# Appendix B

## Test Data for SZEM150900598004

# CONTENT

# 1 Effective (Isotropic) Radiated Power Output Data

**Part I - Test Results**

**Part 1 – RF Conducted Power of Transmitter for GSM850**

| TEST CONDITIONS | RF Output Power(Conducted) | | | | | |
|---|---|---|---|---|---|---|
| | Channel128(L) | | Channel190(M) | | Channel251(H) | |
| | 824.2MHz | | 836.6 MHz | | 848.8 MHz | |
| Tnom/ Vnom | Measured (dBm) | Limit (dBm) | Measured (dBm) | Limit (dBm) | Measured (dBm) | Limit (dBm) |
| GSM/TM1 (GSM ONLY) | 33.24 | 38.5 | 33.11 | 38.5 | 33.08 | 38.5 |
| GSM/TM1 (GPRS) | 32.85 | 38.5 | 32.76 | 38.5 | 32.75 | 38.5 |
| GSM/TM2 (EGPRS) | 26.28 | 38.5 | 26.35 | 38.5 | 26.19 | 38.5 |

**Part 2– Effective Radiated Power of Transmitter (ERP) for GSM850**

| Test Mode | Freq. (MHz) | Meas. Level (dBm) | Substitution Antenna Type | SGP (dBm) | Substitution Gain(dBd) | Cable Loss (dB) | Substitution Level(ERP) / dBm | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|
| GSM/TM1 (GSM ONLY) | 824.2 | 33.94 | Dipole Ant. | 39.19 | -4.90 | 0.6 | 33.69 | 38.5 | Pass |
| GSM/TM1 (GSM ONLY) | 836.6 | 33.81 | Dipole Ant. | 39.27 | -5.02 | 0.6 | 33.65 | 38.5 | Pass |
| GSM/TM1 (GSM ONLY) | 848.8 | 33.78 | Dipole Ant. | 39.18 | -5.00 | 0.6 | 33.58 | 38.5 | Pass |
| GSM/TM1 (GPRS) | 824.2 | 33.55 | Dipole | 38.72 | -4.90 | 0.6 | 33.22 | 38.5 | Pass |
| GSM/TM1 (GPRS) | 836.6 | 33.46 | Dipole | 38.79 | -5.02 | 0.6 | 33.17 | 38.5 | Pass |
| GSM/TM1 (GPRS) | 848.8 | 33.45 | Dipole | 36.83 | -5.00 | 0.6 | 31.23 | 38.5 | Pass |
| GSM/TM2 (EGPRS) | 824.2 | 26.98 | Dipole | 32.23 | -4.90 | 0.6 | 26.73 | 38.5 | Pass |
| GSM/TM2 (EGPRS) | 836.6 | 27.05 | Dipole | 32.51 | -5.02 | 0.6 | 26.89 | 38.5 | Pass |
| GSM/TM2 (EGPRS) | 848.8 | 26.89 | Dipole | 32.36 | -5.00 | 0.6 | 26.76 | 38.5 | Pass |

Note:

a: For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should be taken to calculate it,

ERP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBd]

b: SGP=Signal Generator Level

c: RBW > emission bandwidth, VBW > 3 x RBW.
Detector: RMS

**Part 3 – RF Conducted Power of Transmitter for GSM1900**

| TEST CONDITIONS | RF Output Power(Conducted) | | | | | |
|---|---|---|---|---|---|---|
| | Channel512(L) | | Channel661(M) | | Channel810(H) | |
| | 1850.2MHz | | 1880 MHz | | 1909.8 MHz | |
| Tnom/ Vnom | Measured (dBm) | Limit (dBm) | Measured (dBm) | Limit (dBm) | Measured (dBm) | Limit (dBm) |
| GSM/TM1 (GSM ONLY) | 30.66 | 38.5 | 30.23 | 38.5 | 30.29 | 38.5 |
| GSM/TM1 (GPRS) | 30.15 | 38.5 | 30.00 | 38.5 | 29.92 | 38.5 |
| GSM/TM2 (EGPRS) | 24.26 | 38.5 | 24.19 | 38.5 | 24.74 | 38.5 |

**Part 4– Effective Isotropic Radiated Power of Transmitter (EIRP) for GSM1900**

| Test Mode | Freq. (MHz) | Meas. Level (dBm) | Substitution Antenna Type | SGP (dBm) | Substitution Gain(dBd) | Cable Loss (dB) | Substitution Level(EIRP) / dBm | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|
| GSM/TM1 (GSM ONLY) | 1850.2 | 29.06 | Dipole Ant. | 34.50 | -4.90 | 0.6 | 29.00 | 38.5 | Pass |
| GSM/TM1 (GSM ONLY) | 1880 | 28.63 | Dipole Ant. | 34.14 | -5.02 | 0.6 | 28.52 | 38.5 | Pass |
| GSM/TM1 (GSM ONLY) | 1909.8 | 28.69 | Dipole Ant. | 34.11 | -5.00 | 0.6 | 28.51 | 38.5 | Pass |
| GSM/TM1 (GPRS) | 1850.2 | 28.55 | Dipole | 33.97 | -4.90 | 0.6 | 28.47 | 38.5 | Pass |
| GSM/TM1 (GPRS) | 1880 | 28.4 | Dipole | 33.92 | -5.02 | 0.6 | 28.30 | 38.5 | Pass |
| GSM/TM1 (GPRS) | 1909.8 | 28.32 | Dipole | 33.75 | -5.00 | 0.6 | 28.15 | 38.5 | Pass |
| GSM/TM2 (EGPRS) | 1850.2 | 22.66 | Dipole | 28.09 | -4.90 | 0.6 | 22.59 | 38.5 | Pass |
| GSM/TM2 (EGPRS) | 1880 | 22.59 | Dipole | 28.14 | -5.02 | 0.6 | 22.52 | 38.5 | Pass |
| GSM/TM2 (EGPRS) | 1909.8 | 23.14 | Dipole | 28.58 | -5.00 | 0.6 | 22.98 | 38.5 | Pass |

Note:

a: For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

EIRP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBd]

b: SGP=Signal Generator Level

c: RBW > emission bandwidth, VBW > 3 x RBW.
Detector: RMS

**Part 3 – RF Conducted Power of Transmitter for WCDMA BAND 5**

| TEST CONDITIONS | RF Output Power(Conducted) | | | | | |
|---|---|---|---|---|---|---|
| | Channel 4132(L) | | Channel 4182 (M) | | Channel 4233(H) | |
| | 826.4MHz | | 836.4MHz | | 846.6MHz | |
| Tnom/ Vnom | Measured(dBm) | Limit (dBm) | Measured(dBm) | Limit (dBm) | Measured(dBm) | Limit (dBm) |
| WCDMA | 23.21 | 38.5 | 23.2 | 38.5 | 23.38 | 38.5 |
| HSDPA | 22.24 | 38.5 | 22.25 | 38.5 | 22.36 | 38.5 |
| HSUPA | 22.11 | 38.5 | 22.23 | 38.5 | 22.16 | 38.5 |

**Part 4– Effective Radiated Power of Transmitter (ERP) for WCDMA BAND 5**

| Test Mode | Freq. (MHz) | Meas. Level (dBm) | Substitution Antenna Type | SGP (dBm) | Substitution Gain(dBd) | Cable Loss (dB) | Substitution Level(ERP) / dBm | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|
| WCDMA | 826.4 | 23.91 | Dipole | 28.54 | -4.90 | 0.6 | 23.04 | 38.5 | Pass |
| WCDMA | 836.4 | 23.90 | Dipole | 28.63 | -5.02 | 0.6 | 23.01 | 38.5 | Pass |
| WCDMA | 846.6 | 24.08 | Dipole | 28.67 | -5.00 | 0.6 | 23.07 | 38.5 | Pass |
| HSDPA | 826.4 | 22.94 | Dipole | 27.61 | -4.90 | 0.6 | 22.11 | 38.5 | Pass |
| HSDPA | 836.4 | 22.95 | Dipole | 27.76 | -5.02 | 0.6 | 22.14 | 38.5 | Pass |
| HSDPA | 846.6 | 23.06 | Dipole | 27.78 | -5.00 | 0.6 | 22.18 | 38.5 | Pass |
| HSUPA | 826.4 | 22.81 | Dipole | 27.50 | -4.90 | 0.6 | 22.00 | 38.5 | Pass |
| HSUPA | 836.4 | 22.93 | Dipole | 27.64 | -5.02 | 0.6 | 22.02 | 38.5 | Pass |
| HSUPA | 846.6 | 22.86 | Dipole | 27.63 | -5.00 | 0.6 | 22.03 | 38.5 | Pass |

Note:

a: For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should be taken to calculate it,

ERP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBd]

b: SGP=Signal Generator Level

c: RBW > emission bandwidth, VBW > 3 x RBW.
Detector: RMS

**Part 5 – RF Conducted Power of Transmitter for LTE BAND 7**

| Bandwidth | TEST CONDITIONS | RF Output Power(Conducted) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Channel (L) | | Channel (M) | | Channel (H) | |
| | | 2502.5 ~ 2510 MHz | | 2535 MHz | | 2560 ~ 2567.5 MHz | |
| | Tnom/ Vnom | Measured(dBm) | Limit (dBm) | Measured(dBm) | Limit (dBm) | Measured(dBm) | Limit (dBm) |
| 5MHz | QPSK/ TM1 | 22.14 | 38.5 | 22.20 | 38.5 | 22.26 | 38.5 |
| | 16QAM/ TM2 | 21.35 | 38.5 | 21.51 | 38.5 | 21.18 | 38.5 |
| 10MHz | QPSK/ TM1 | 22.09 | 38.5 | 22.25 | 38.5 | 22.18 | 38.5 |
| | 16QAM/ TM2 | 21.31 | 38.5 | 21.20 | 38.5 | 21.26 | 38.5 |
| 15MHz | QPSK/ TM1 | 22.17 | 38.5 | 22.25 | 38.5 | 22.09 | 38.5 |
| | 16QAM/ TM2 | 21.24 | 38.5 | 21.47 | 38.5 | 21.08 | 38.5 |
| 20MHz | QPSK/ TM1 | 22.32 | 38.5 | 22.38 | 38.5 | 22.11 | 38.5 |
| | 16QAM/ TM2 | 21.09 | 38.5 | 21.54 | 38.5 | 21.30 | 38.5 |

**Part 6– Effective Isotropic Radiated Power of Transmitter (EIRP) for LTE**

| Test Mode | Freq. (MHz) | Meas. Level (dBm) | Substitution Antenna Type | SGP (dBm) | Substitution Gain(dBd) | Cable Loss (dB) | Substitution Level(EIRP) / dBm | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|
| LTE TM1/5MHz | 2502.5 | 23.44 | Dipole | 28.86 | -4.90 | 0.6 | 23.36 | 38.5 | Pass |
| | 2535 | 23.5 | Dipole | 29.05 | -5.02 | 0.6 | 23.43 | 38.5 | Pass |
| | 2567.5 | 23.56 | Dipole | 29.04 | -5.00 | 0.6 | 23.44 | 38.5 | Pass |
| LTE TM2/5MHz | 2502.5 | 22.65 | Dipole | 28.07 | -4.90 | 0.6 | 22.57 | 38.5 | Pass |
| | 2535 | 22.81 | Dipole | 28.34 | -5.02 | 0.6 | 22.72 | 38.5 | Pass |
| | 2567.5 | 22.48 | Dipole | 27.96 | -5.00 | 0.6 | 22.36 | 38.5 | Pass |
| LTE TM1/ 10MHz | 2505 | 23.39 | Dipole | 28.75 | -4.90 | 0.6 | 23.25 | 38.5 | Pass |
| | 2535 | 23.55 | Dipole | 29.00 | -5.02 | 0.6 | 23.38 | 38.5 | Pass |
| | 2565 | 23.48 | Dipole | 28.93 | -5.00 | 0.6 | 23.33 | 38.5 | Pass |
| LTE TM2/ 10MHz | 2505 | 22.61 | Dipole | 27.96 | -4.90 | 0.6 | 22.46 | 38.5 | Pass |
| | 2535 | 22.5 | Dipole | 27.93 | -5.02 | 0.6 | 22.31 | 38.5 | Pass |
| | 2565 | 22.56 | Dipole | 27.93 | -5.00 | 0.6 | 22.33 | 38.5 | Pass |
| LTE TM1/ 15MHz | 2507.5 | 23.47 | Dipole | 28.83 | -4.90 | 0.6 | 23.33 | 38.5 | Pass |
| | 2535 | 23.55 | Dipole | 29.02 | -5.02 | 0.6 | 23.40 | 38.5 | Pass |
| | 2562.5 | 23.39 | Dipole | 28.76 | -5.00 | 0.6 | 23.16 | 38.5 | Pass |
| LTE TM2/ 15MHz | 2507.5 | 22.54 | Dipole | 27.92 | -4.90 | 0.6 | 22.42 | 38.5 | Pass |
| | 2535 | 22.77 | Dipole | 28.19 | -5.02 | 0.6 | 22.57 | 38.5 | Pass |
| | 2562.5 | 22.38 | Dipole | 27.92 | -5.00 | 0.6 | 22.32 | 38.5 | Pass |
| LTE TM1/ 20MHz | 2510 | 23.62 | Dipole | 29.05 | -4.90 | 0.6 | 23.55 | 38.5 | Pass |
| | 2535 | 23.68 | Dipole | 29.20 | -5.02 | 0.6 | 23.58 | 38.5 | Pass |
| | 2560 | 23.41 | Dipole | 28.99 | -5.00 | 0.6 | 23.39 | 38.5 | Pass |
| LTE TM2/ 20MHz | 2510 | 22.39 | Dipole | 27.80 | -4.90 | 0.6 | 22.30 | 38.5 | Pass |
| | 2535 | 22.84 | Dipole | 28.33 | -5.02 | 0.6 | 22.71 | 38.5 | Pass |
| | 2560 | 22.6 | Dipole | 28.09 | -5.00 | 0.6 | 22.49 | 38.5 | Pass |

Note:

a: For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

EIRP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBd] b: SGP=Signal Generator Level

c: RBW > emission bandwidth, VBW > 3 x RBW.
Detector: RMS

# 2 Peak-to-Average Ratio

**Part I - Test Results**

| Test Band | Test Mode | Test Channel | Measured[dB] | Limit [dB] | Verdict |
|---|---|---|---|---|---|
| GSM850 | GSM/TM1 | LCH | 0.25 | 13 | PASS |
| | | MCH | 0.31 | 13 | PASS |
| | | HCH | 0.23 | 13 | PASS |
| | GSM/TM2 | LCH | 0.31 | 13 | PASS |
| | | MCH | 0.35 | 13 | PASS |
| | | HCH | 0.25 | 13 | PASS |

| Test Band | Test Mode | Test Channel | Measured[dB] | Limit [dB] | Verdict |
|---|---|---|---|---|---|
| WCDMA850 | UMTS/TM1 | LCH | 3.12 | 13 | PASS |
| | | MCH | 2.81 | 13 | PASS |
| | | HCH | 3.22 | 13 | PASS |

| Test Band | Test Mode | Test Channel | Measured[dB] | Limit [dB] | Verdict |
|---|---|---|---|---|---|
| LTE 2600 | LTE TM1/5MHz | LCH | 4.28 | 13 | PASS |
| | | MCH | 4.43 | 13 | PASS |
| | | HCH | 4.38 | 13 | PASS |
| | LTE TM2/5MHz | LCH | 4.59 | 13 | PASS |
| | | MCH | 4.61 | 13 | PASS |
| | | HCH | 4.39 | 13 | PASS |
| | LTE TM1/ 10MHz | LCH | 4.51 | 13 | PASS |
| | | MCH | 4.68 | 13 | PASS |
| | | HCH | 4.65 | 13 | PASS |
| | LTE TM2/ 10MHz | LCH | 4.51 | 13 | PASS |
| | | MCH | 4.38 | 13 | PASS |
| | | HCH | 4.42 | 13 | PASS |
| | LTE TM1/ 15MHz | LCH | 4.68 | 13 | PASS |
| | | MCH | 4.54 | 13 | PASS |
| | | HCH | 4.49 | 13 | PASS |
| | LTE TM2/ 15MHz | LCH | 4.35 | 13 | PASS |
| | | MCH | 4.52 | 13 | PASS |
| | | HCH | 4.55 | 13 | PASS |
| | LTE TM1/ 20MHz | LCH | 4.81 | 13 | PASS |
| | | MCH | 4.59 | 13 | PASS |
| | | HCH | 4.65 | 13 | PASS |
| | LTE TM2/ 20MHz | LCH | 4.66 | 13 | PASS |
| | | MCH | 4.54 | 13 | PASS |
| | | HCH | 4.25 | 13 | PASS |

