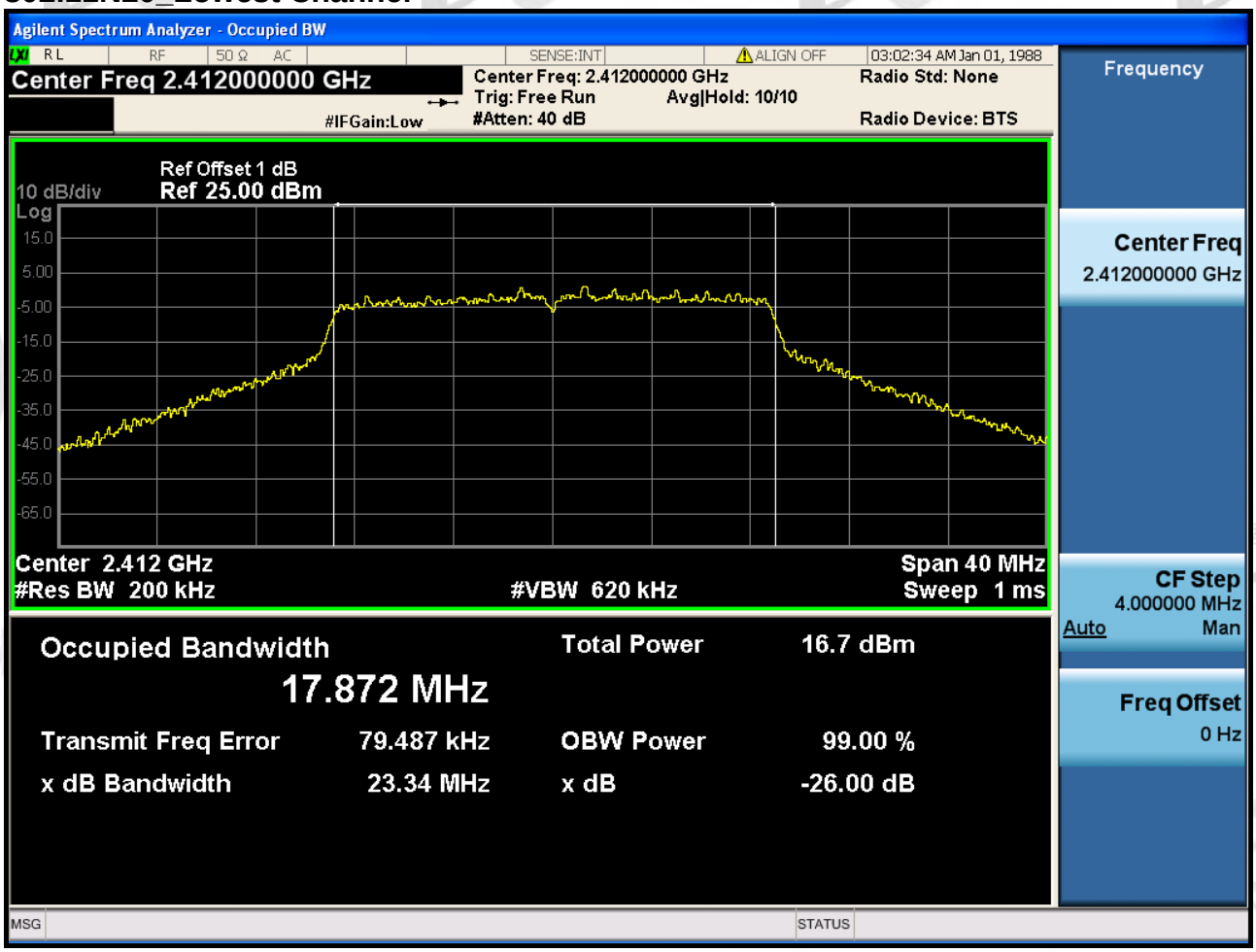
## 802.11G_ Middle Channel



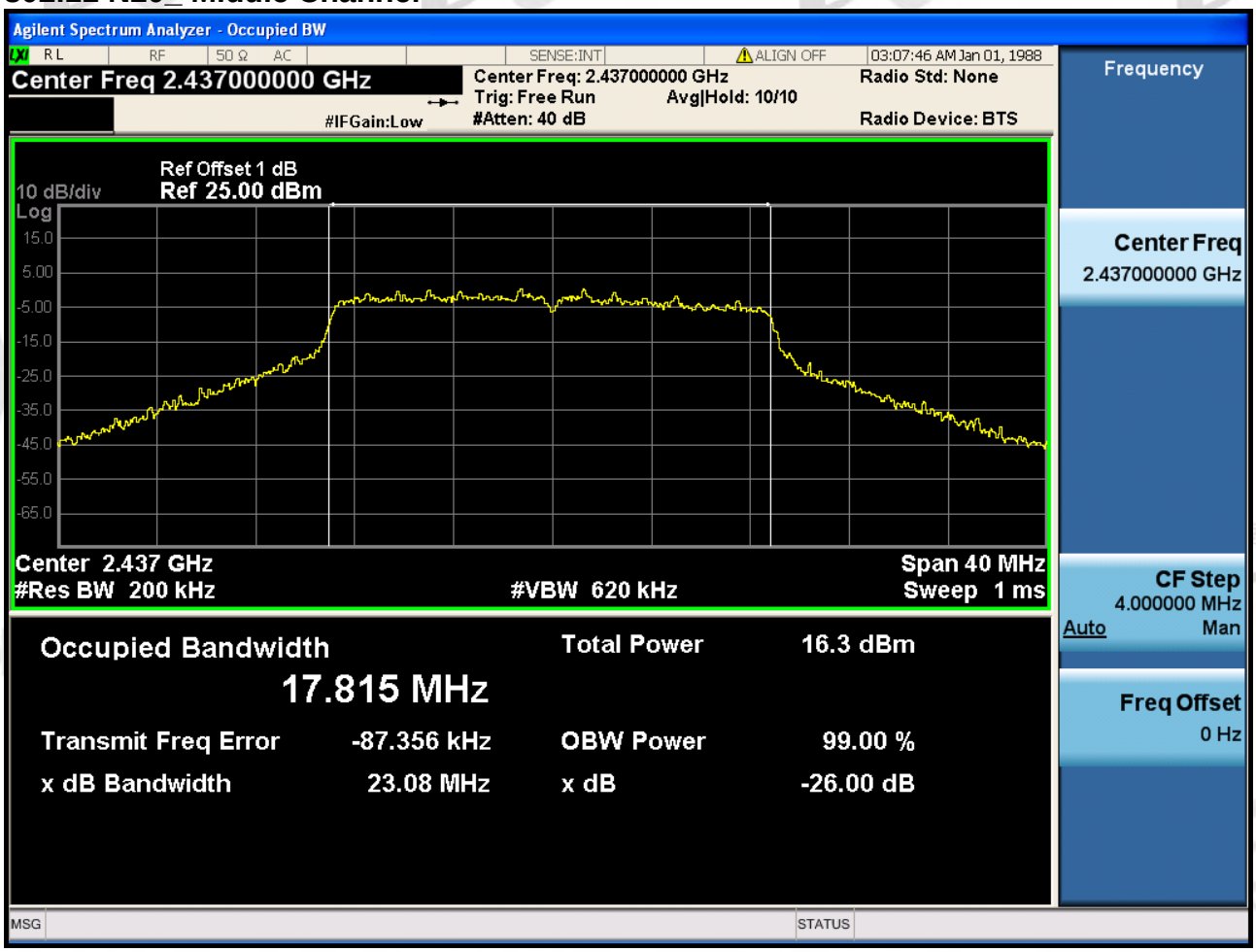
## 802.11G_ Highest Channel



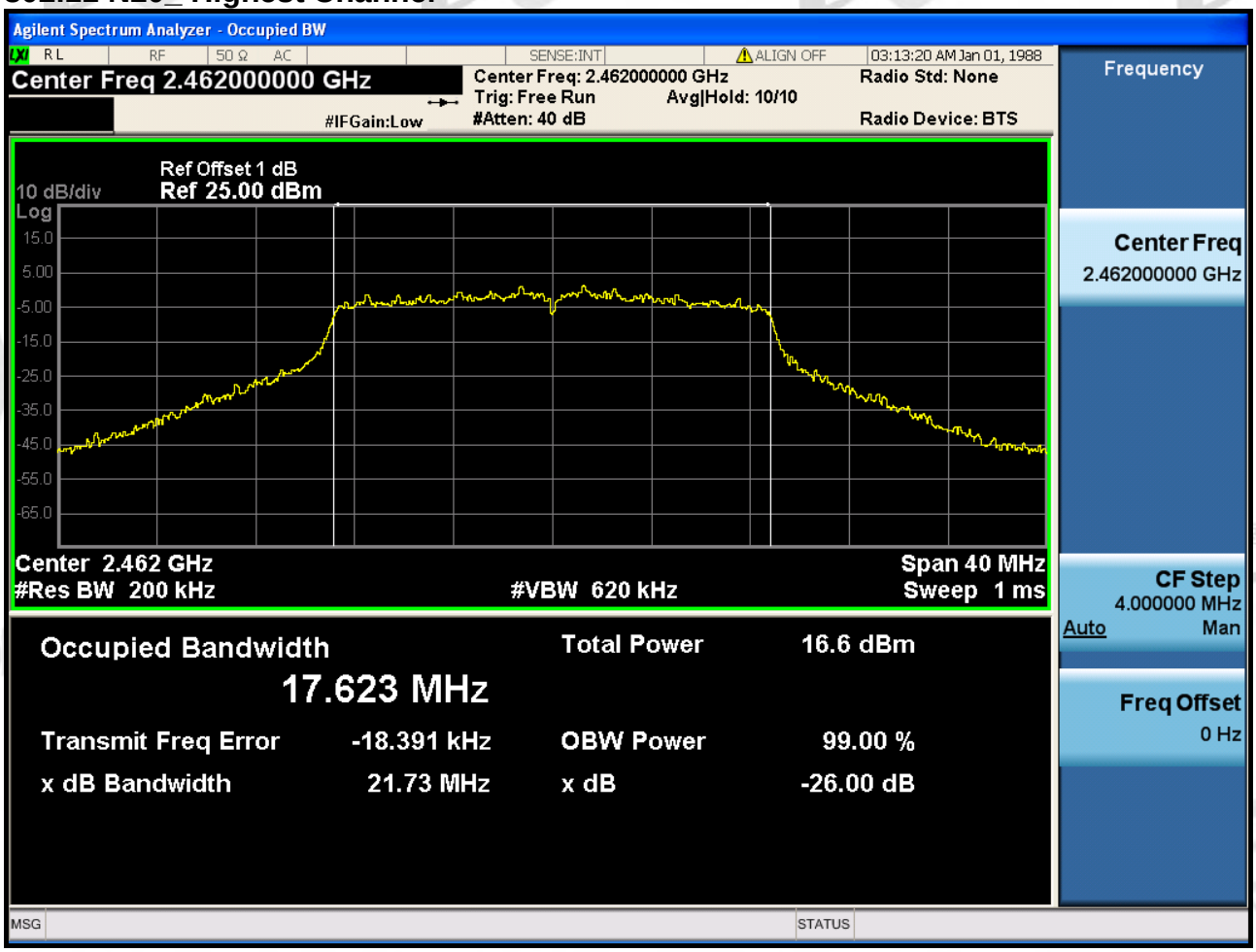
## 802.11N20_Lowest Channel



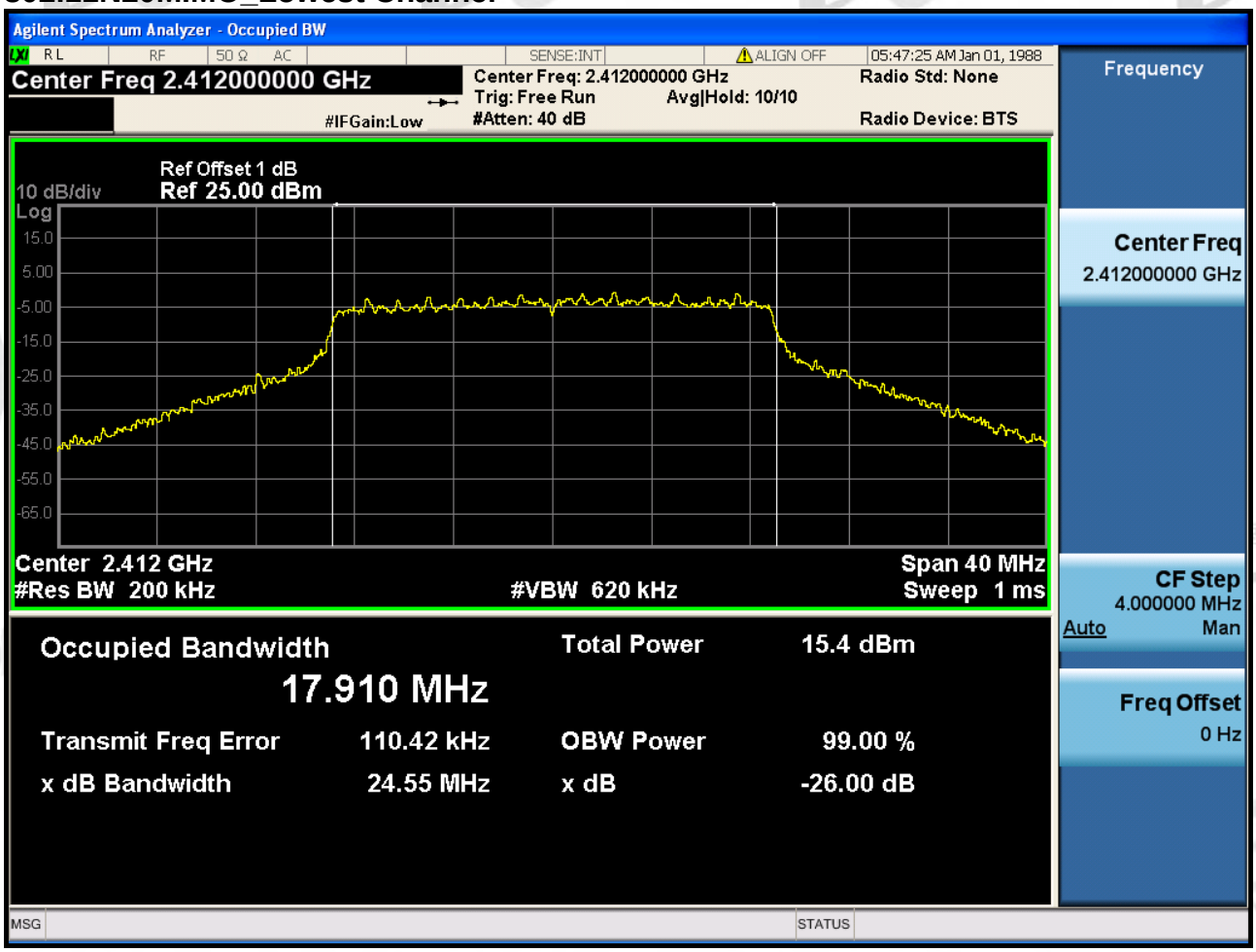
## 802.11 N20_ Middle Channel



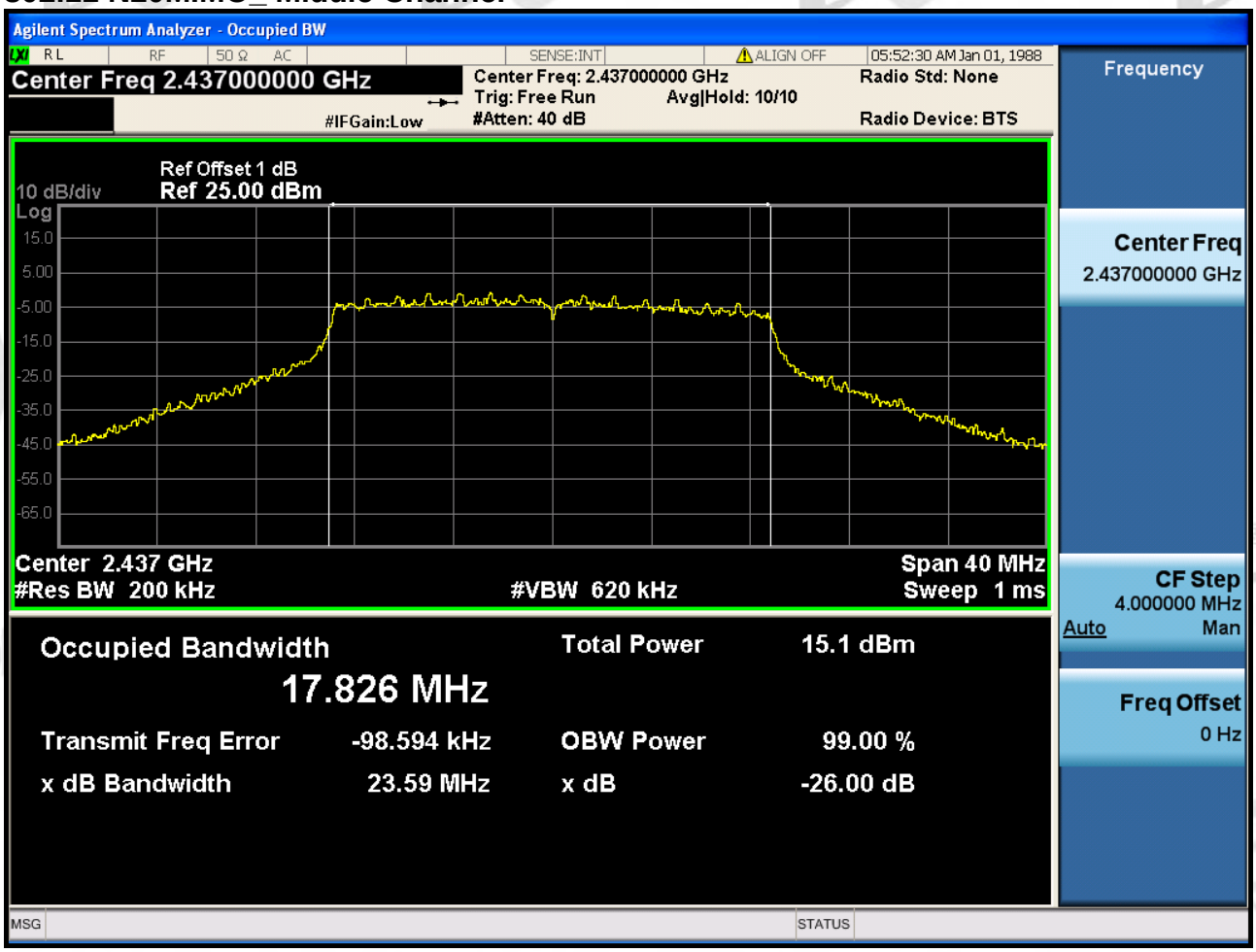
## 802.11 N20_ Highest Channel



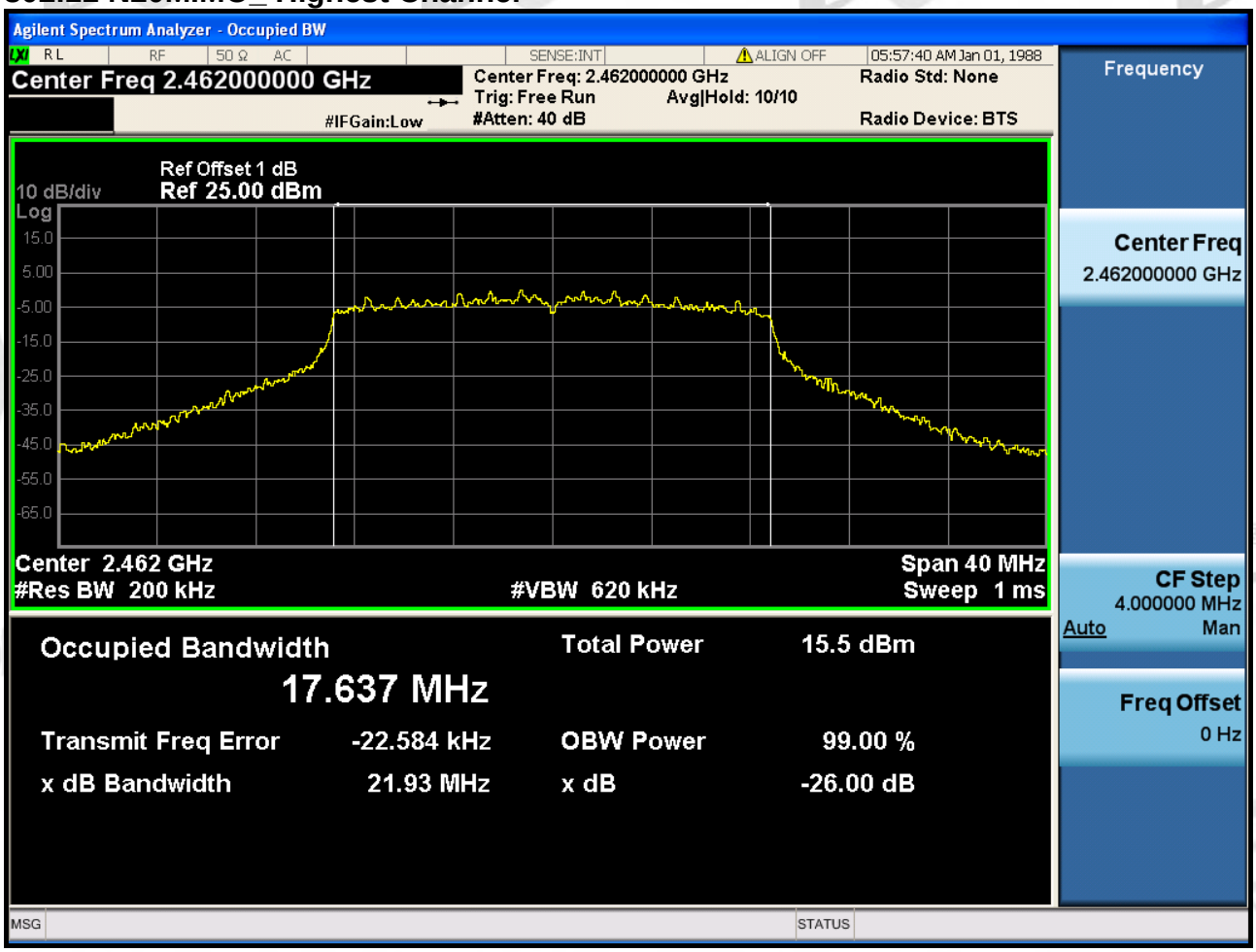
## 802.11N20MIMO_Lowest Channel



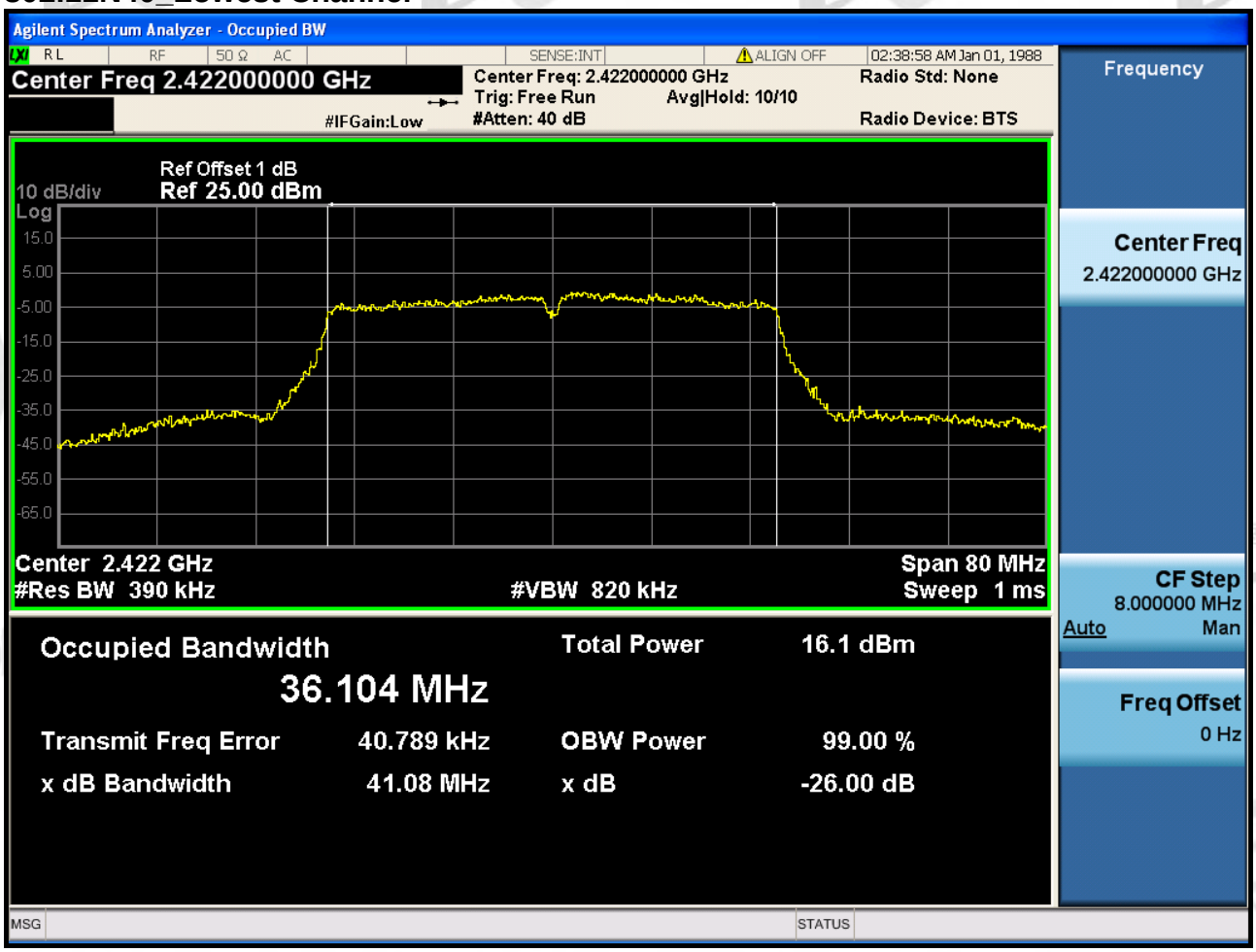
## 802.11 N20MIMO_ Middle Channel



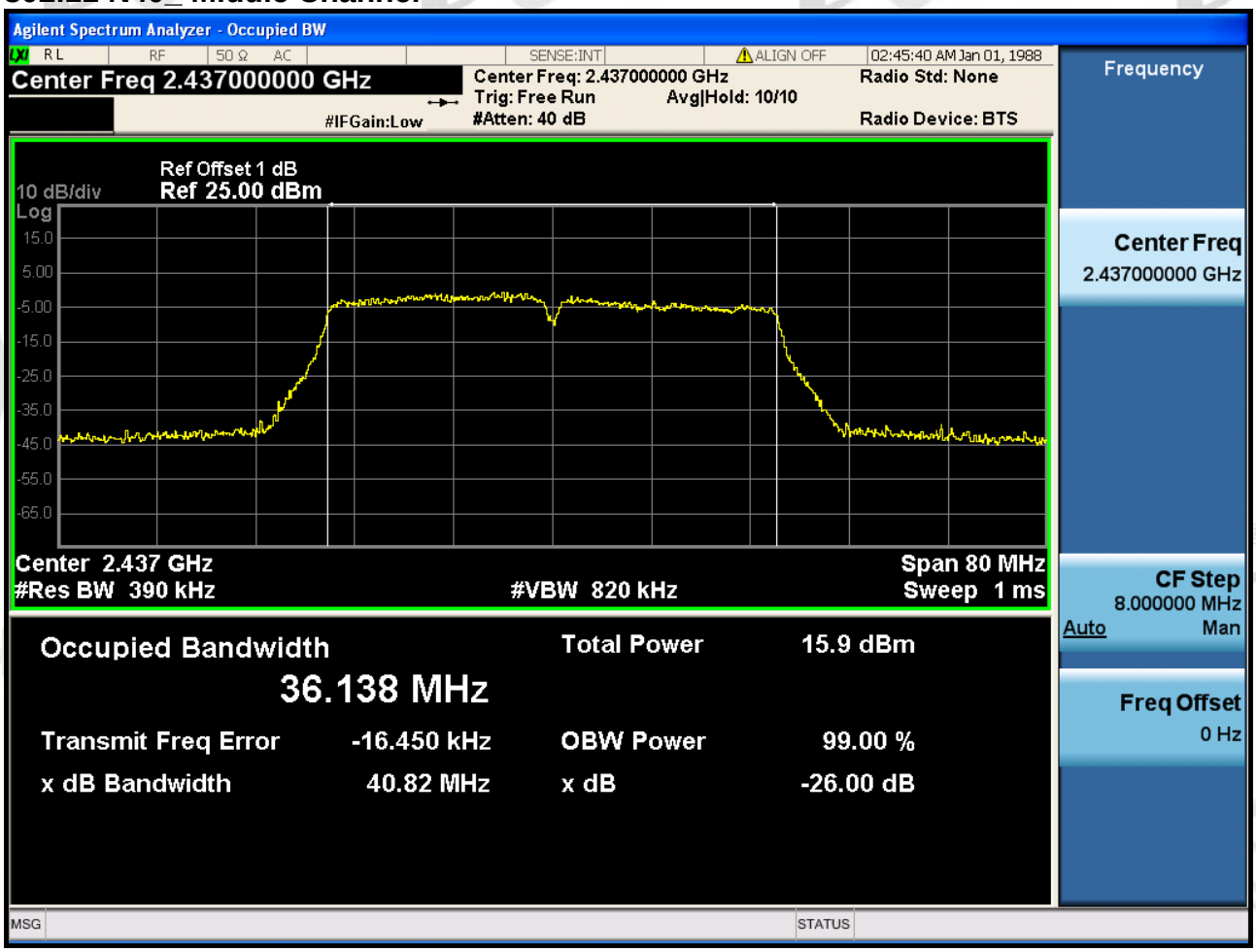