# 3 Modulation Characteristics

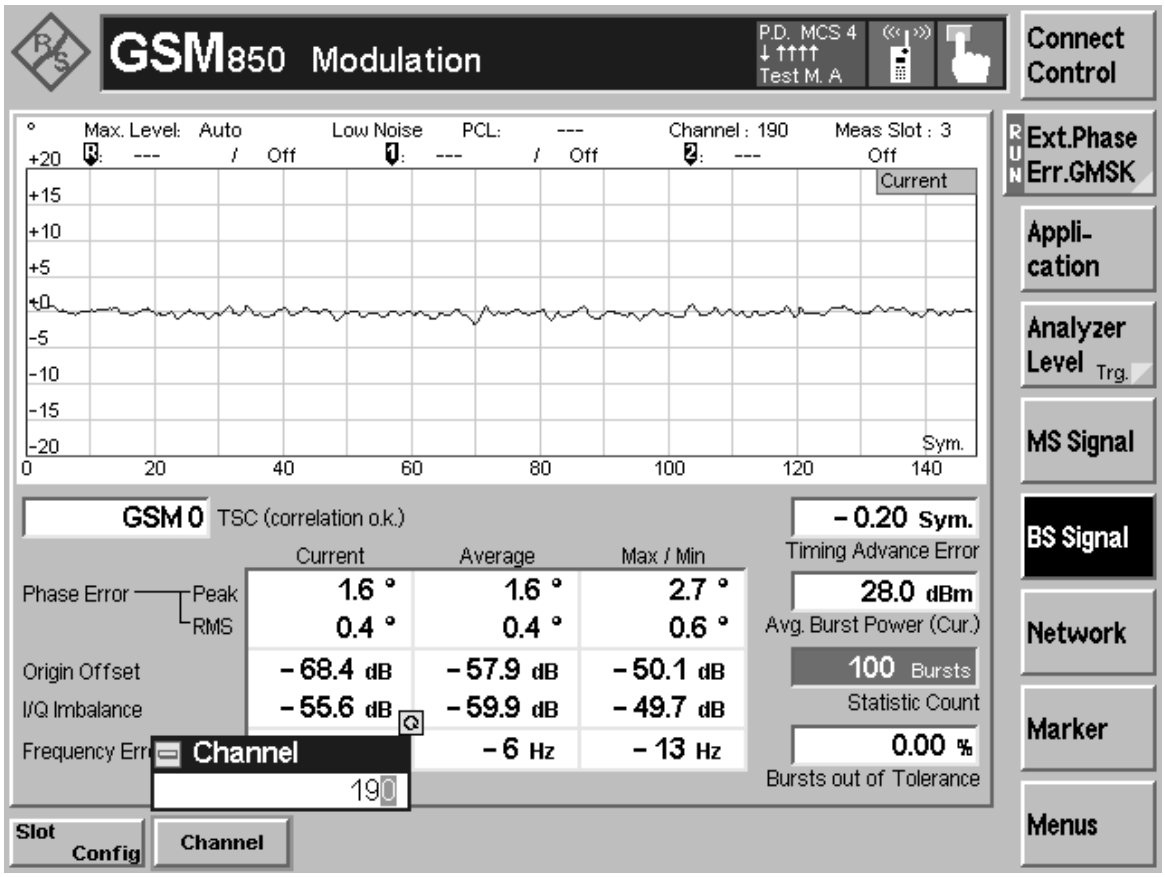
**Part I - Test Plots**

## 3.1 For GSM

### 3.1.1 Test Band = GSM850

#### 3.1.1.1 Test Mode = GSM/TM1

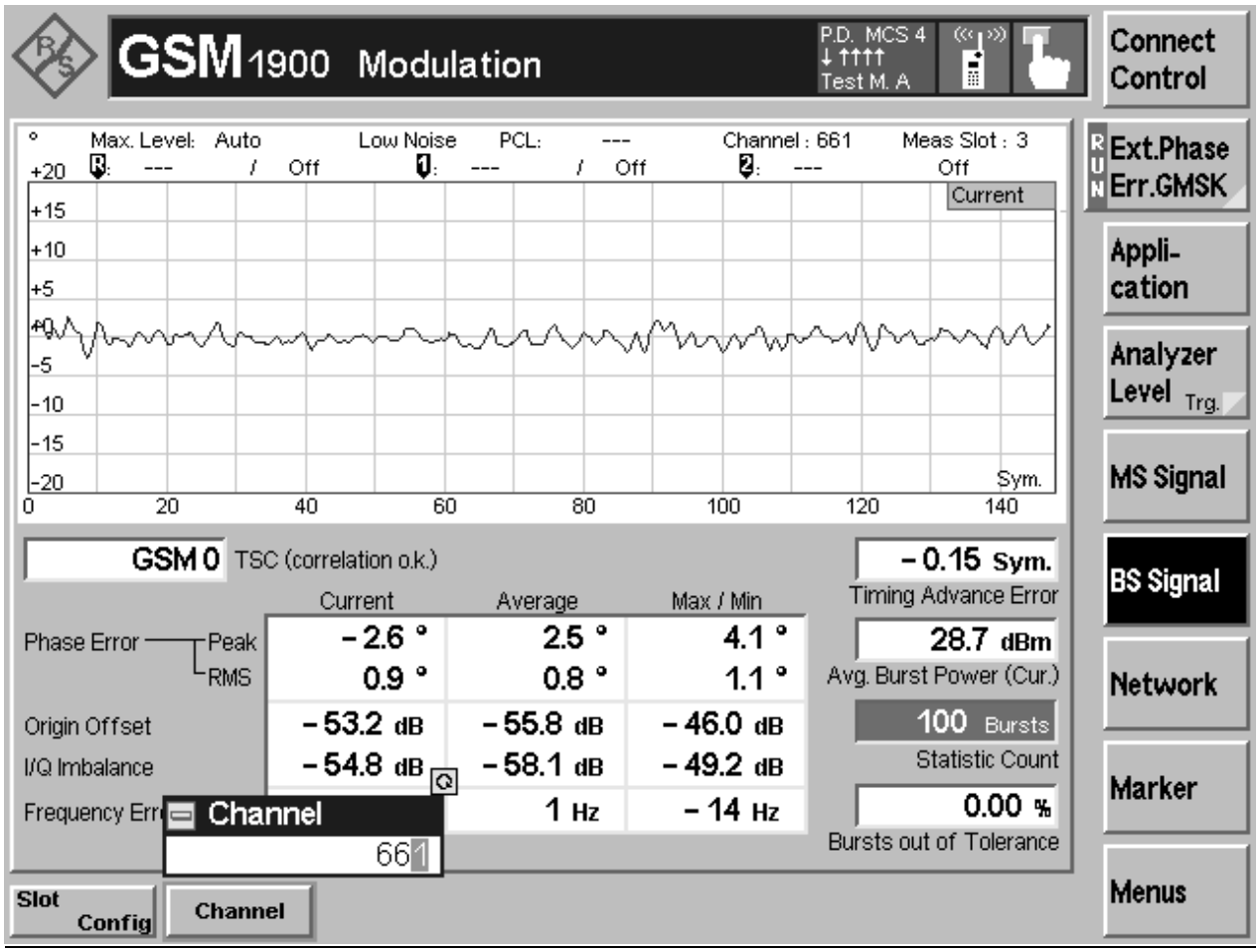
##### 3.1.1.1.1 Test Channel = MCH



## 3.1.2 Test Band = GSM1900

### 3.1.2.1 Test Mode = GSM/TM1

#### 3.1.2.1.1 Test Channel = MCH

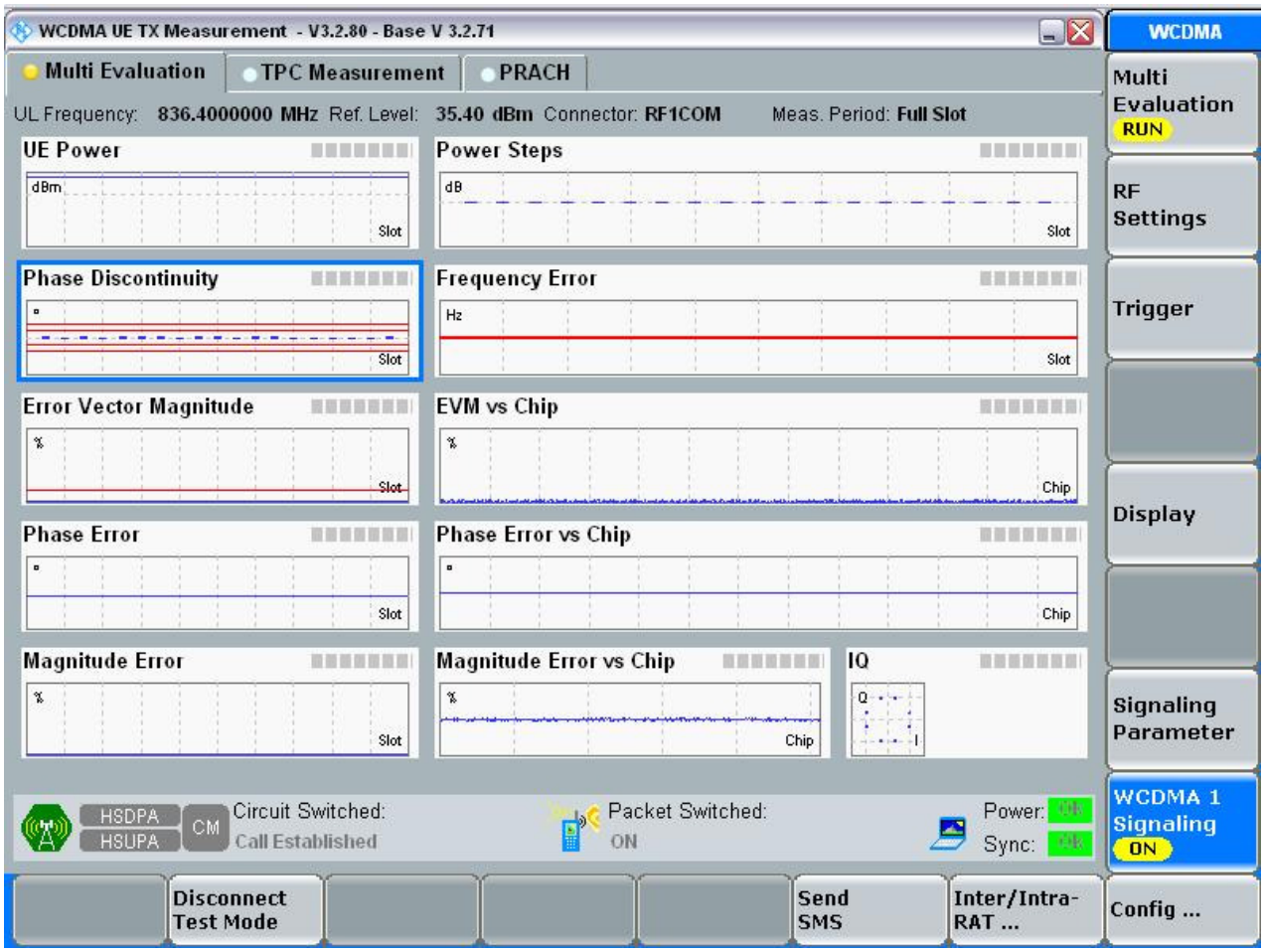


## 3.2 For WCDMA

### 3.2.1 Test Band = WCDMA 850

#### 3.2.1.1 Test Mode = WCDMA BAND 5/TM1

##### 3.2.1.1.1 Test Channel = MCH

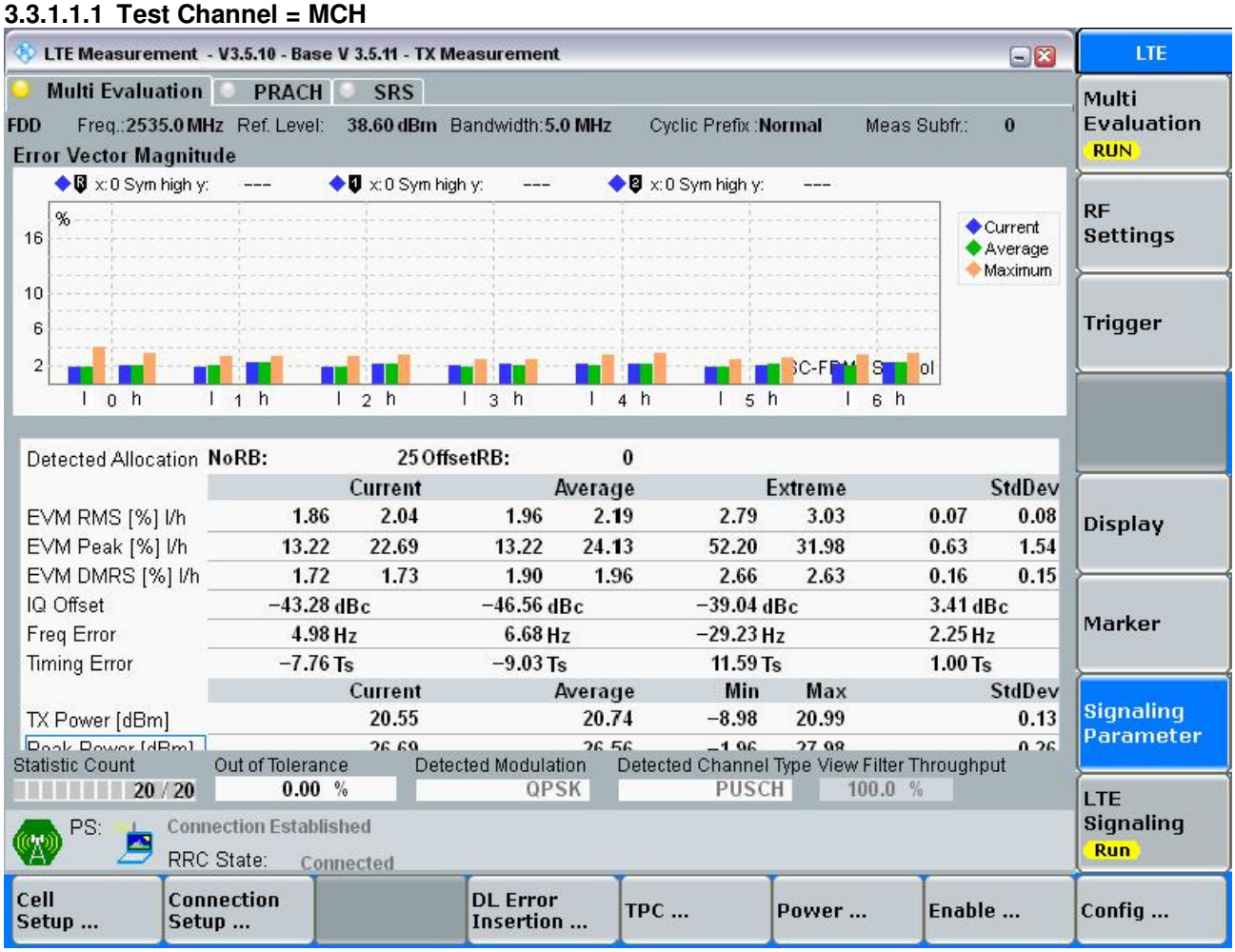


# 3.3 For LTE

## 3.3.1 Test Band = LTE2600

### 3.3.1.1 Test Mode = LTE//TM1 5MHz

#### 3.3.1.1.1 Test Channel = MCH



# 4 Bandwidth

**Part I - Test Results**

| Test Band | Test Mode | Test Channel | Occupied Bandwidth [kHz] | Emission Bandwidth [kHz] | Verdict |
|---|---|---|---|---|---|
| GSM850 | GSM/TM1 | LCH | 247.21 | 312.9 | PASS |
| | | MCH | 243.73 | 318.1 | PASS |
| | | HCH | 243.18 | 320.0 | PASS |
| | GSM/TM2 | LCH | 251.08 | 318.3 | PASS |
| | | MCH | 243.77 | 308.3 | PASS |
| | | HCH | 248.67 | 317.0 | PASS |
| GSM1900 | GSM/TM1 | LCH | 240.20 | 317.1 | PASS |
| | | MCH | 241.10 | 320.0 | PASS |
| | | HCH | 245.85 | 317.4 | PASS |
| | GSM/TM2 | LCH | 241.81 | 305.2 | PASS |
| | | MCH | 251.31 | 318.4 | PASS |
| | | HCH | 245.83 | 305.0 | PASS |

| Test Band | Test Mode | Test Channel | Occupied Bandwidth [MHz] | Emission Bandwidth [MHz] | Verdict |
|---|---|---|---|---|---|
| WCDMA850 | UMTS/TM1 | LCH | 4.1509 | 4.664 | PASS |
| | | MCH | 4.1522 | 4.662 | PASS |
| | | HCH | 4.1527 | 4.662 | PASS |

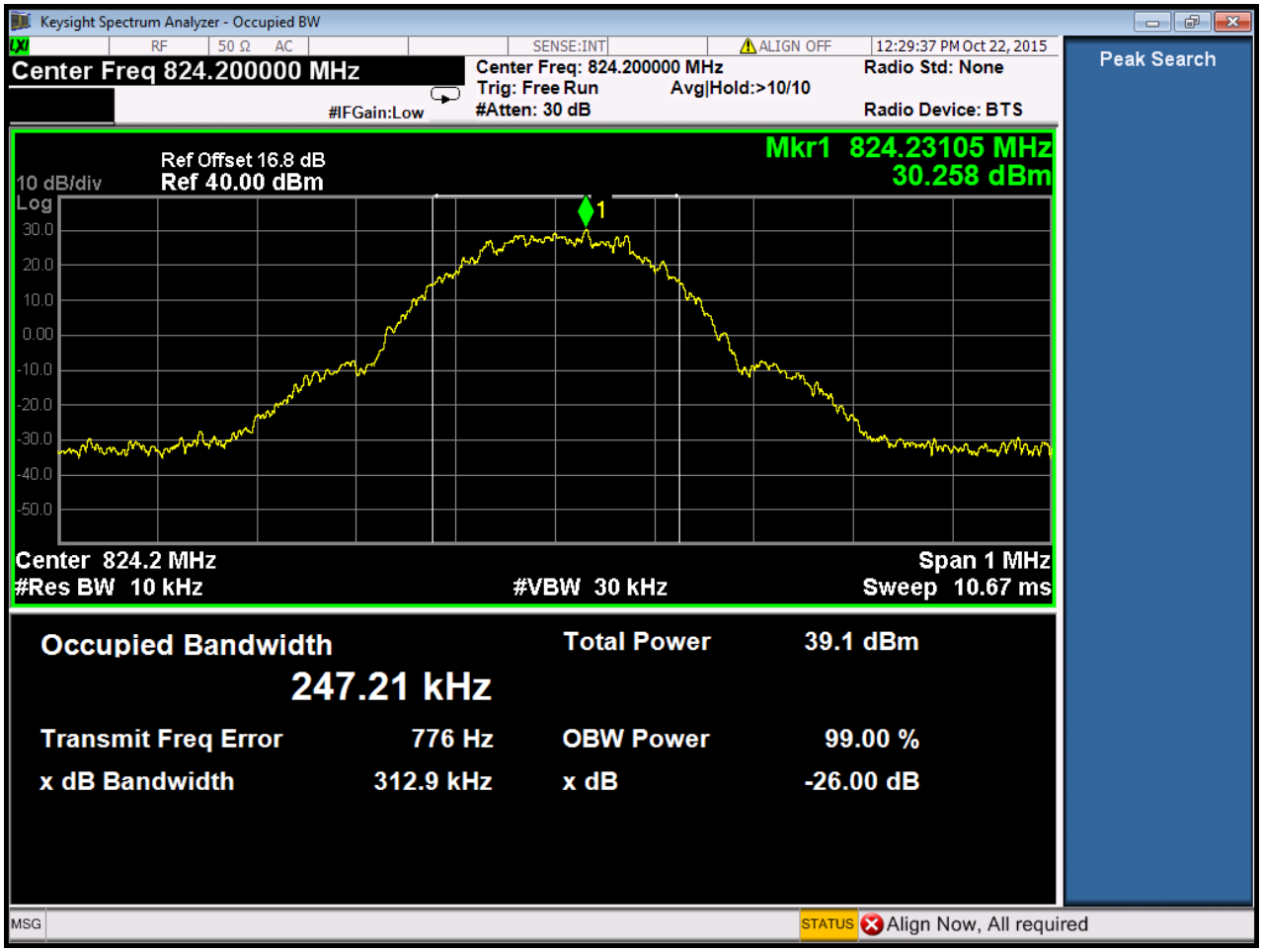
| Test Band | Test Mode | Test Channel | Occupied Bandwidth [MHz] | Emission Bandwidth [MHz] | Verdict |
|---|---|---|---|---|---|
| LTE 2600 | LTE TM1/5MHz | LCH | 4.5056 | 5.025 | PASS |
| | | MCH | 4.5007 | 5.033 | PASS |
| | | HCH | 4.5028 | 4.961 | PASS |
| | LTE TM2/5MHz | LCH | 4.5222 | 5.045 | PASS |
| | | MCH | 4.5064 | 5.019 | PASS |
| | | HCH | 4.5037 | 4.956 | PASS |
| | LTE TM1/ 10MHz | LCH | 8.9860 | 9.911 | PASS |
| | | MCH | 8.9781 | 9.830 | PASS |
| | | HCH | 8.9957 | 9.905 | PASS |
| | LTE TM2/ 10MHz | LCH | 9.0019 | 9.968 | PASS |
| | | MCH | 8.9796 | 9.904 | PASS |
| | | HCH | 8.9885 | 9.736 | PASS |
| | LTE TM1/ 15MHz | LCH | 13.445 | 14.59 | PASS |
| | | MCH | 13.414 | 14.60 | PASS |
| | | HCH | 13.429 | 14.64 | PASS |
| | LTE TM2/ 15MHz | LCH | 13.456 | 14.64 | PASS |
| | | MCH | 13.424 | 14.63 | PASS |
| | | HCH | 13.468 | 14.78 | PASS |
| | LTE TM1/ 20MHz | LCH | 17.887 | 19.36 | PASS |
| | | MCH | 17.916 | 19.50 | PASS |
| | | HCH | 17.899 | 19.32 | PASS |
| | LTE TM2/ 20MHz | LCH | 17.910 | 19.58 | PASS |
| | | MCH | 17.896 | 19.30 | PASS |
| | | HCH | 17.888 | 19.31 | PASS |

# 4.1 For GSM

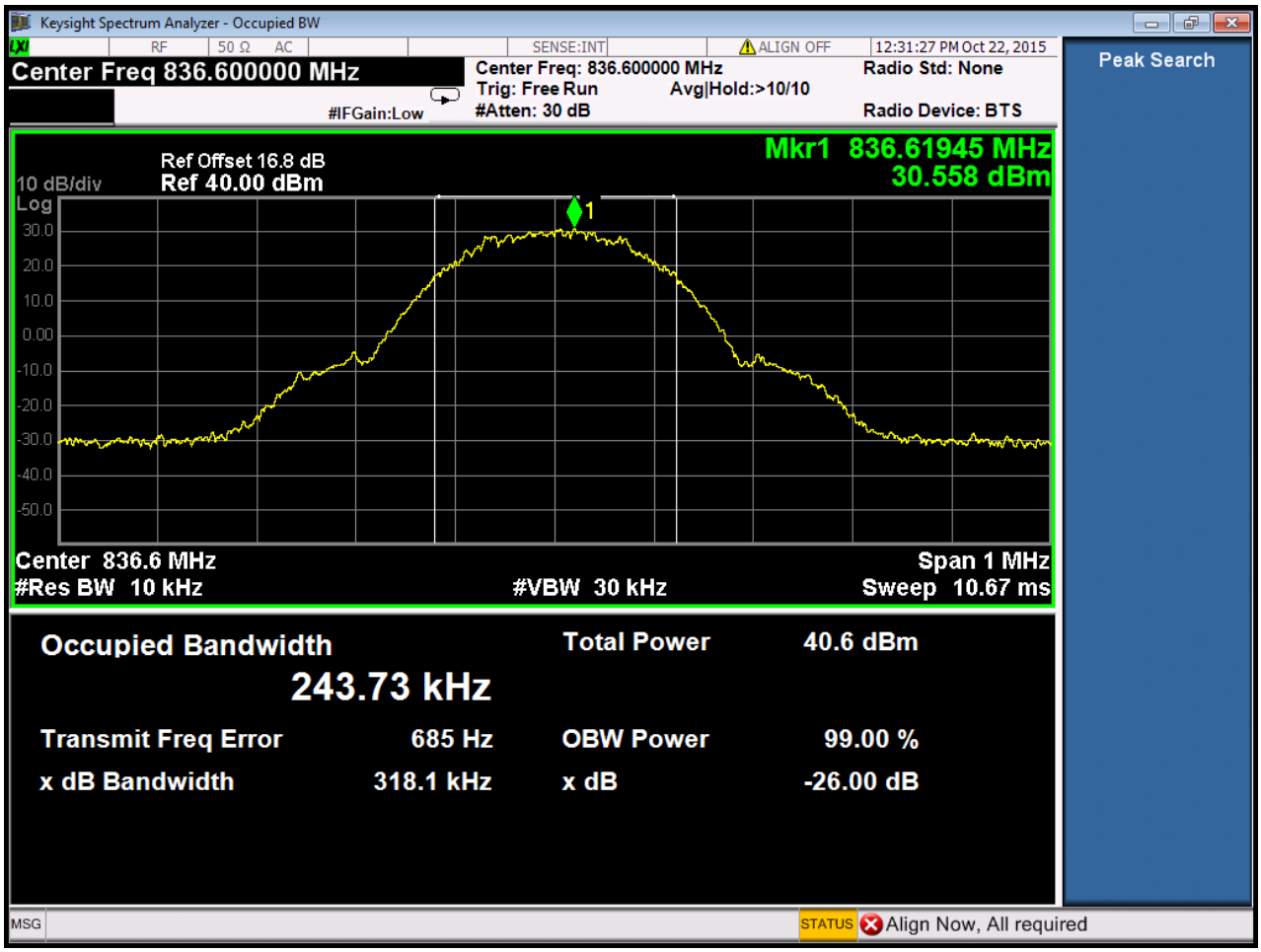
## 4.1.1 Test Band = GSM850

### 4.1.1.1 Test Mode = GSM/TM1

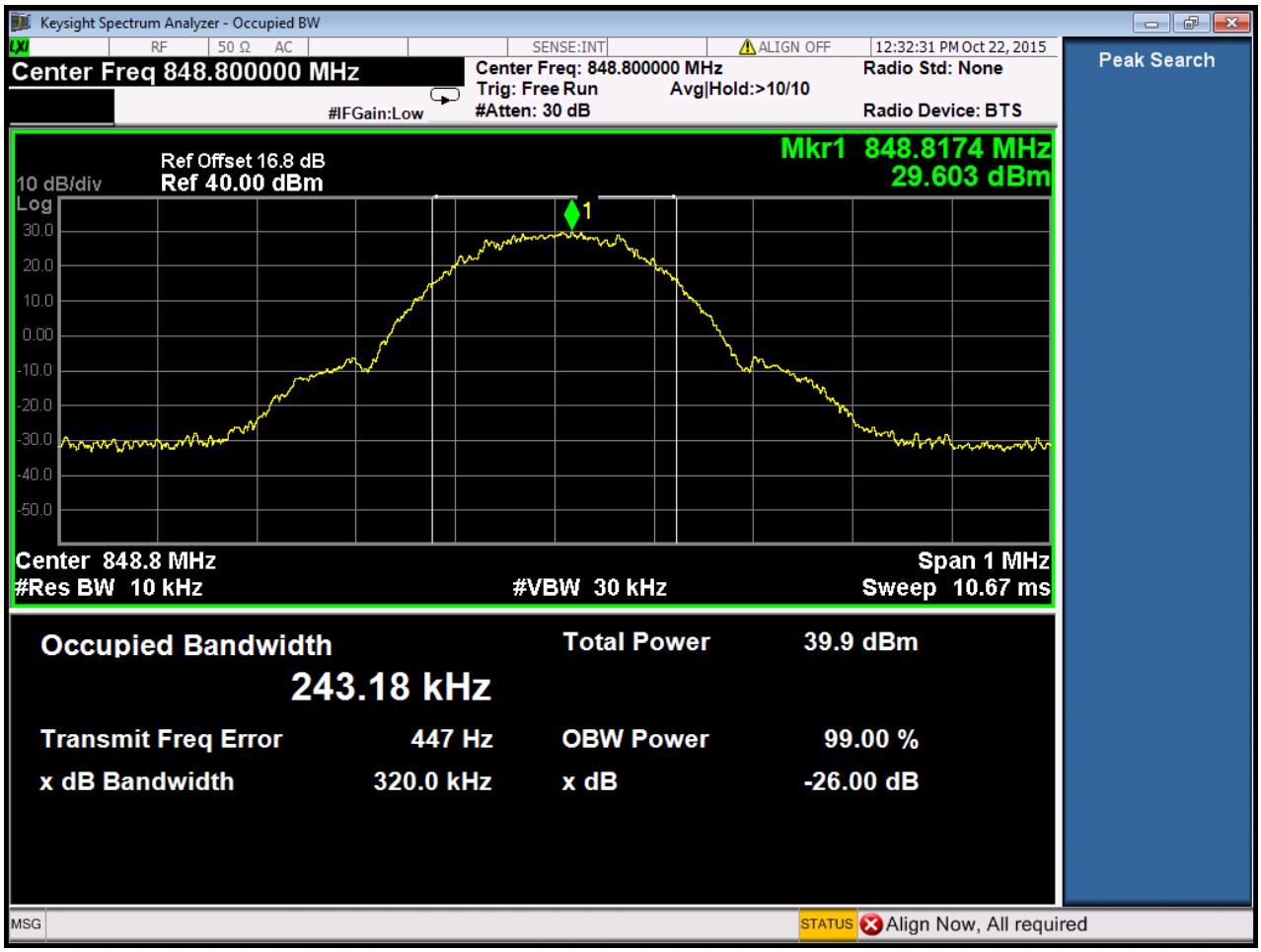
#### 4.1.1.1.1 Test Channel = LCH



#### 4.1.1.1.2 Test Channel = MCH

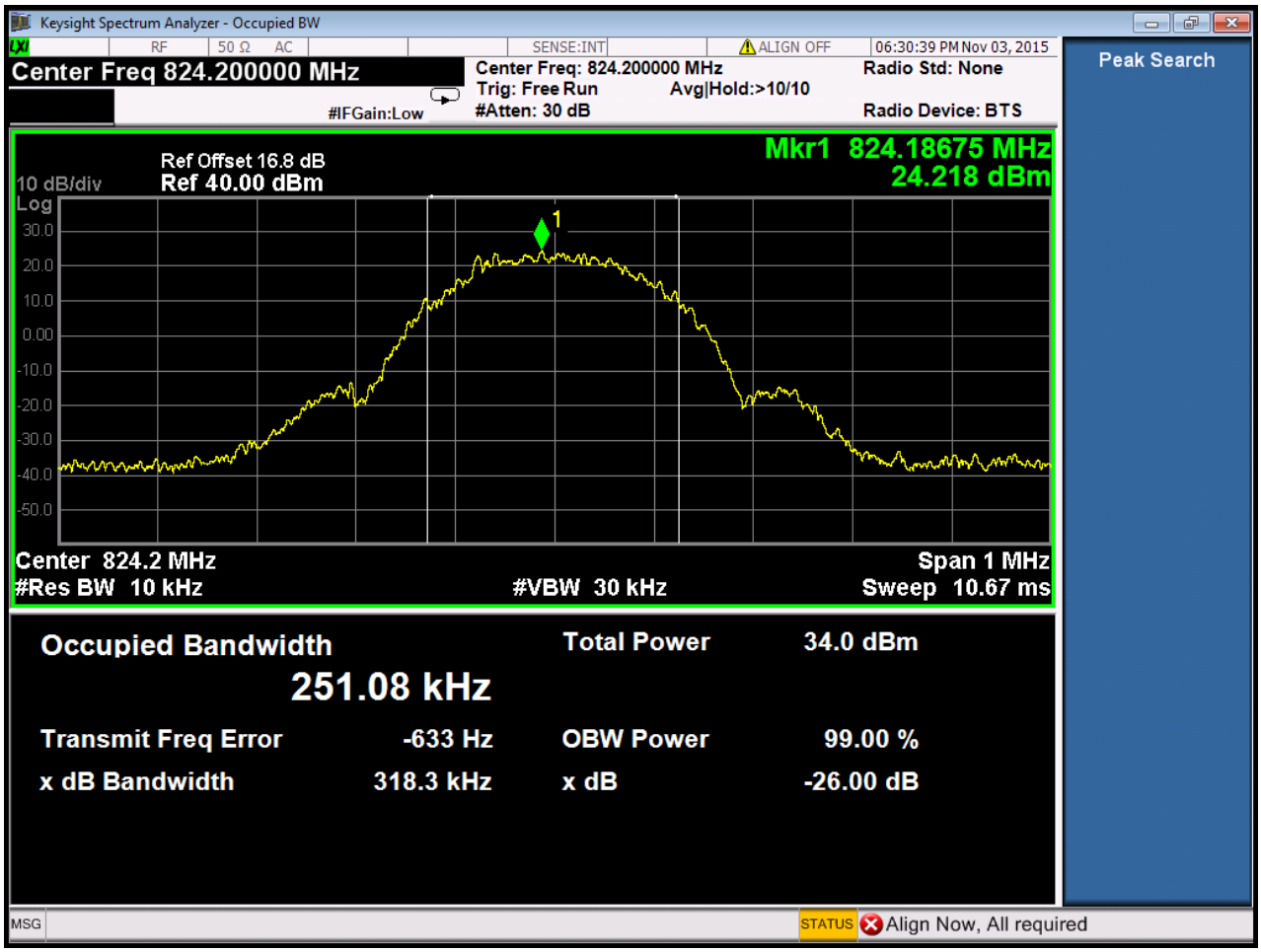


#### 4.1.1.1.3 Test Channel = HCH

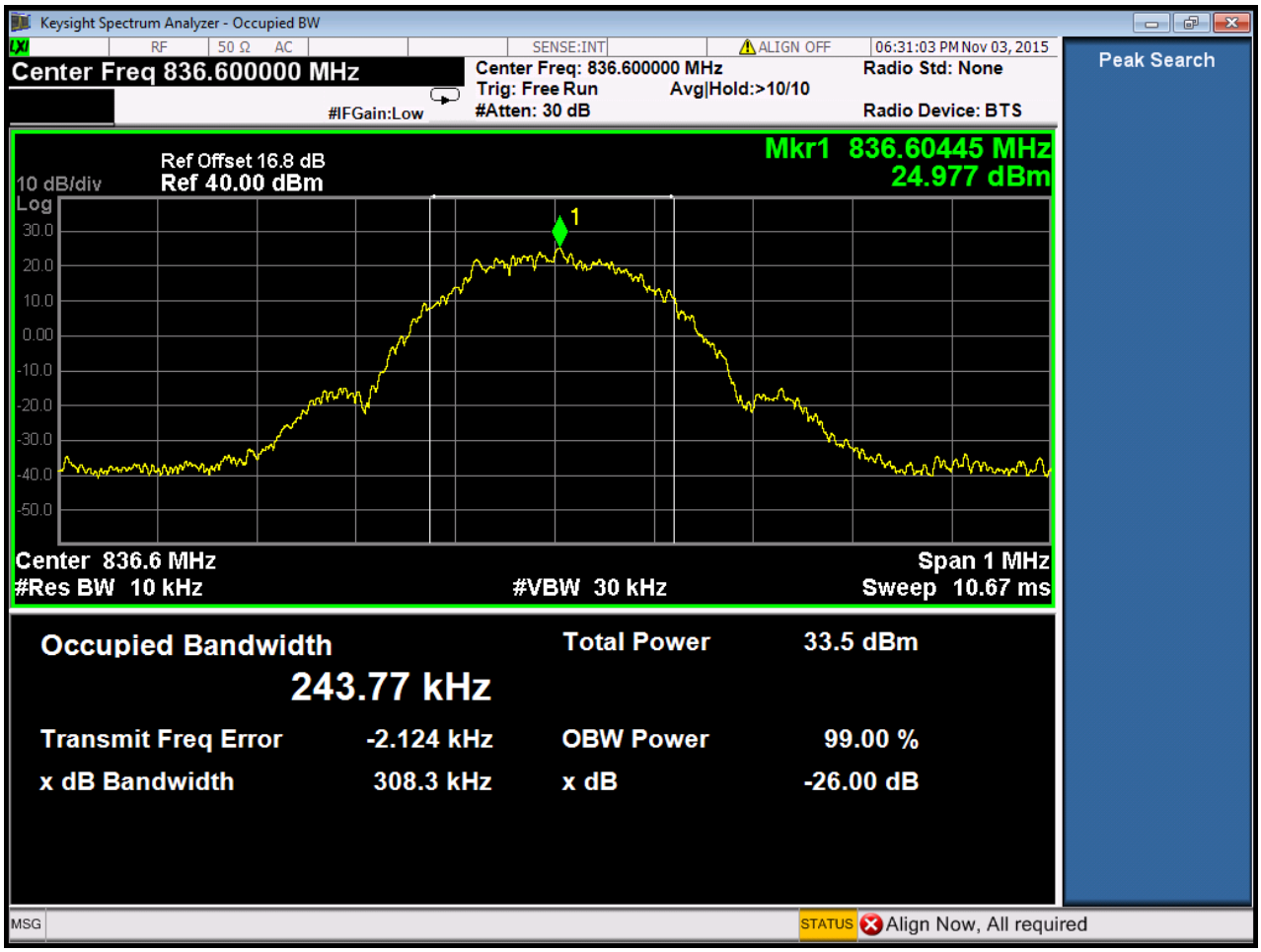


#### 4.1.1.2 Test Mode = GSM/TM2

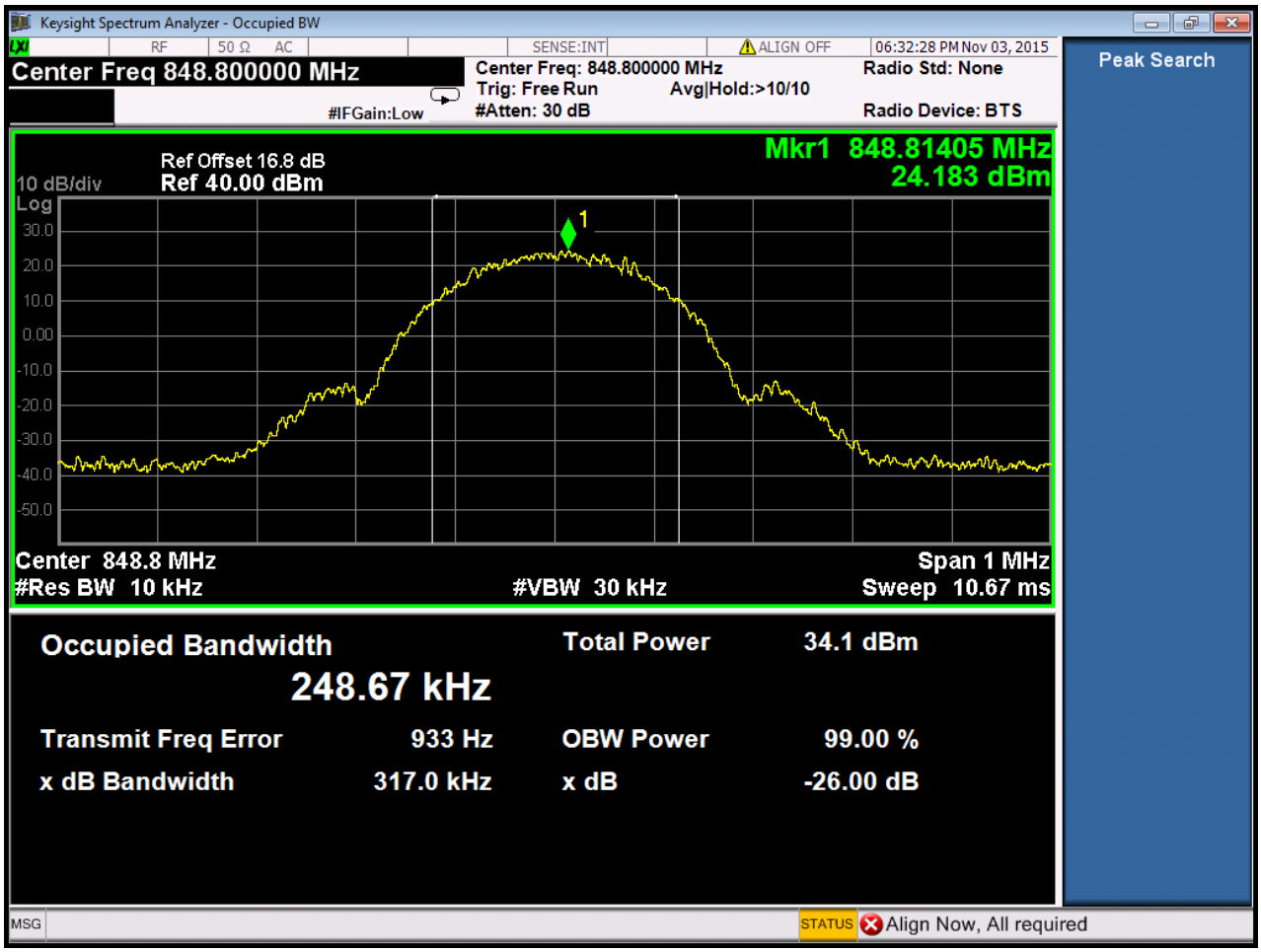
##### 4.1.1.2.1 Test Channel = LCH



#### 4.1.1.2.2 Test Channel = MCH



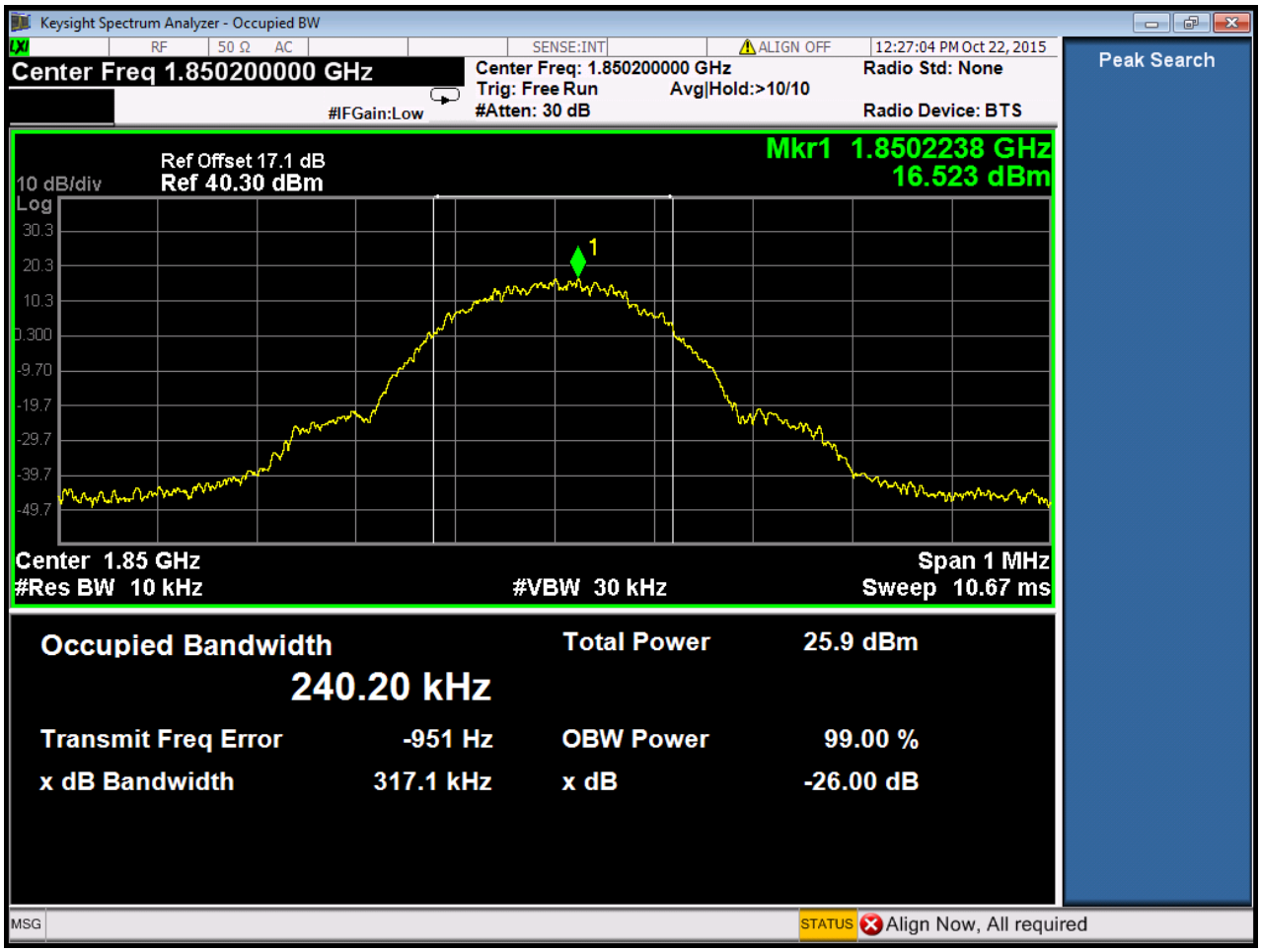