## 802.11 N20MIMO_ Highest Channel



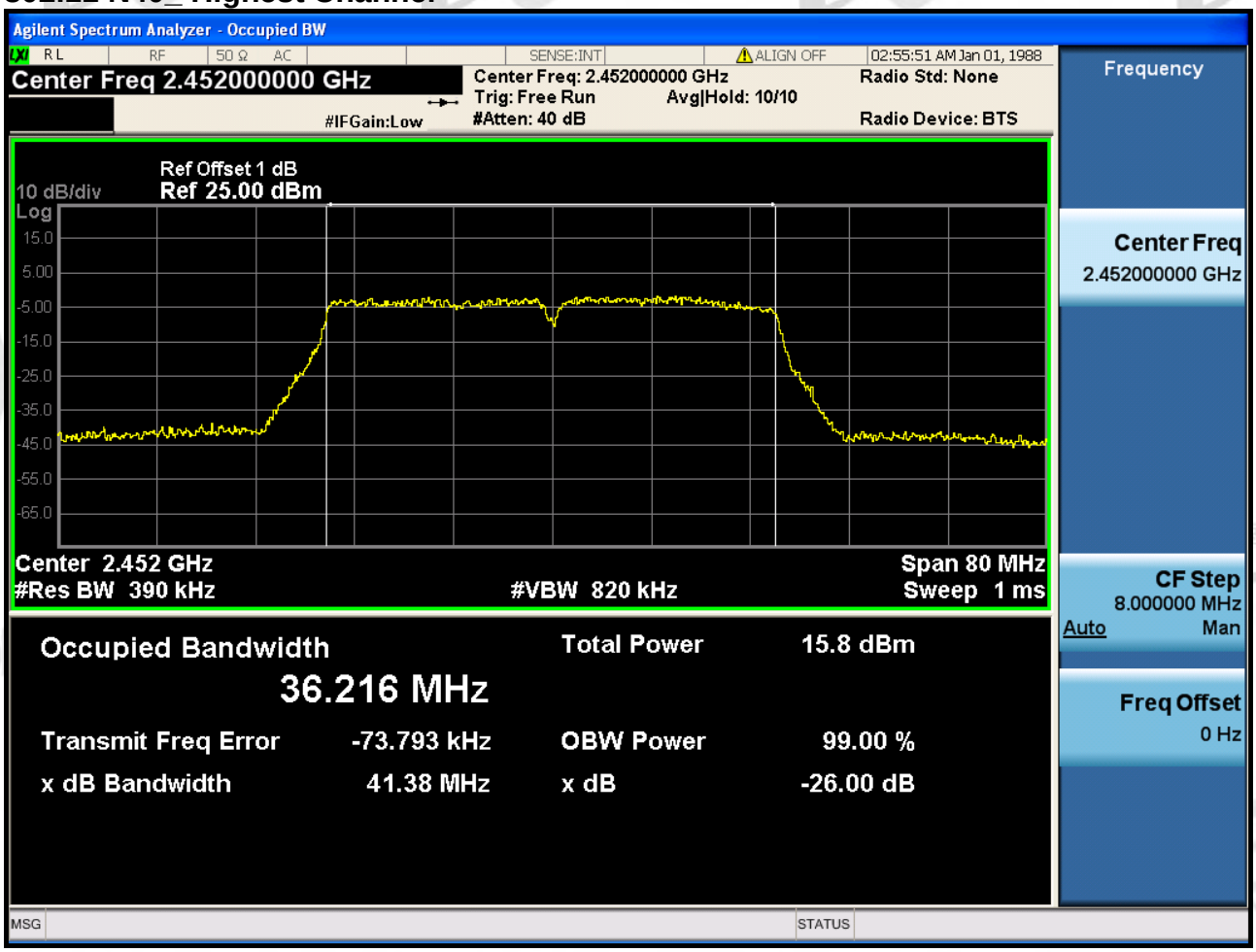
## 802.11N40_Lowest Channel



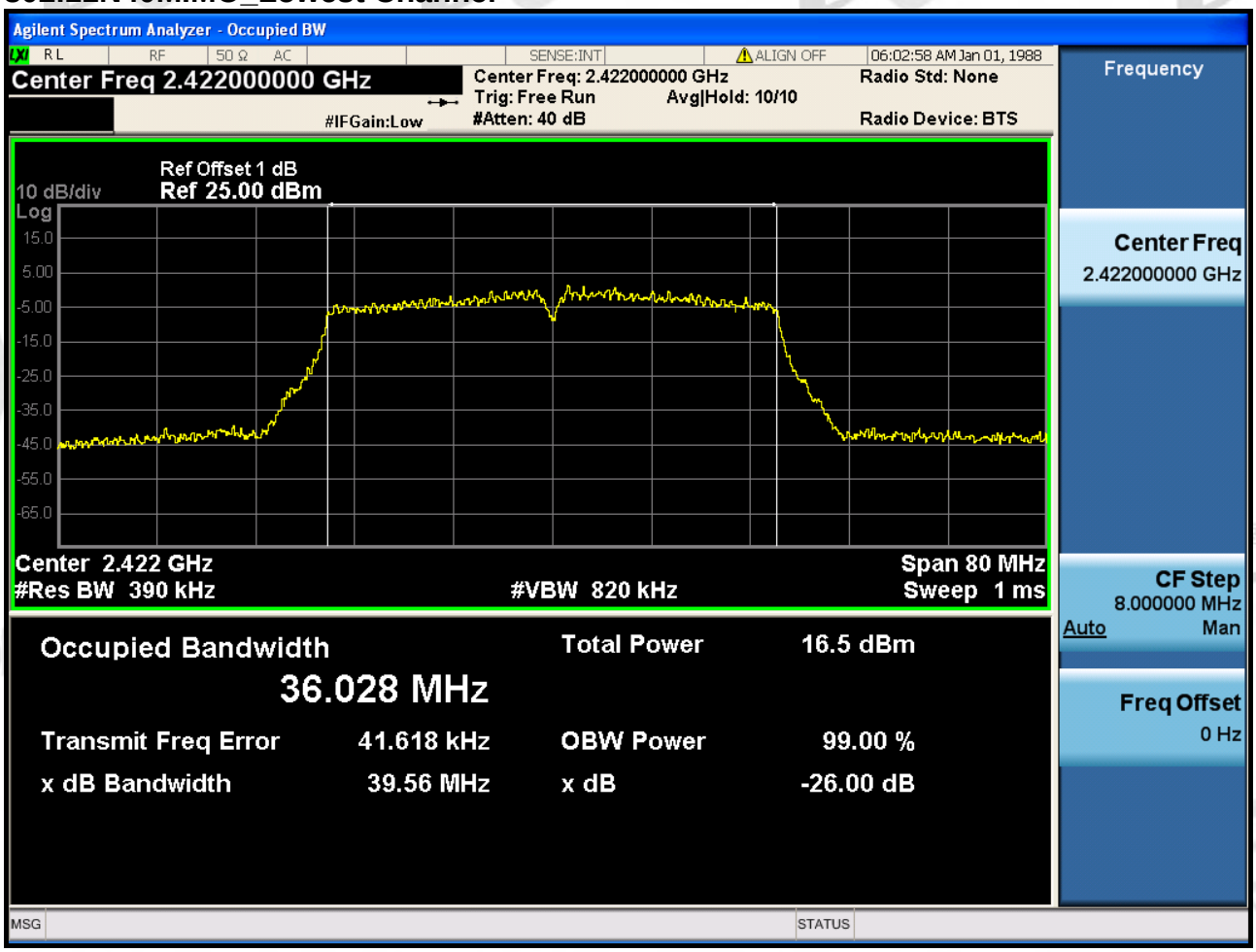
## 802.11 N40_ Middle Channel



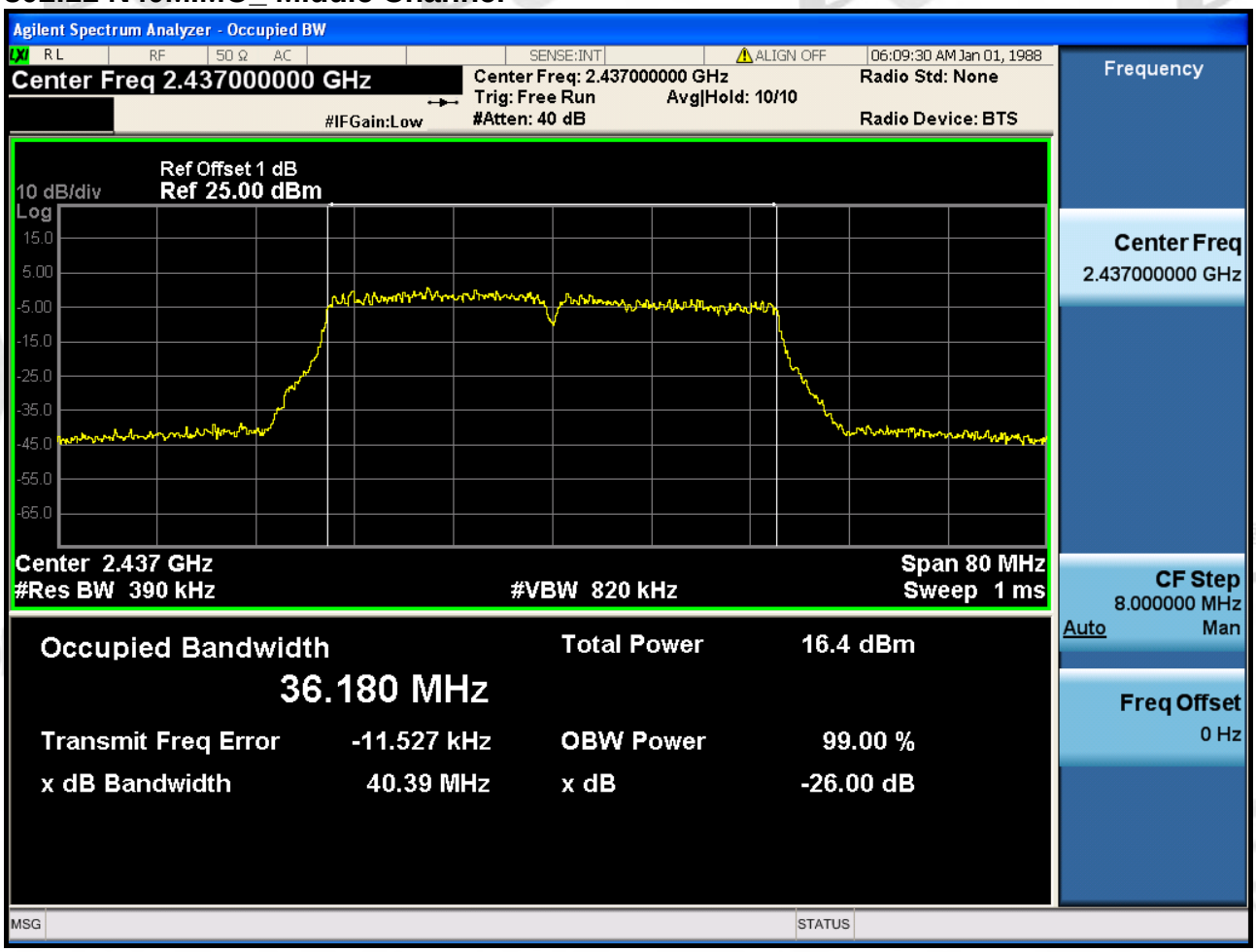
## 802.11 N40_ Highest Channel



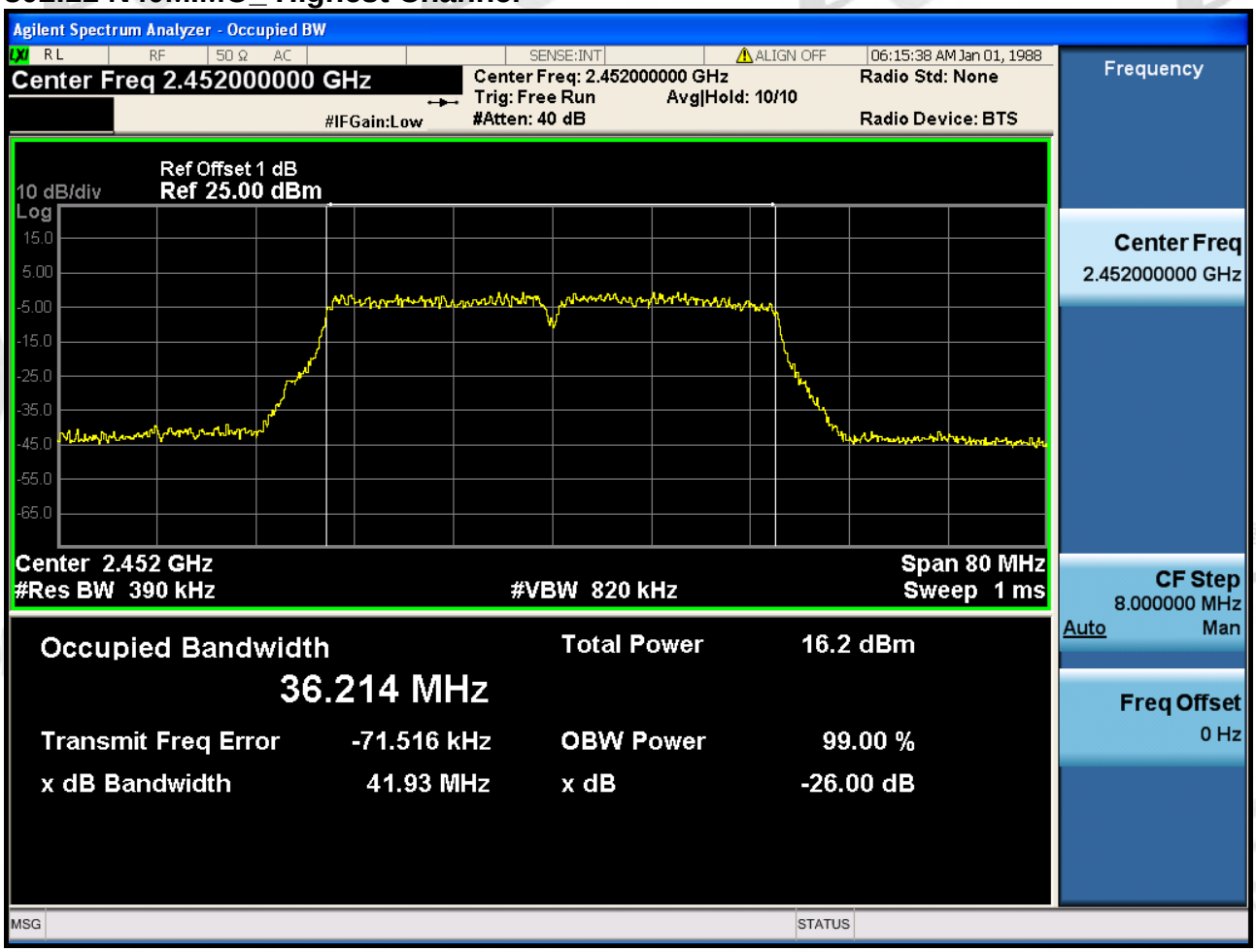
## 802.11N40MIMO_Lowest Channel



## 802.11 N40MIMO_ Middle Channel



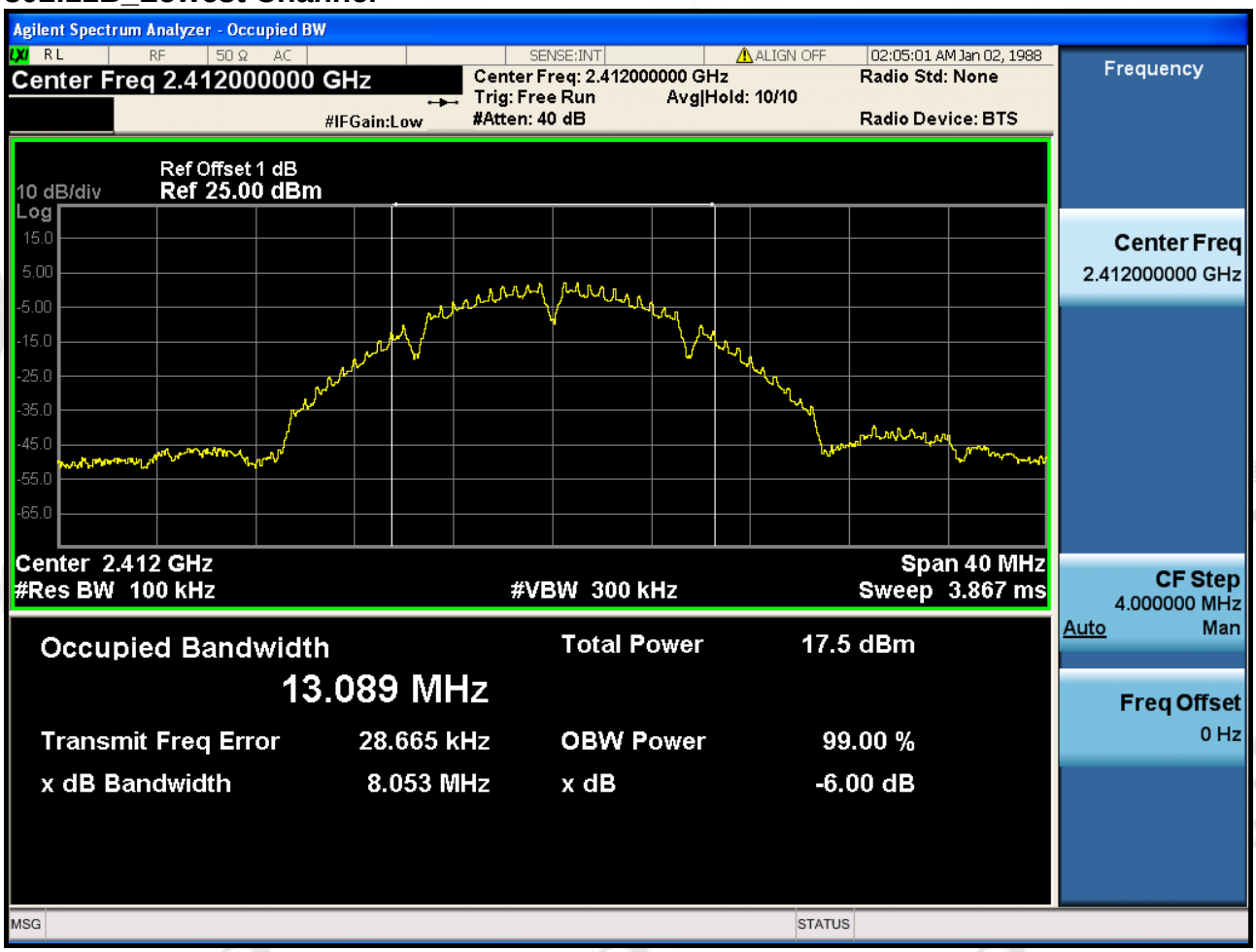
## 802.11 N40MIMO_ Highest Channel



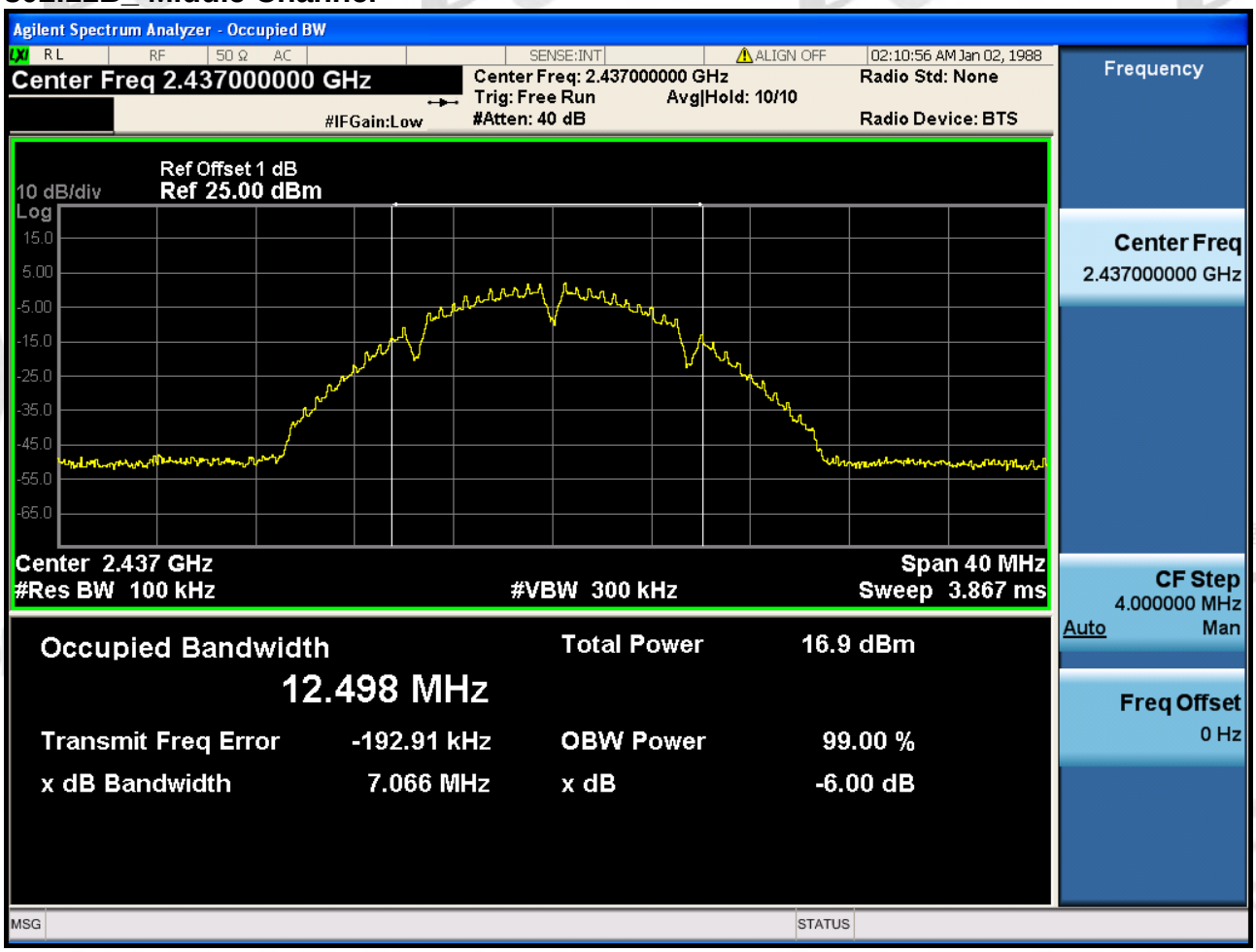
## Test plots For 6dB Emission Bandwidth