#### 4.1.1.2.3 Test Channel = HCH



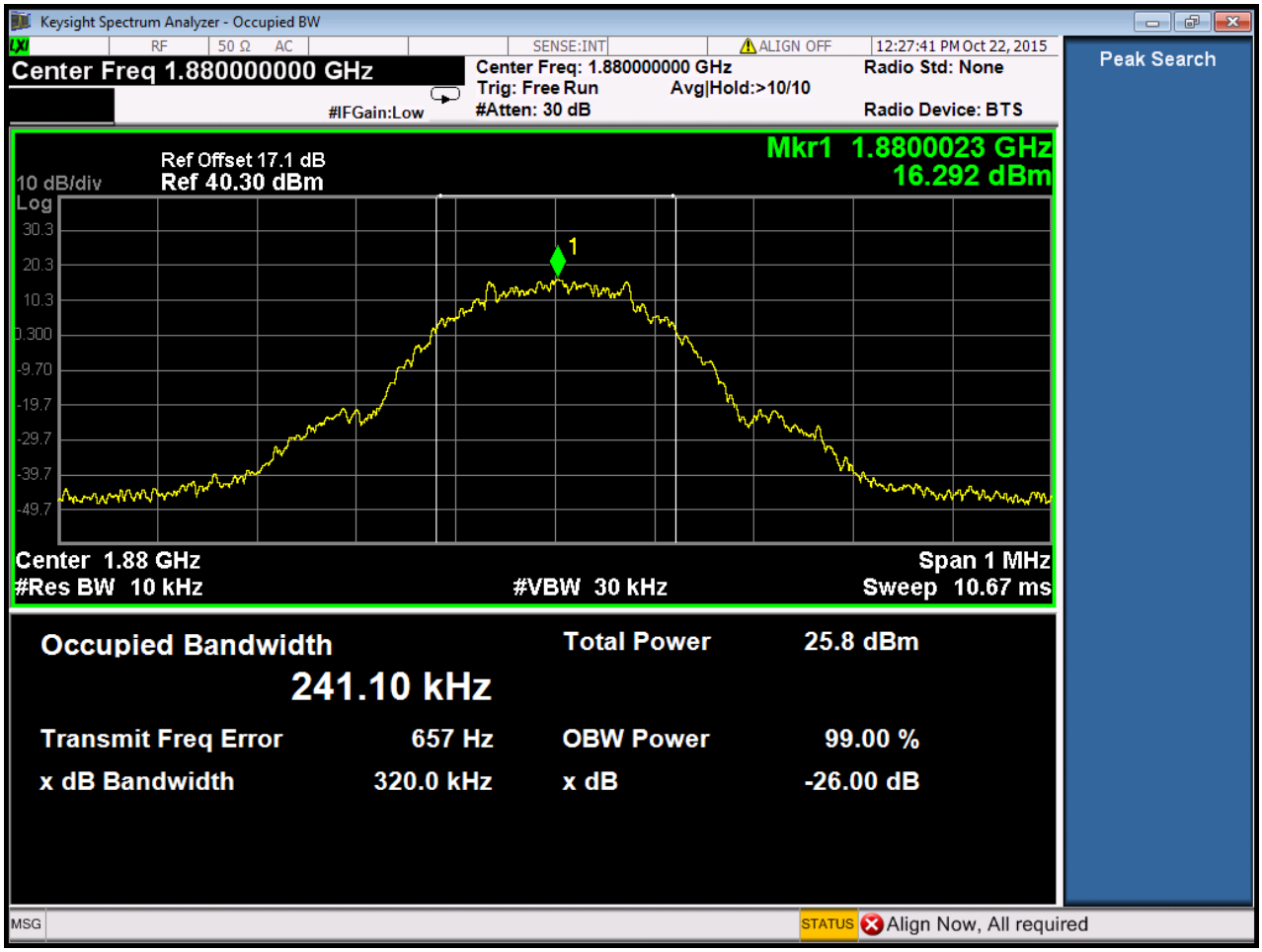
## 4.1.2 Test Band = GSM1900

### 4.1.2.1 Test Mode = GSM/TM1

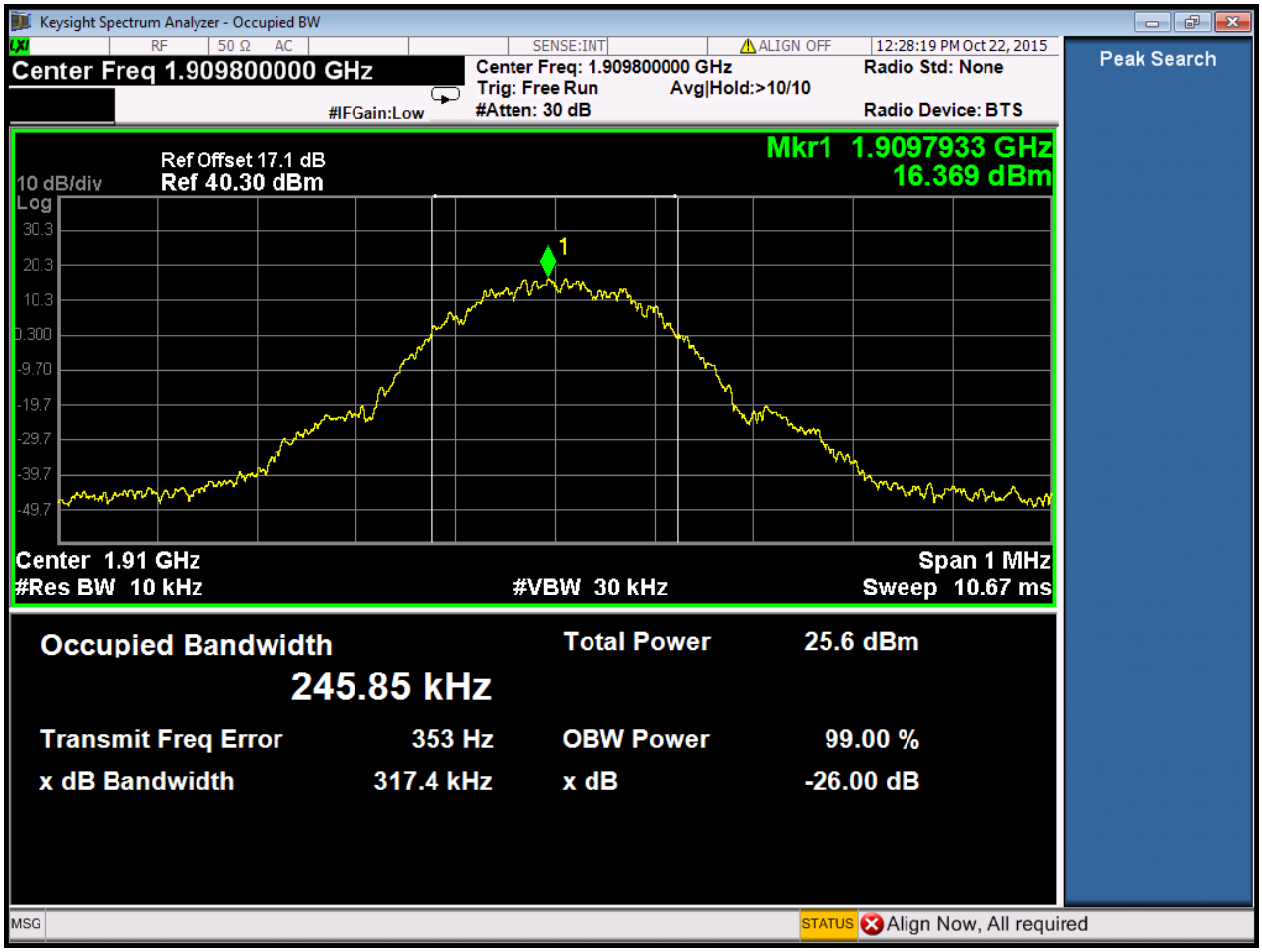
#### 4.1.2.1.1 Test Channel = LCH



#### 4.1.2.1.2 Test Channel = MCH

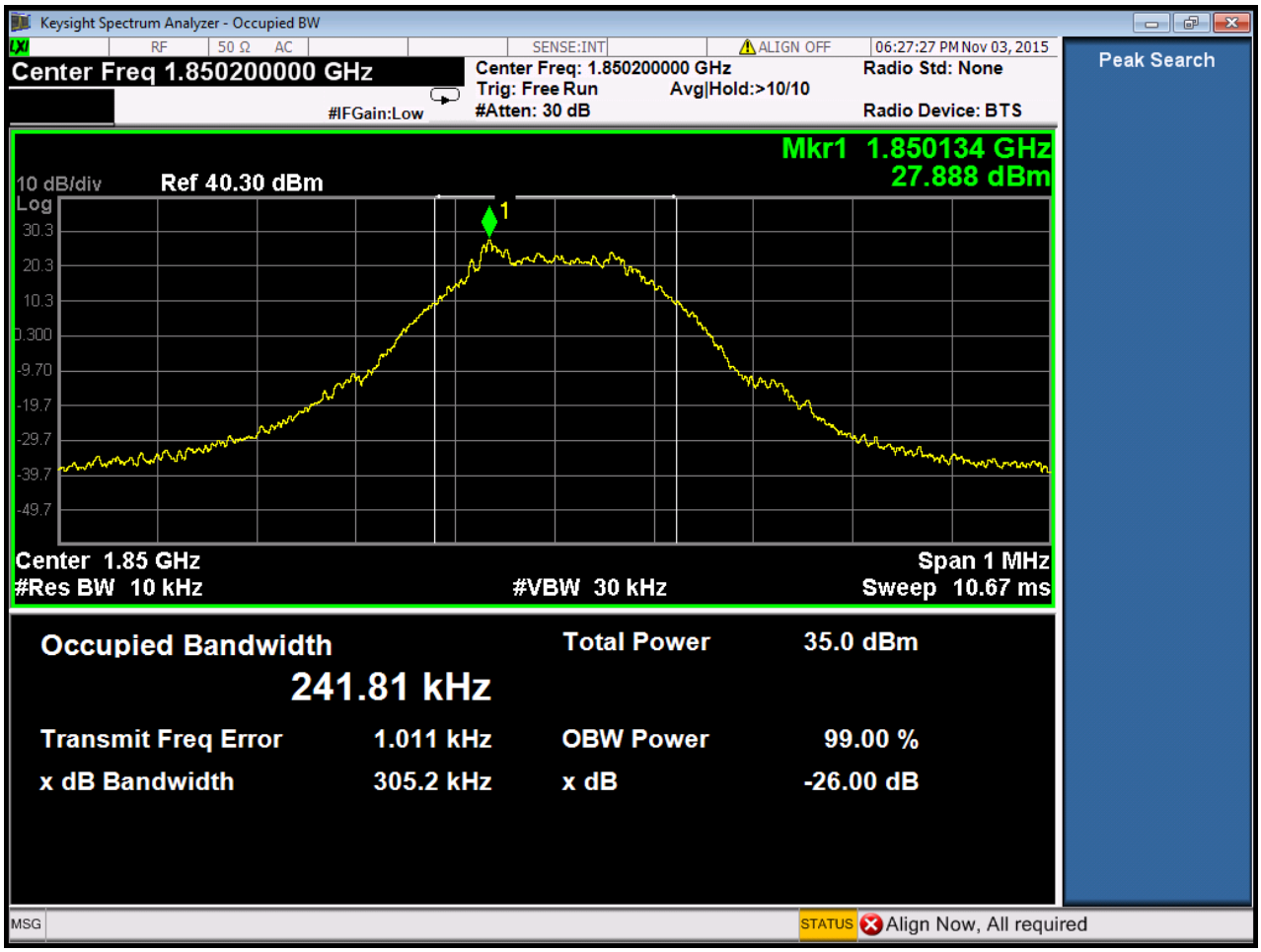


#### 4.1.2.1.3 Test Channel = HCH

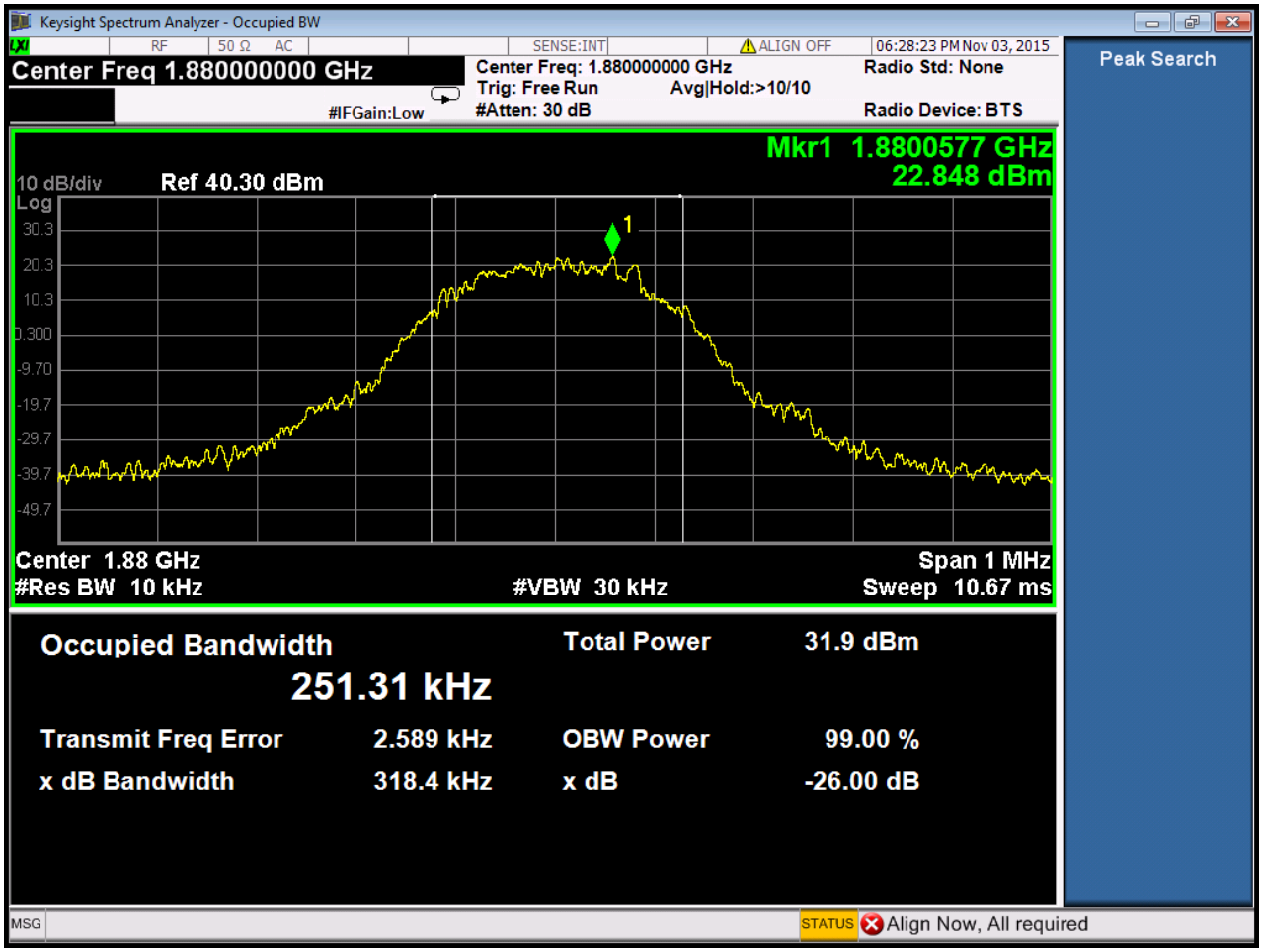


#### 4.1.2.2 Test Mode = GSM/TM2

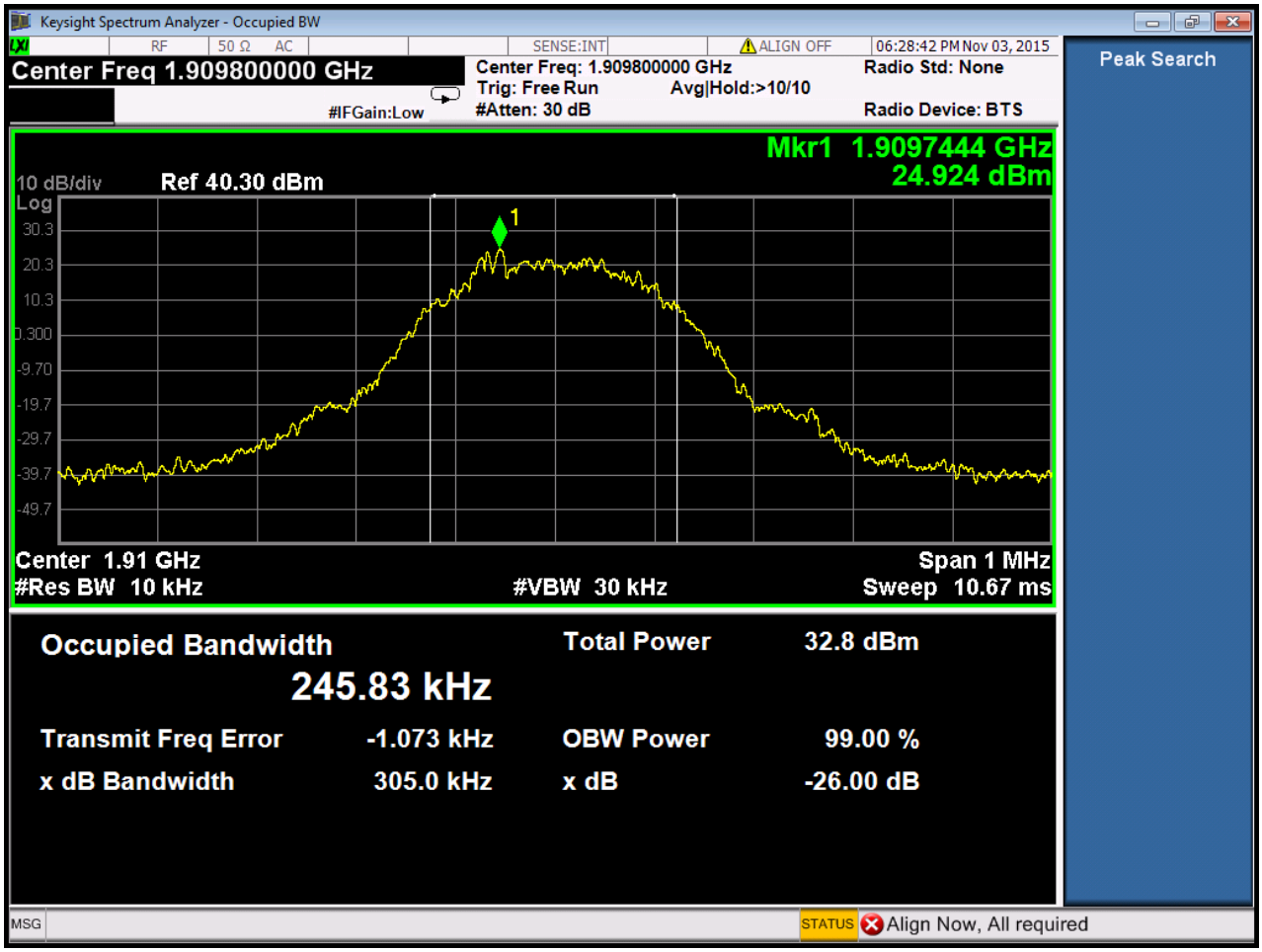
##### 4.1.2.2.1 Test Channel = LCH



#### 4.1.2.2.2 Test Channel = MCH



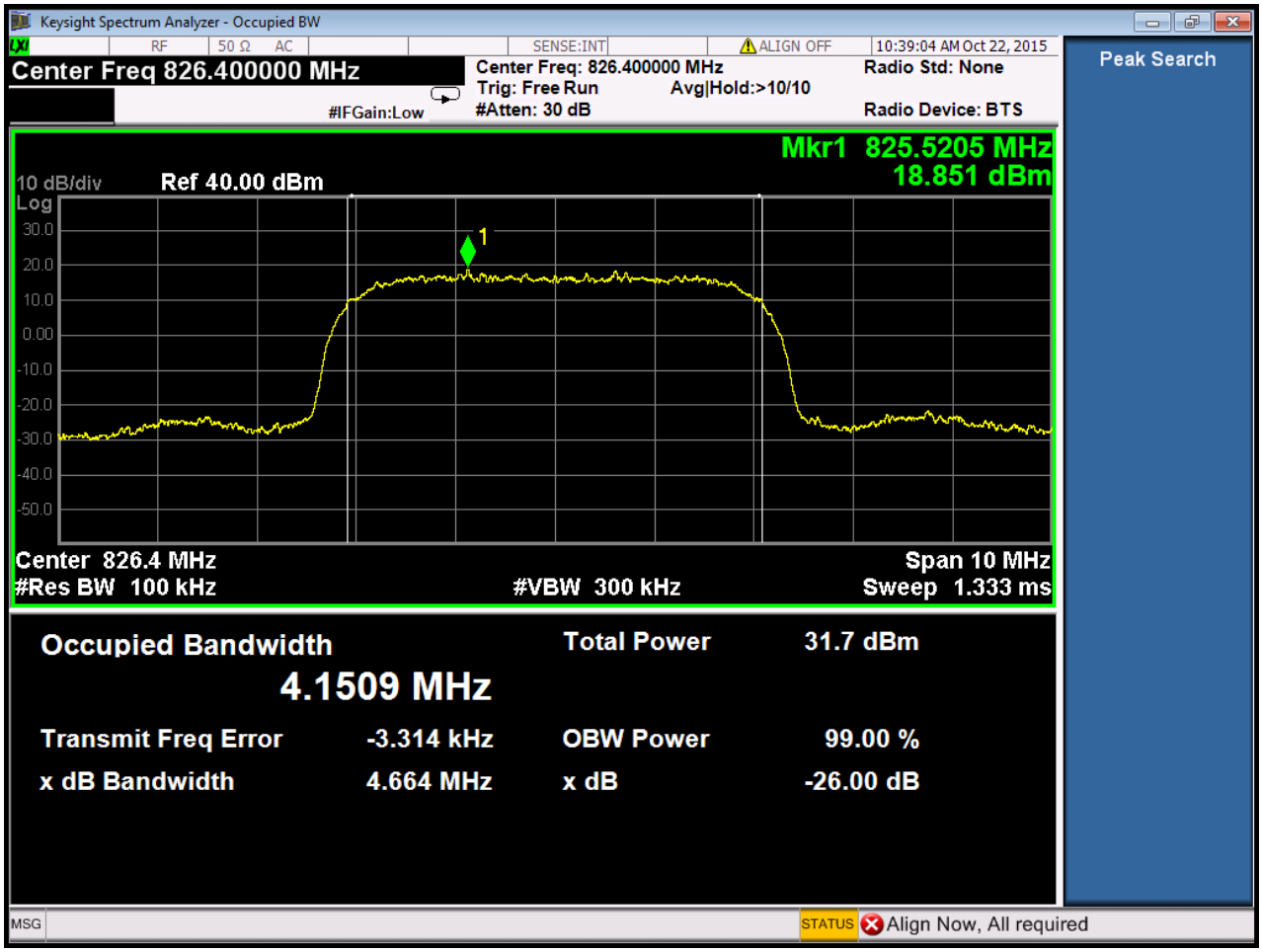
#### 4.1.2.2.3 Test Channel = HCH



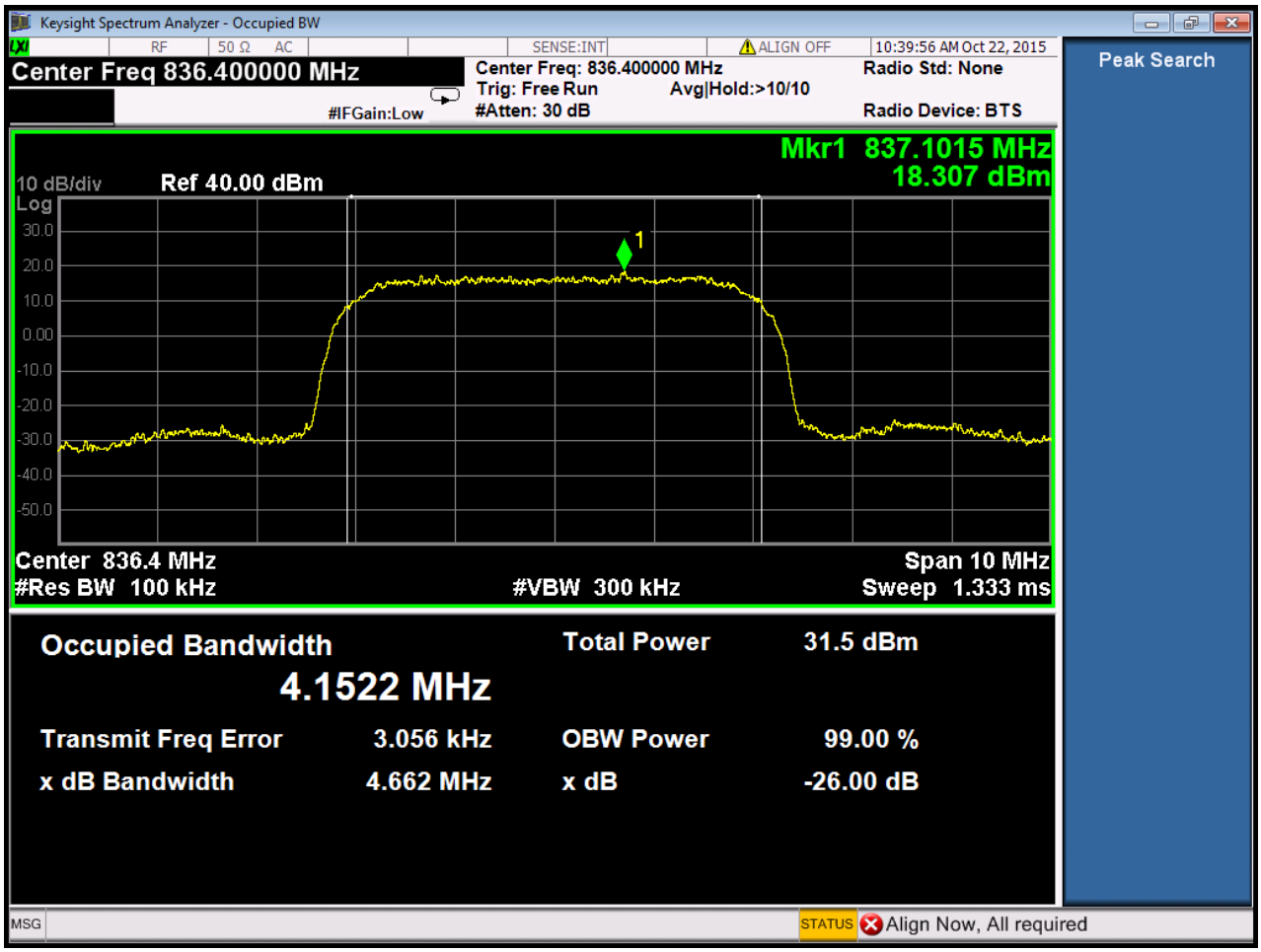
## 4.1.3 Test Band = WCDMA850

### 4.1.3.1 Test Mode = UMTS/TM1

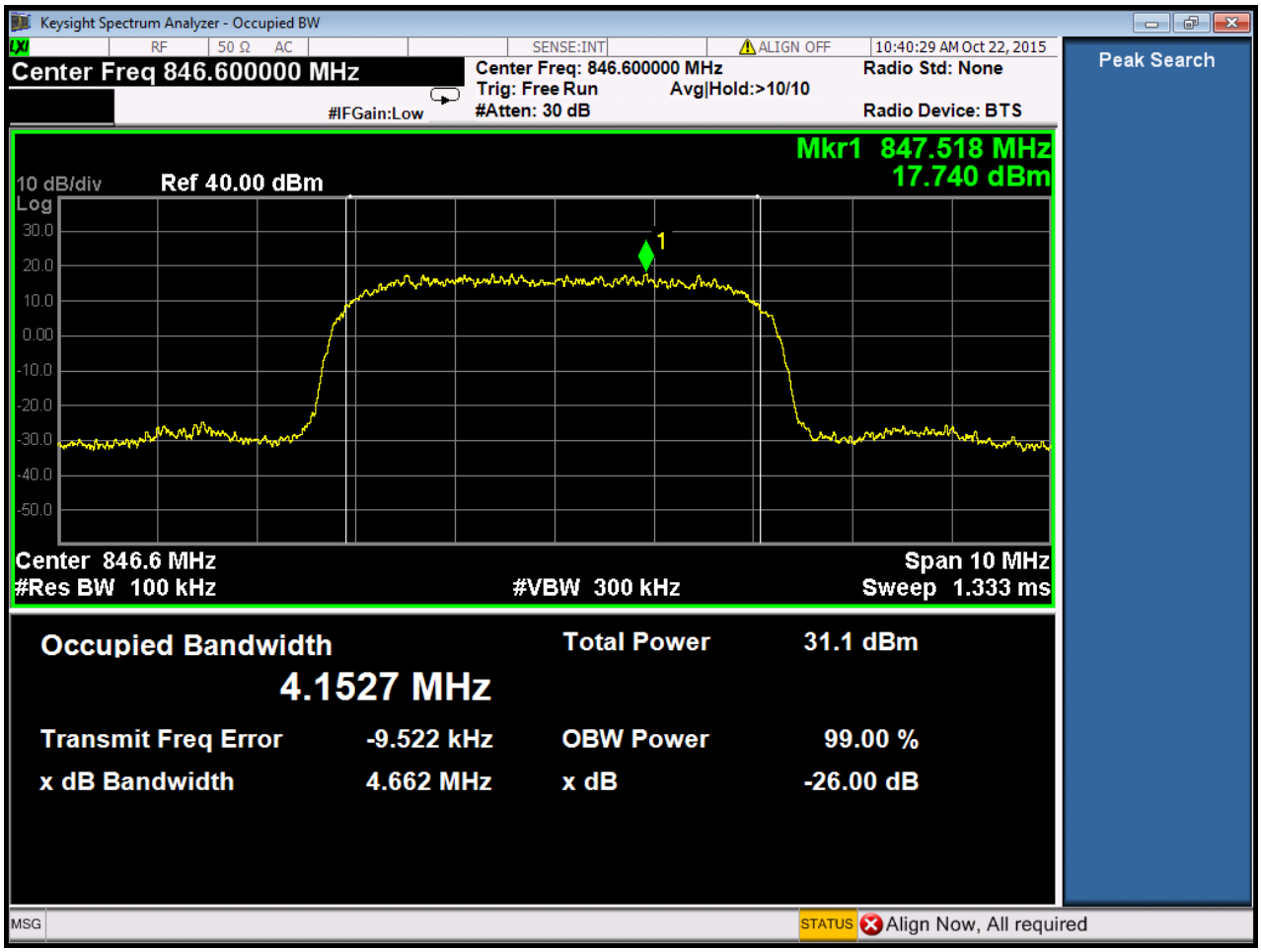
#### 4.1.3.1.1 Test Channel = LCH



#### 4.1.3.1.2 Test Channel = MCH



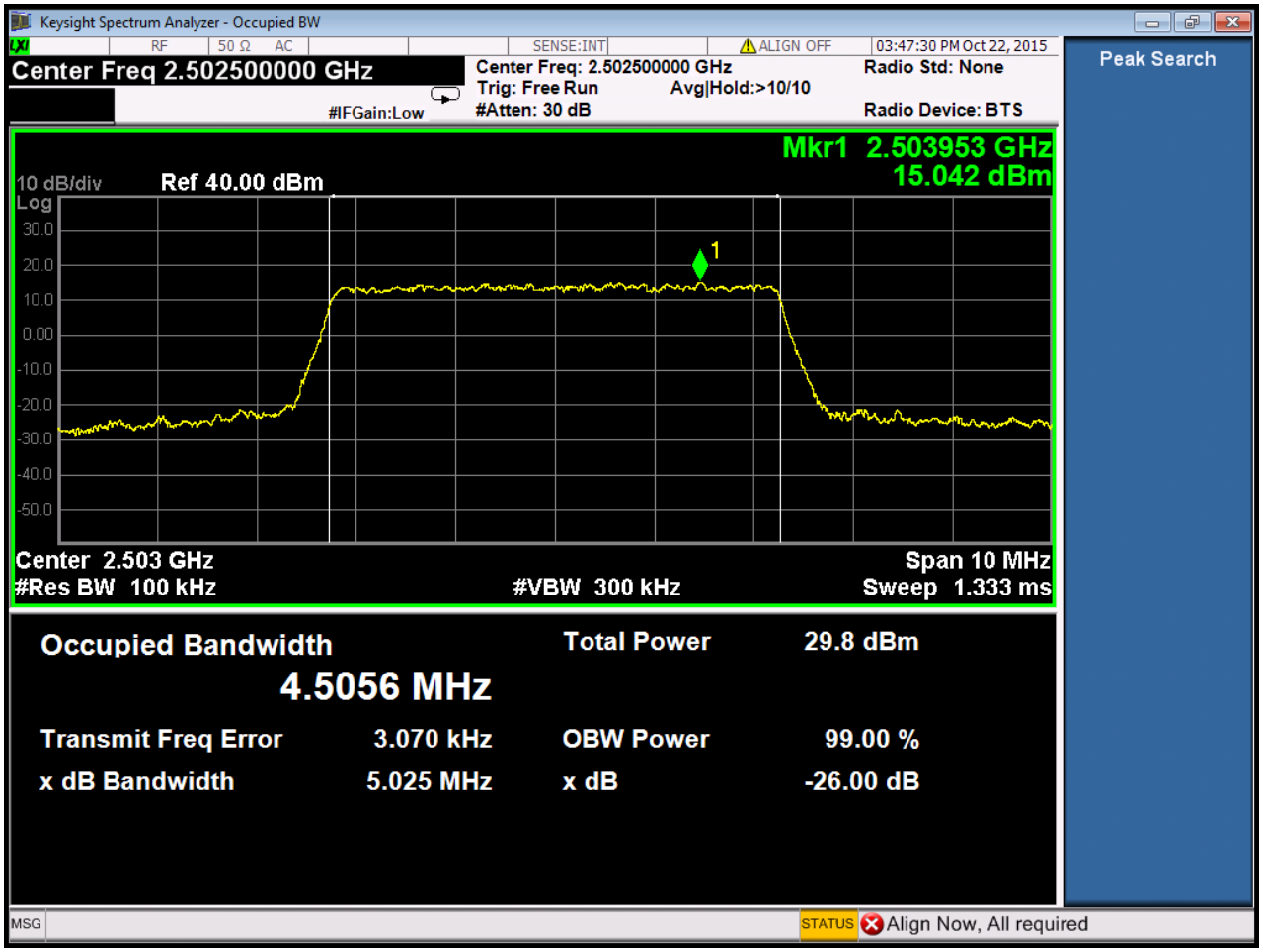
#### 4.1.3.1.3 Test Channel = HCH



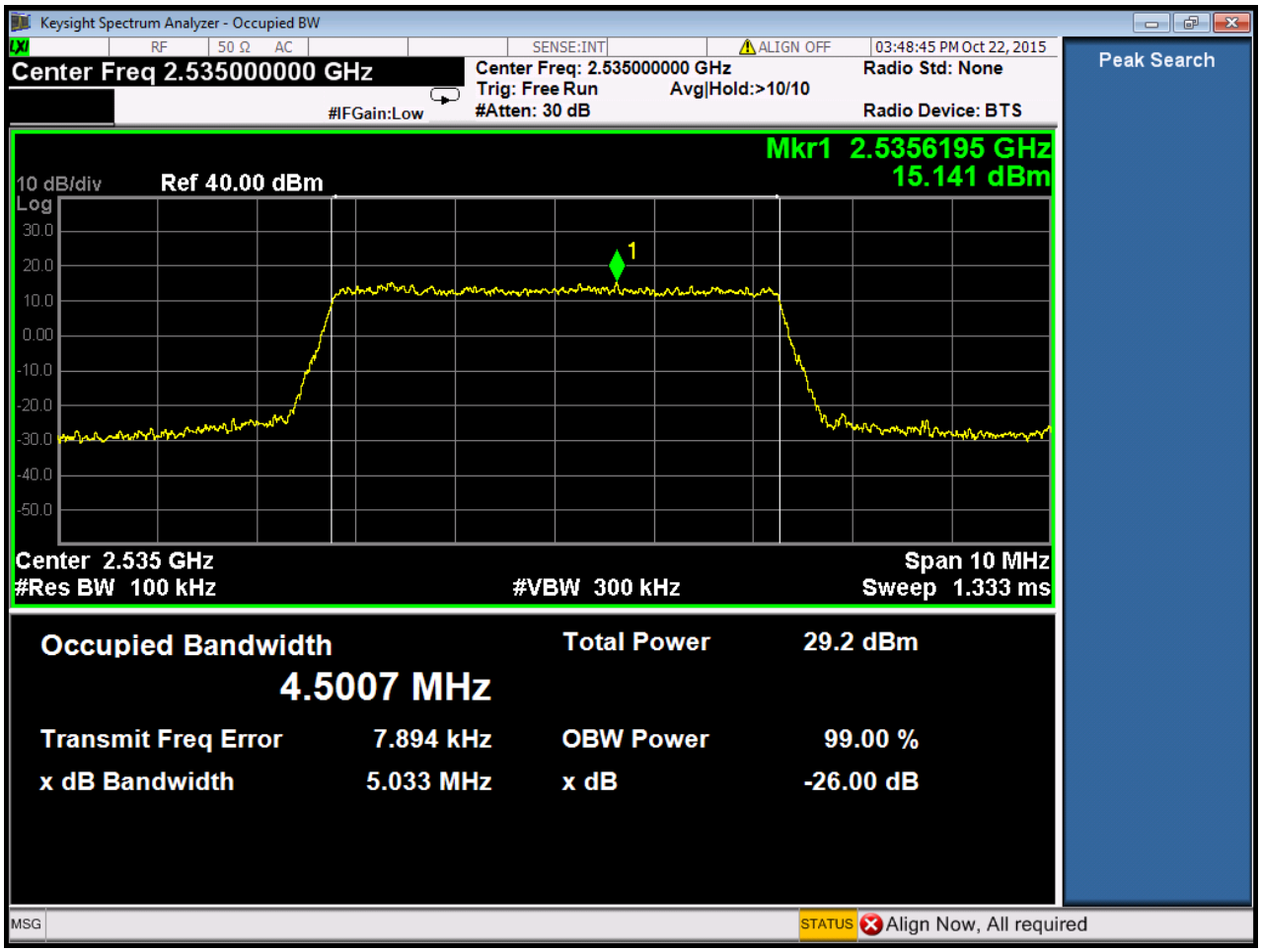