### ANT1

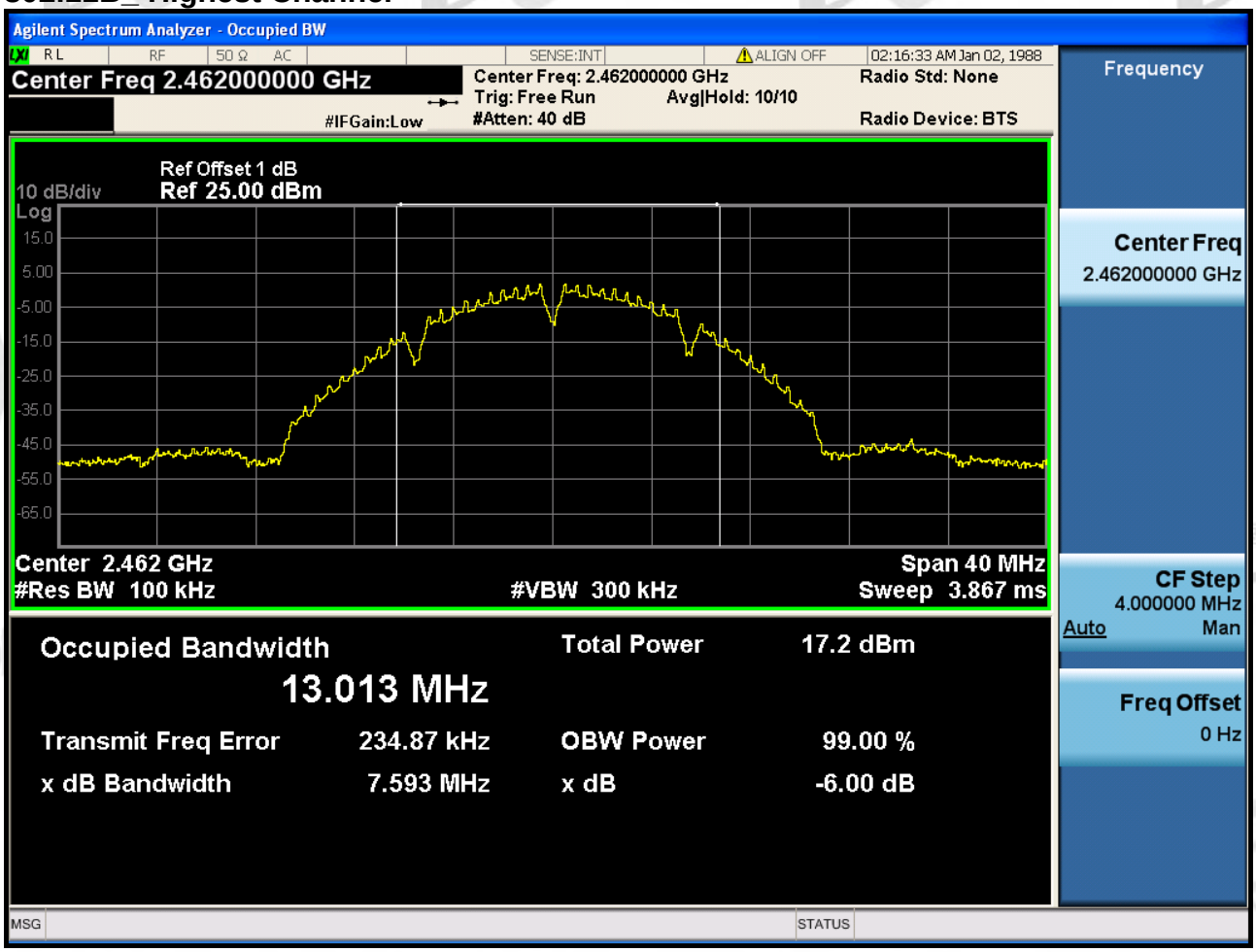
### 802.11B_Lowest Channel



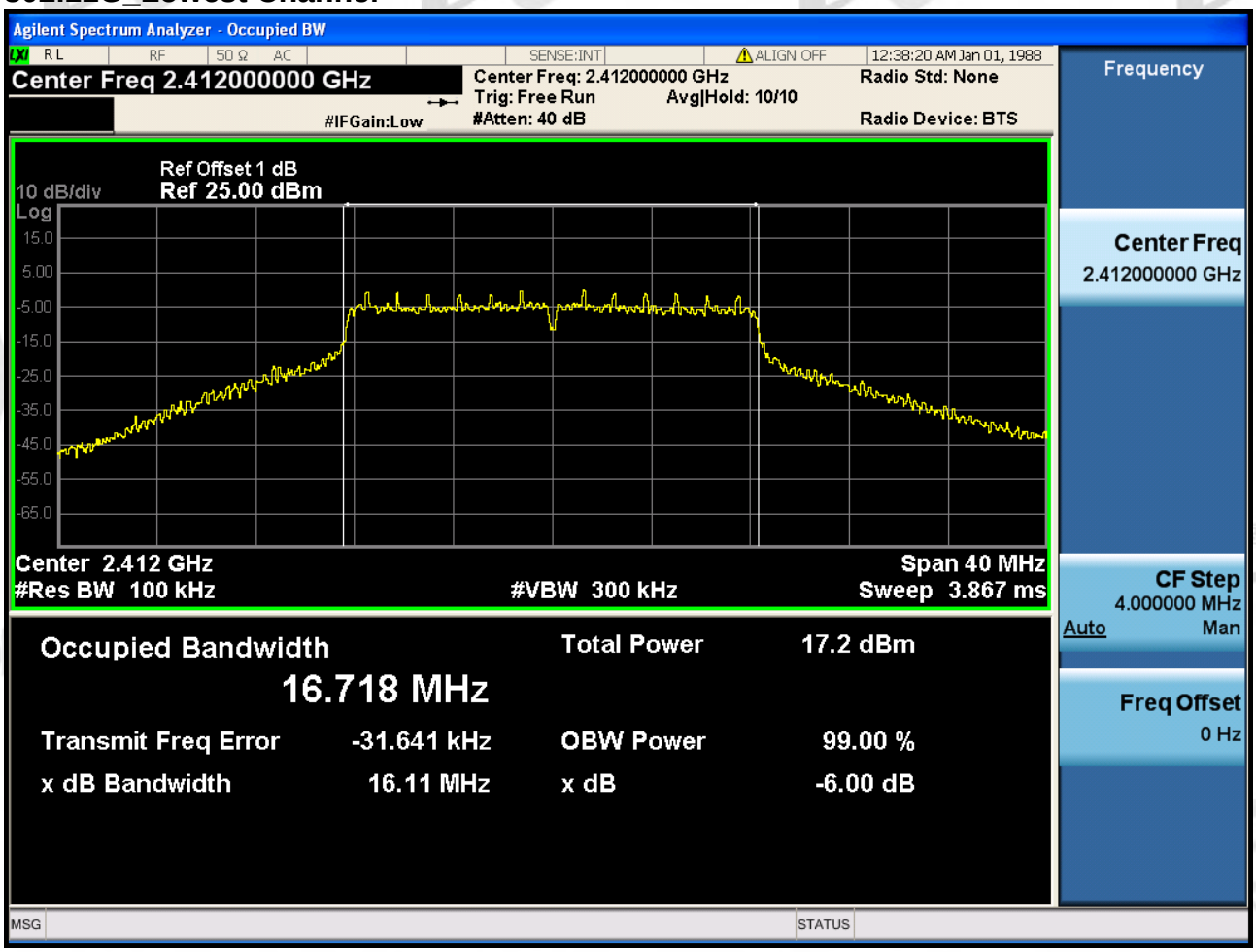
## 802.11B_ Middle Channel



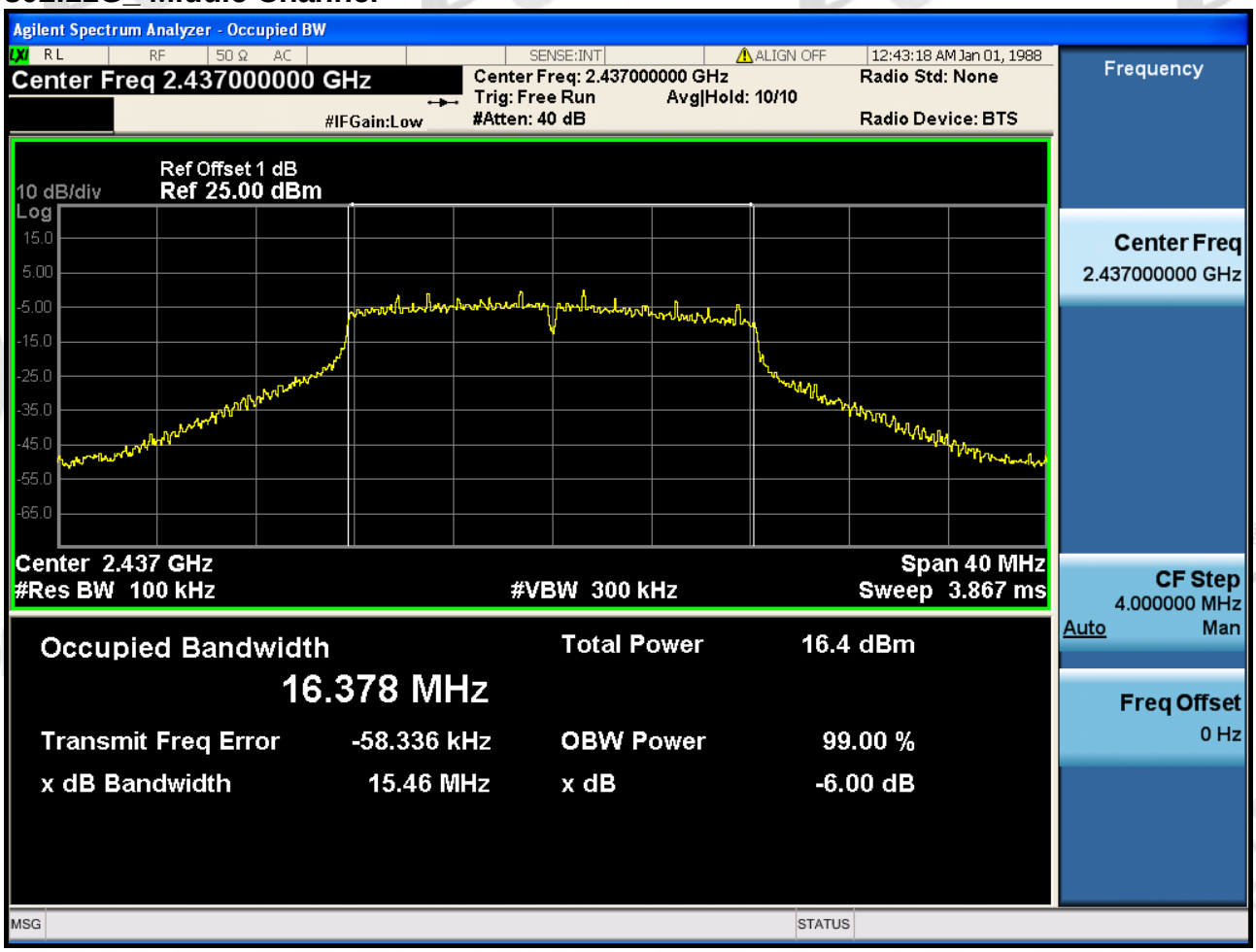
## 802.11B_ Highest Channel



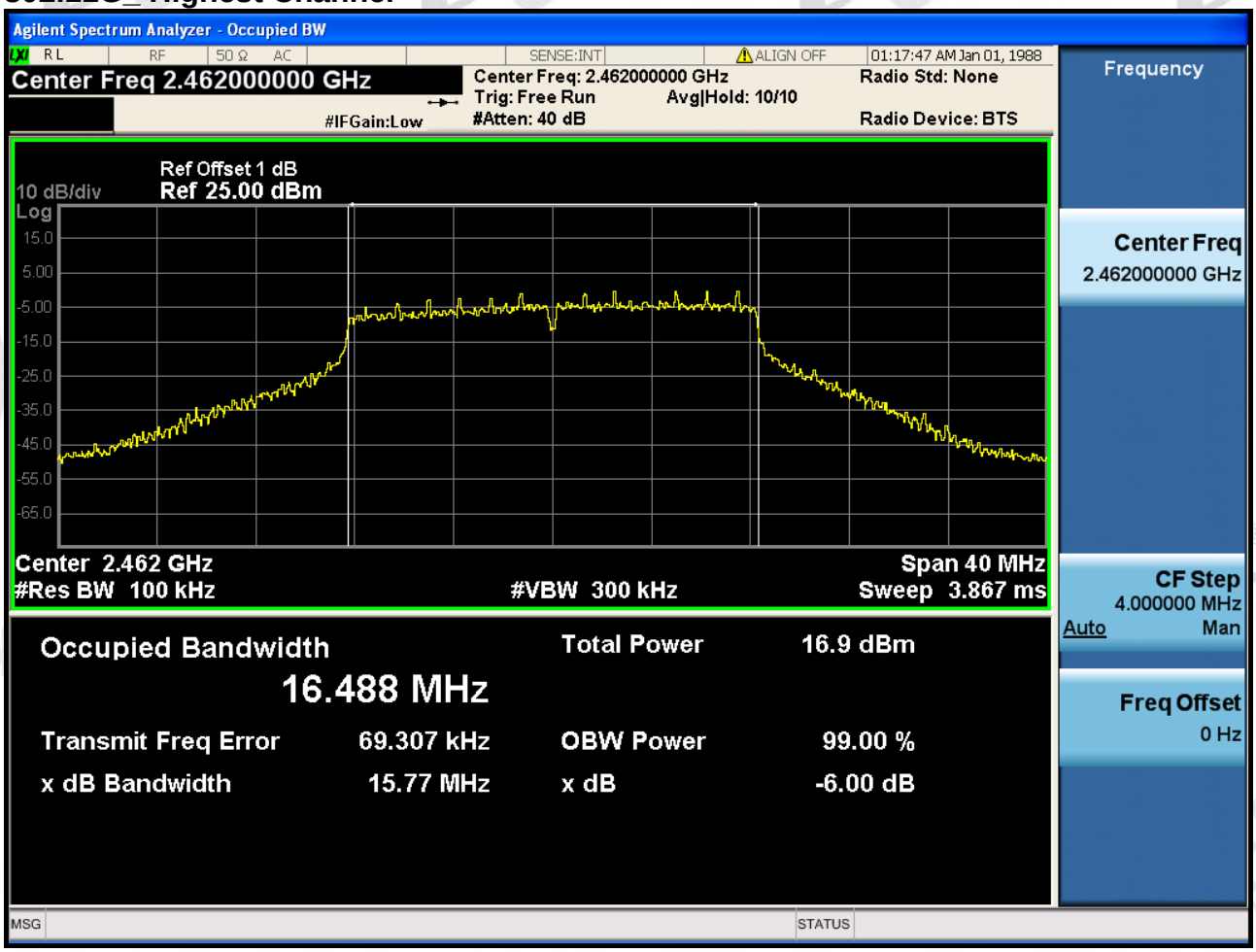
## 802.11G_Lowest Channel



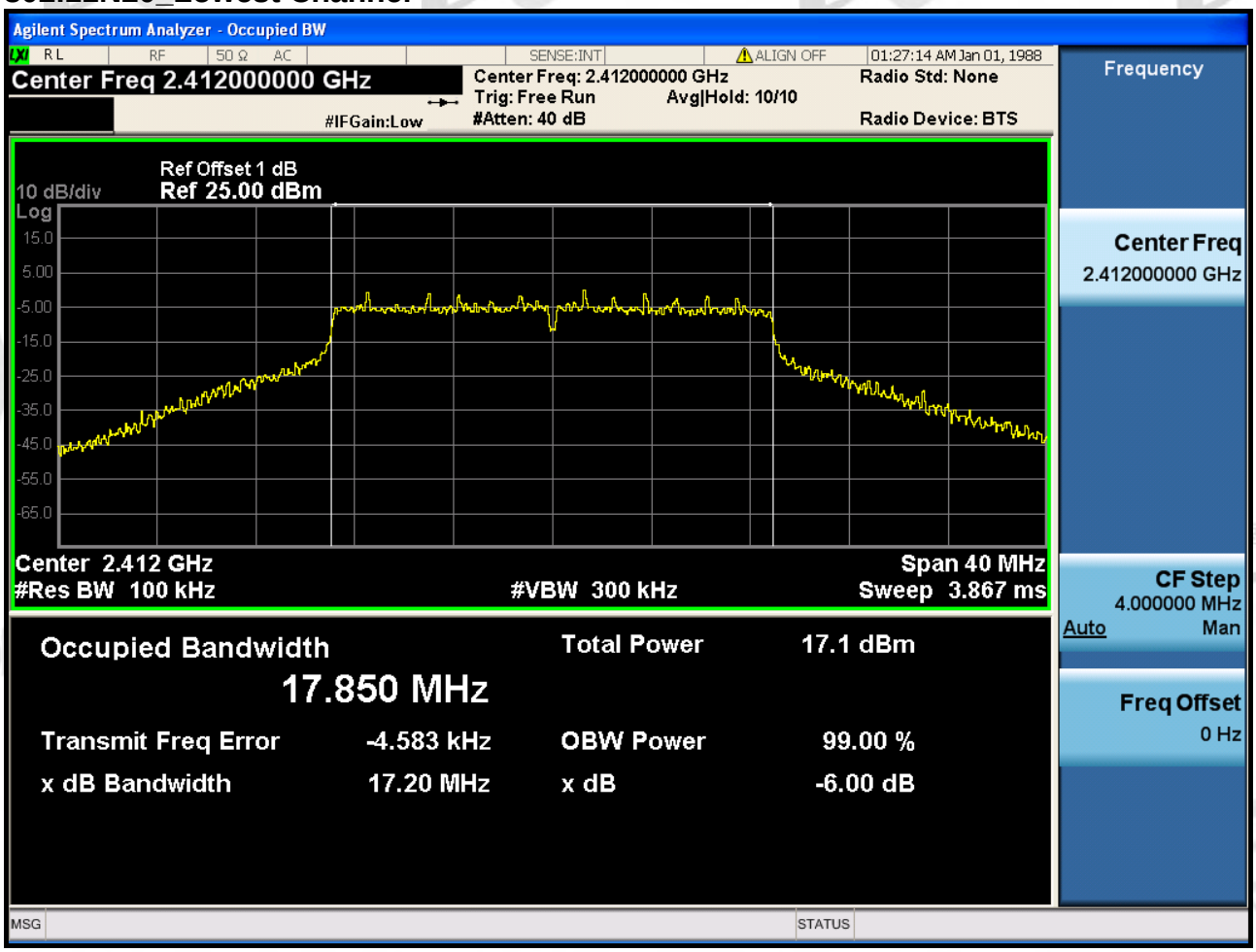
## 802.11G_ Middle Channel



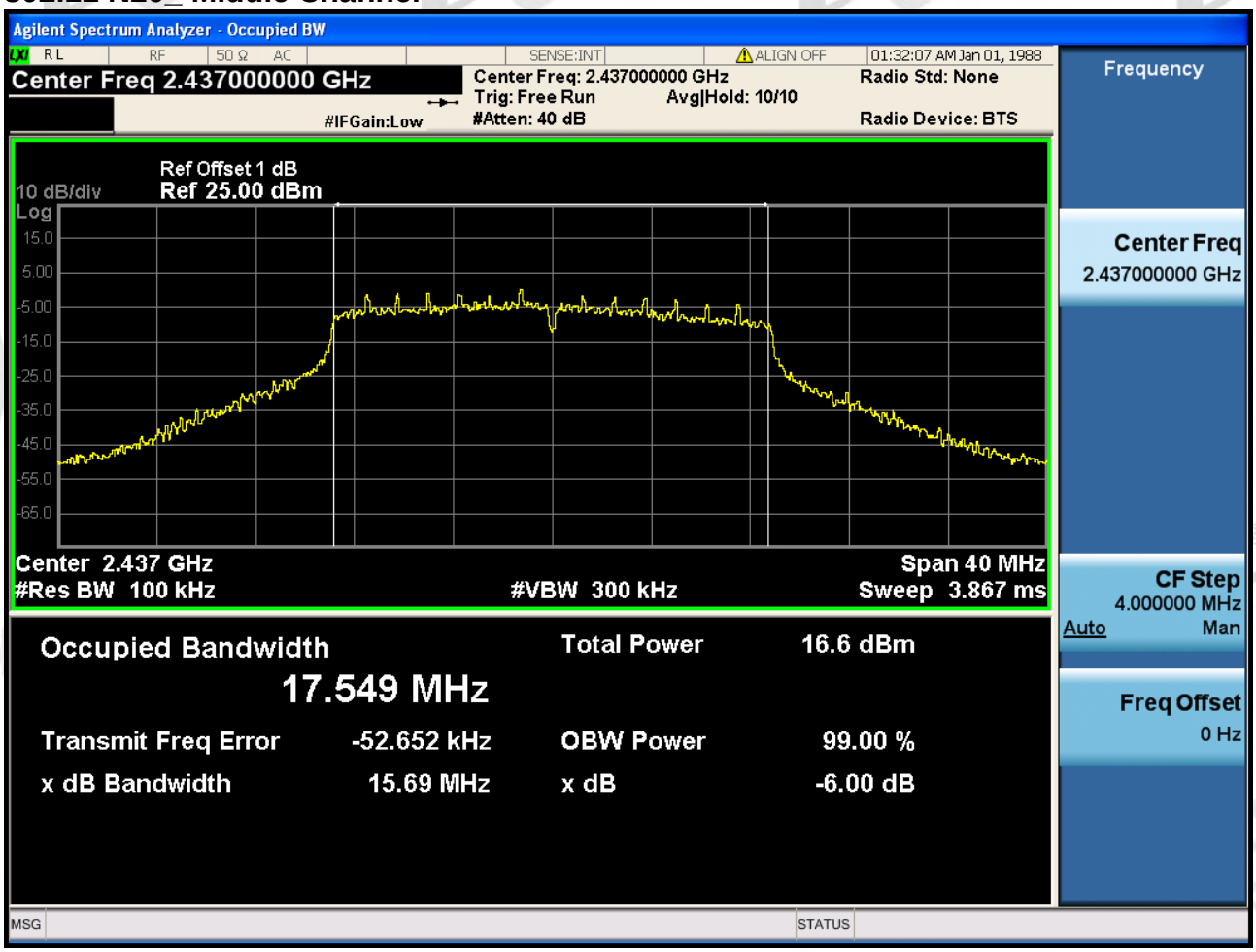
## 802.11G_ Highest Channel



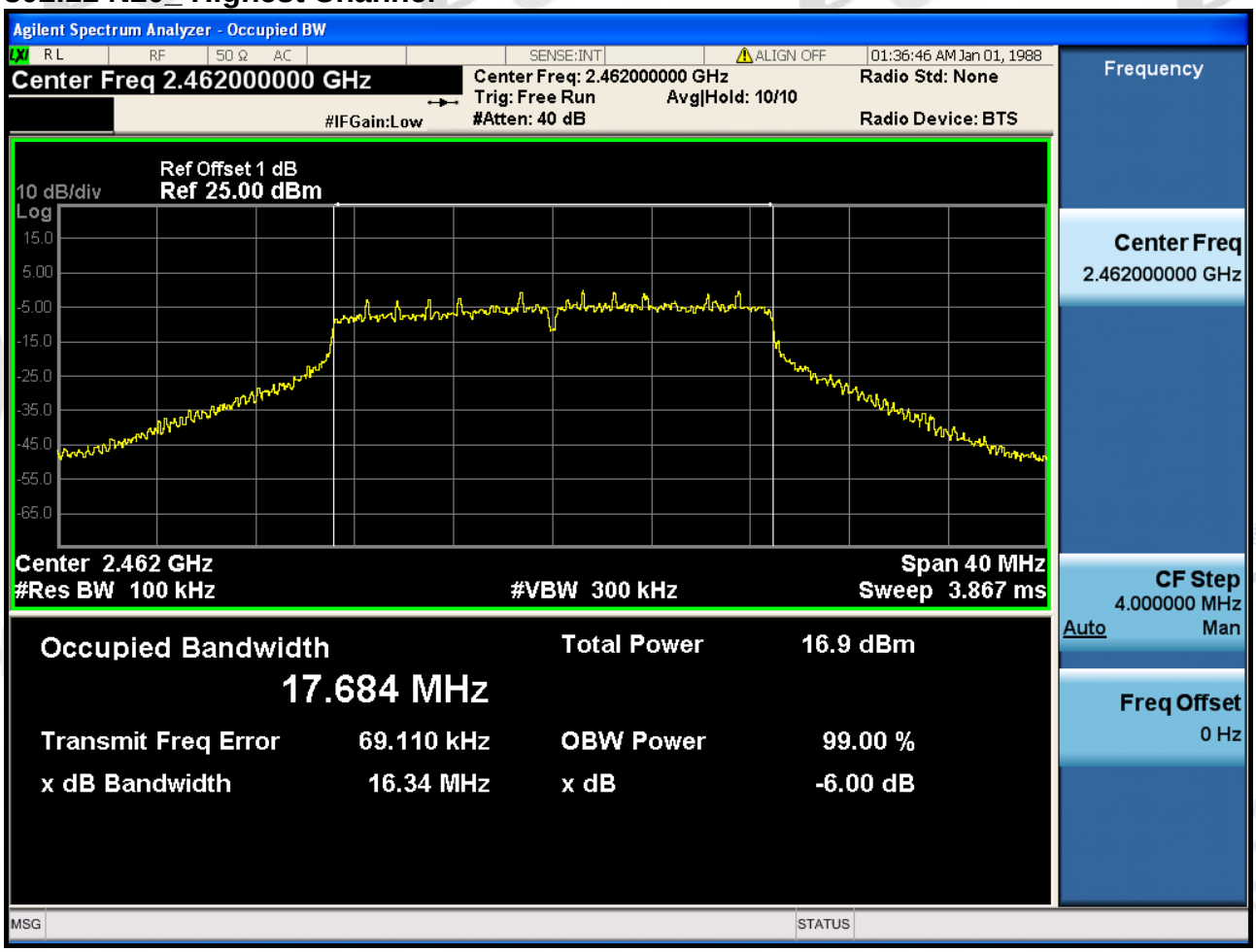
## 802.11N20_Lowest Channel



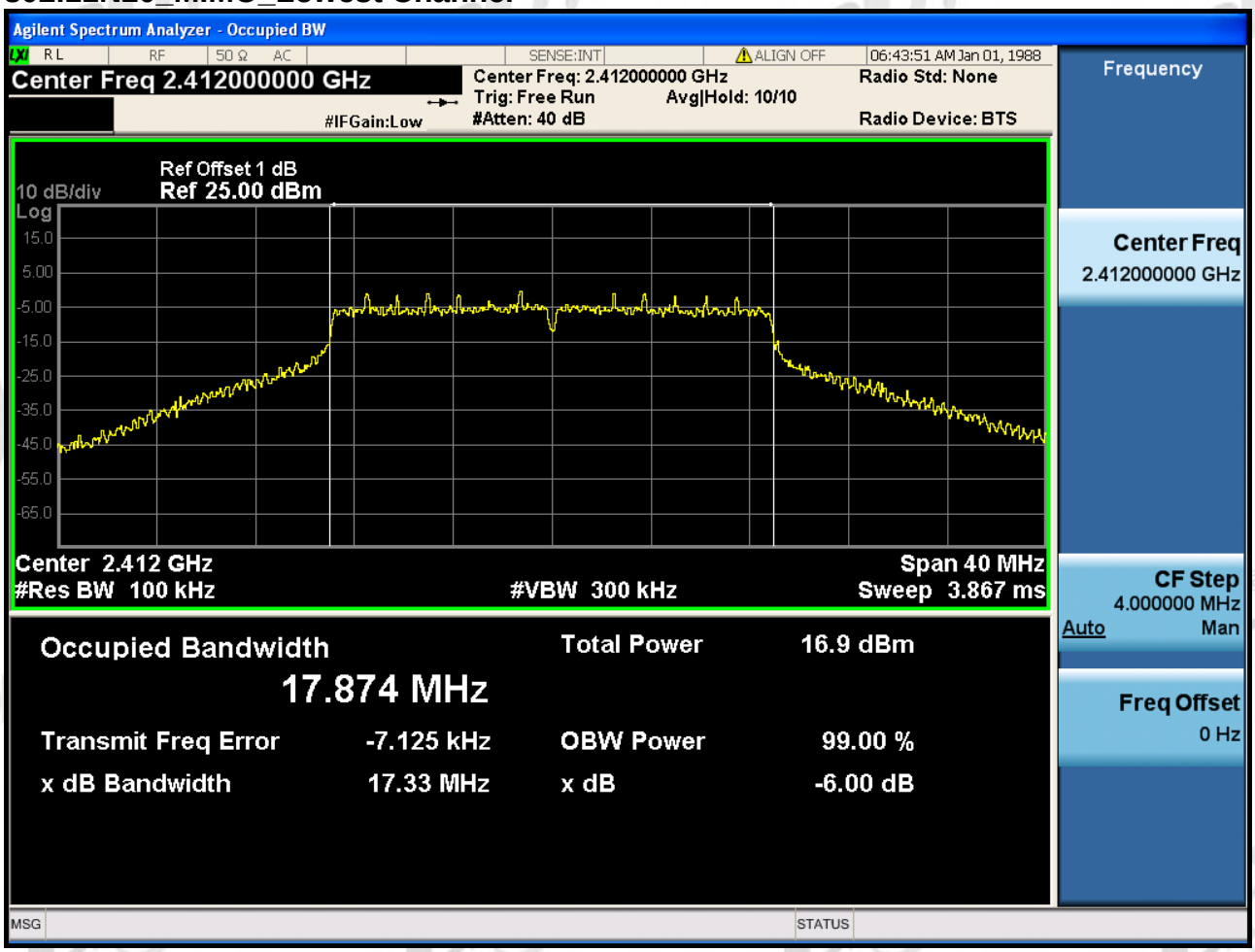
## 802.11 N20_ Middle Channel



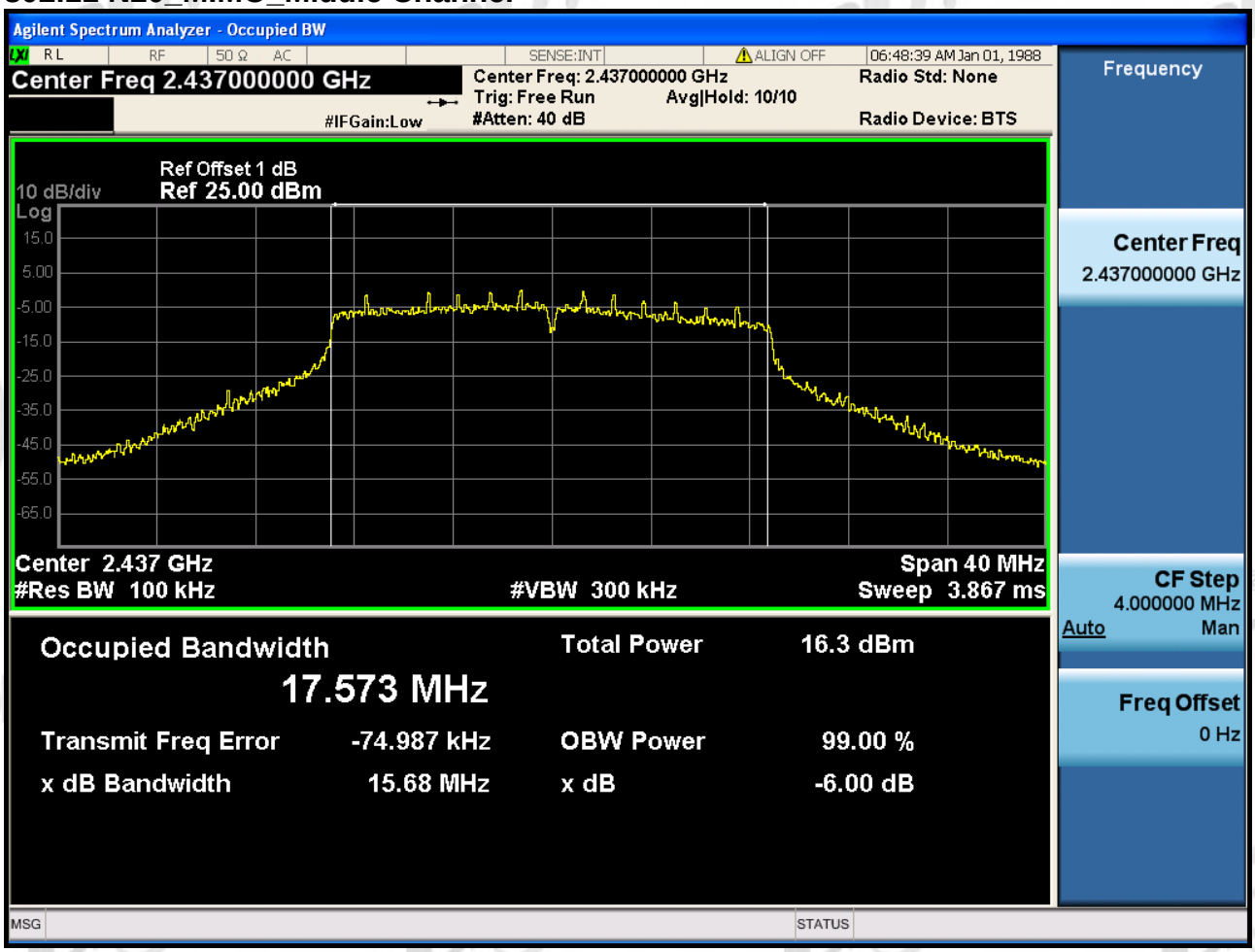
## 802.11 N20_ Highest Channel



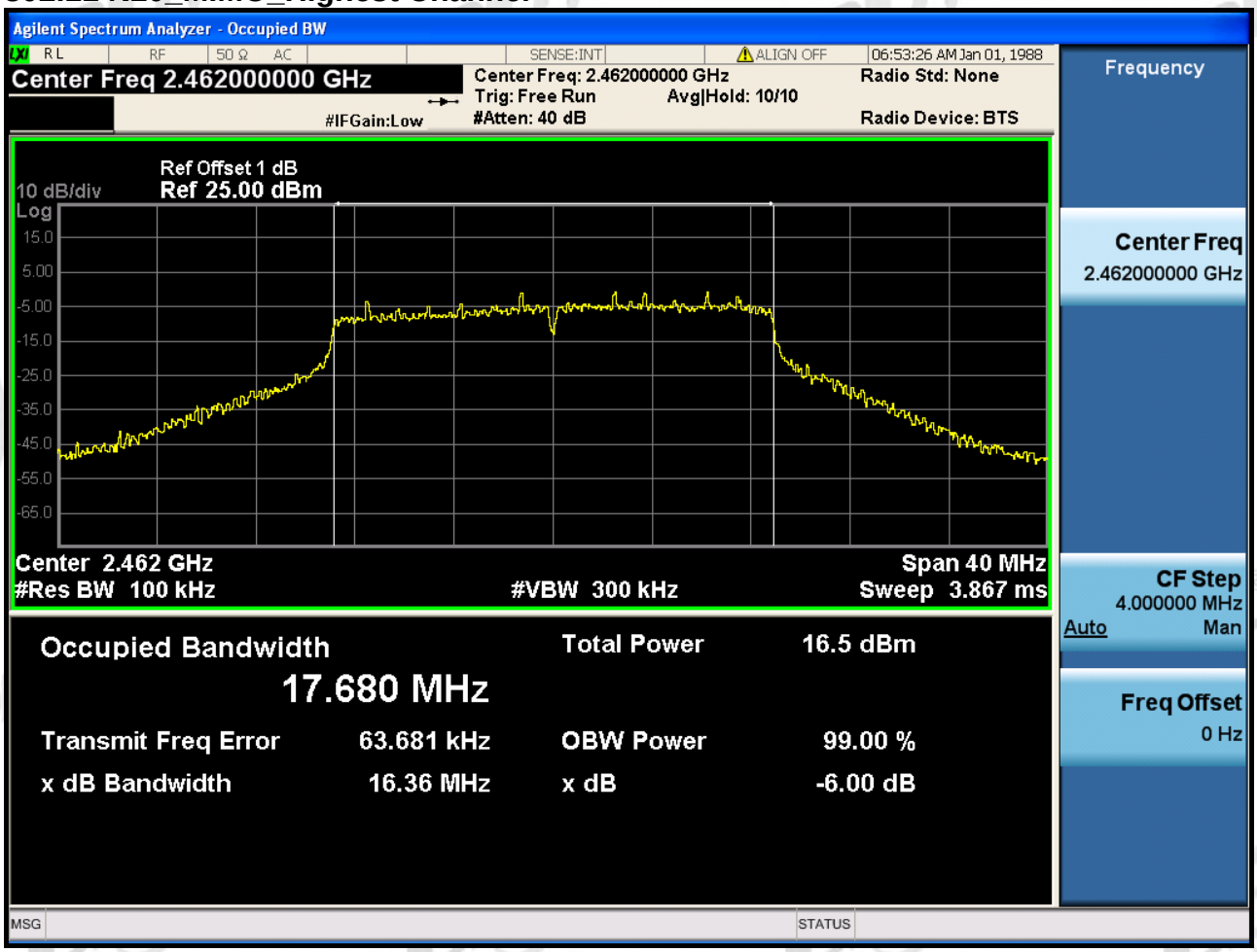
## 802.11N20_MIMO_Lowest Channel



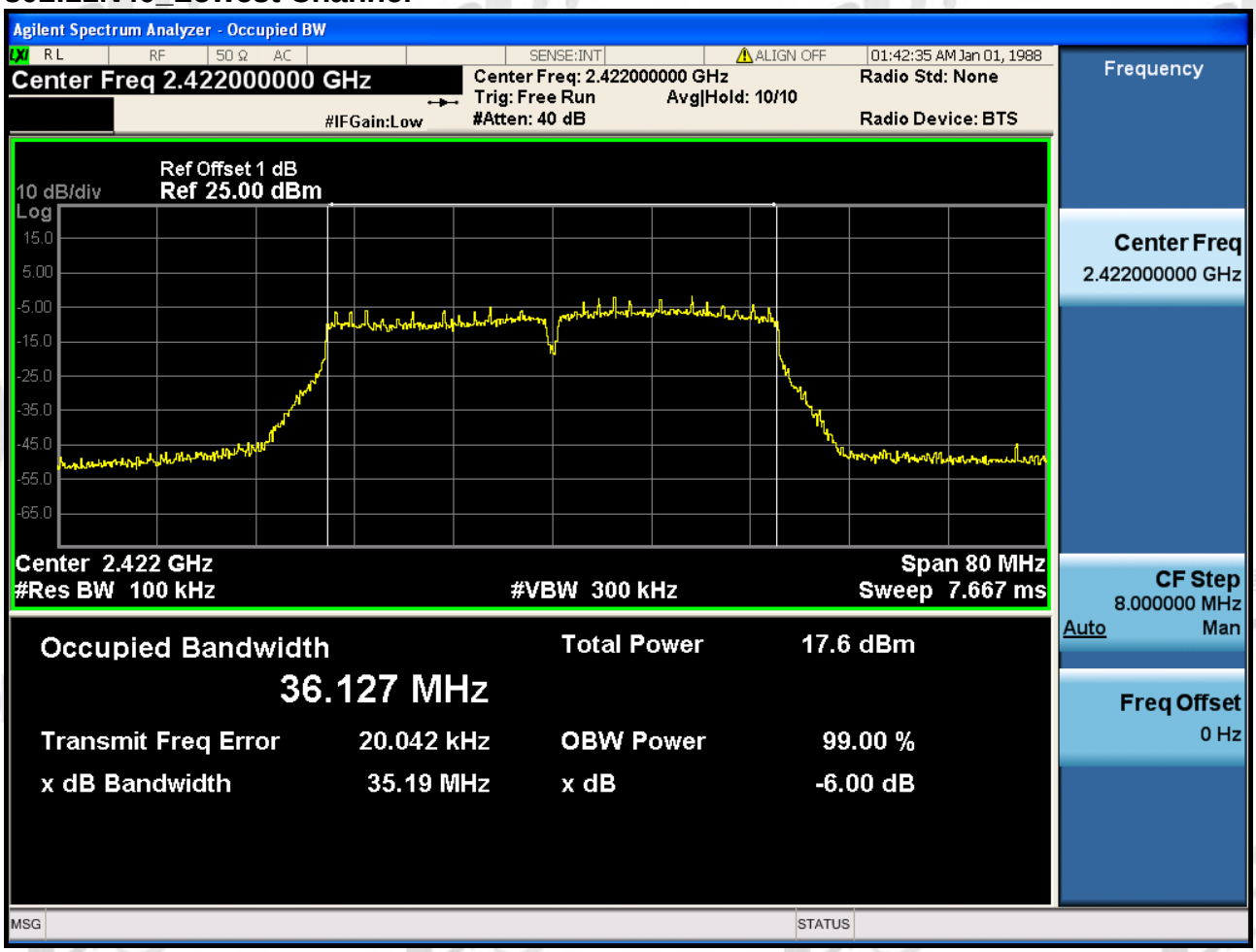
## 802.11 N20_MIMO_Middle Channel



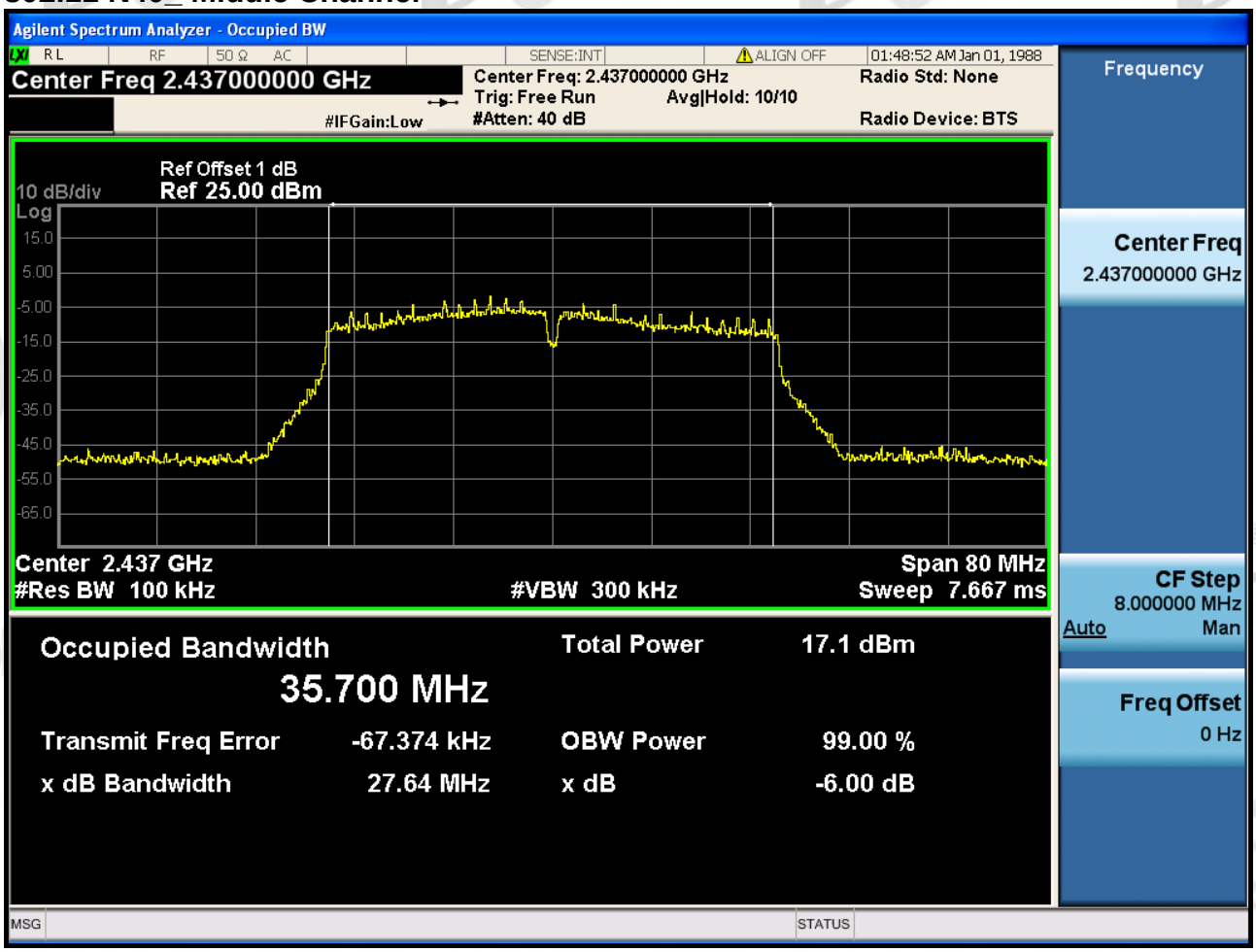
## 802.11 N20_MIMO_Highest Channel



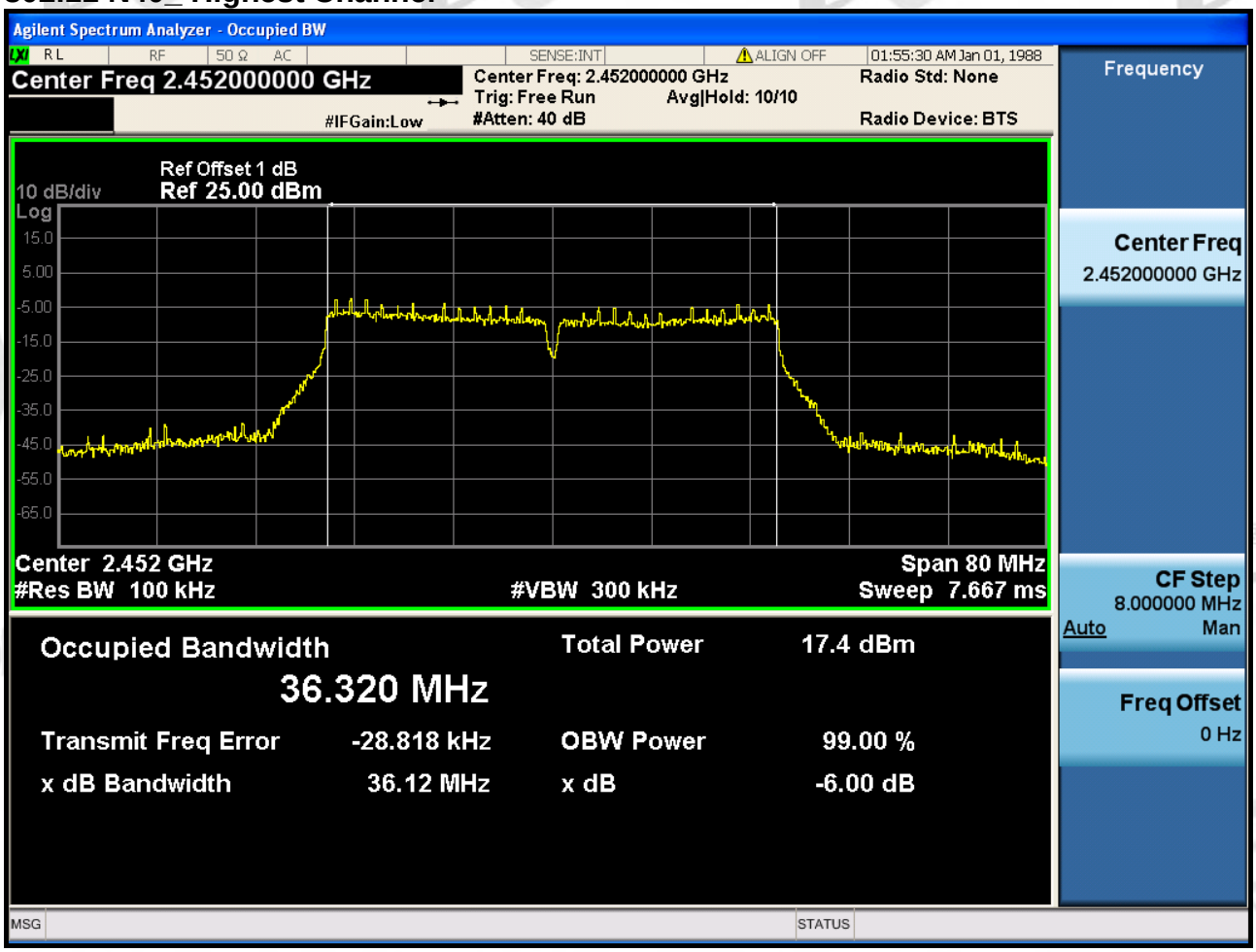
## 802.11N40_Lowest Channel



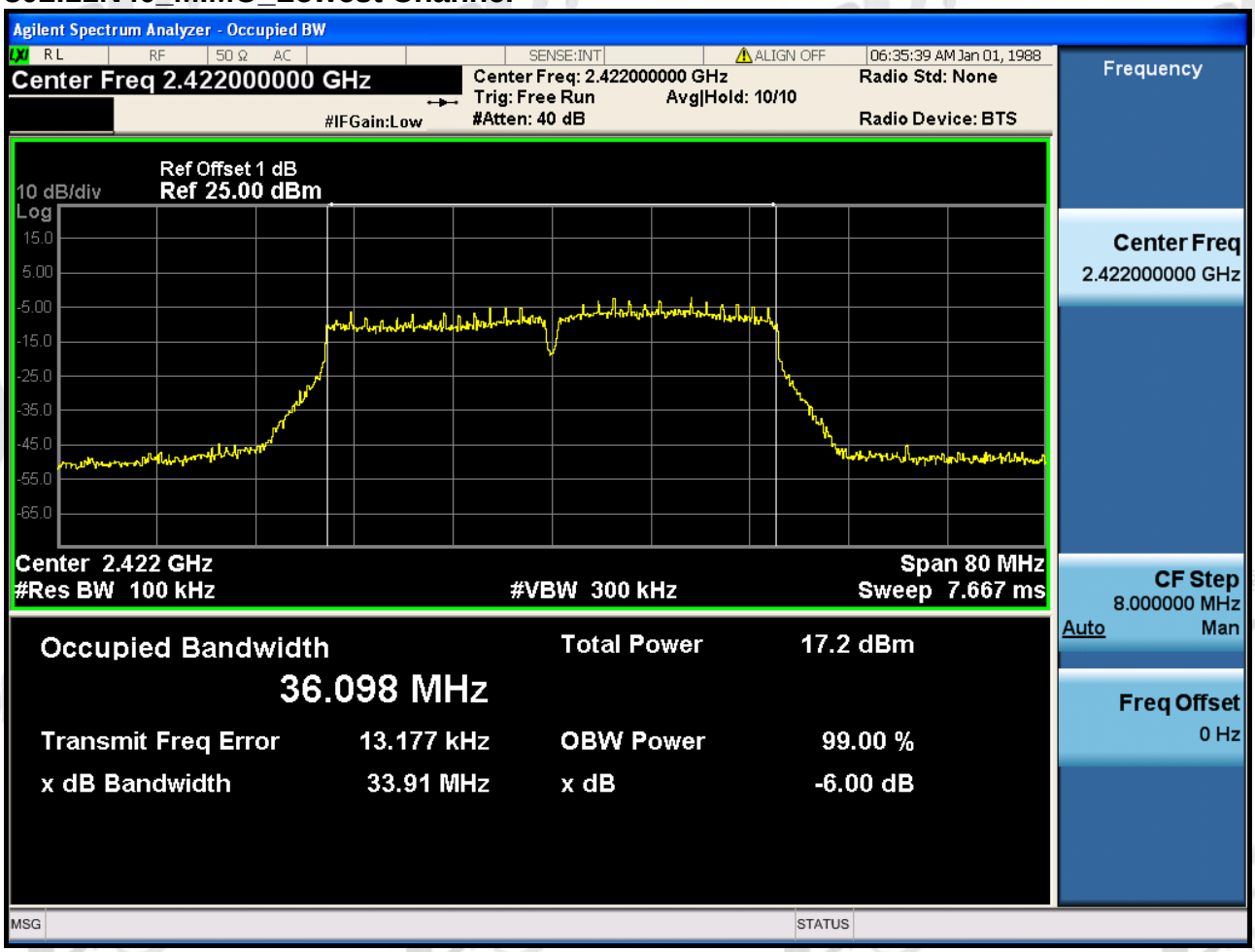
## 802.11 N40_ Middle Channel



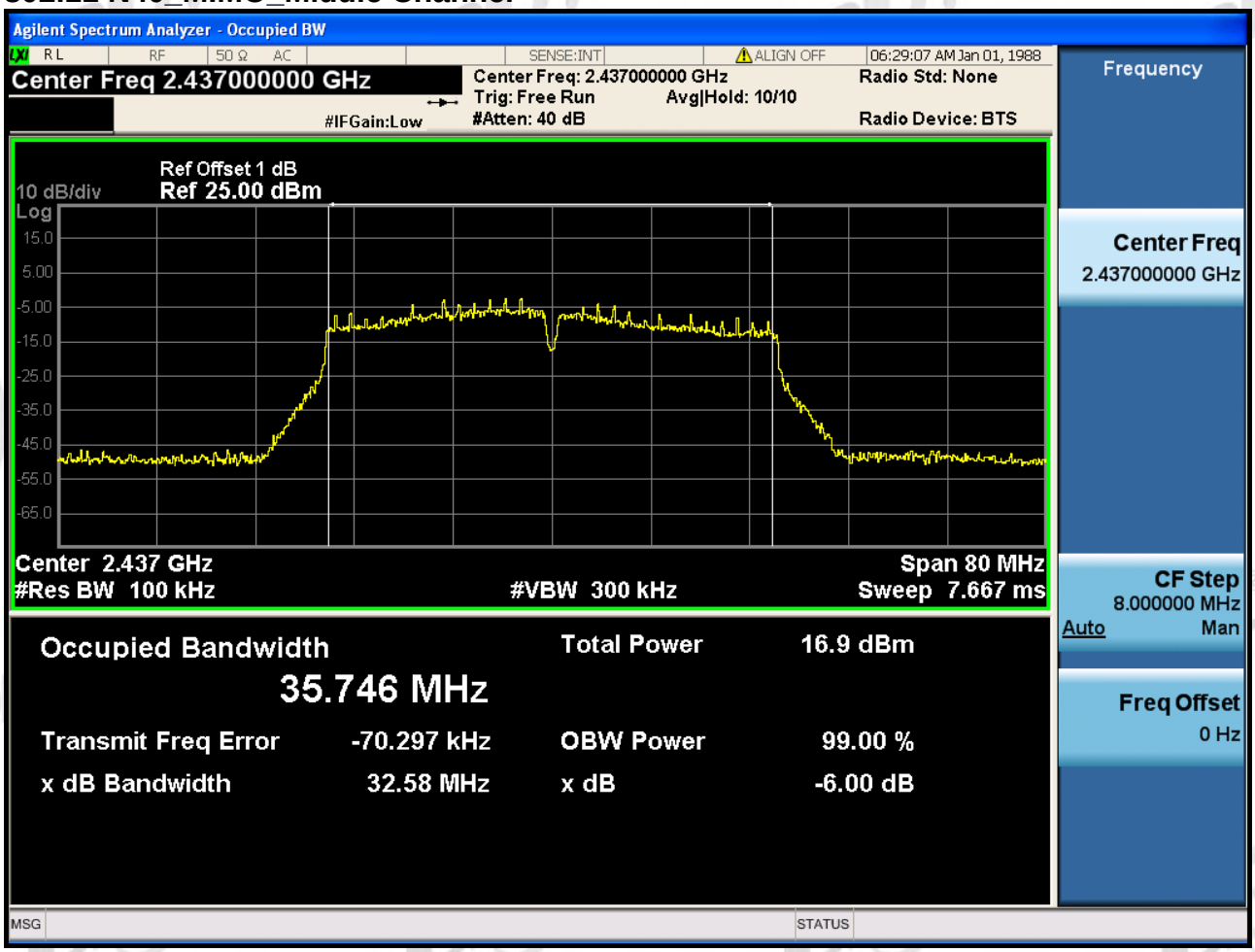
## 802.11 N40_ Highest Channel



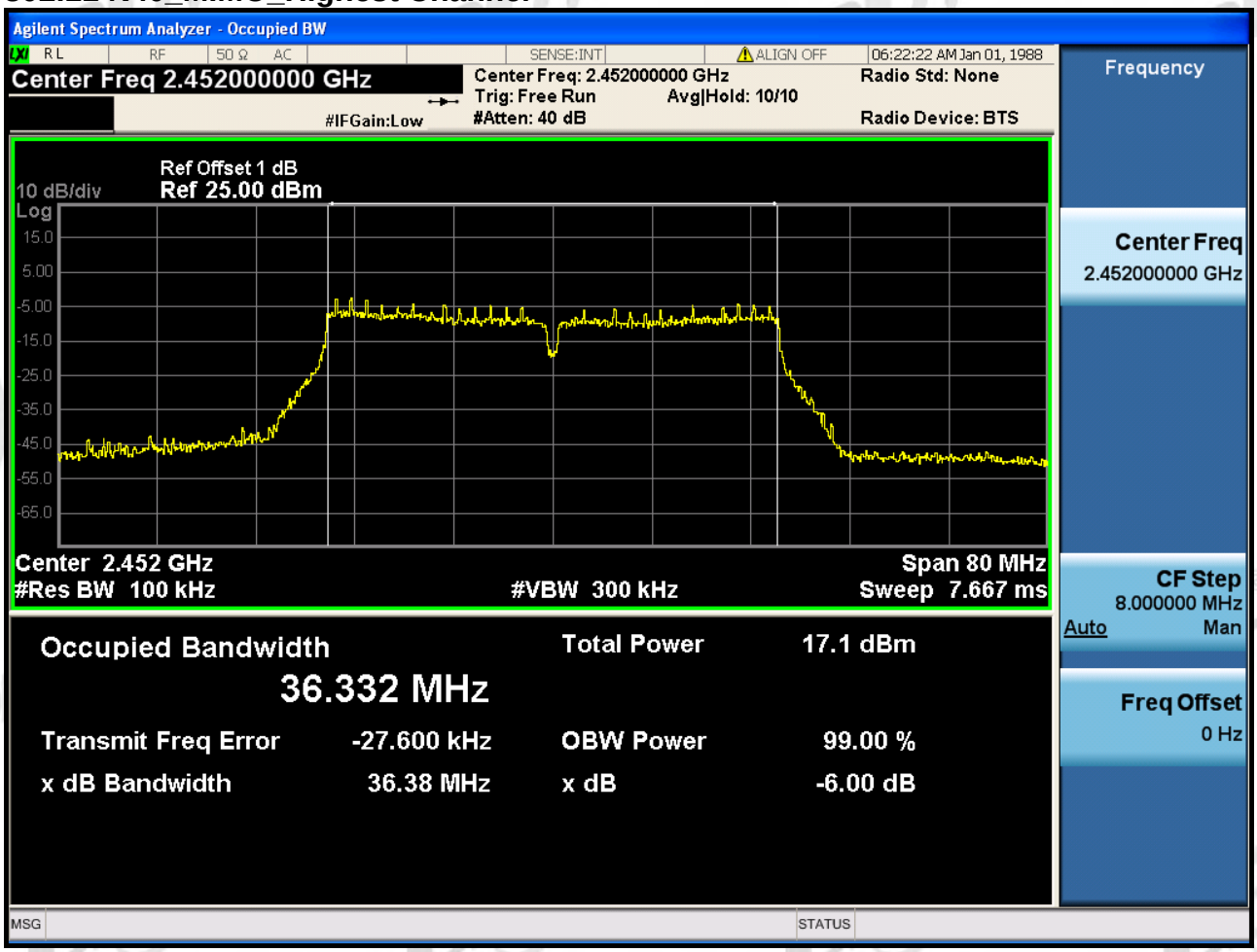
## 802.11N40_MIMO_Lowest Channel



## 802.11 N40_MIMO_Middle Channel

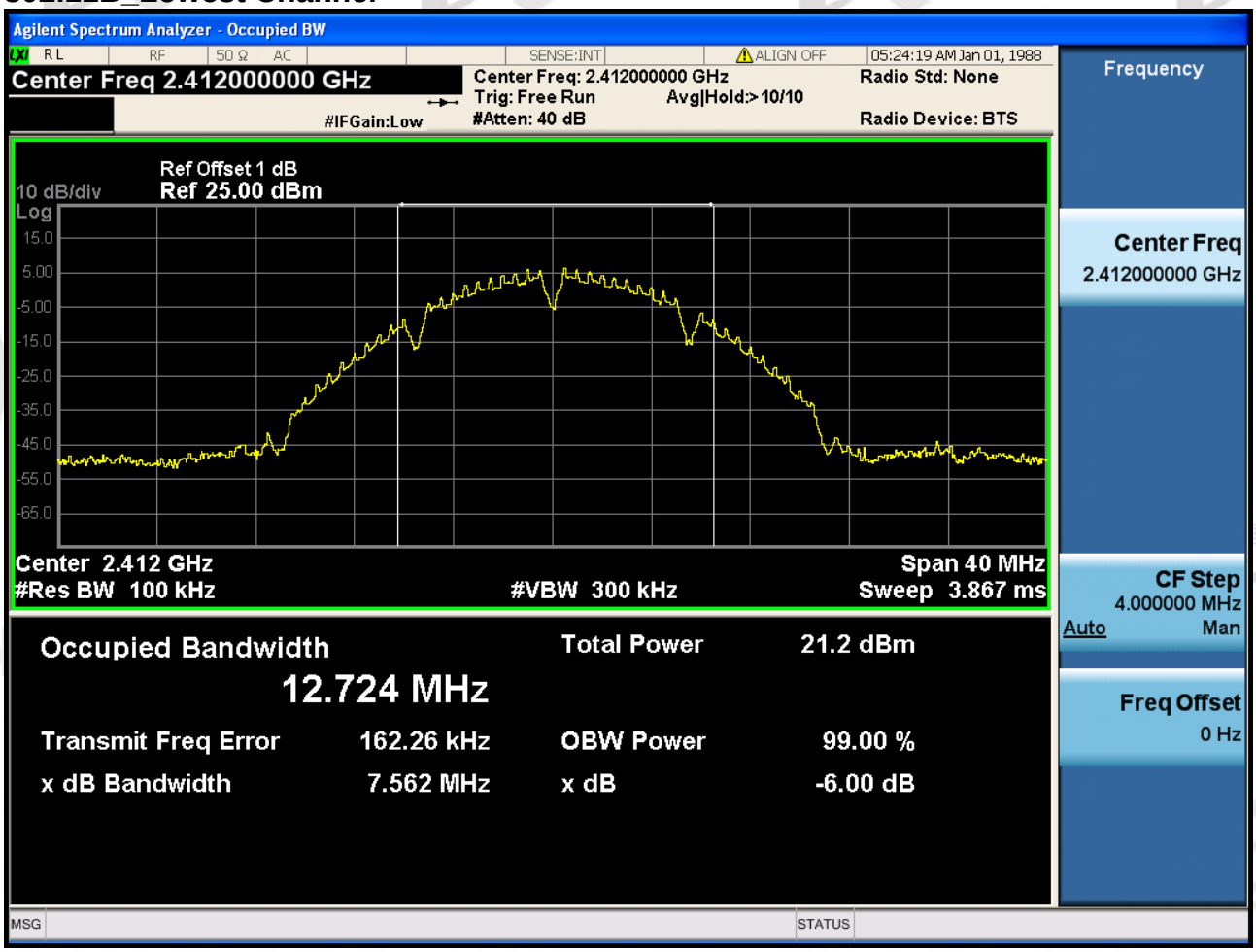


## 802.11 N40_MIMO_Highest Channel

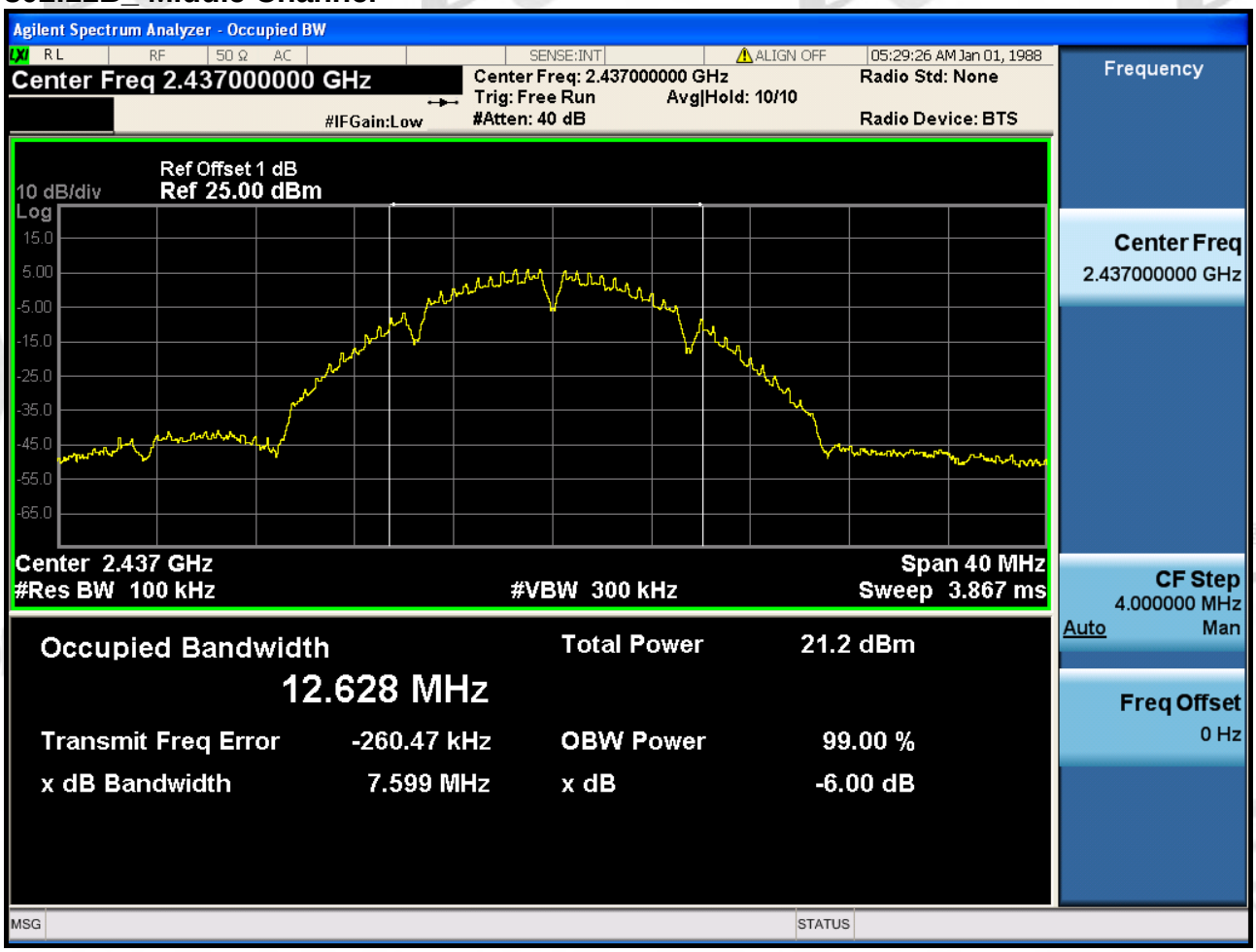


**ANT2**

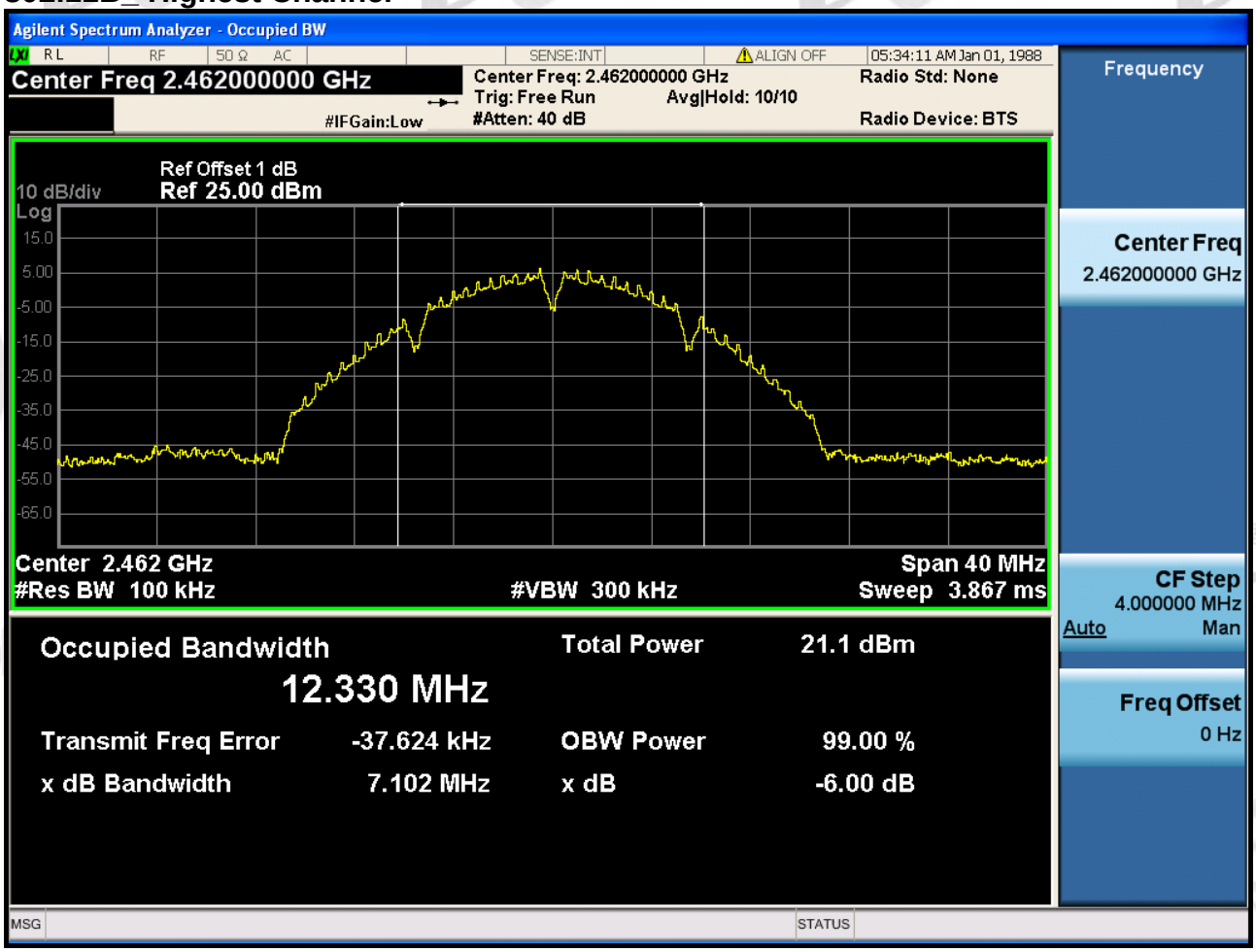
**802.11B_Lowest Channel**



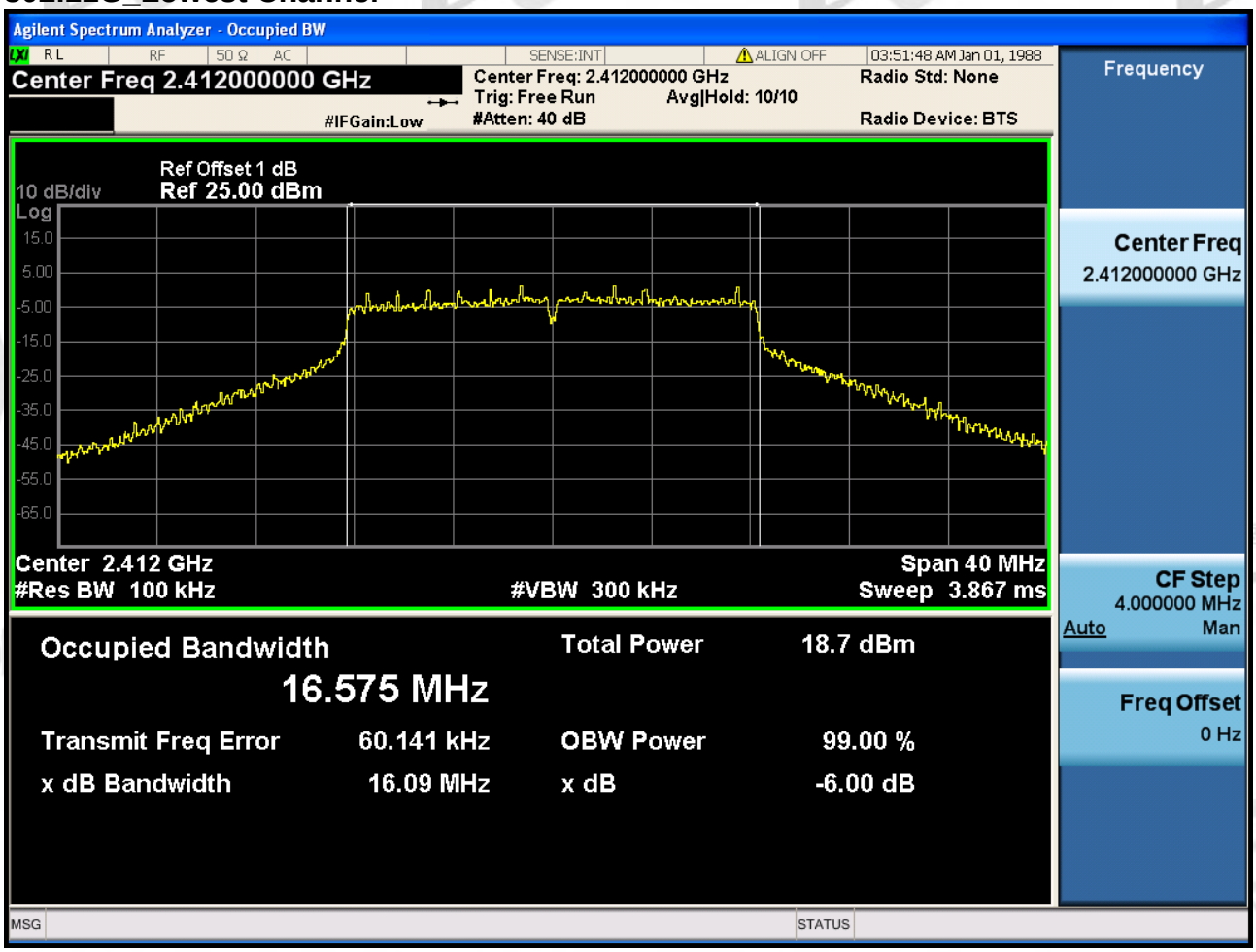
## 802.11B_ Middle Channel



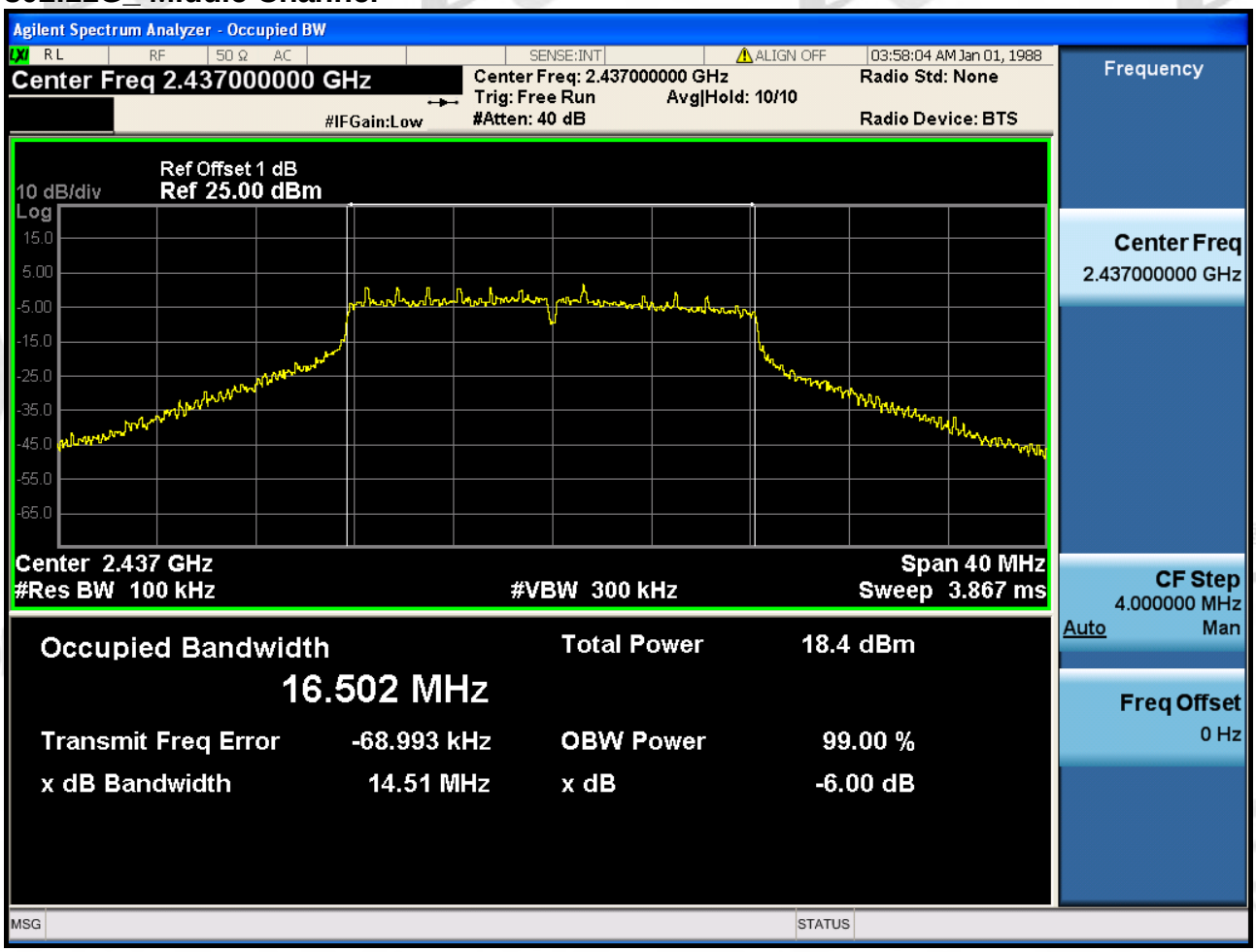
## 802.11B_ Highest Channel



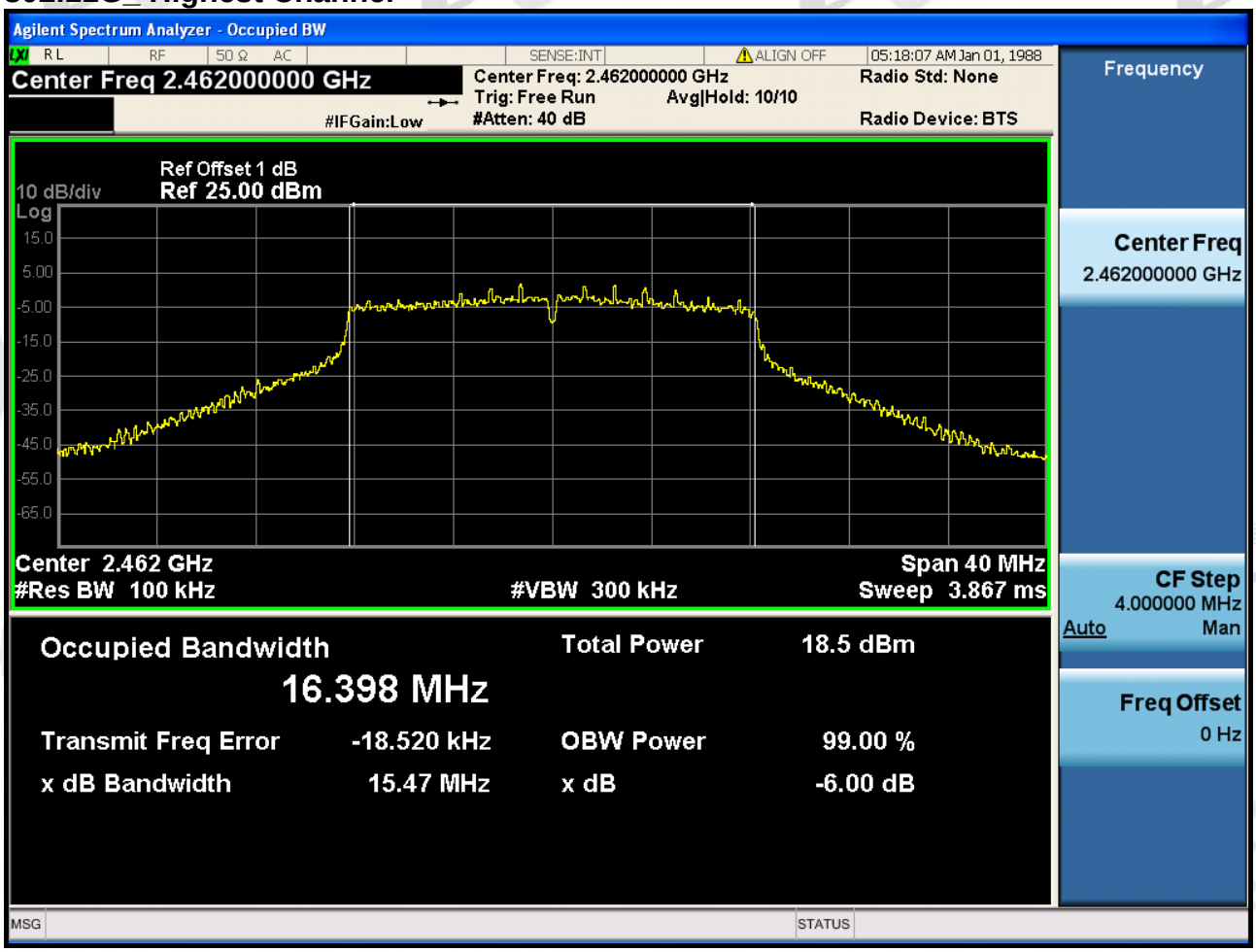
## 802.11G_Lowest Channel



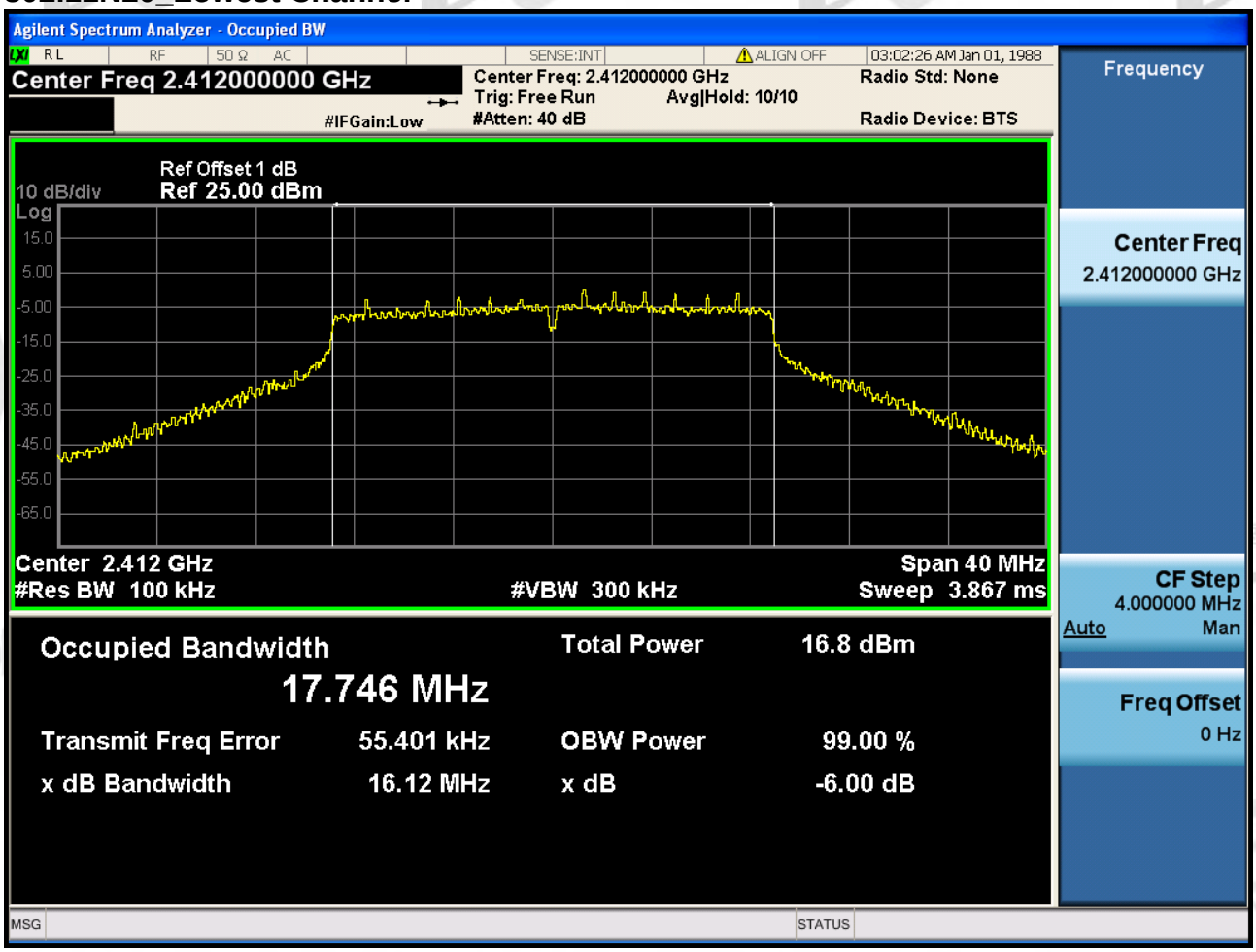
## 802.11G_ Middle Channel



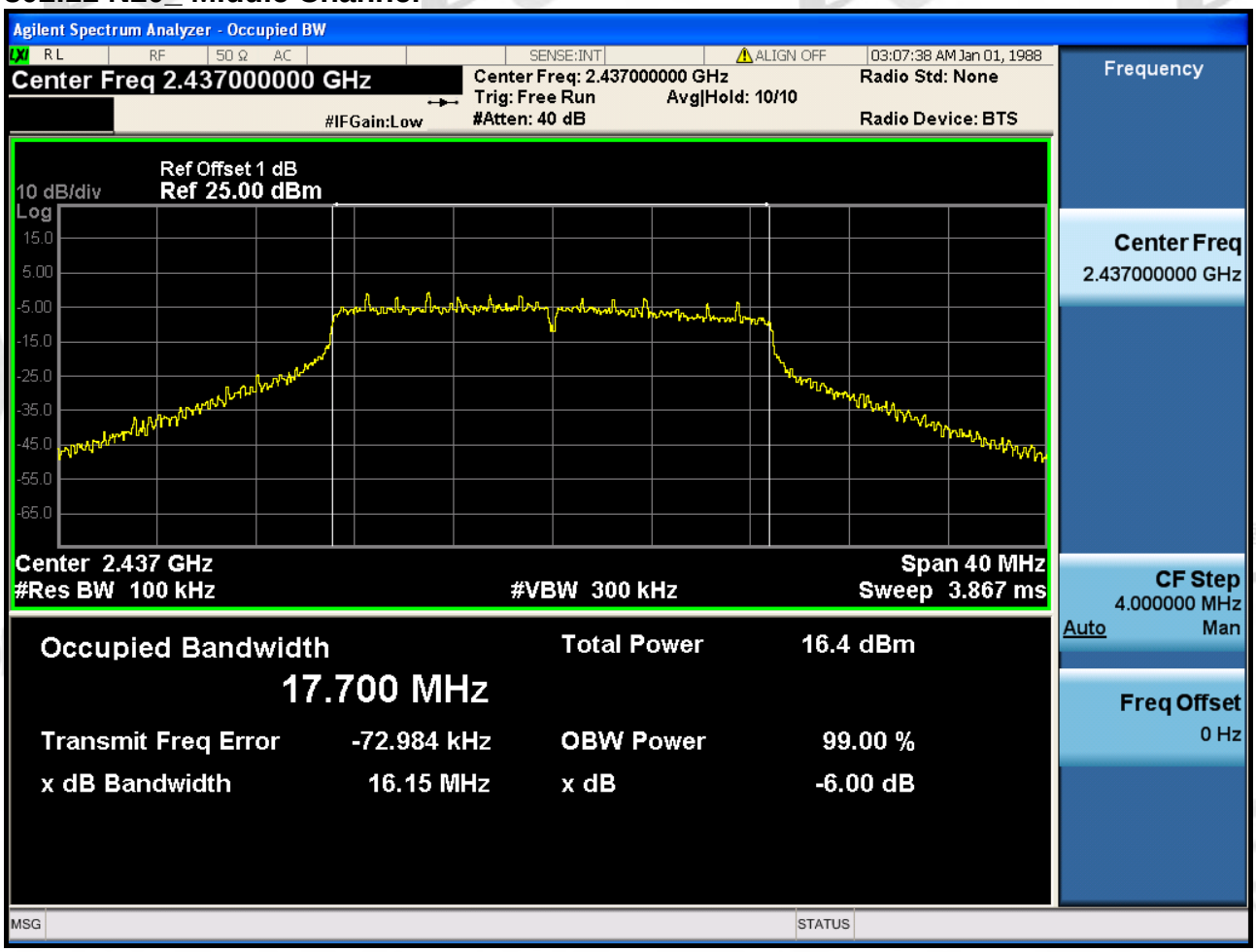
## 802.11G_ Highest Channel



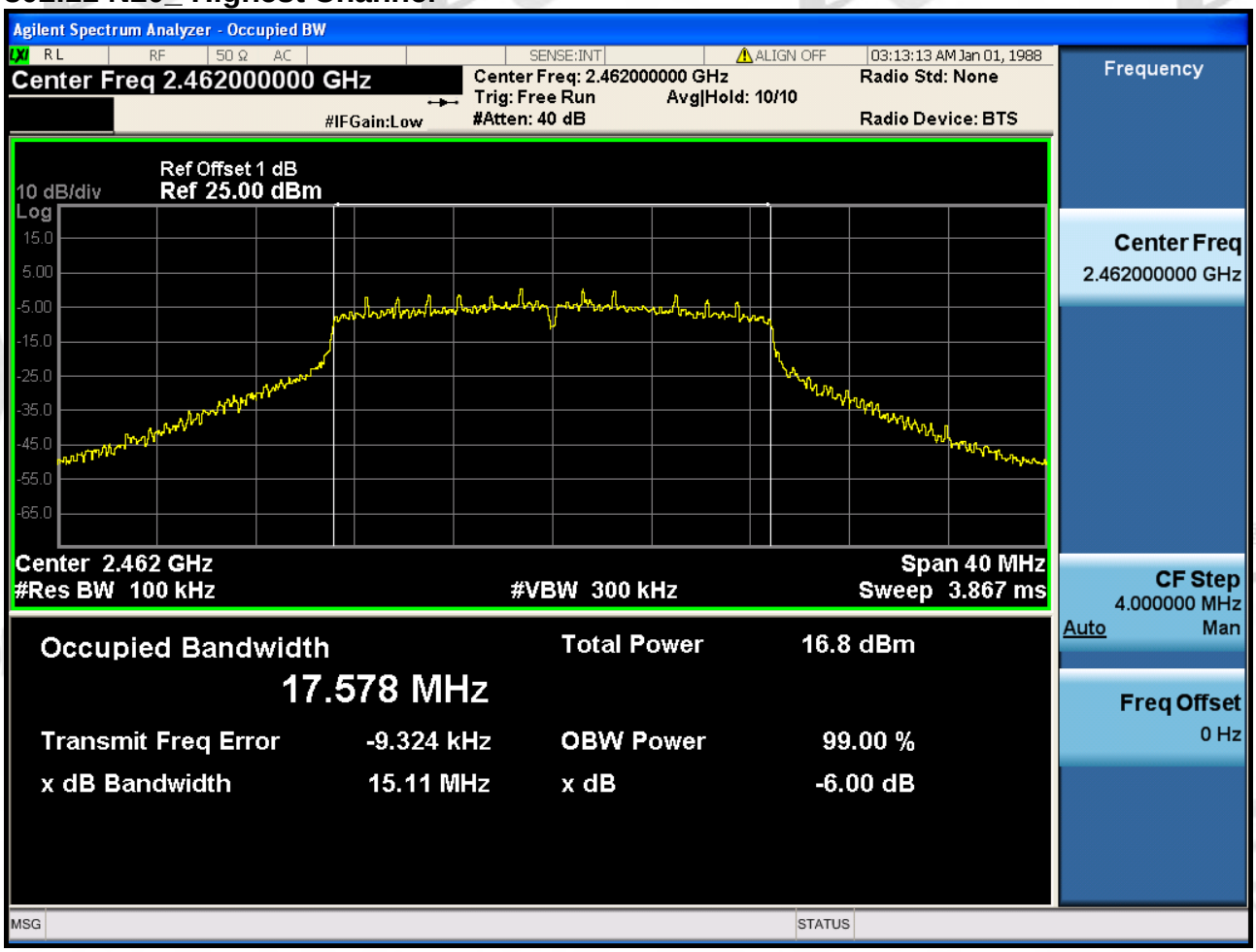
## 802.11N20_Lowest Channel



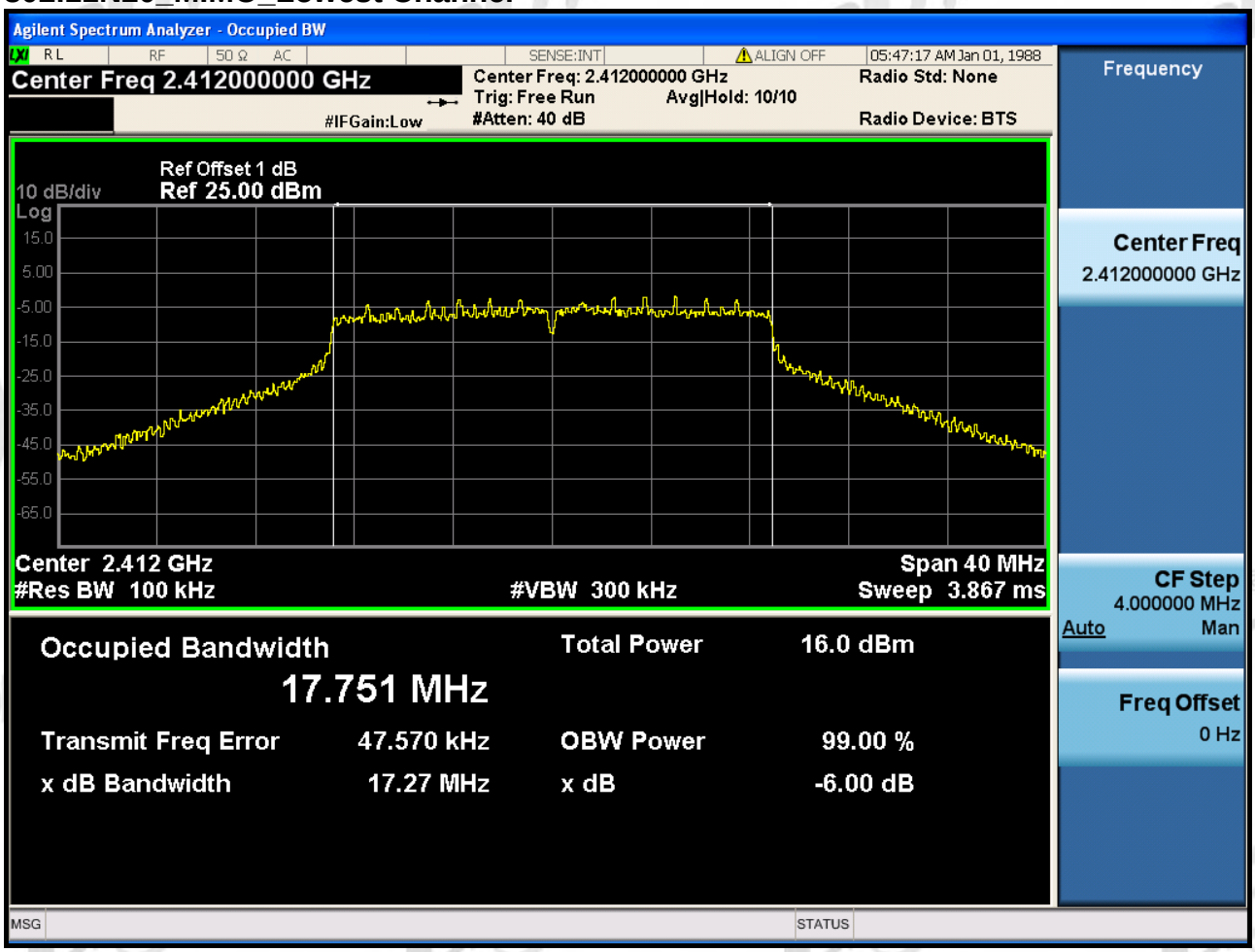