## 4.1.4 Test Band = LTE Band 7

### 4.1.4.1 Test Mode = LTE/TM1 5MHz

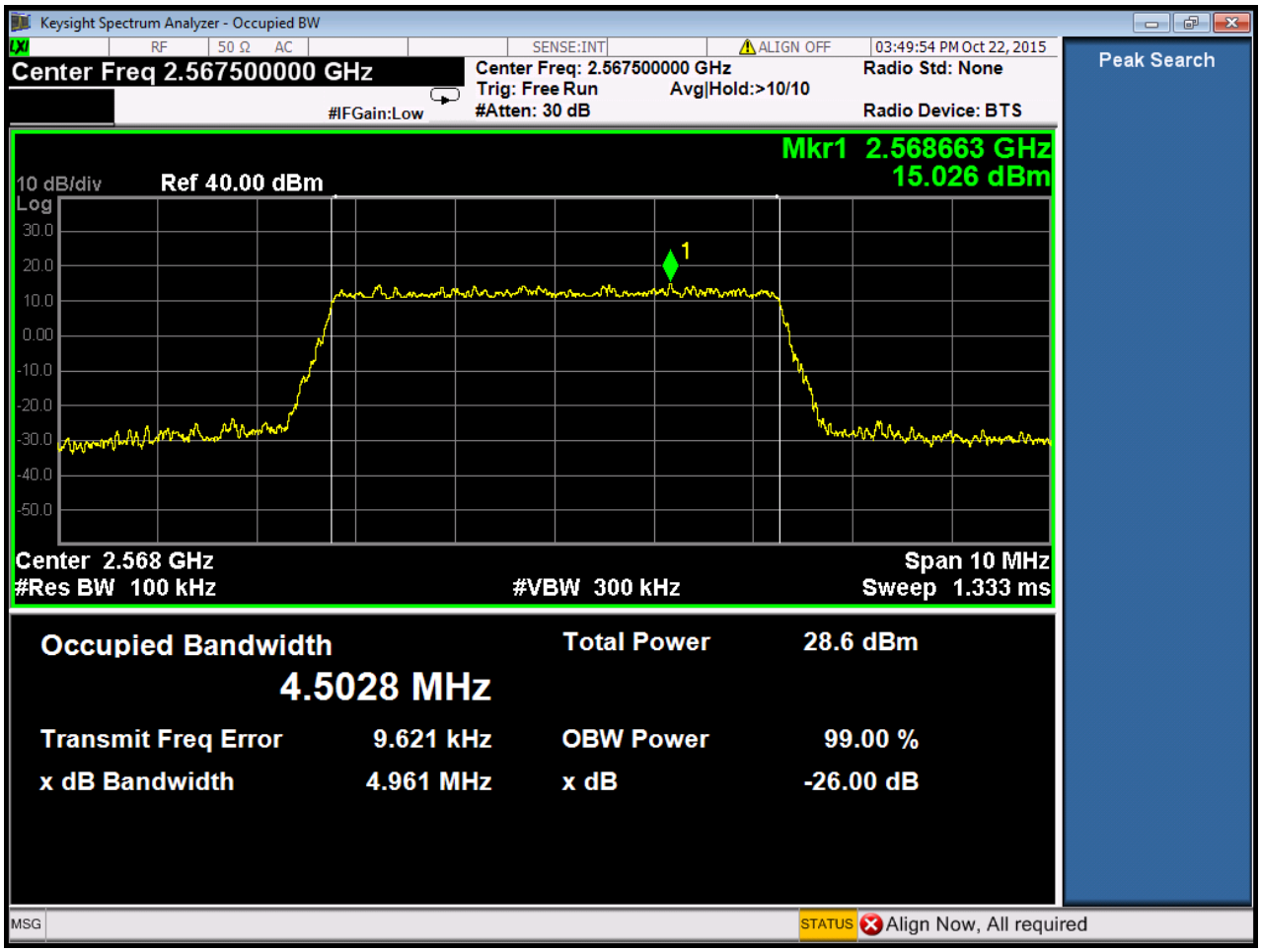
#### 4.1.4.1.1 Test Channel = LCH



#### 4.1.4.1.2 Test Channel = MCH

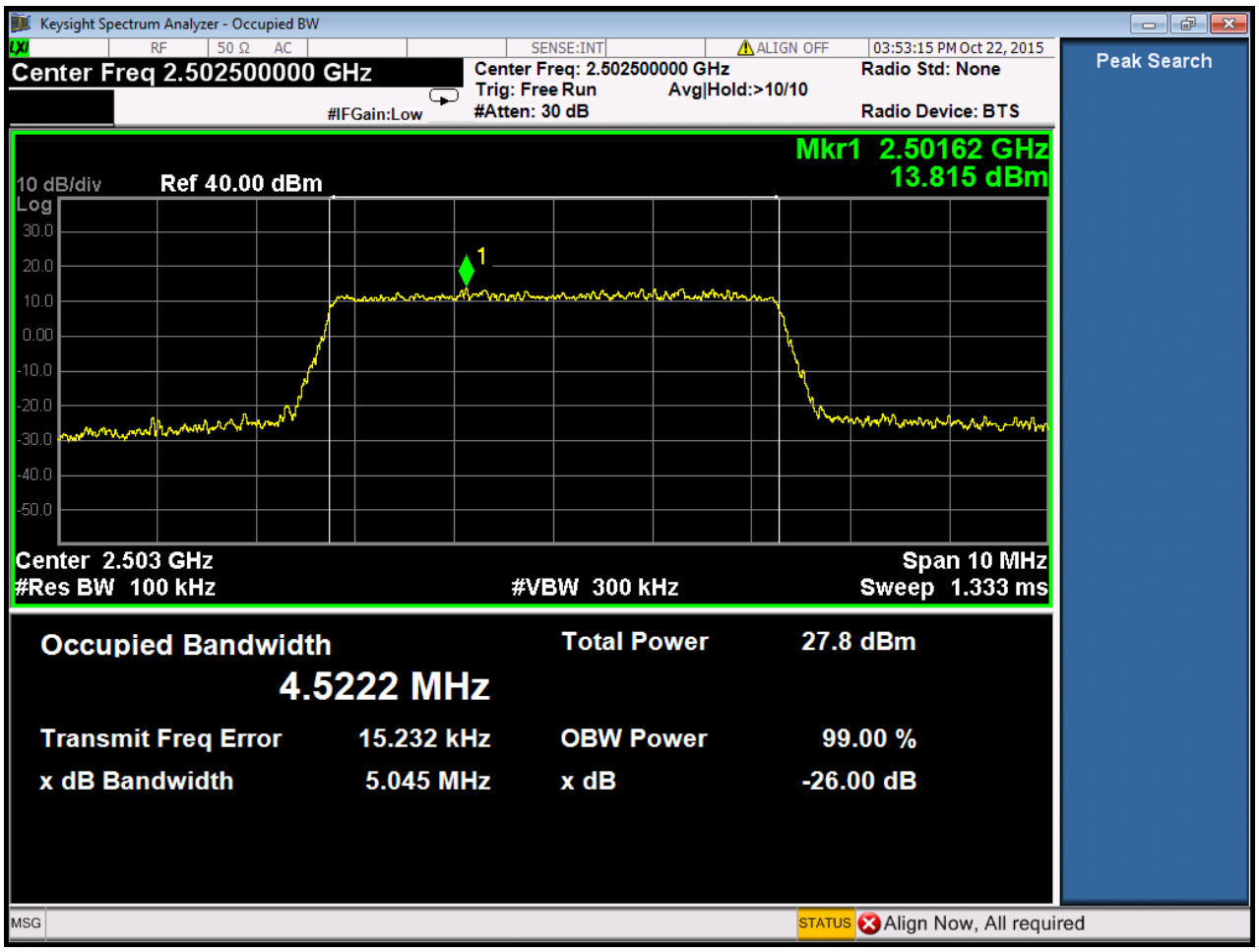


#### 4.1.4.1.3 Test Channel = HCH

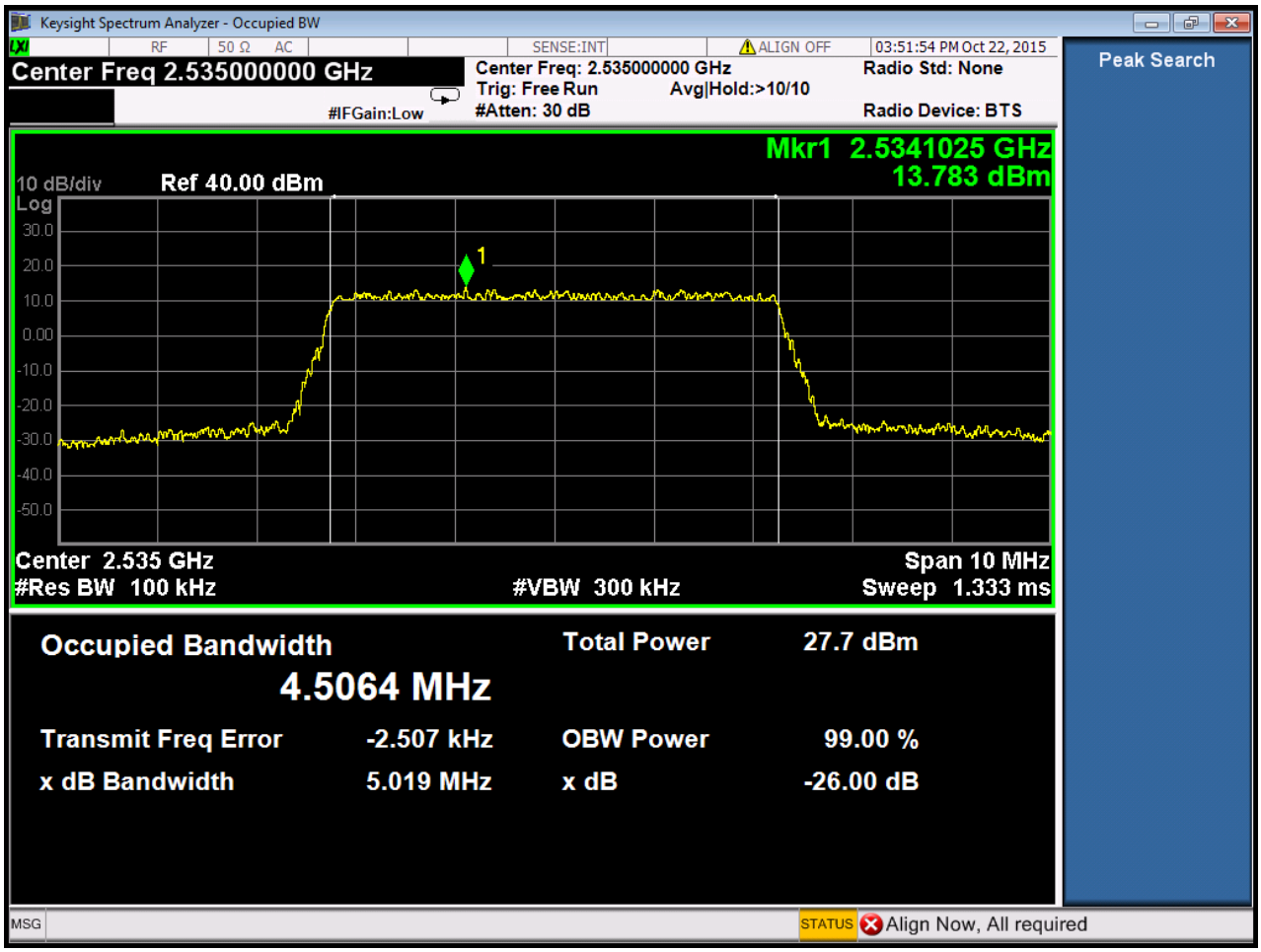


### 4.1.4.2 Test Mode = LTE/TM2 5MHz

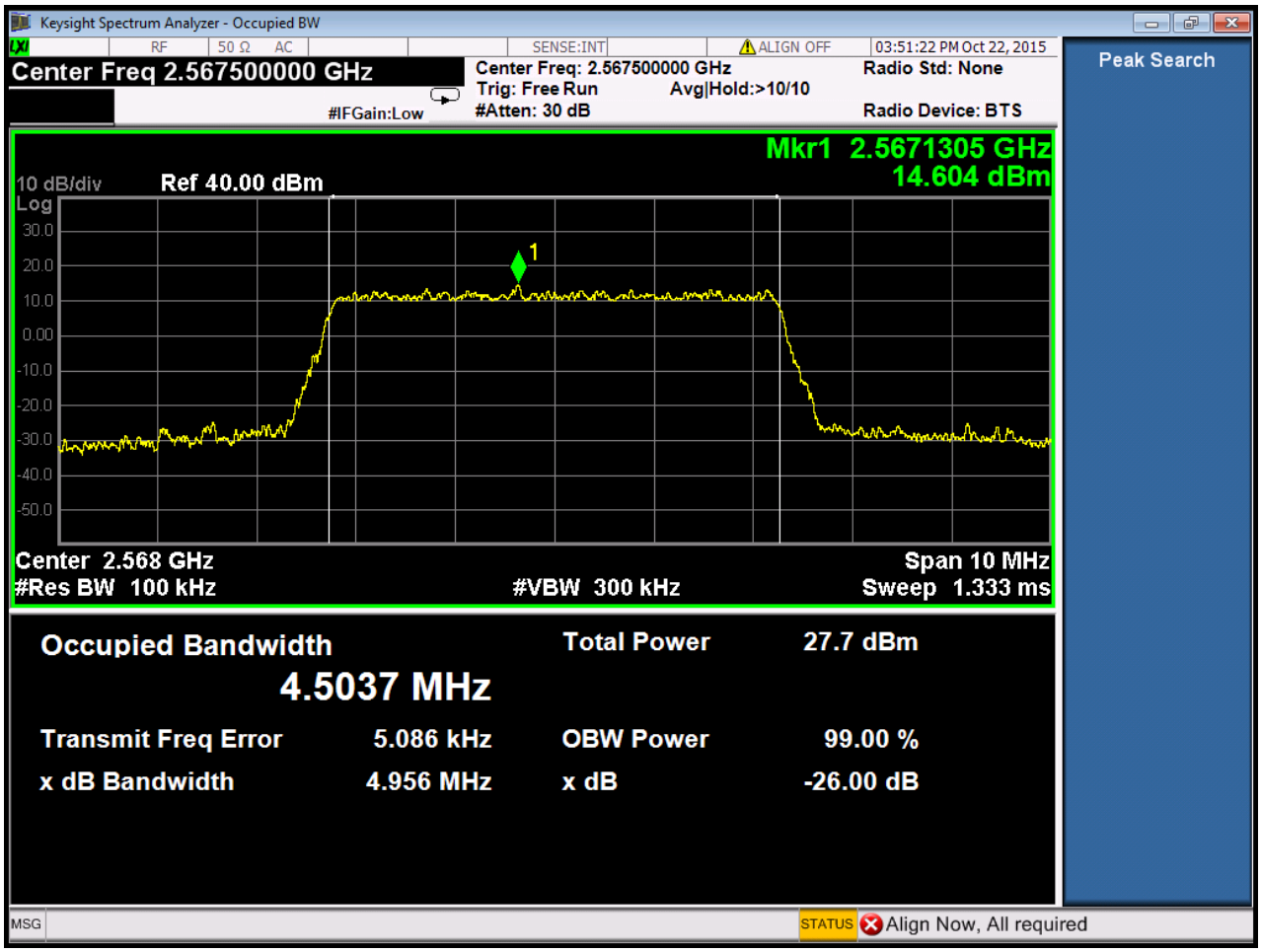
#### 4.1.4.2.1 Test Channel = LCH



#### 4.1.4.2.2 Test Channel = MCH

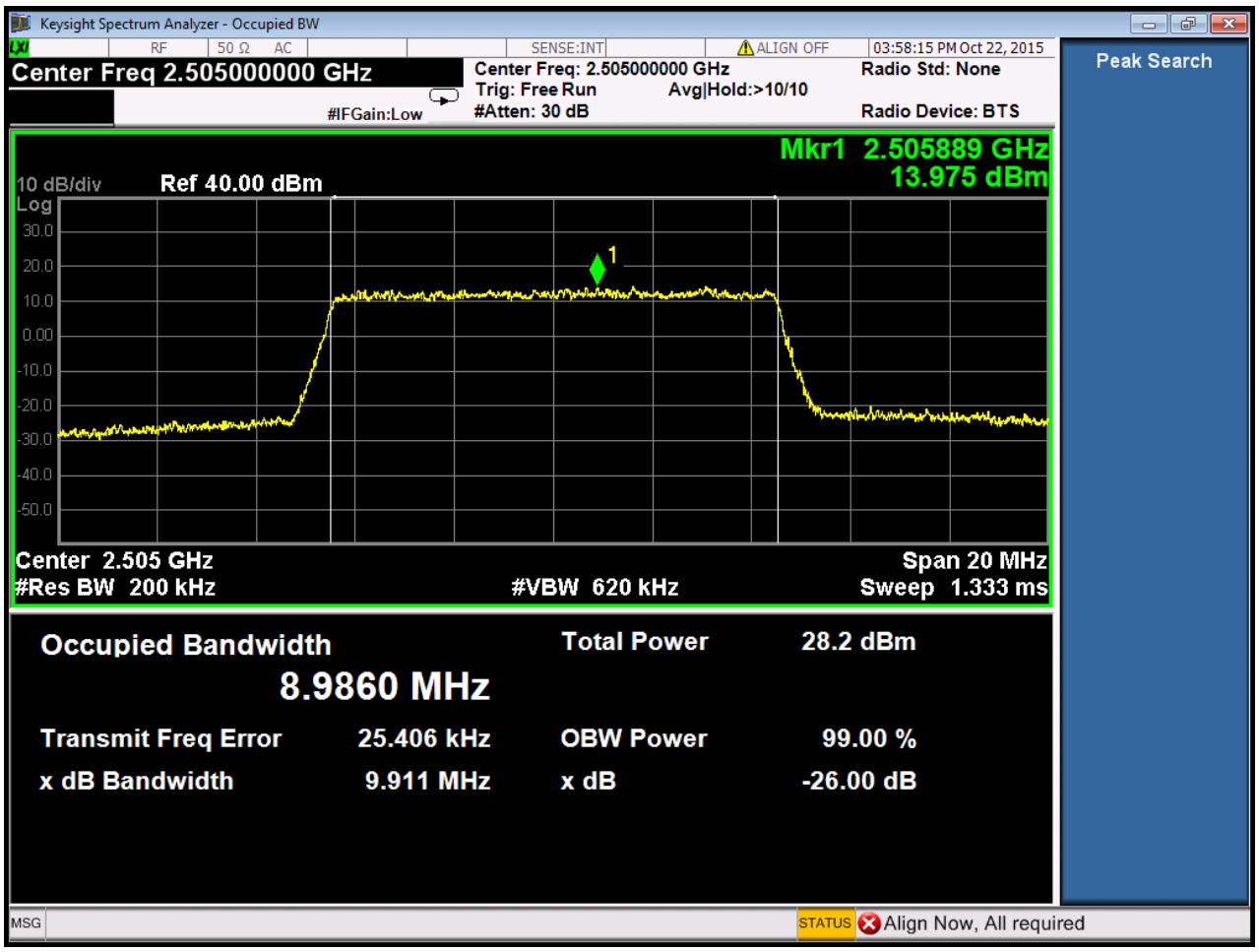


#### 4.1.4.2.3 Test Channel = HCH

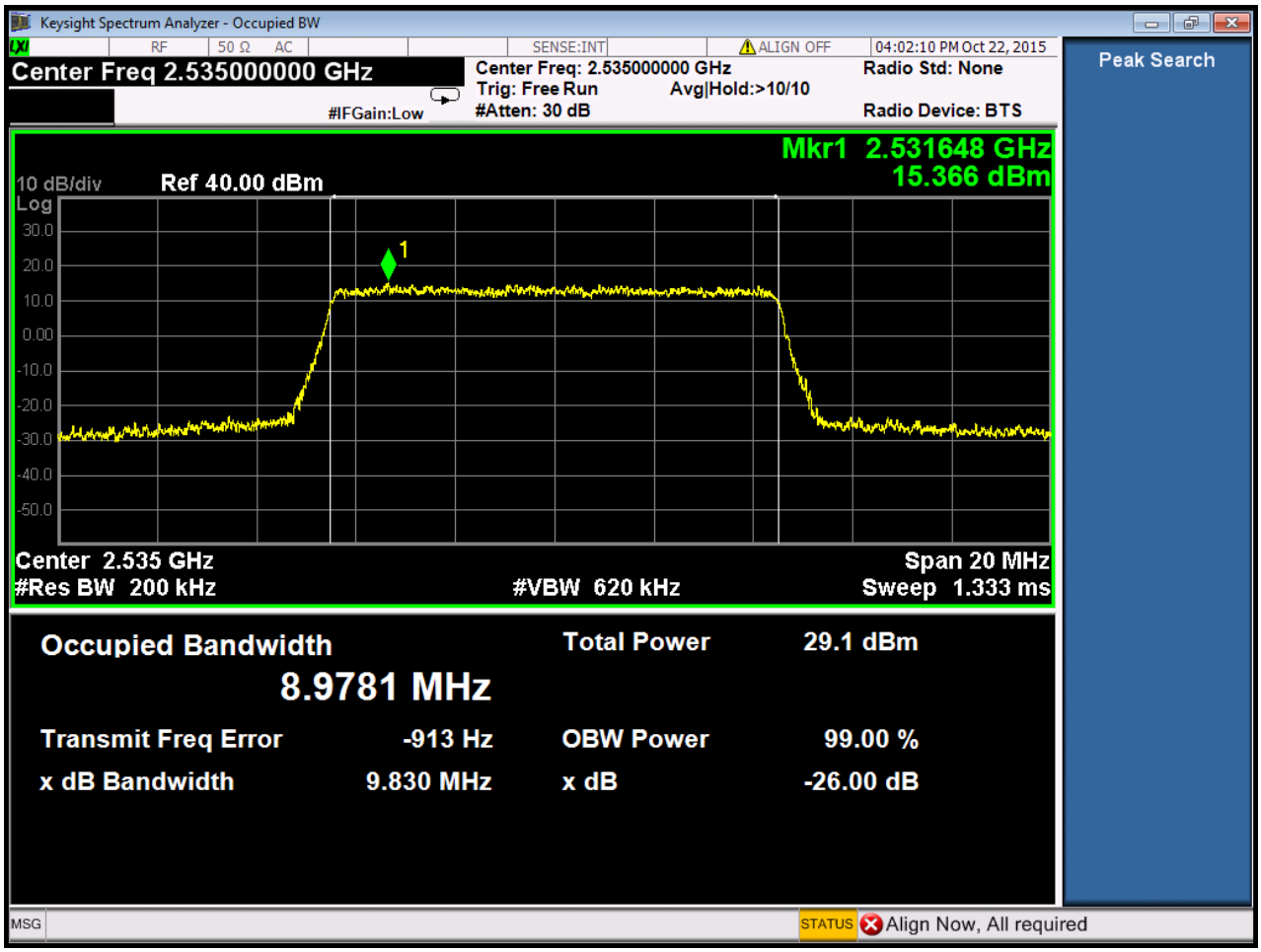