## 802.11 N20_ Middle Channel



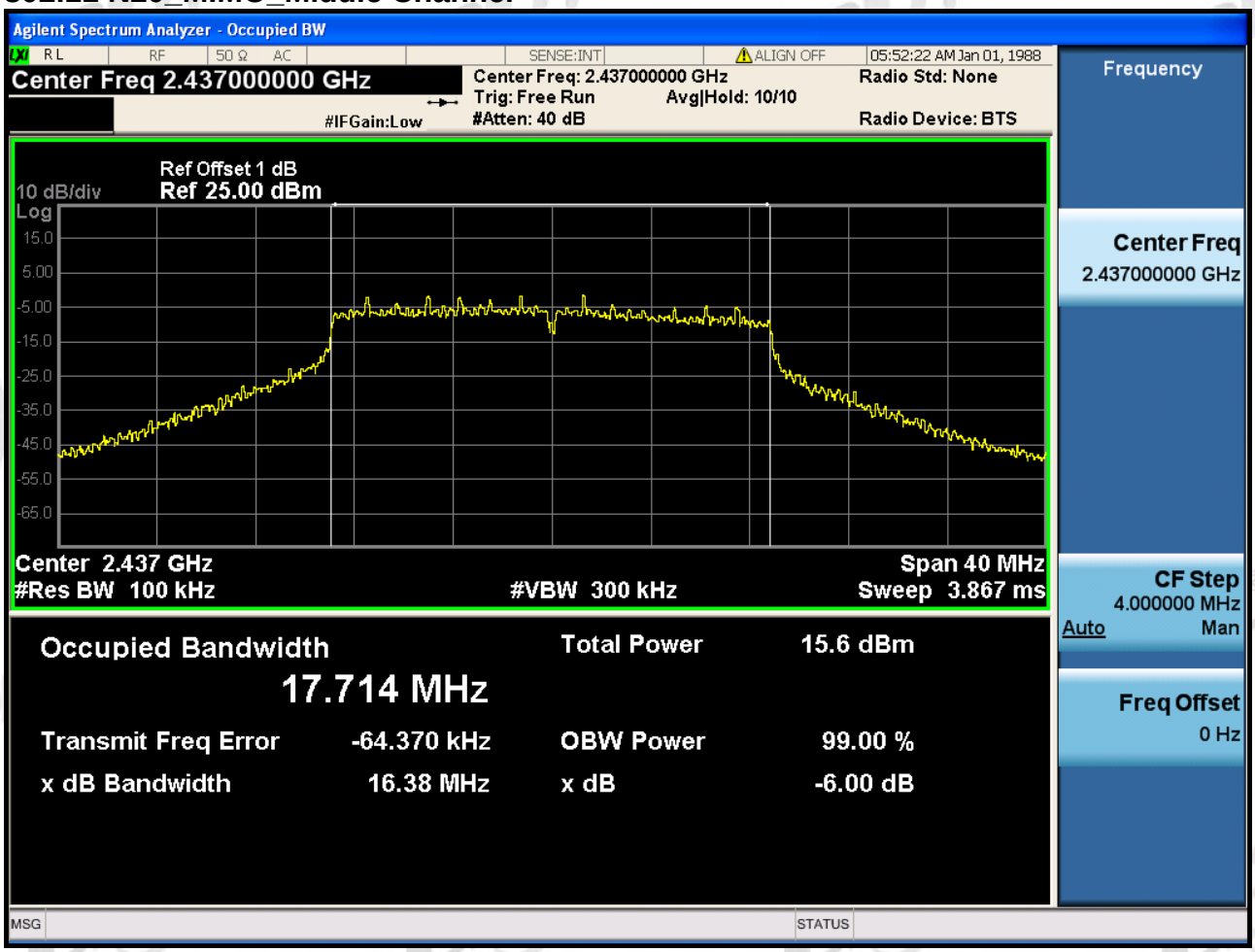
## 802.11 N20_ Highest Channel



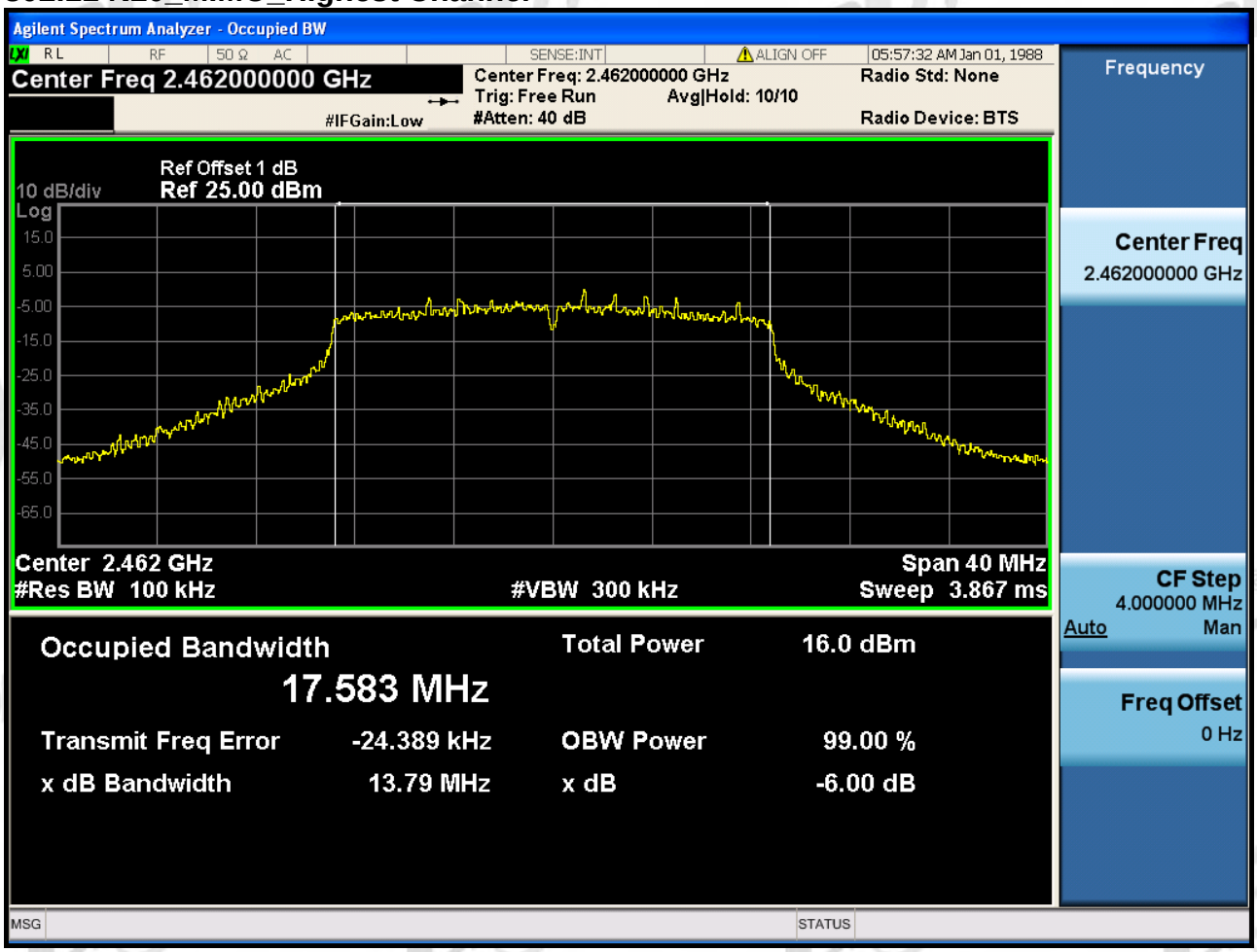
## 802.11N20_MIMO_Lowest Channel



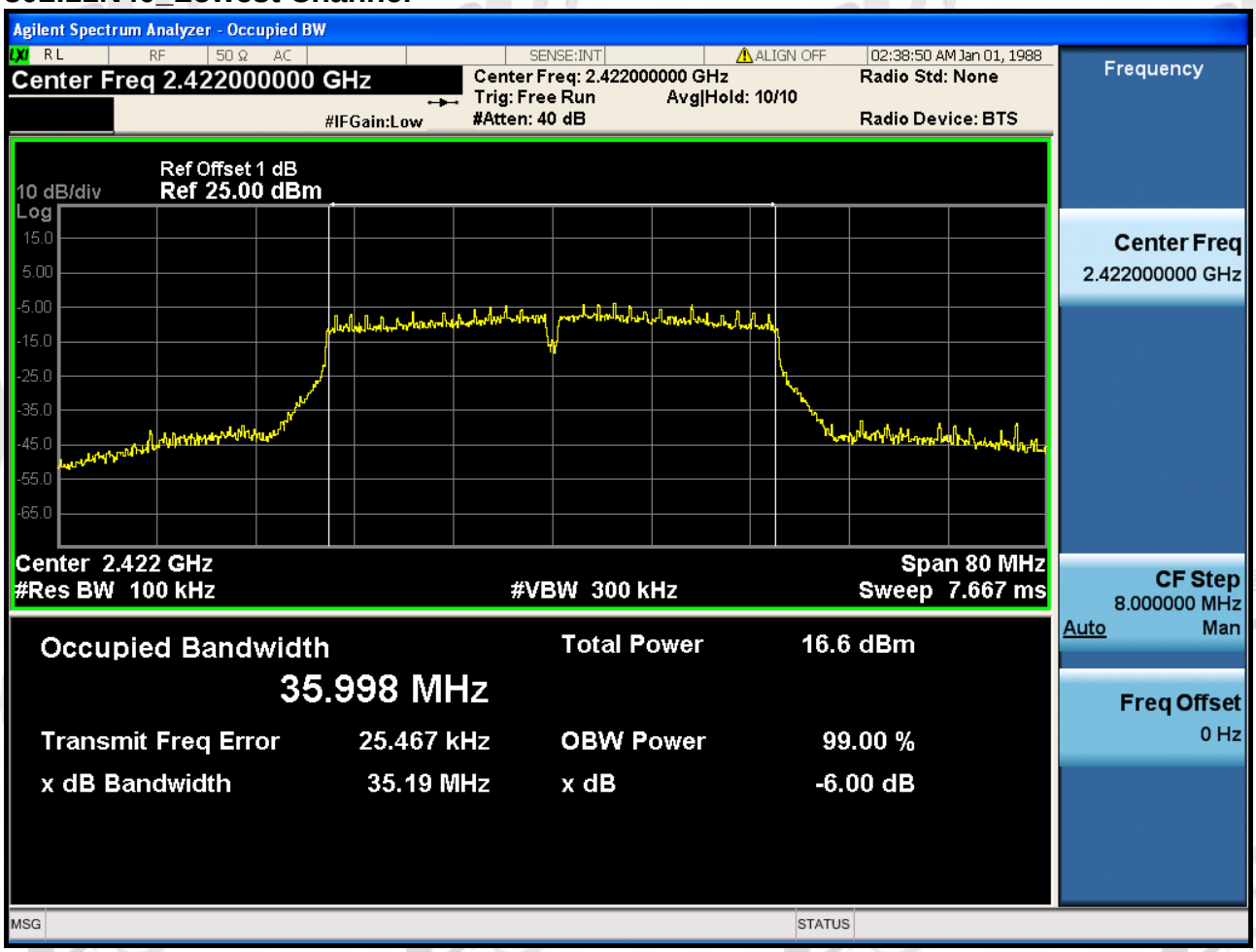
## 802.11 N20_MIMO_Middle Channel



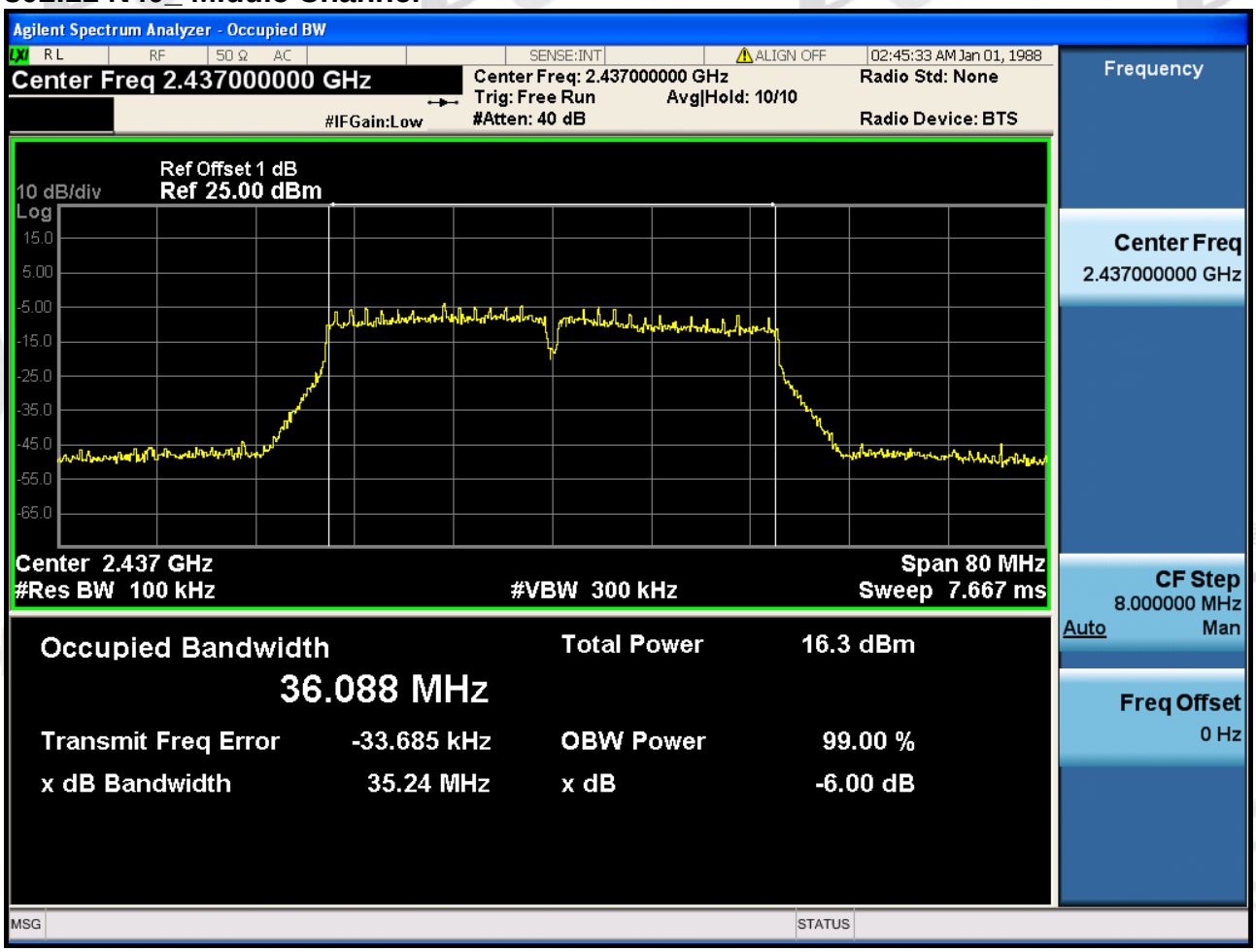
## 802.11 N20_MIMO_Highest Channel



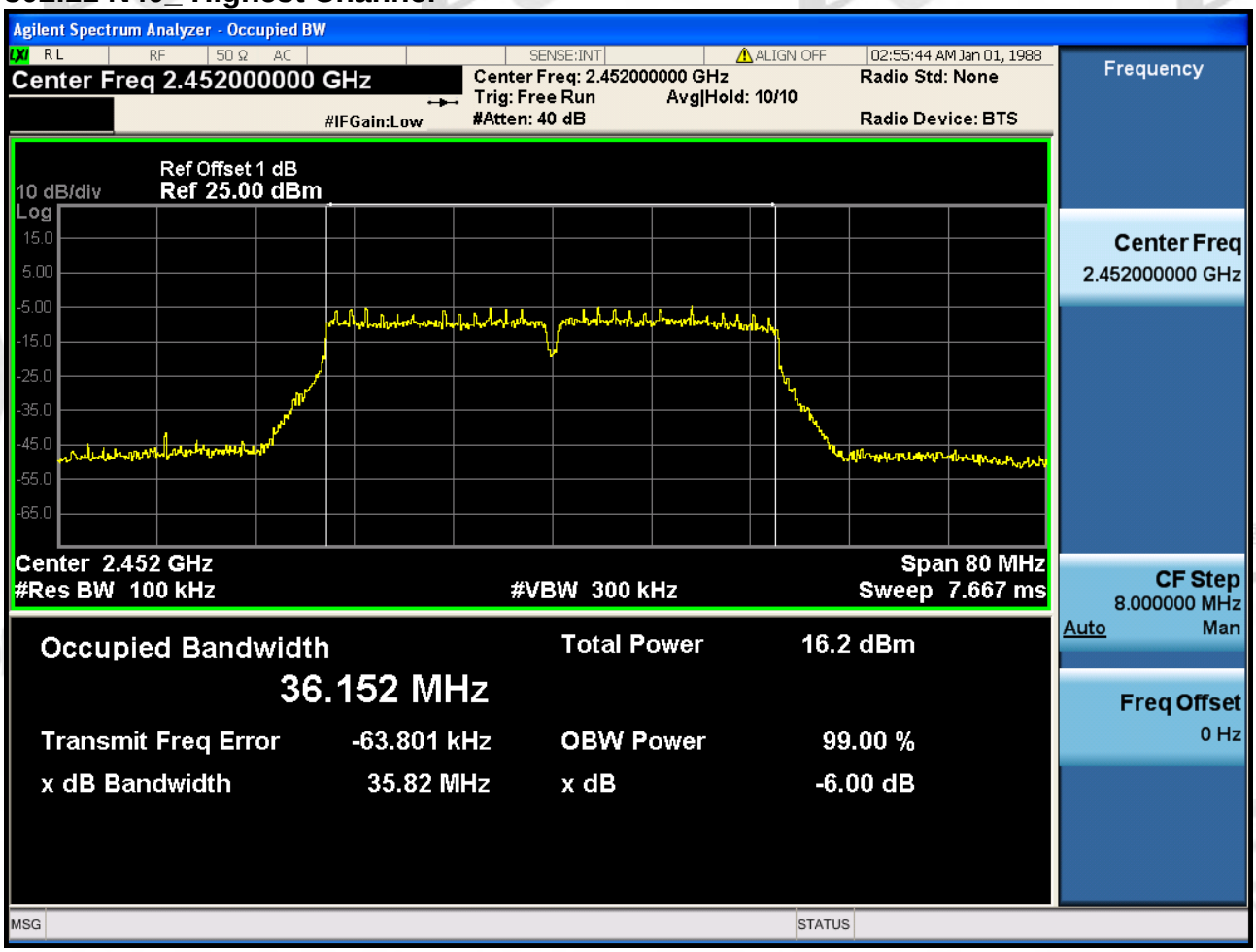
## 802.11N40_Lowest Channel



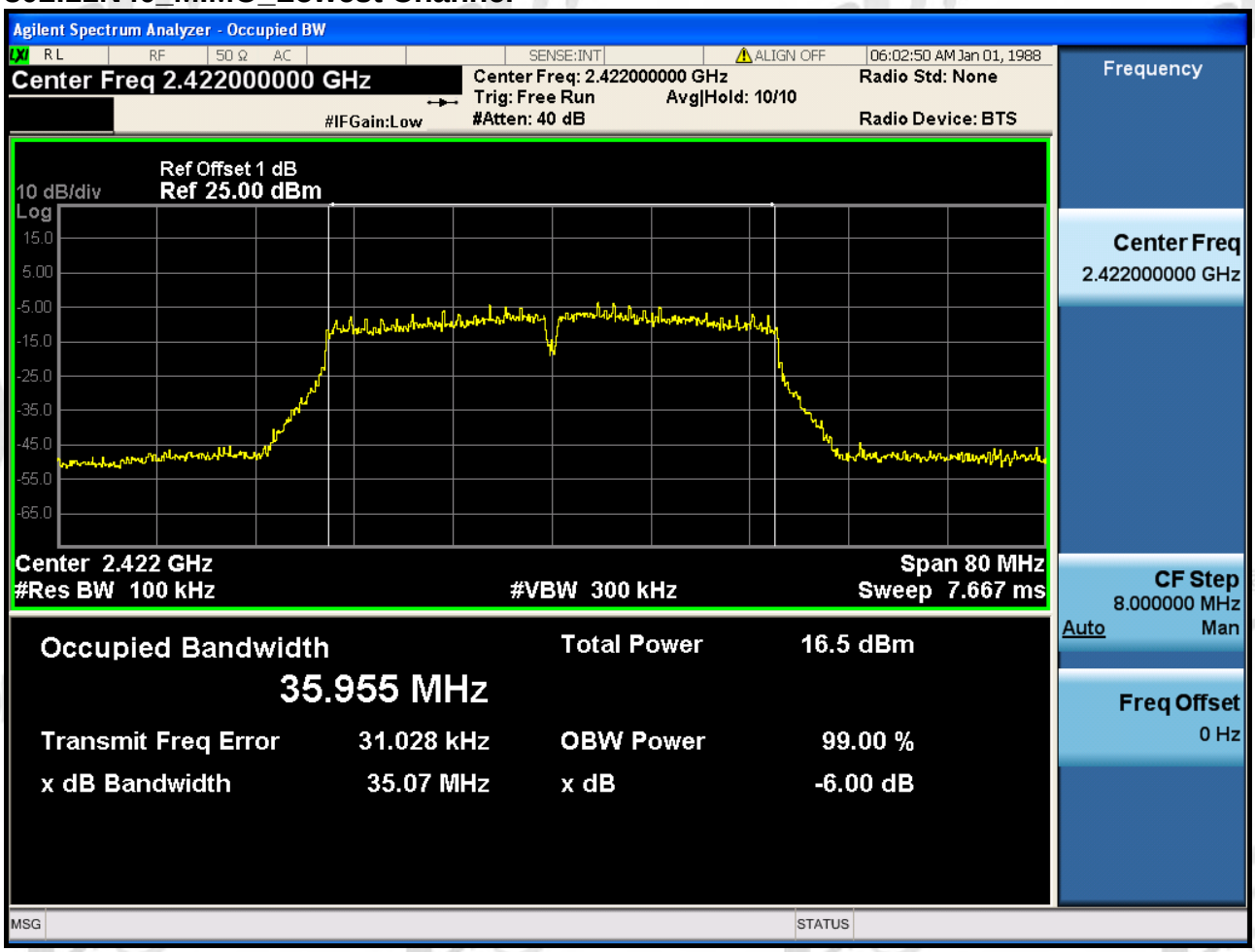
## 802.11 N40_ Middle Channel



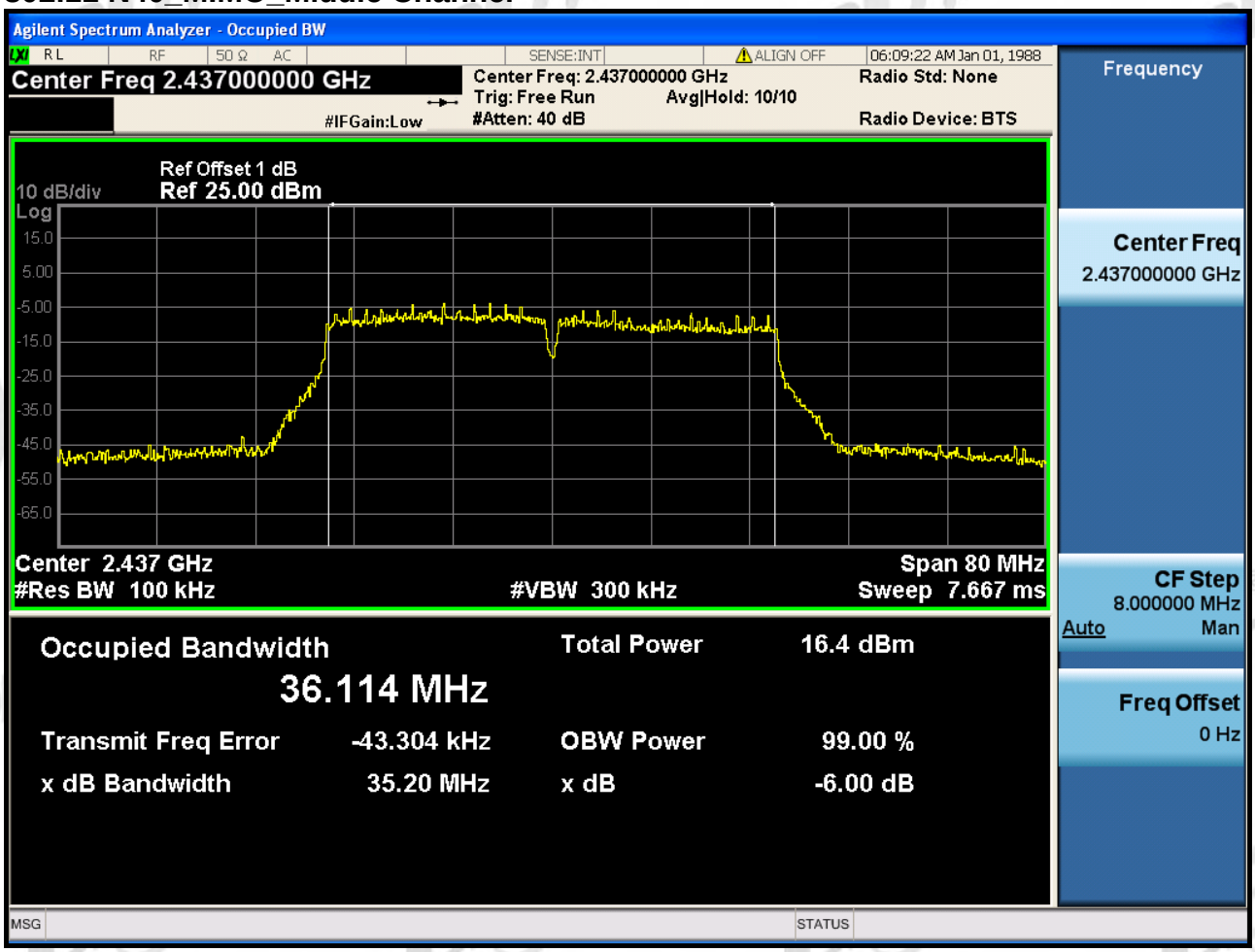
## 802.11 N40_ Highest Channel



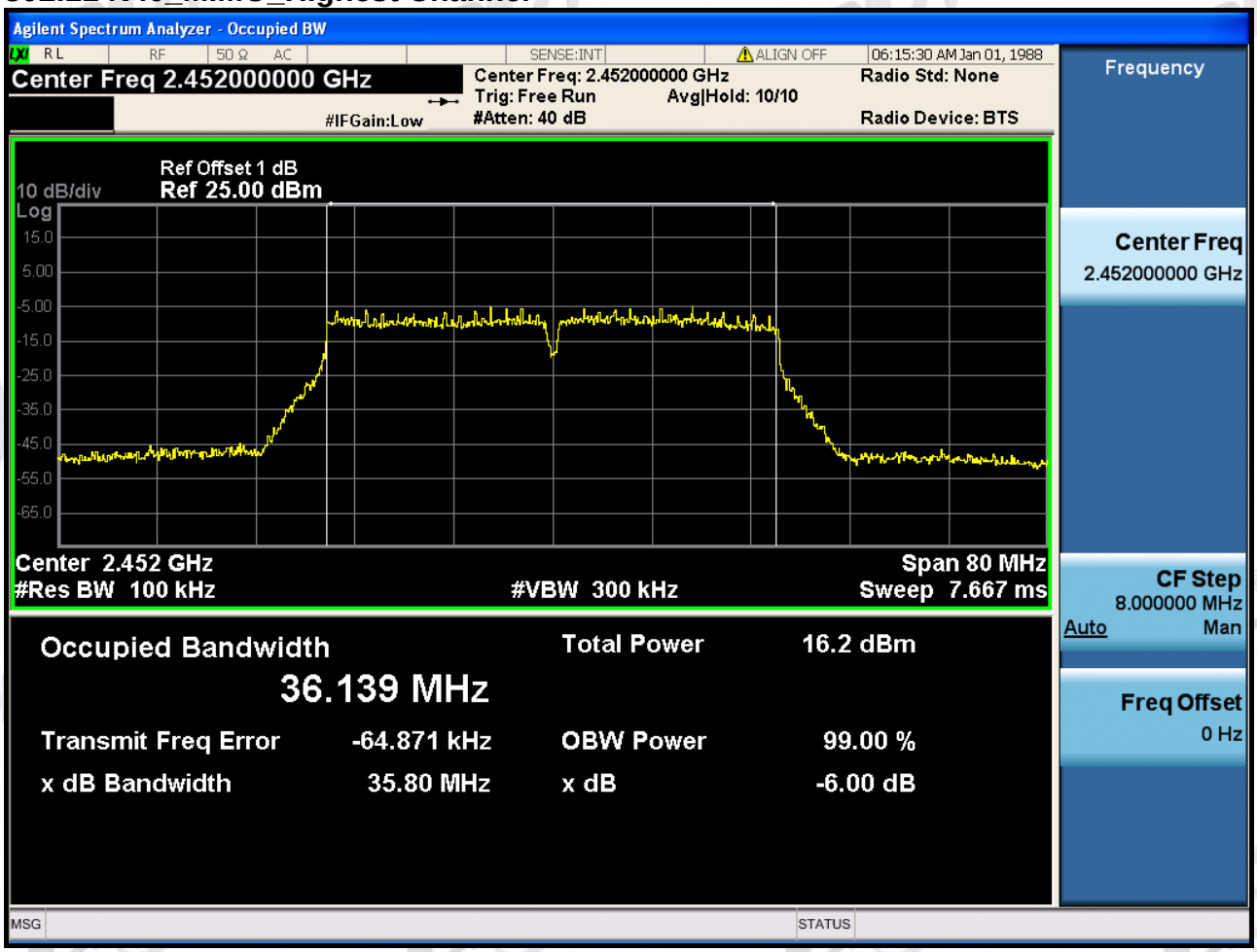
## 802.11N40_MIMO_Lowest Channel



## 802.11 N40_MIMO_Middle Channel



## 802.11 N40_MIMO_Highest Channel



# Power Spectral Density

## Test Results

| Mode | Test Channel | Power Spectral Density (dBm/3kHz) | | | Limit (dBm/3kHz) | Result |
|---|---|---|---|---|---|---|
| | | ANT1 | ANT2 | Sum | | |
| 802.11B | Lowest | -11.63 | -7.30 | --- | ≤8.00 | Pass |
| | Middle | -12.23 | -7.76 | --- | ≤8.00 | Pass |
| | Highest | -11.66 | -7.34 | --- | ≤8.00 | Pass |
| 802.11G | Lowest | -14.76 | -12.80 | --- | ≤8.00 | Pass |
| | Middle | -13.54 | -12.50 | --- | ≤8.00 | Pass |
| | Highest | -13.99 | -12.70 | --- | ≤8.00 | Pass |
| 802.11N20 | Lowest | -15.01 | -14.73 | --- | ≤8.00 | Pass |
| | Middle | -13.39 | -15.32 | --- | ≤8.00 | Pass |
| | Highest | -14.79 | -14.36 | -11.56 | ≤8.00 | Pass |
| 802.11N20_MIMO | Lowest | -15.81 | -16.54 | -13.15 | ≤8.00 | Pass |
| | Middle | -14.96 | -16.22 | -12.53 | ≤8.00 | Pass |
| | Highest | -14.97 | -15.29 | -12.12 | ≤8.00 | Pass |
| 802.11N40 | Lowest | -16.53 | -18.46 | --- | ≤8.00 | Pass |
| | Middle | -16.53 | -18.70 | --- | ≤8.00 | Pass |
| | Highest | -17.39 | -19.10 | --- | ≤8.00 | Pass |
| 802.11N40_MIMO | Lowest | -16.59 | -16.03 | -13.29 | ≤8.00 | Pass |
| | Middle | -16.43 | -18.24 | -14.23 | ≤8.00 | Pass |
| | Highest | -16.68 | -18.01 | -14.28 | ≤8.00 | Pass |