#### 4.1.4.3 Test Mode = LTE/TM1 10MHz

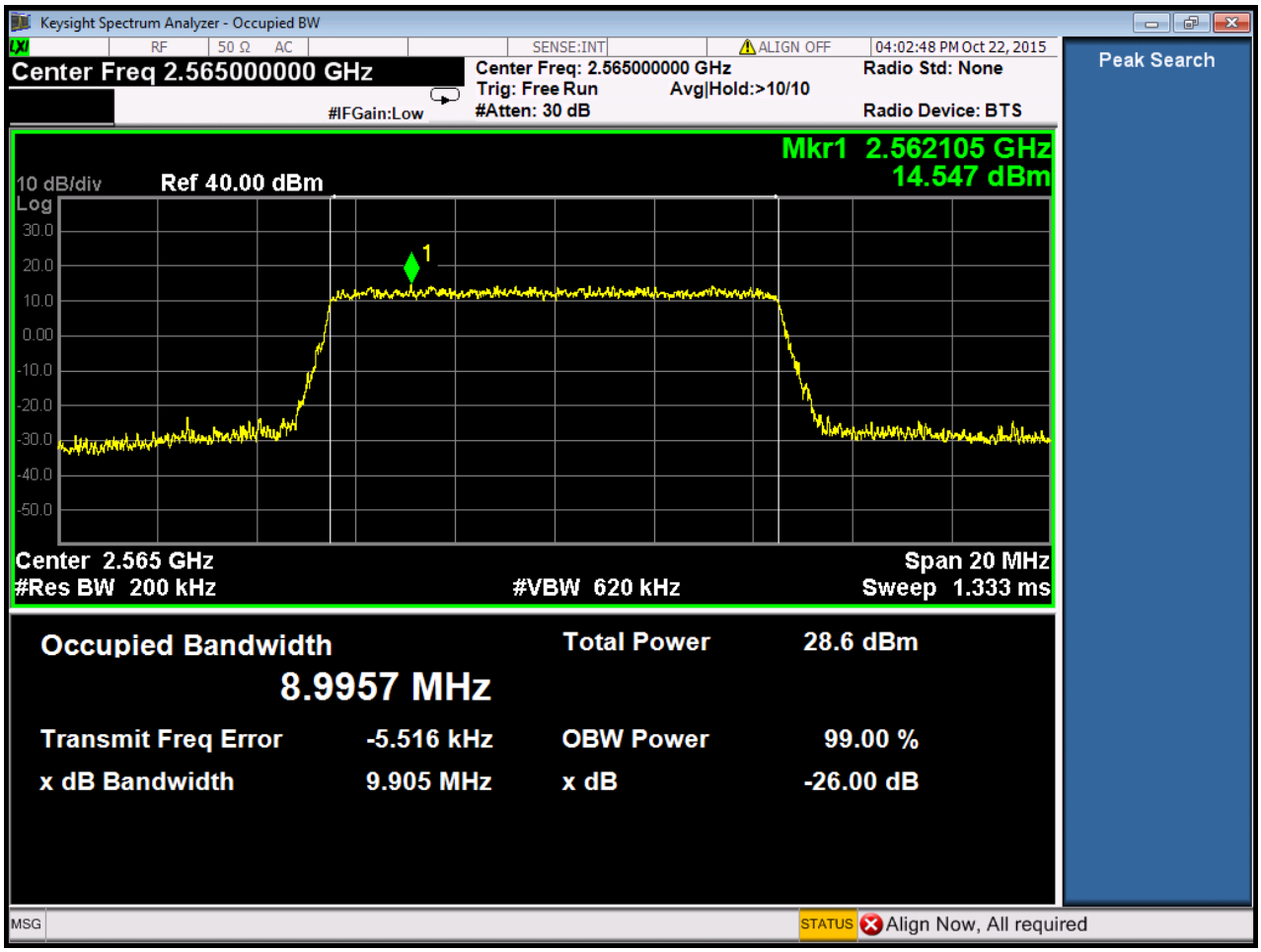
##### 4.1.4.3.1 Test Channel = LCH



#### 4.1.4.3.2 Test Channel = MCH

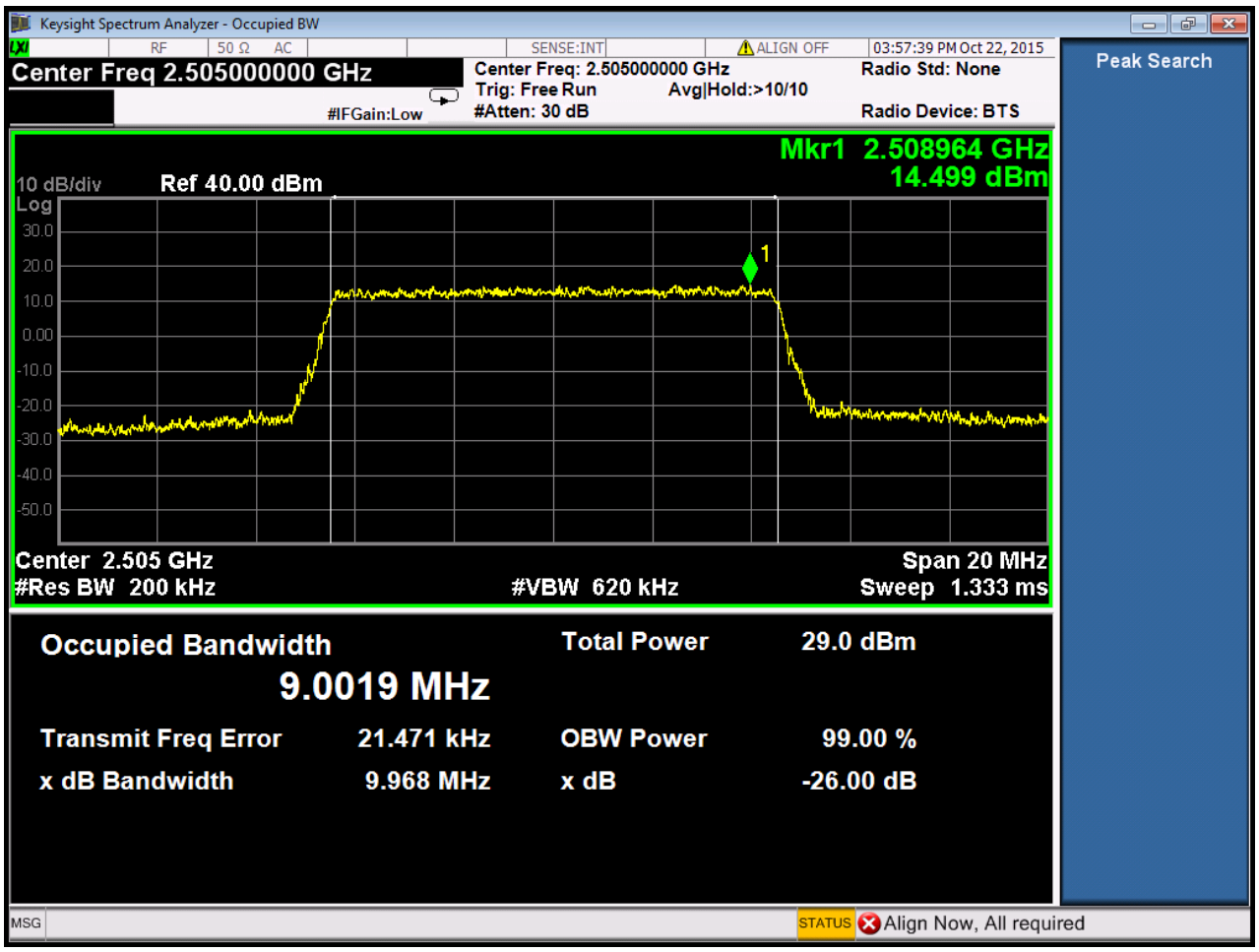


#### 4.1.4.3.3 Test Channel = HCH

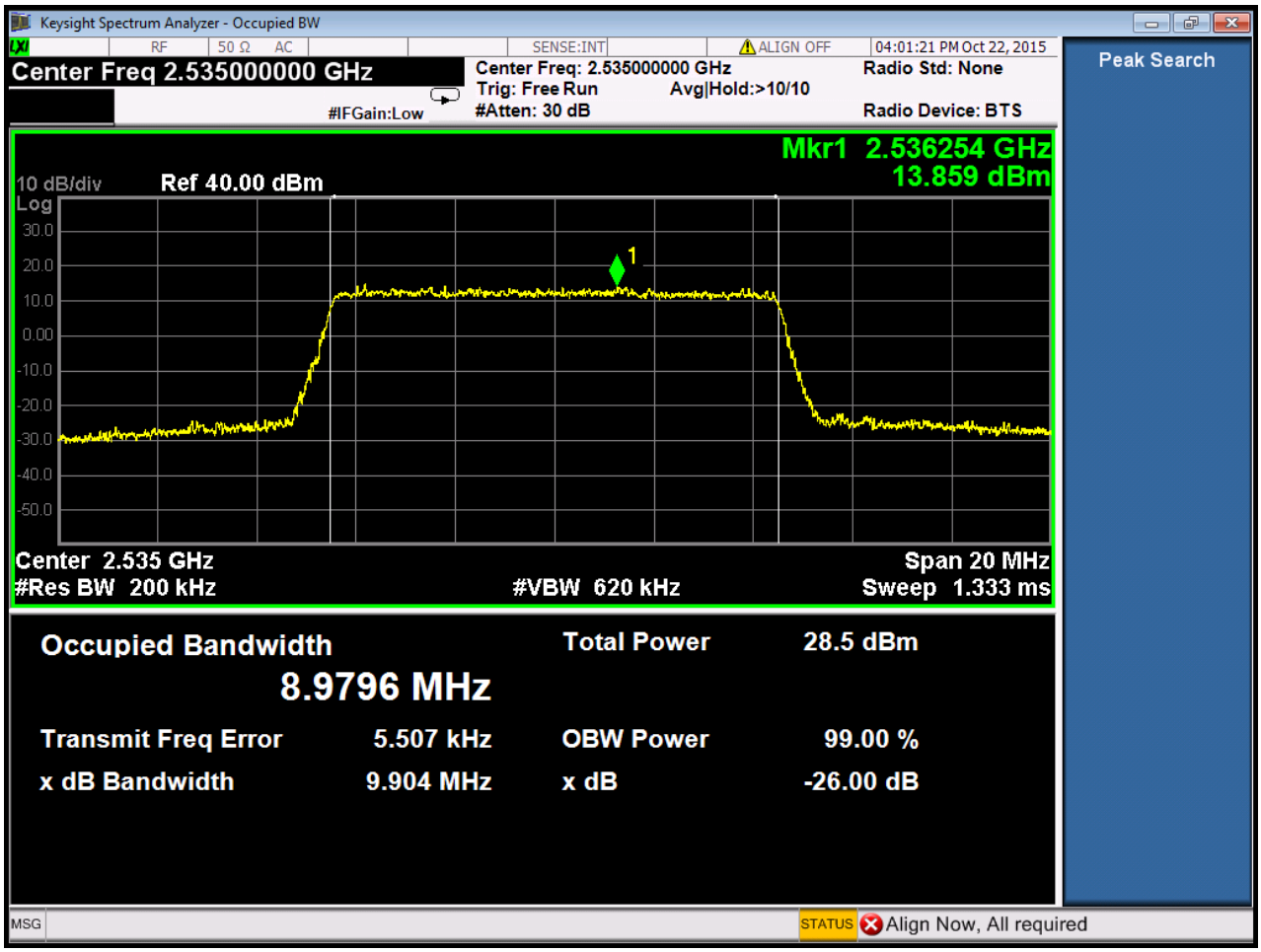


#### 4.1.4.4 Test Mode = LTE/TM2 10MHz

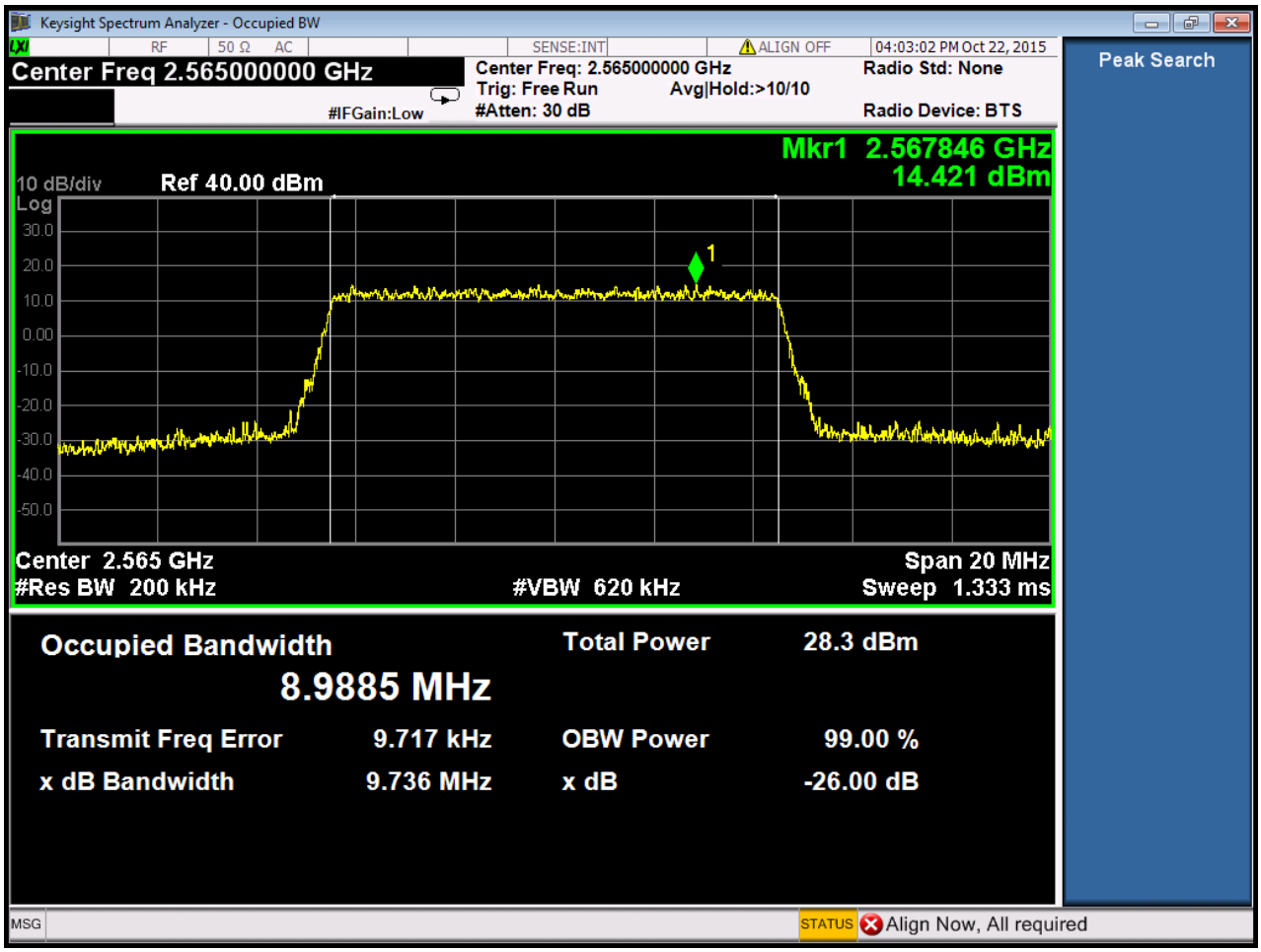
##### 4.1.4.4.1 Test Channel = LCH



#### 4.1.4.4.2 Test Channel = MCH

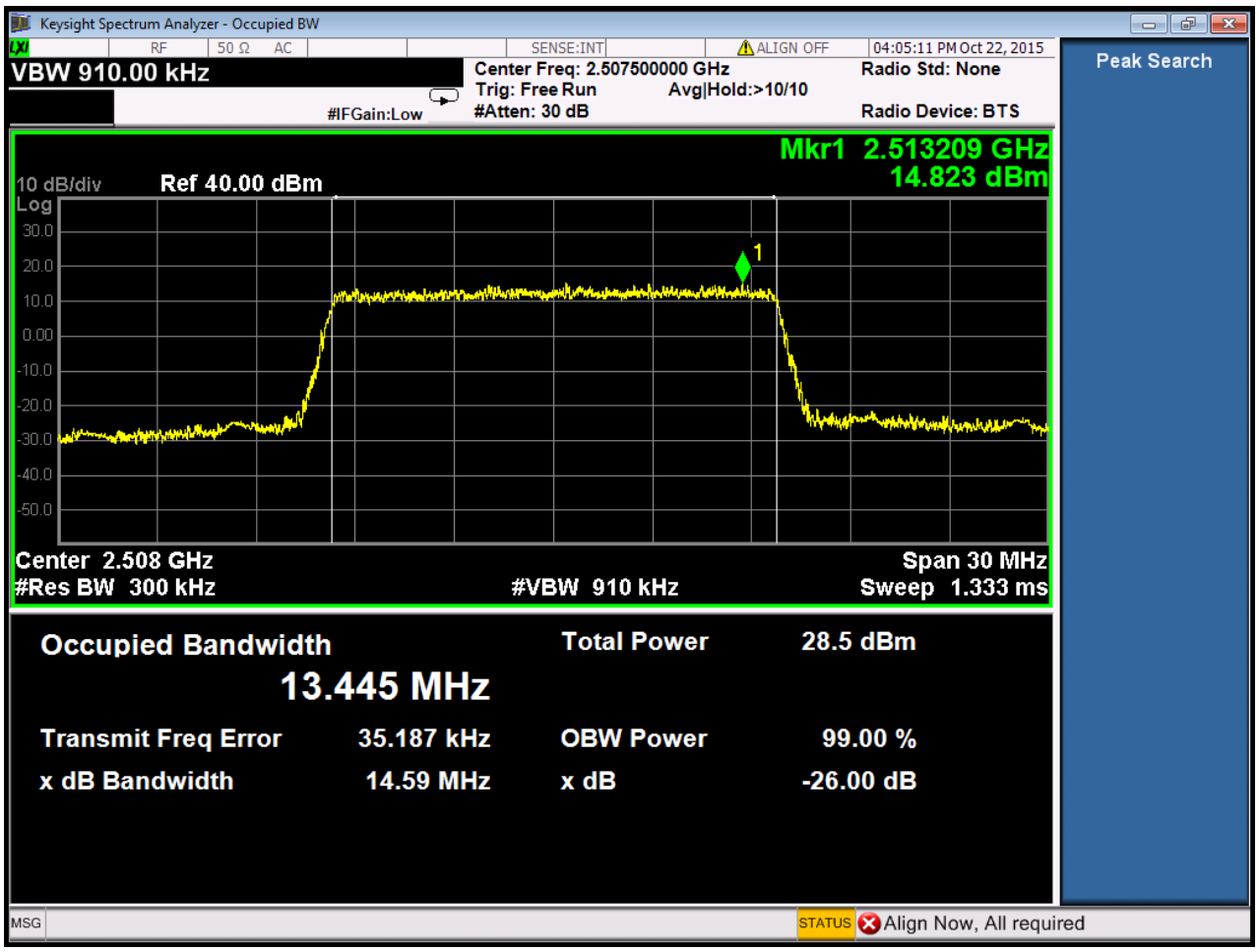