## Test plots

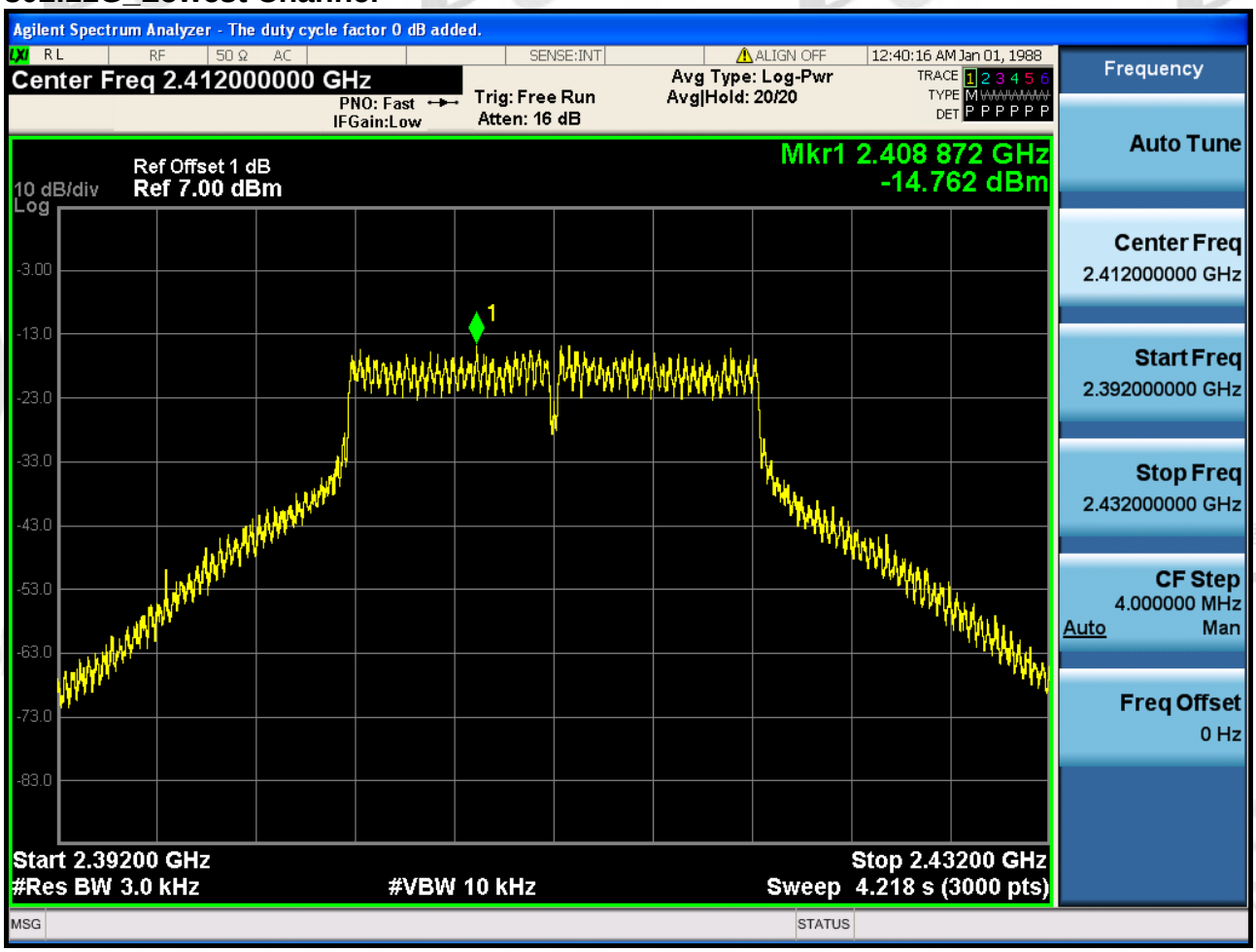
### ANT1

### 802.11B_Lowest Channel

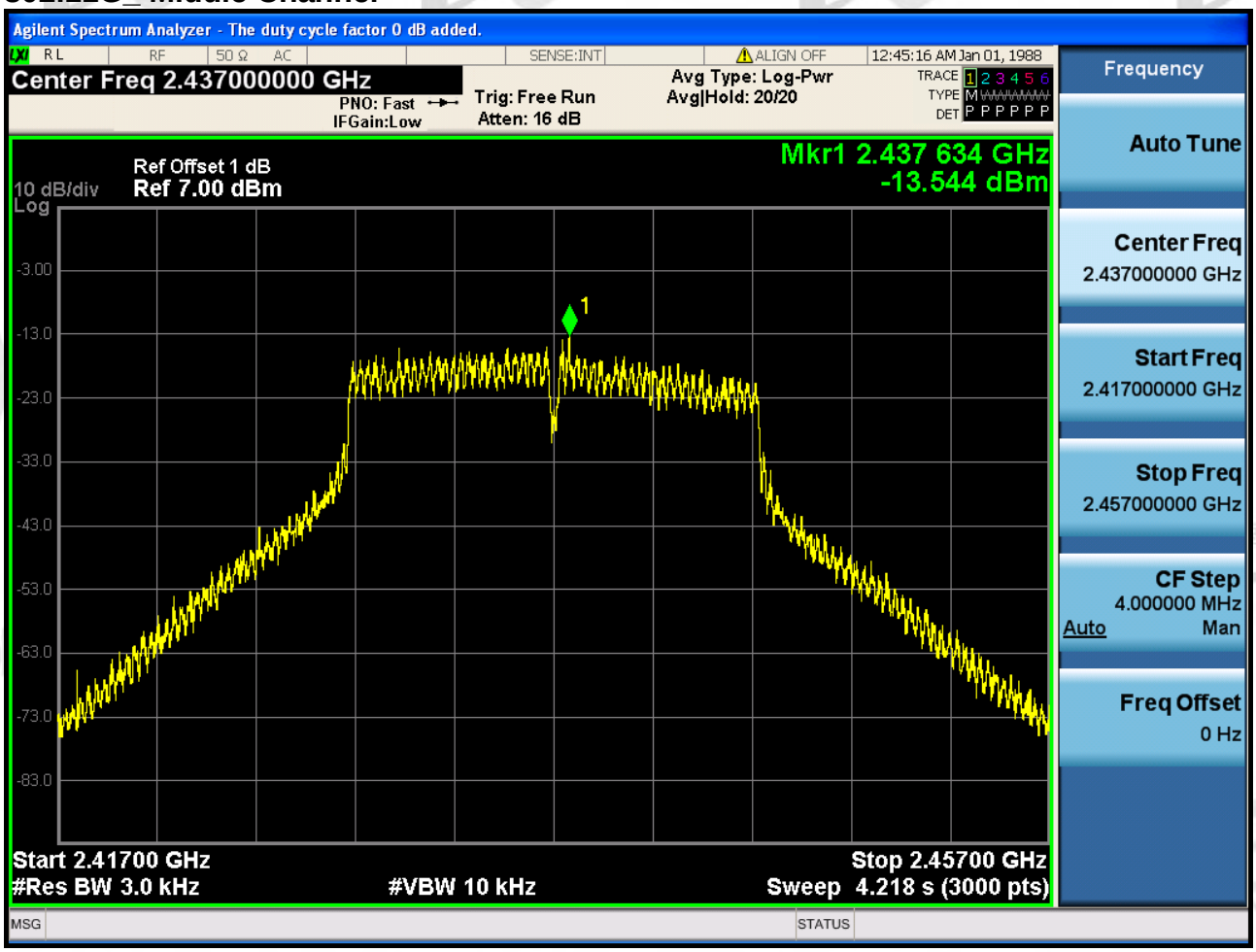
## 802.11B_ Middle Channel

## 802.11B_ Highest Channel

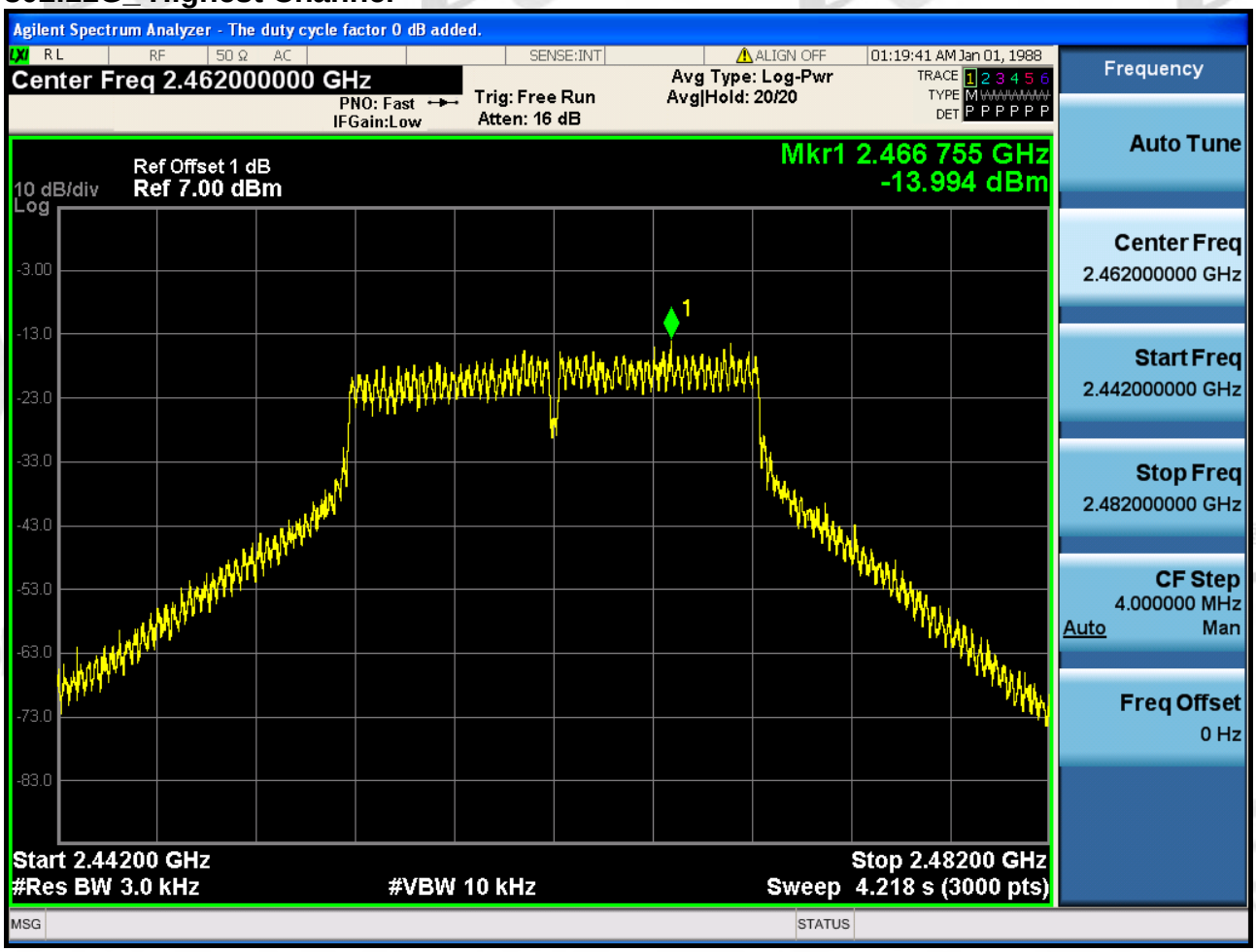
## 802.11G_Lowest Channel



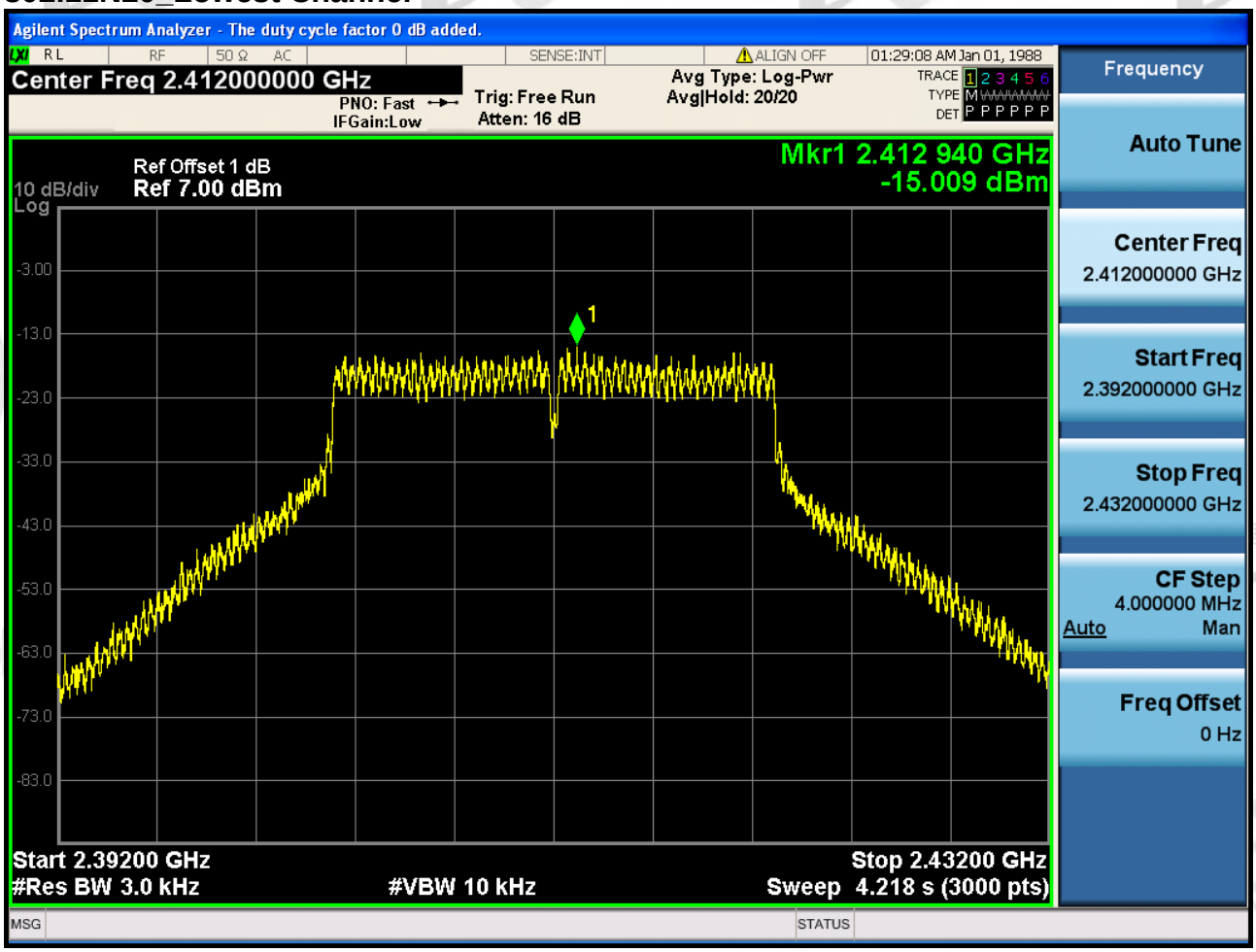
## 802.11G_ Middle Channel



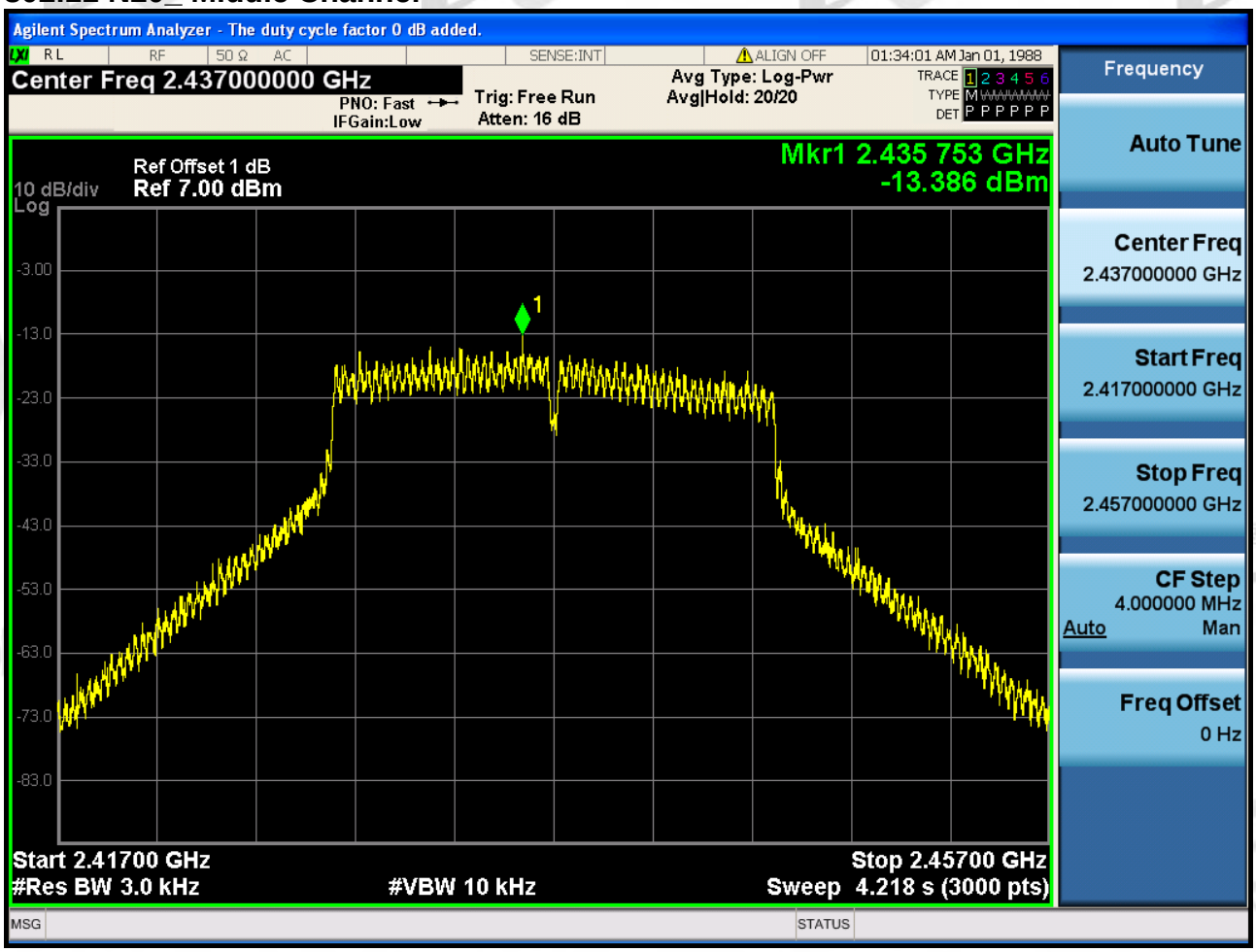
## 802.11G_ Highest Channel



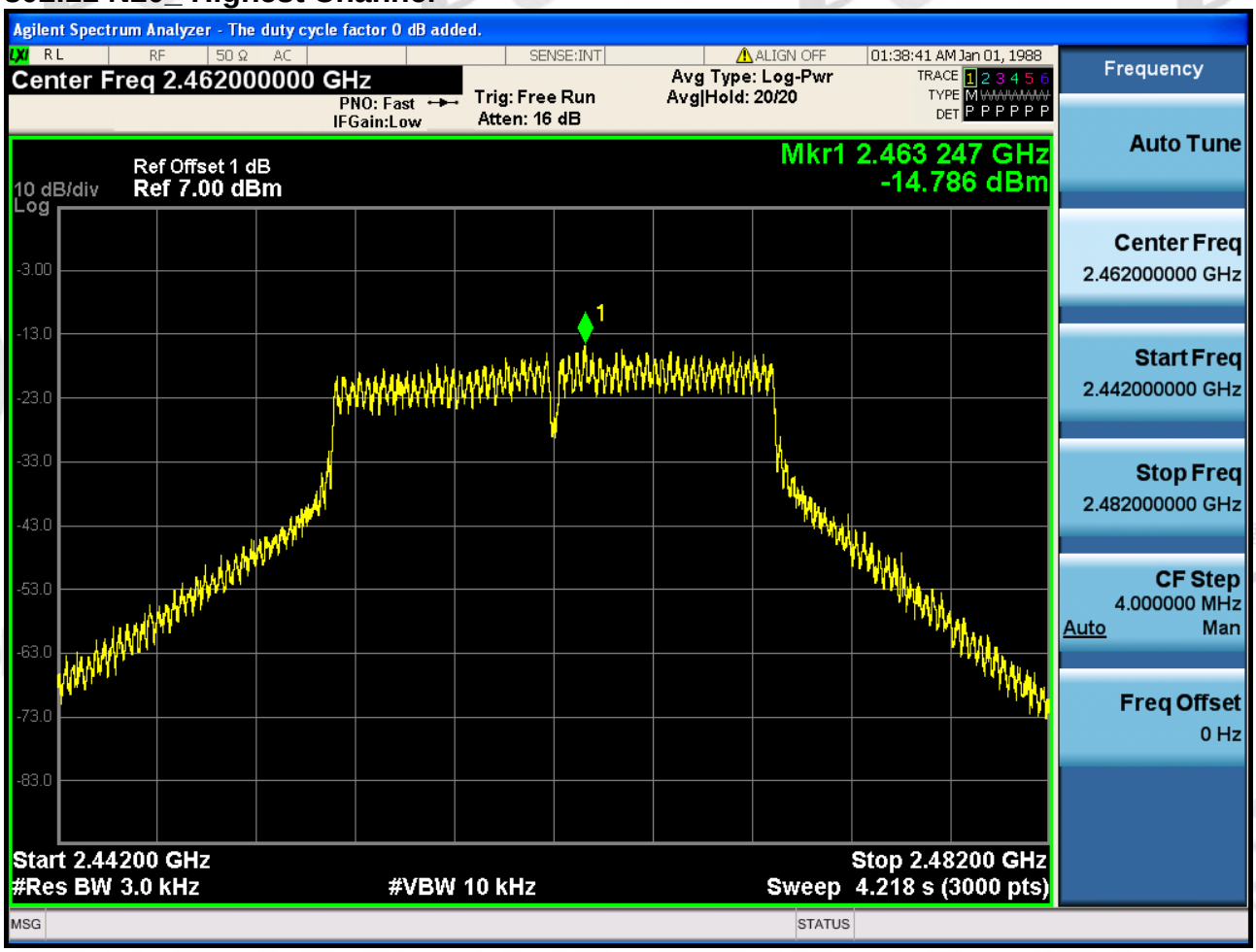
## 802.11N20_Lowest Channel



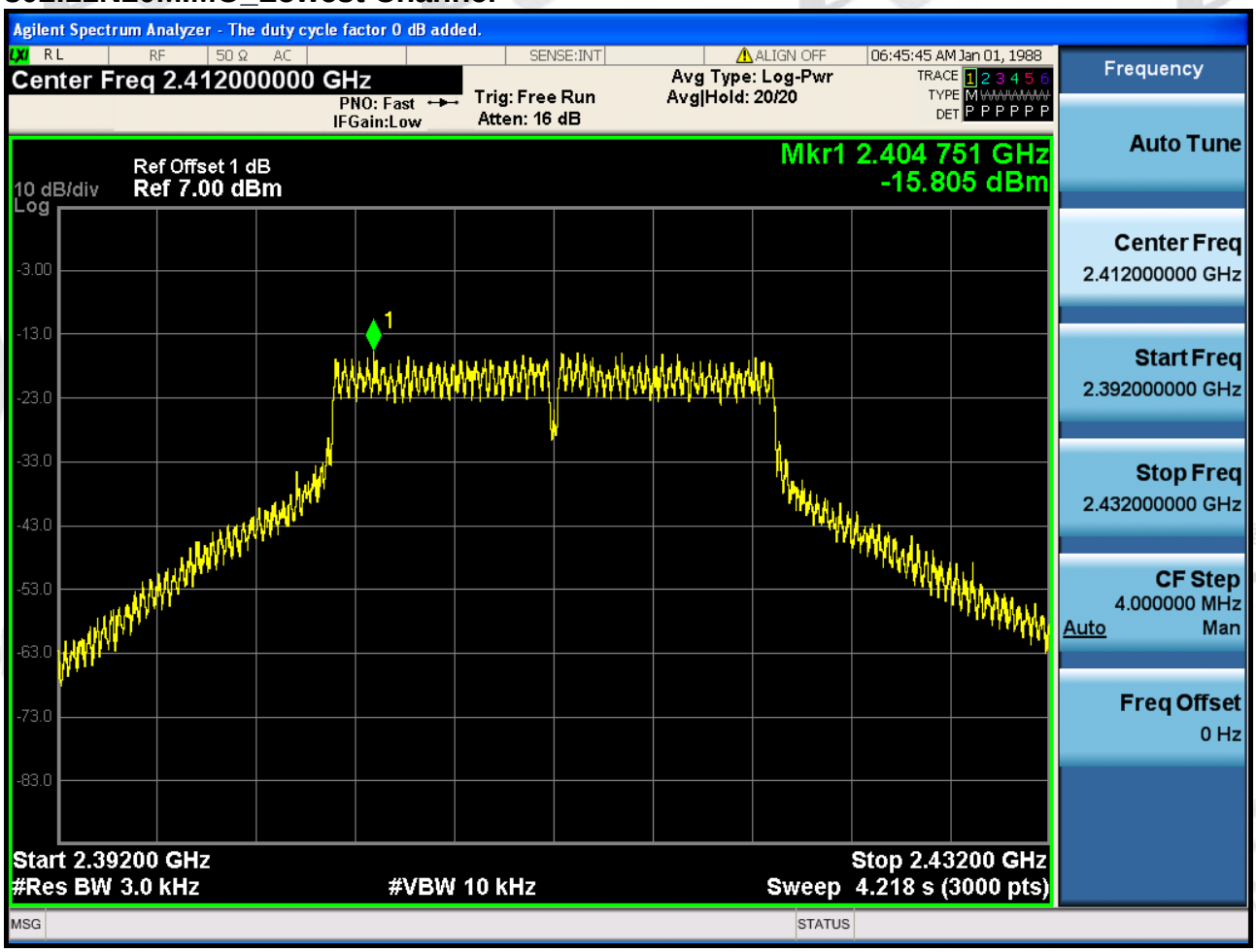
## 802.11 N20_ Middle Channel



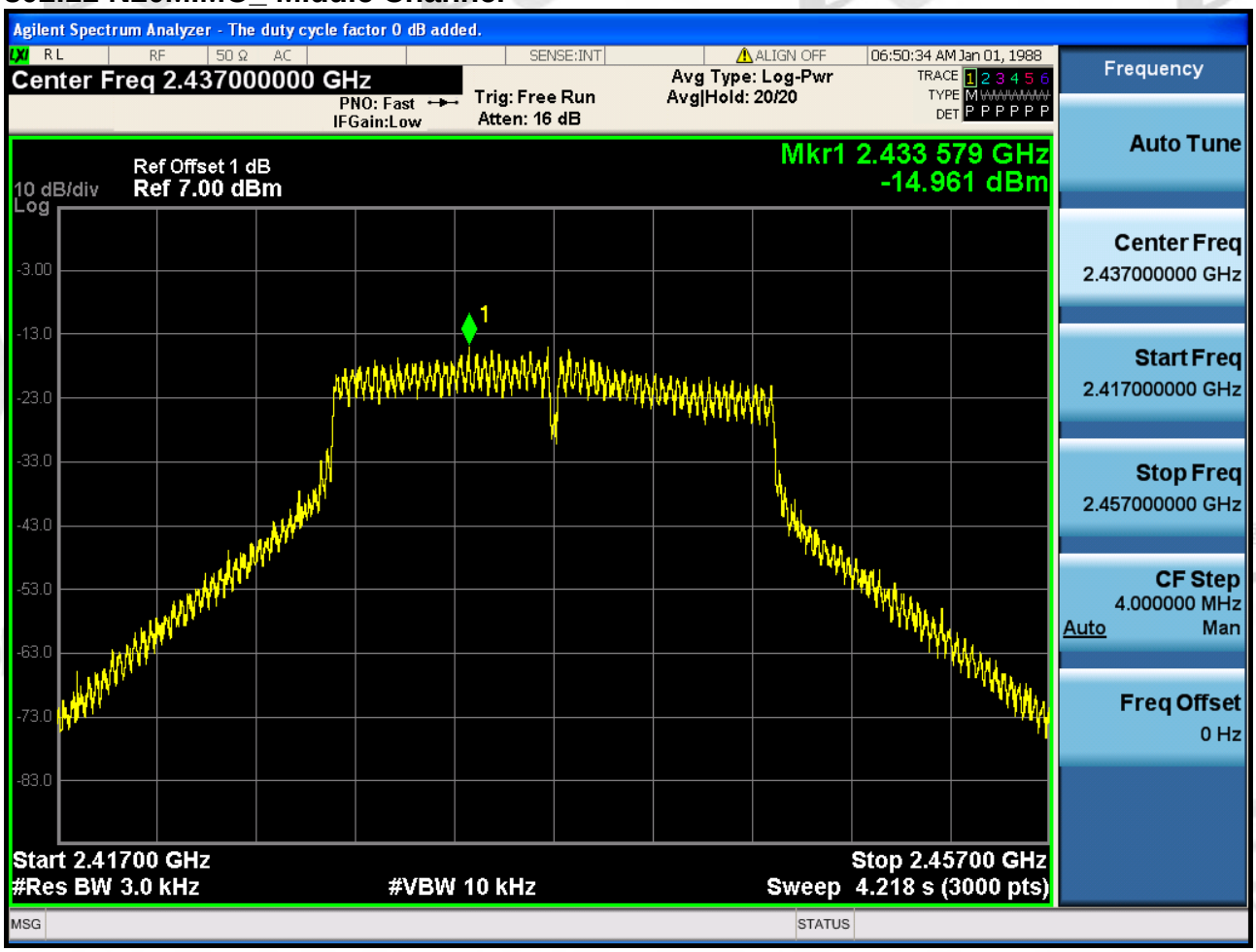
## 802.11 N20_ Highest Channel



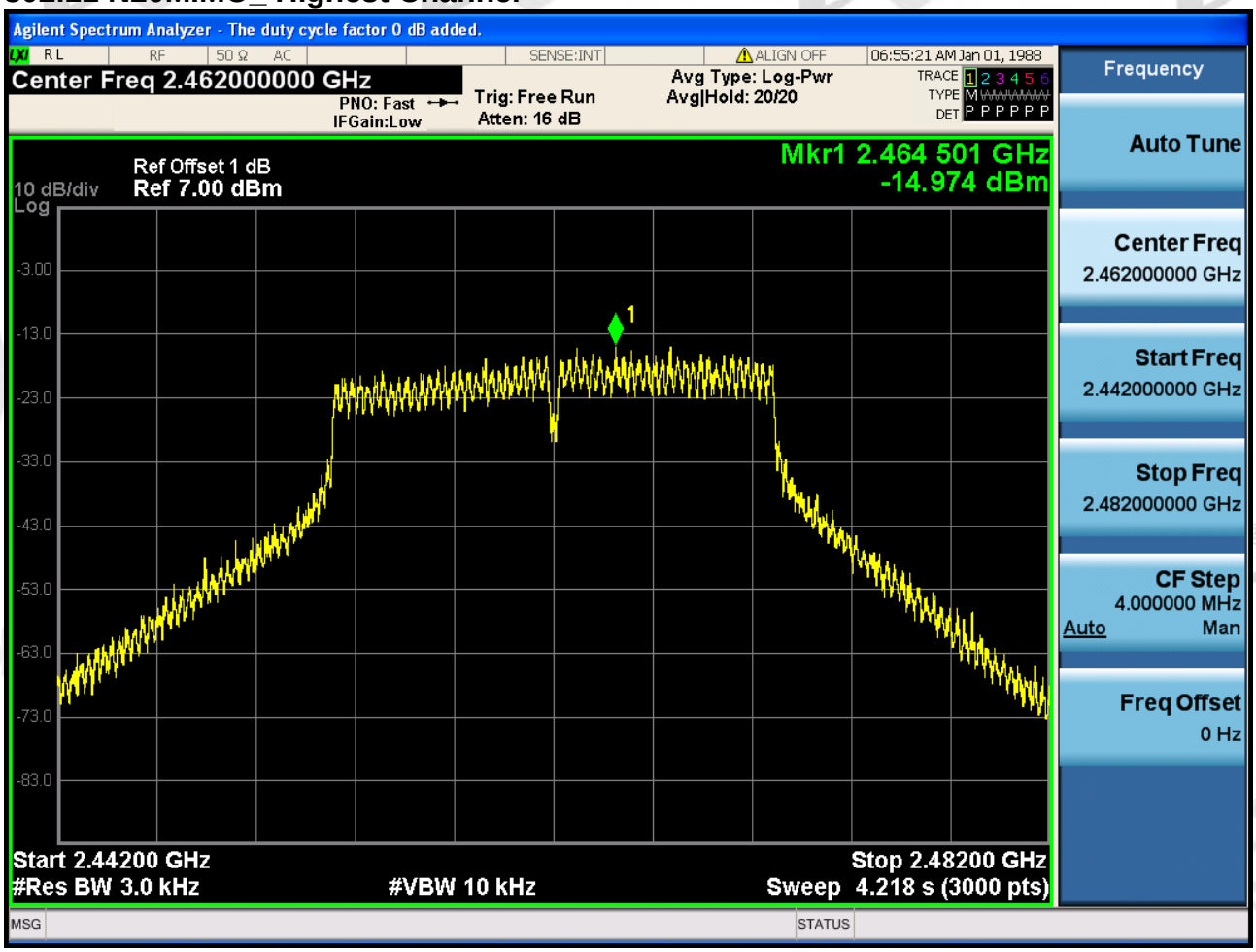
## 802.11N20MIMO_Lowest Channel



## 802.11 N20MIMO_ Middle Channel

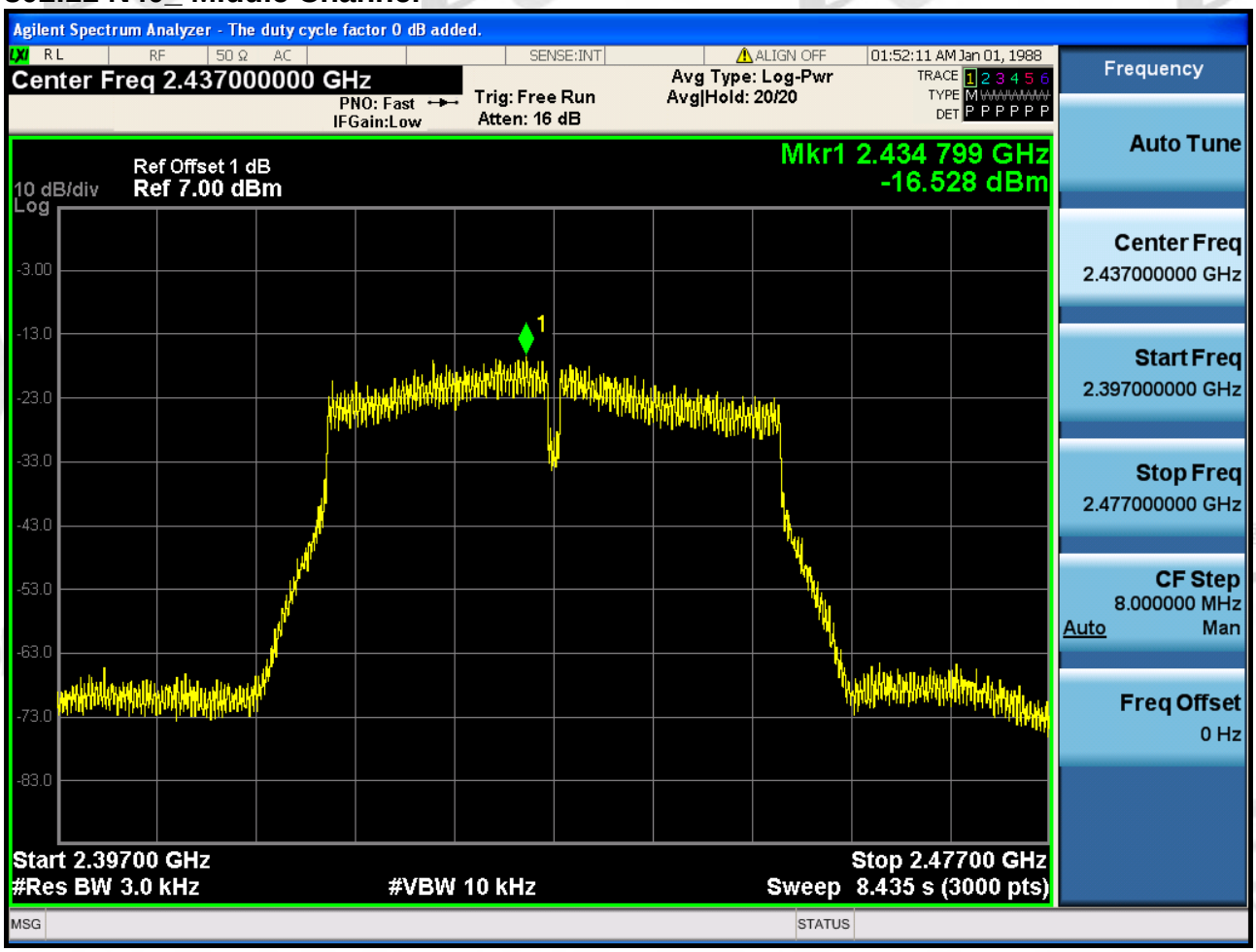


## 802.11 N20MIMO_ Highest Channel

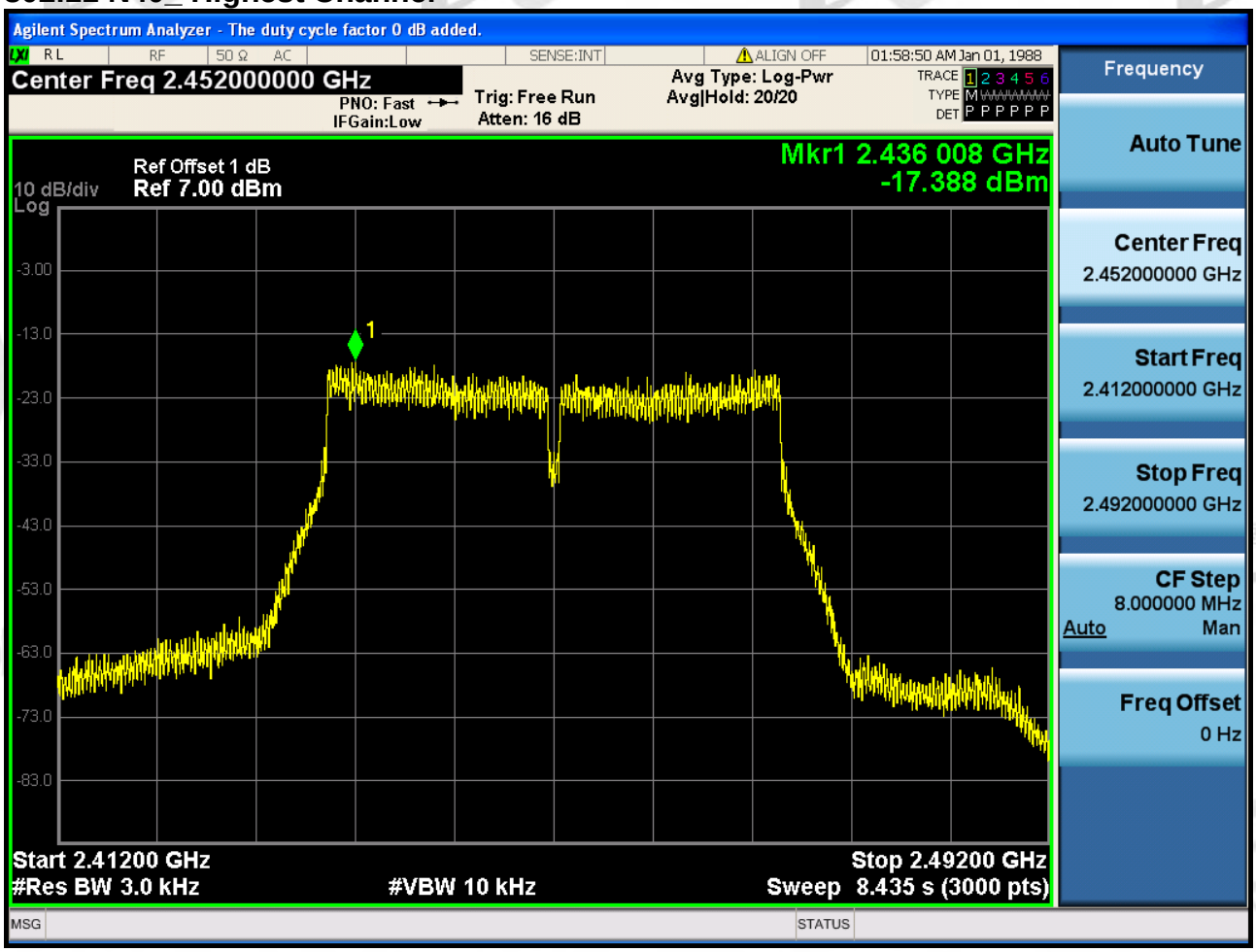


## 802.11N40_Lowest Channel

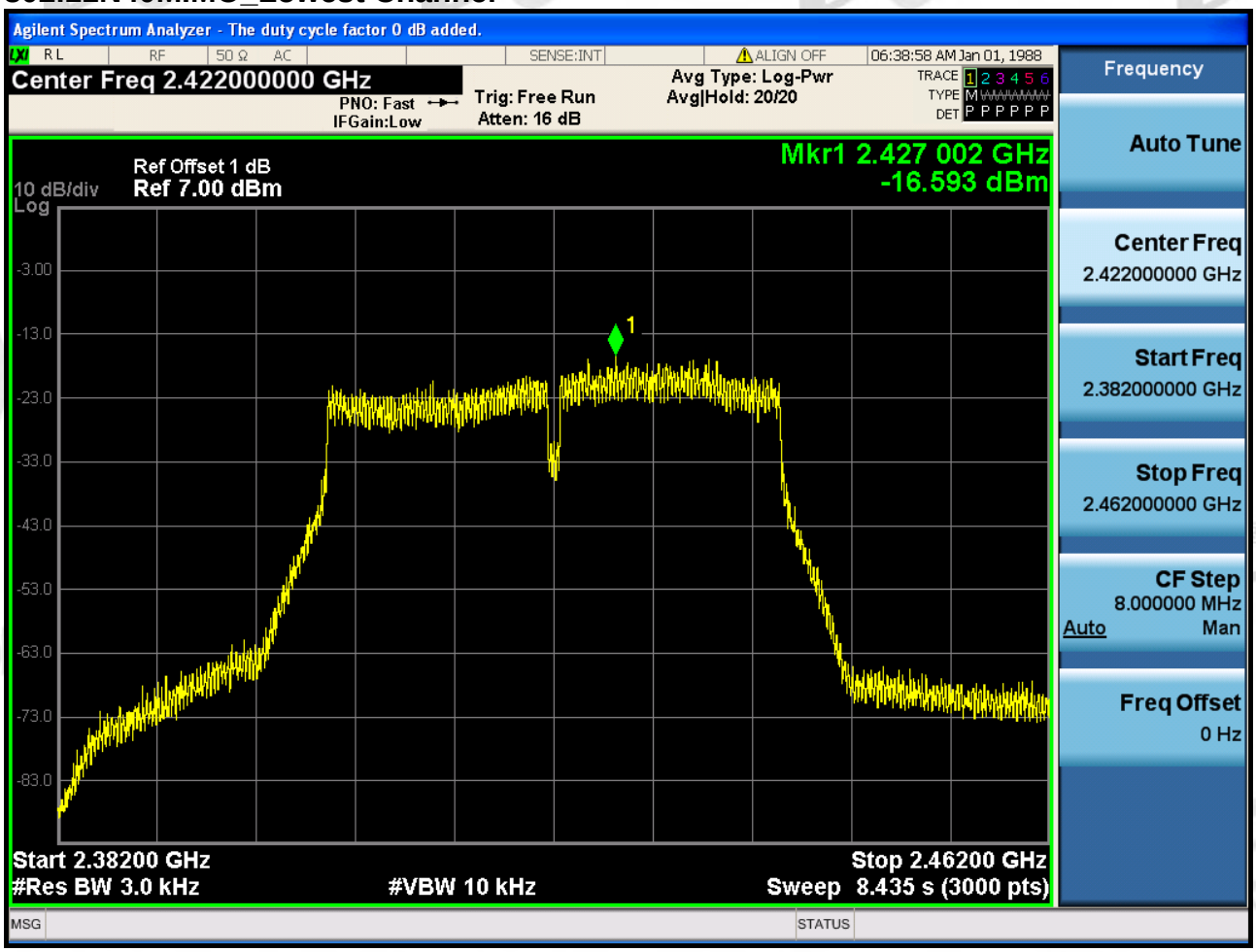
## 802.11 N40_ Middle Channel



## 802.11 N40_ Highest Channel

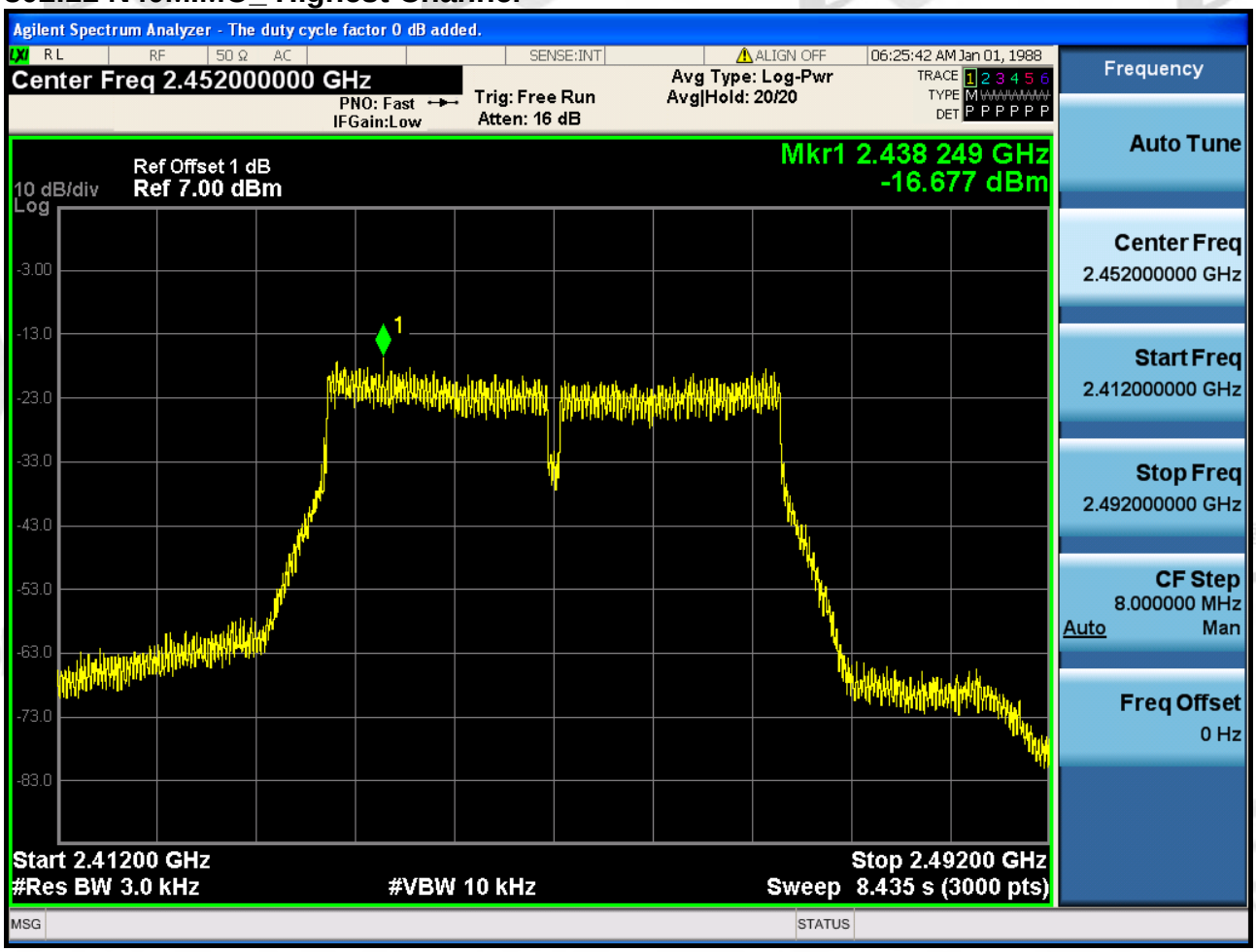


## 802.11N40MIMO_Lowest Channel



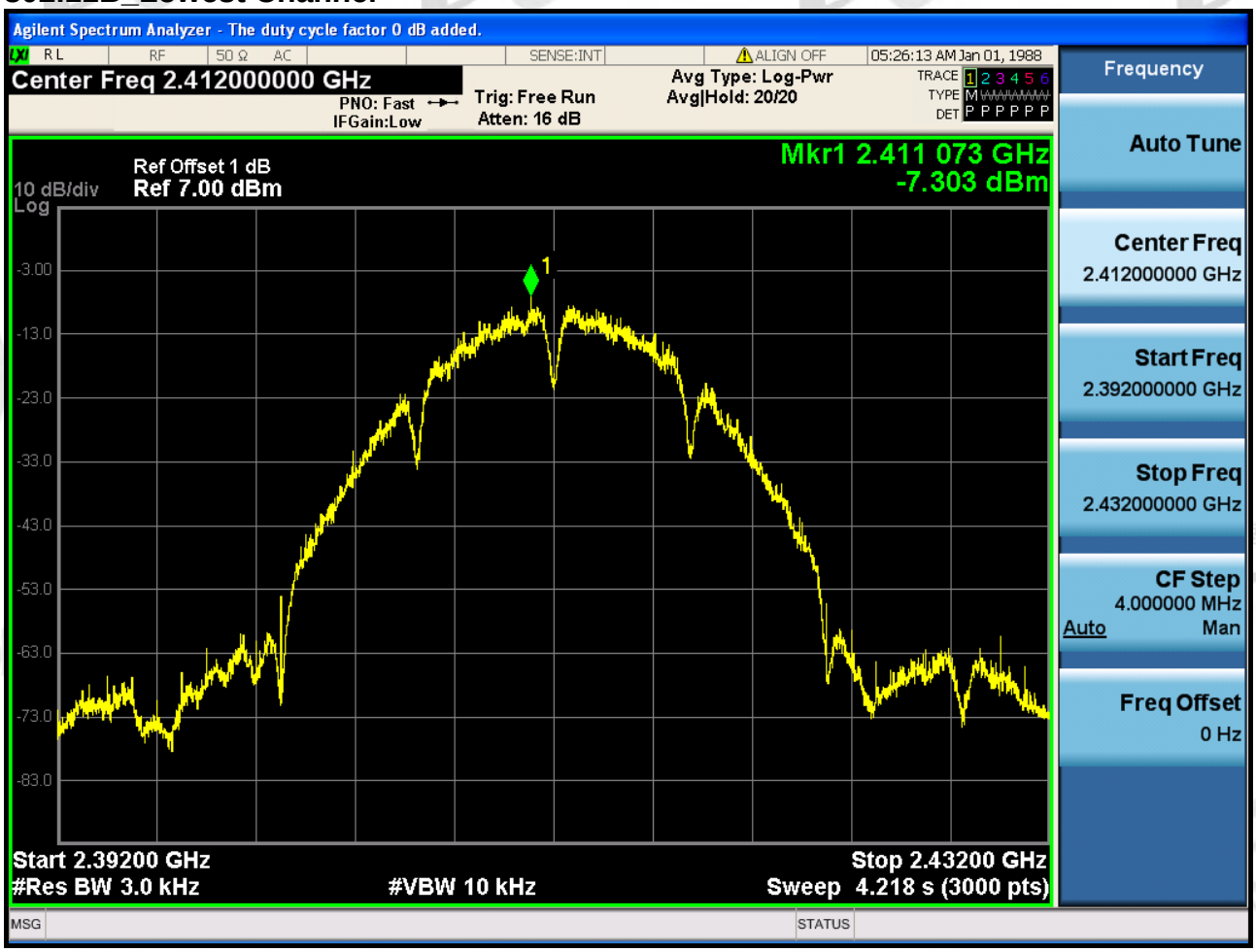
## 802.11 N40MIMO_ Middle Channel

## 802.11 N40MIMO_ Highest Channel



**ANT2**

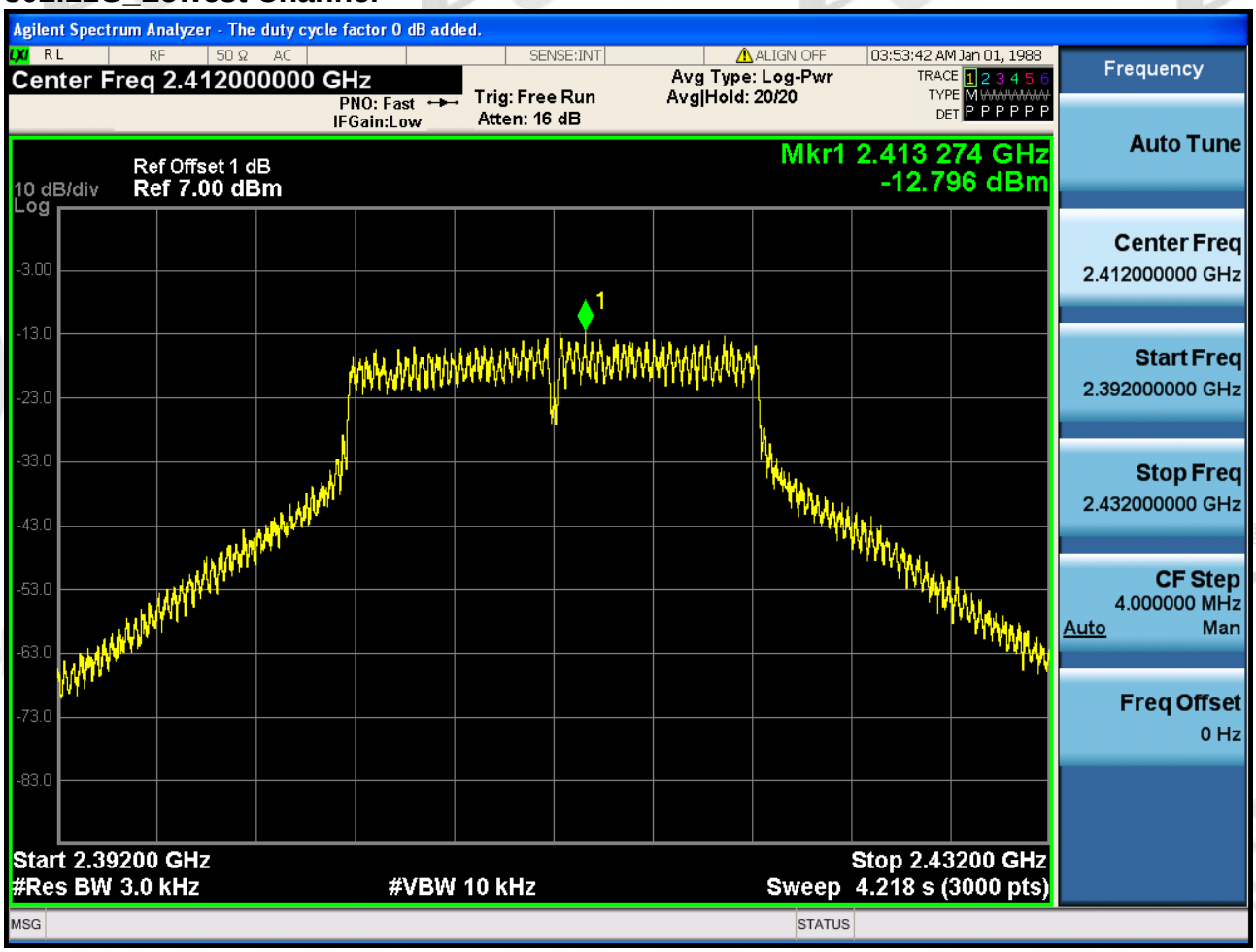
**802.11B_Lowest Channel**



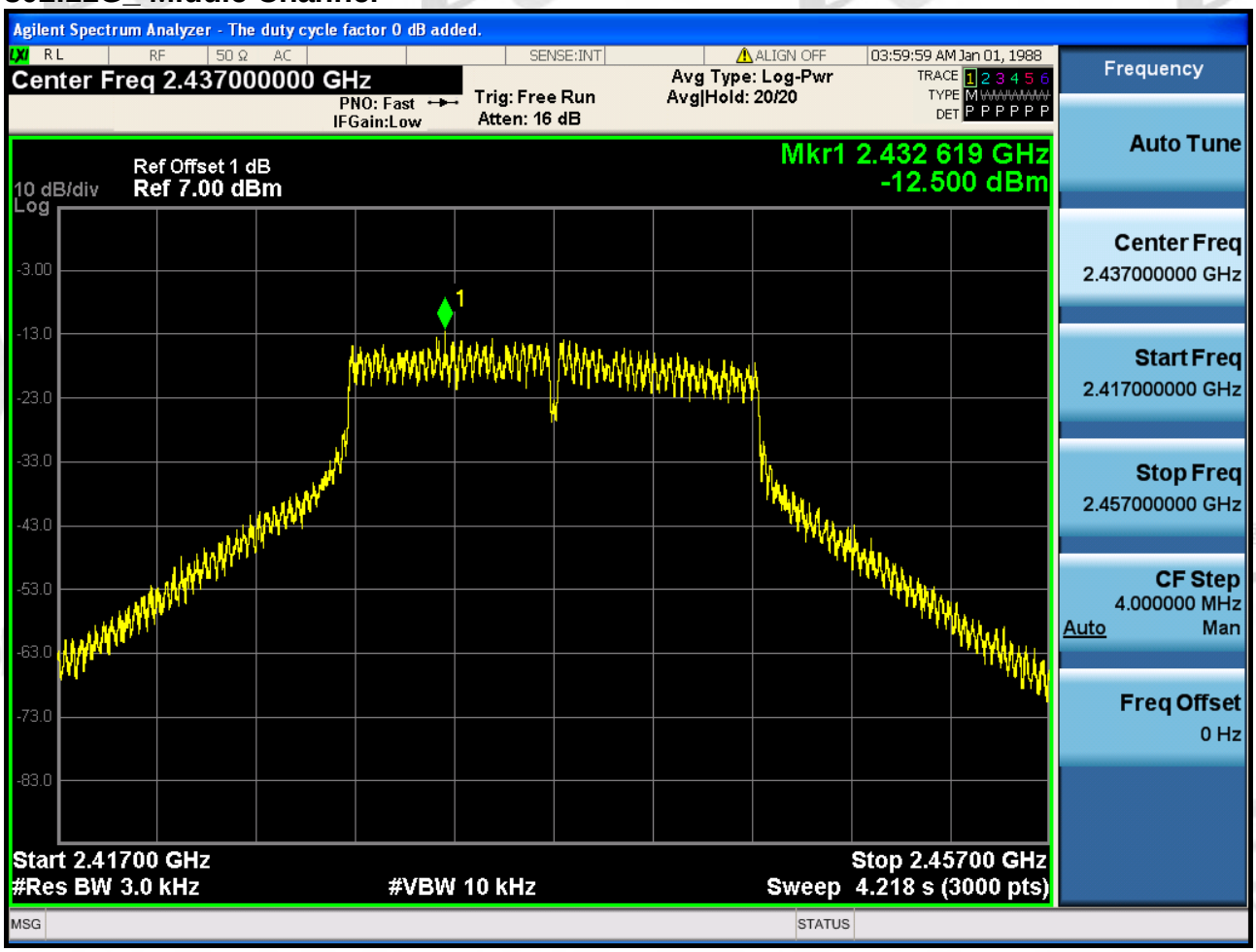
## 802.11B_ Middle Channel

## 802.11B_ Highest Channel

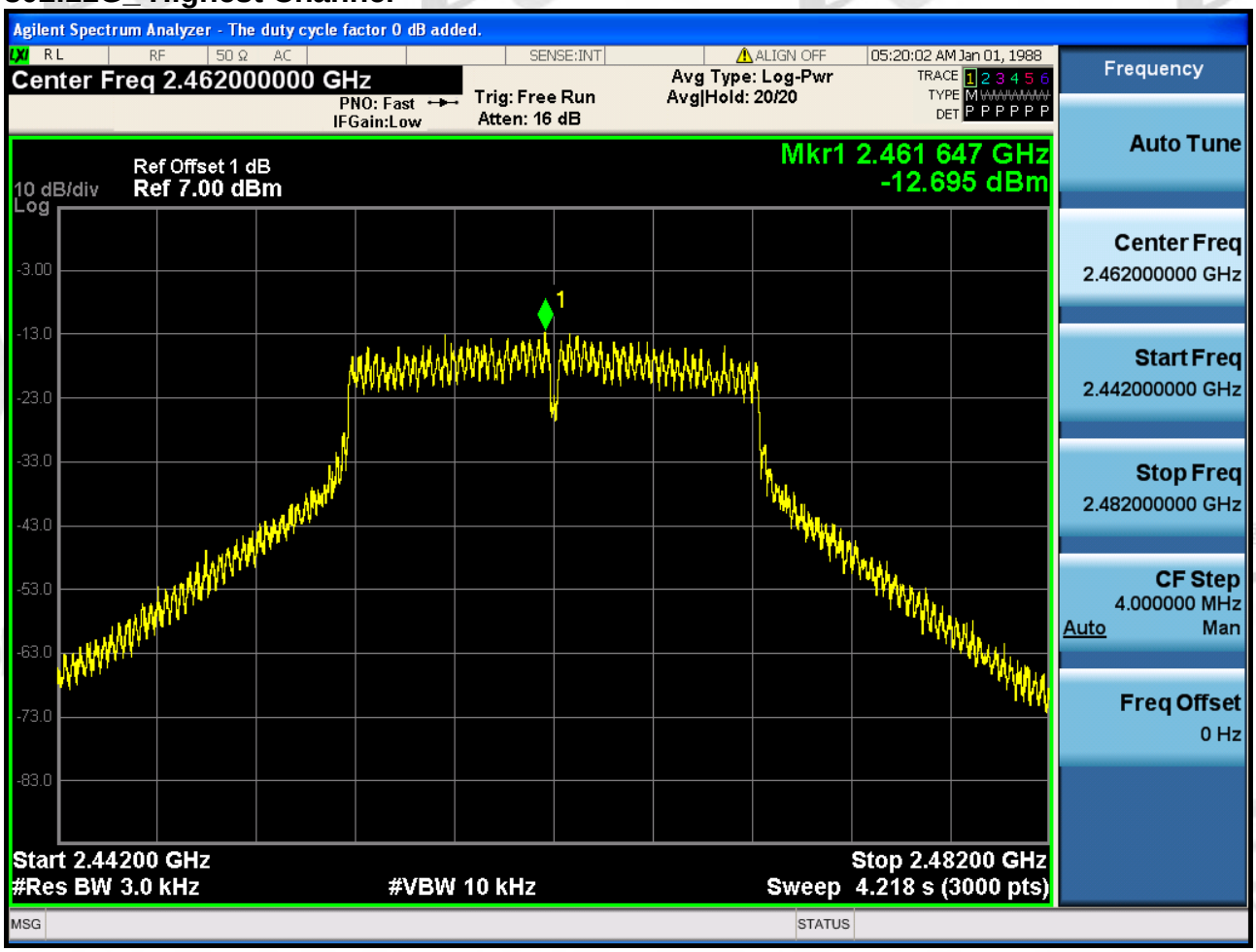
## 802.11G_Lowest Channel



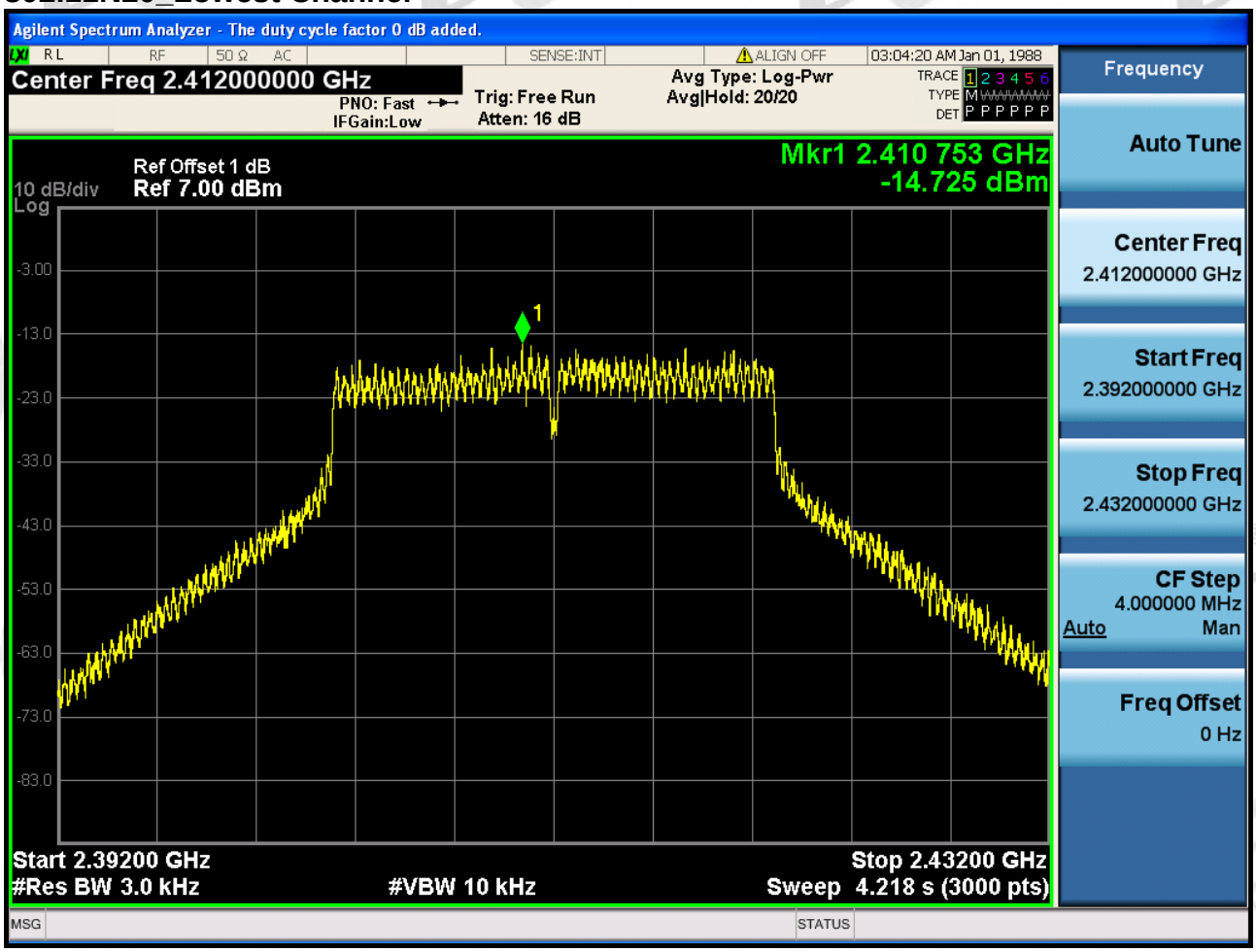
## 802.11G_ Middle Channel



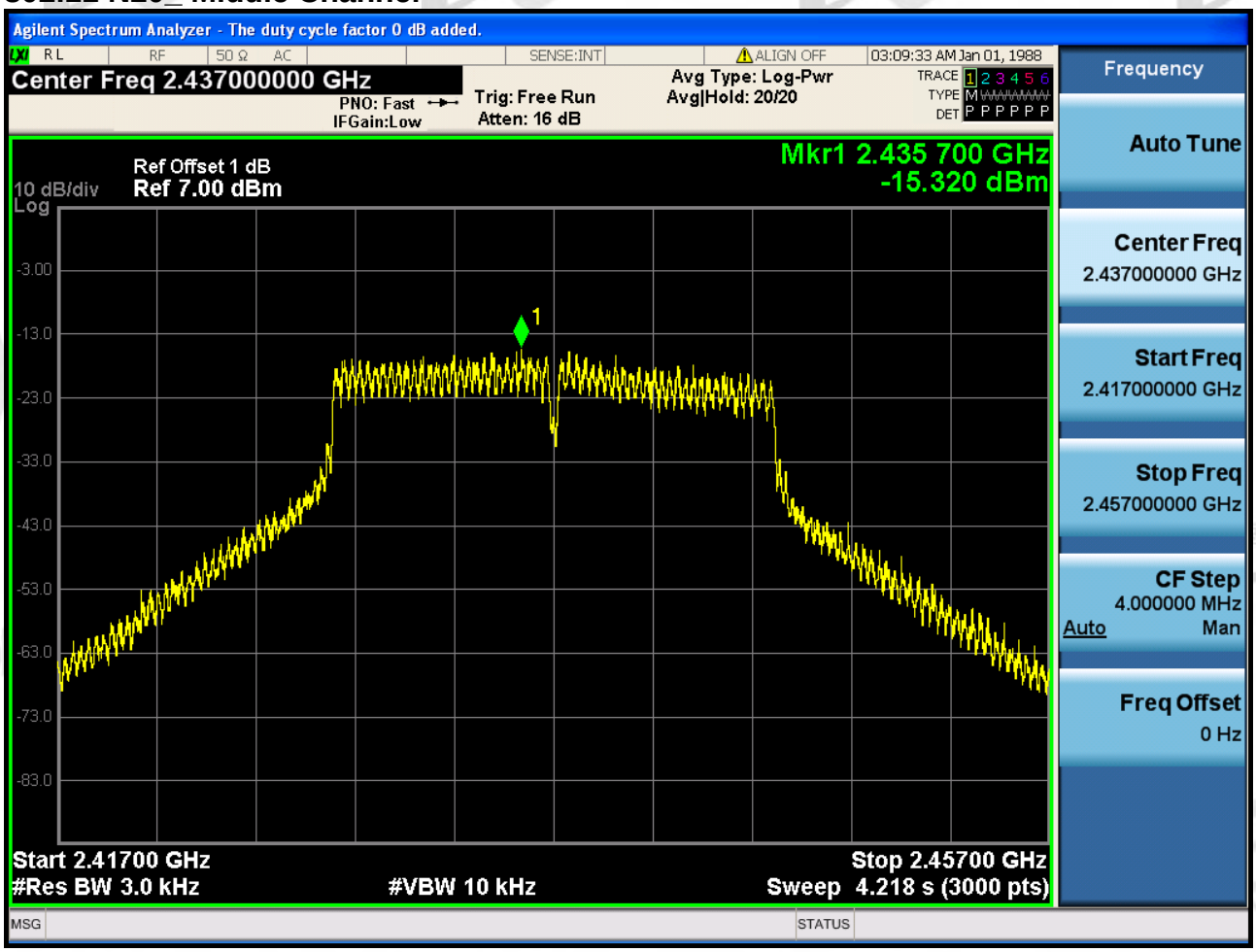
## 802.11G_ Highest Channel



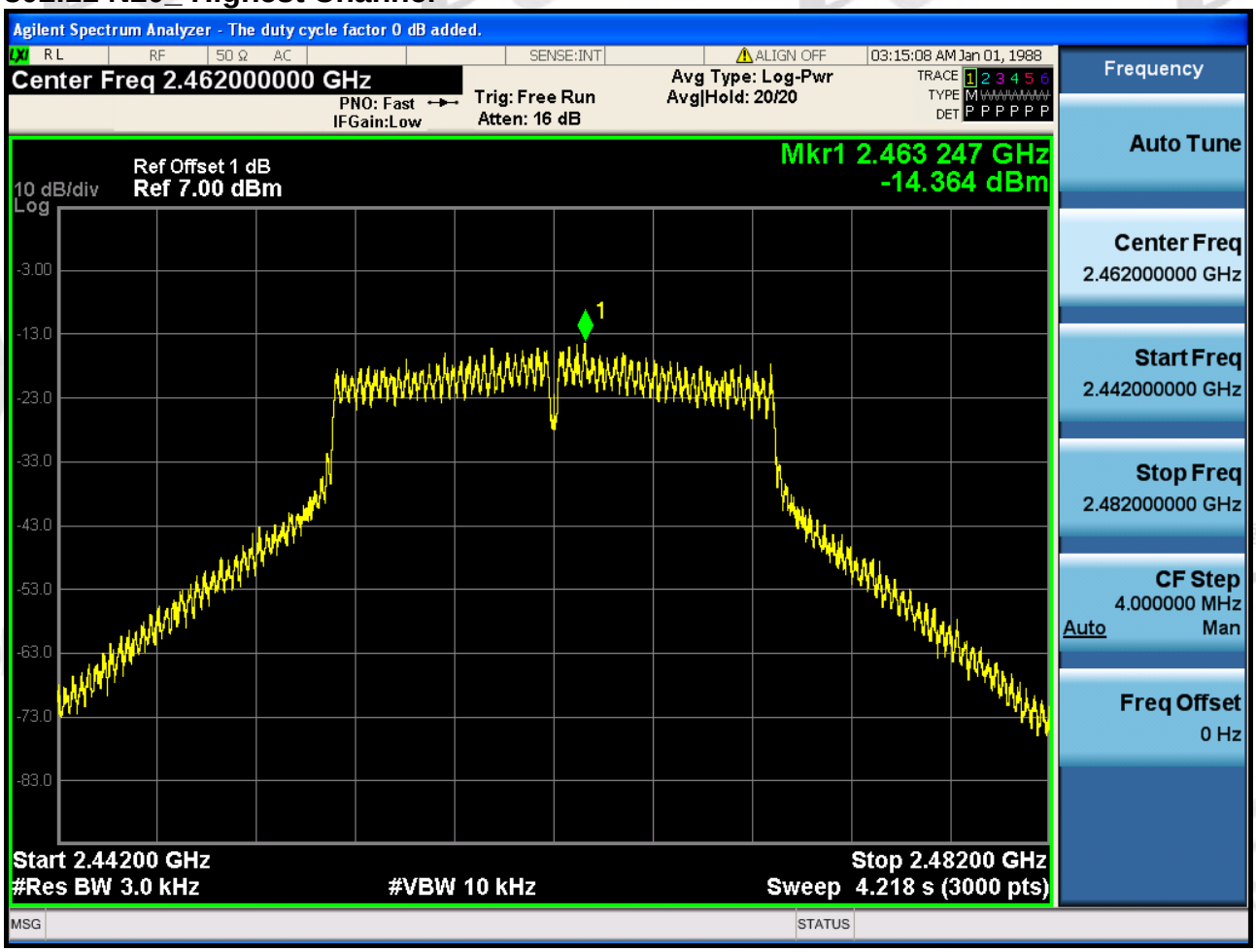
## 802.11N20_Lowest Channel



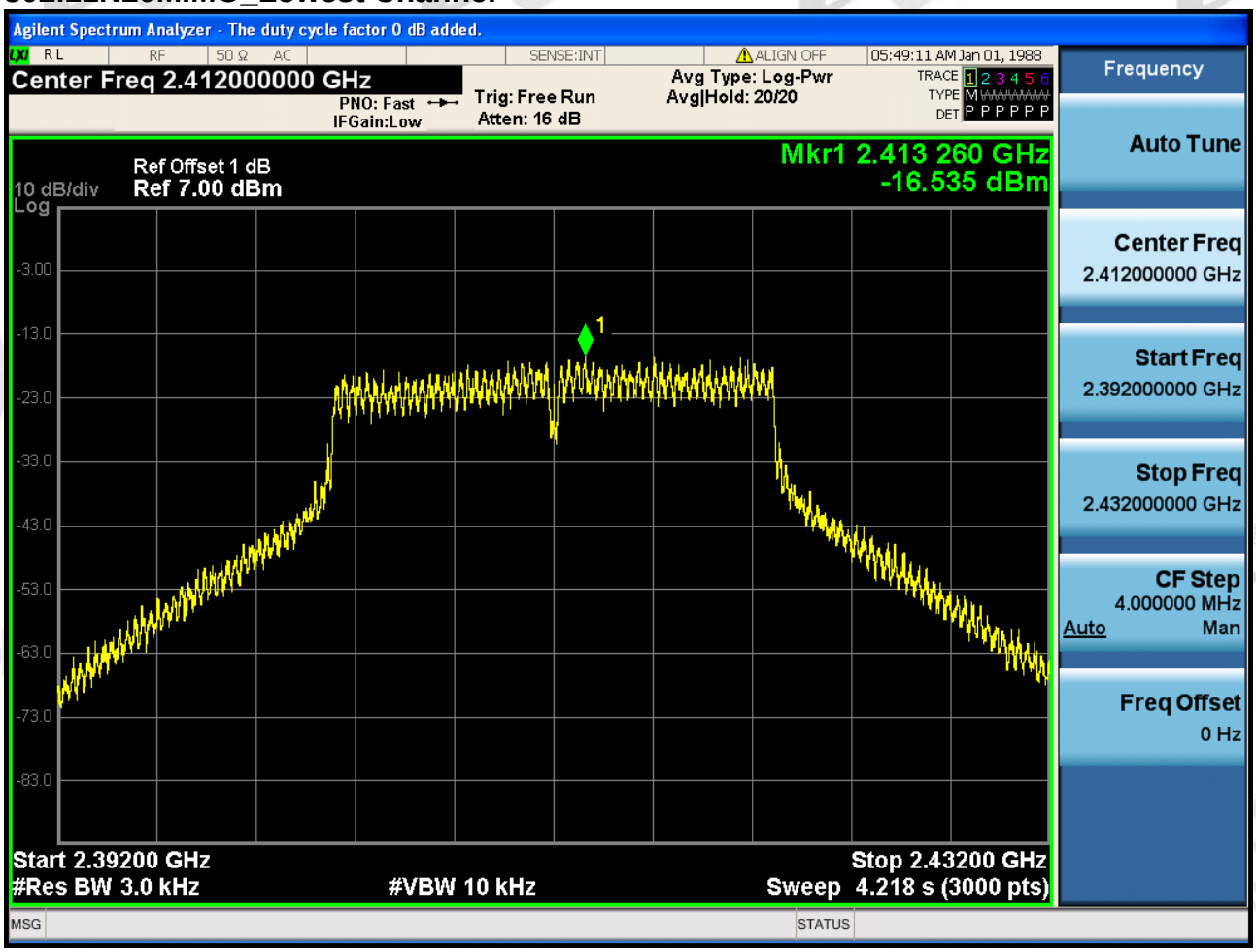
## 802.11 N20_ Middle Channel



## 802.11 N20_ Highest Channel



## 802.11N20MIMO_Lowest Channel



## 802.11 N20MIMO_ Middle Channel