#### 4.1.4.4.3 Test Channel = HCH

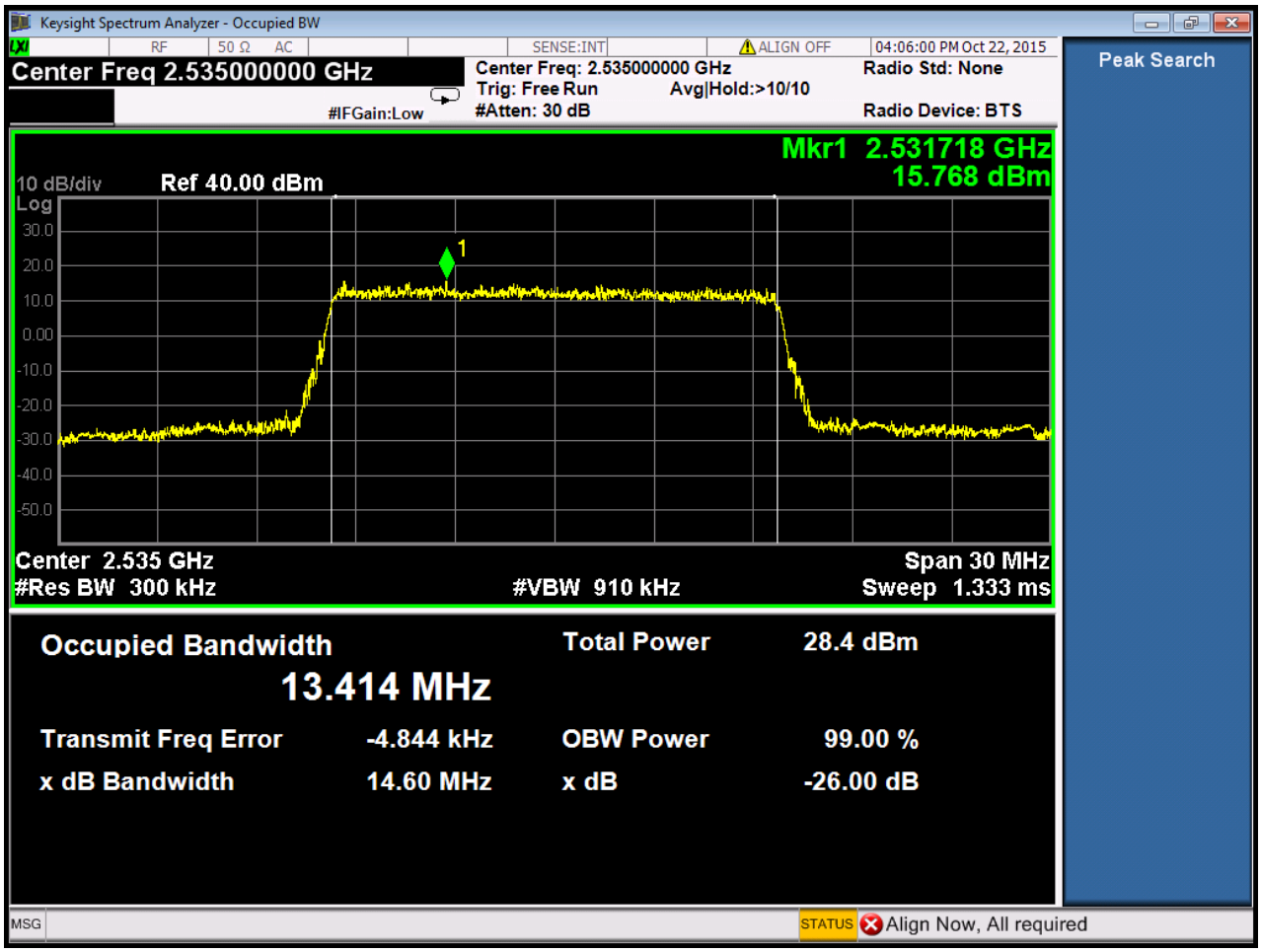


### 4.1.4.5 Test Mode = LTE/TM1 15MHz

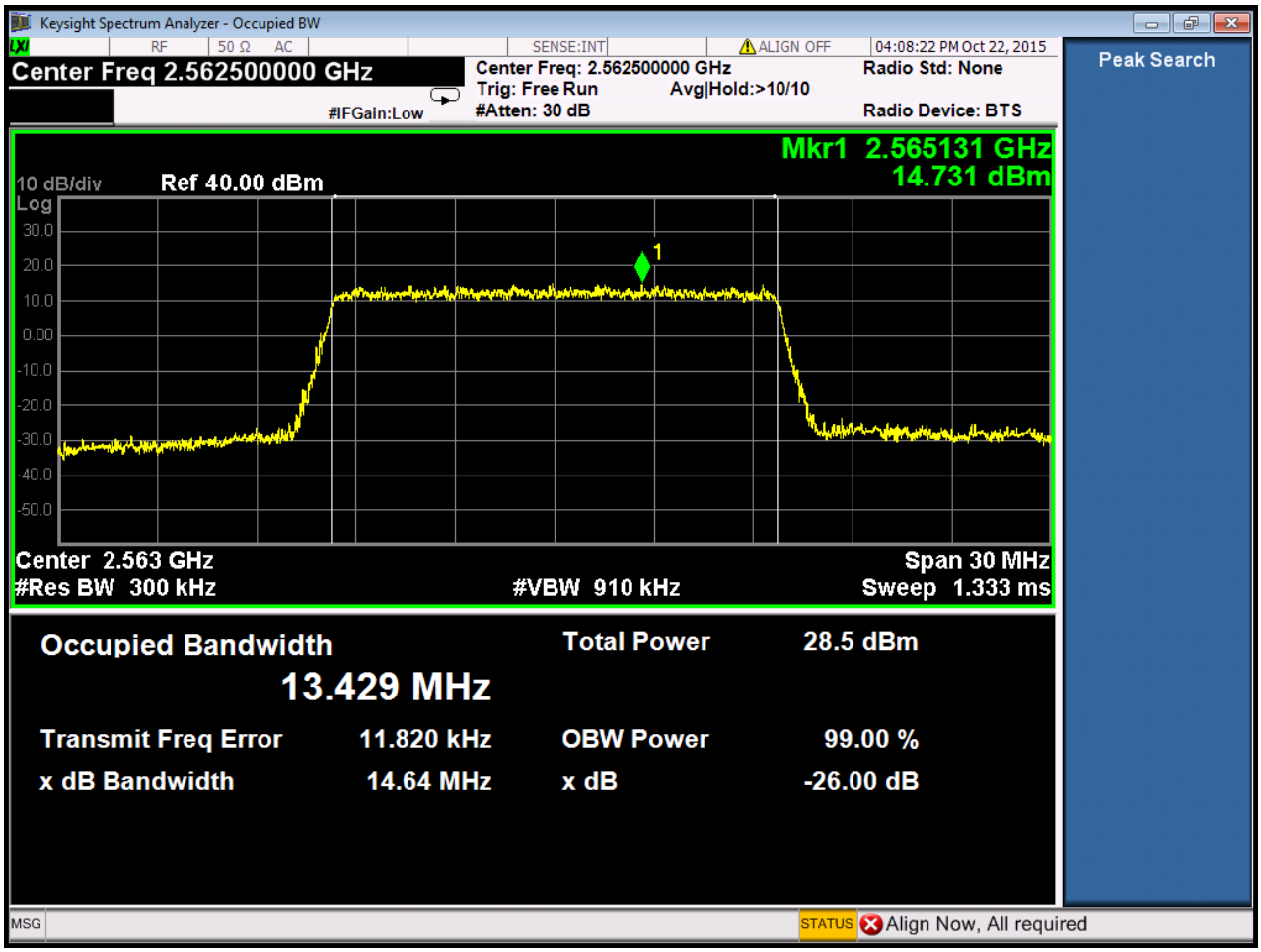
#### 4.1.4.5.1 Test Channel = LCH



#### 4.1.4.5.2 Test Channel = MCH

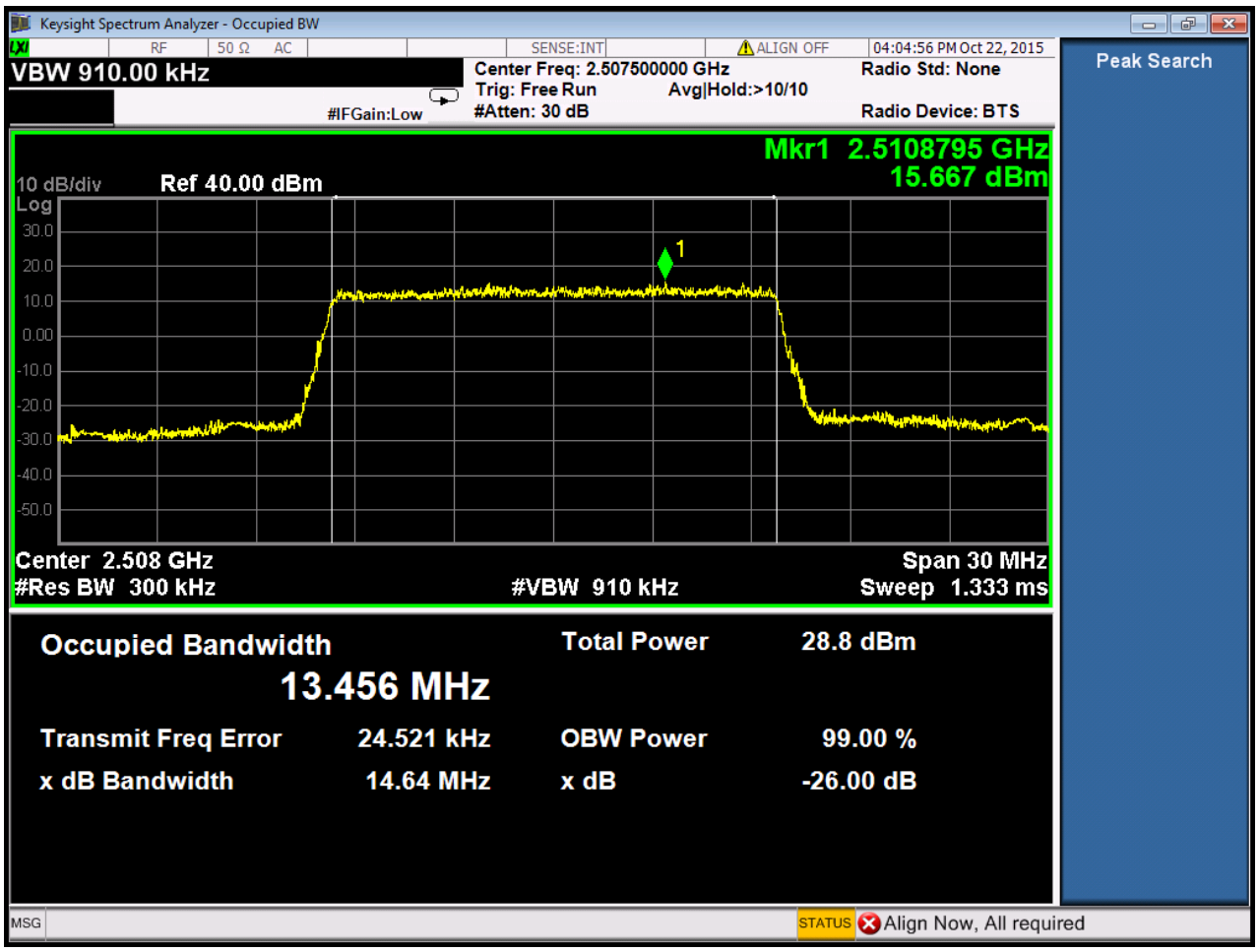


#### 4.1.4.5.3 Test Channel = HCH

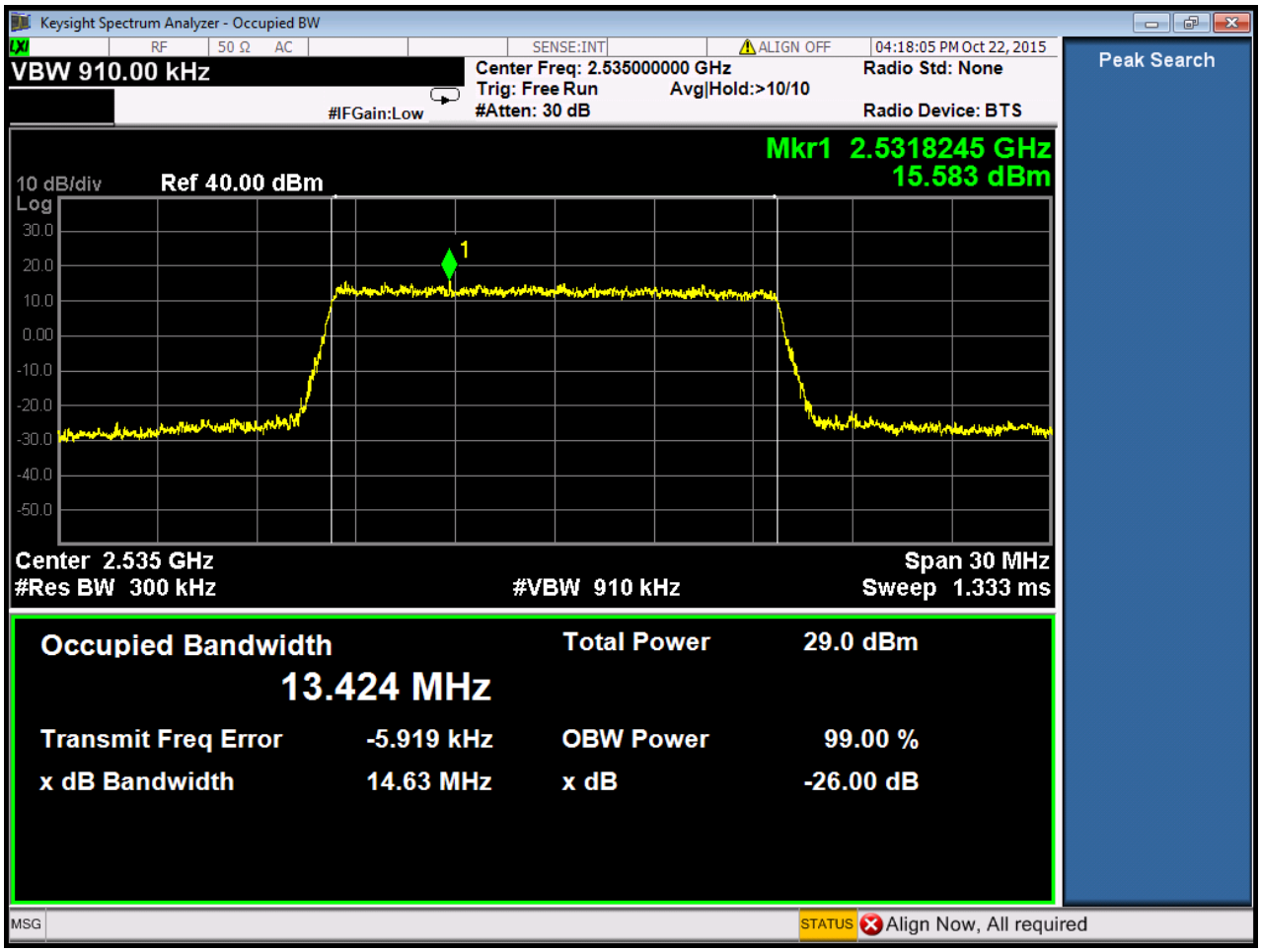


### 4.1.4.6 Test Mode = LTE/TM2 15MHz

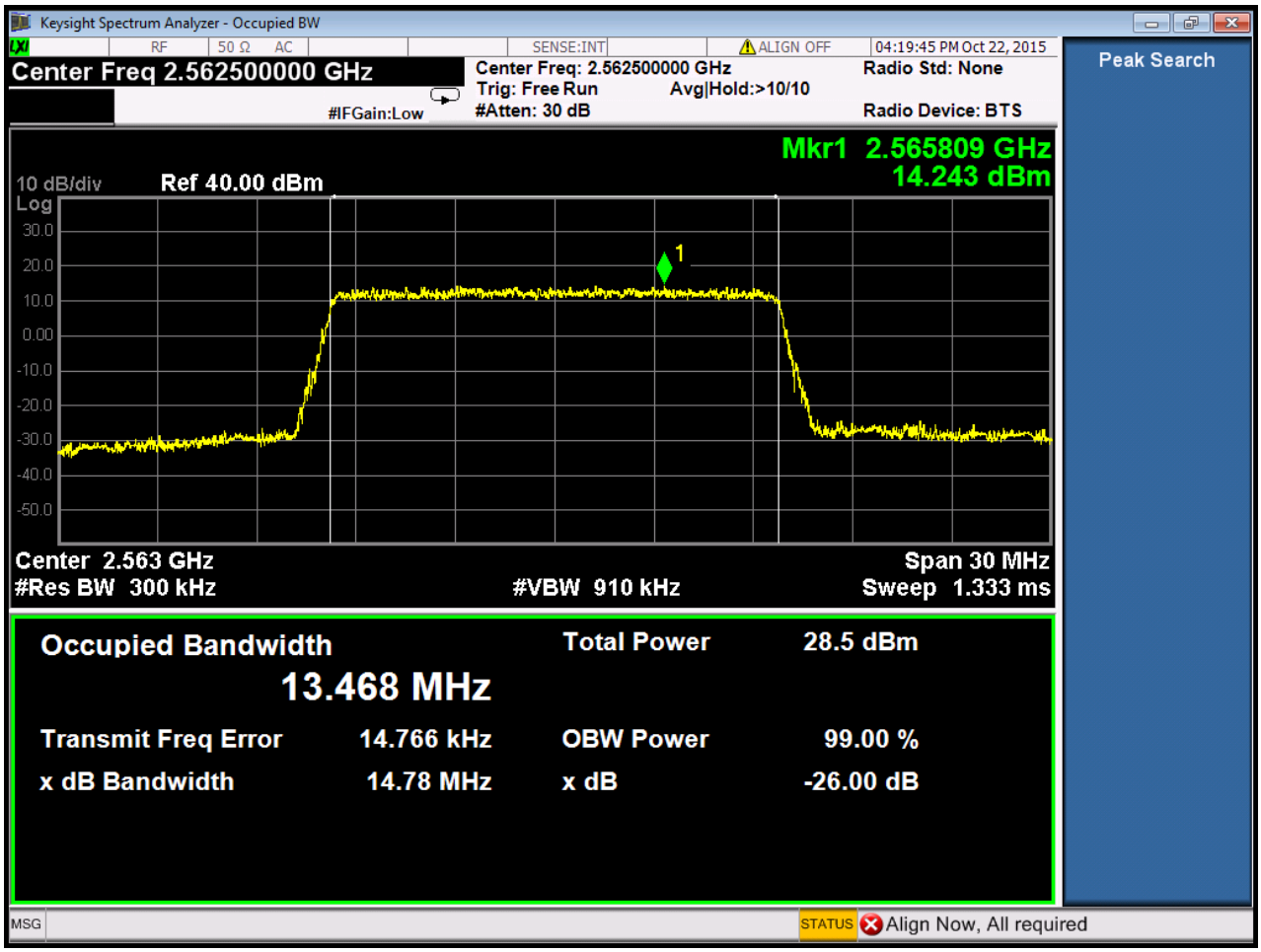
#### 4.1.4.6.1 Test Channel = LCH



#### 4.1.4.6.2 Test Channel = MCH

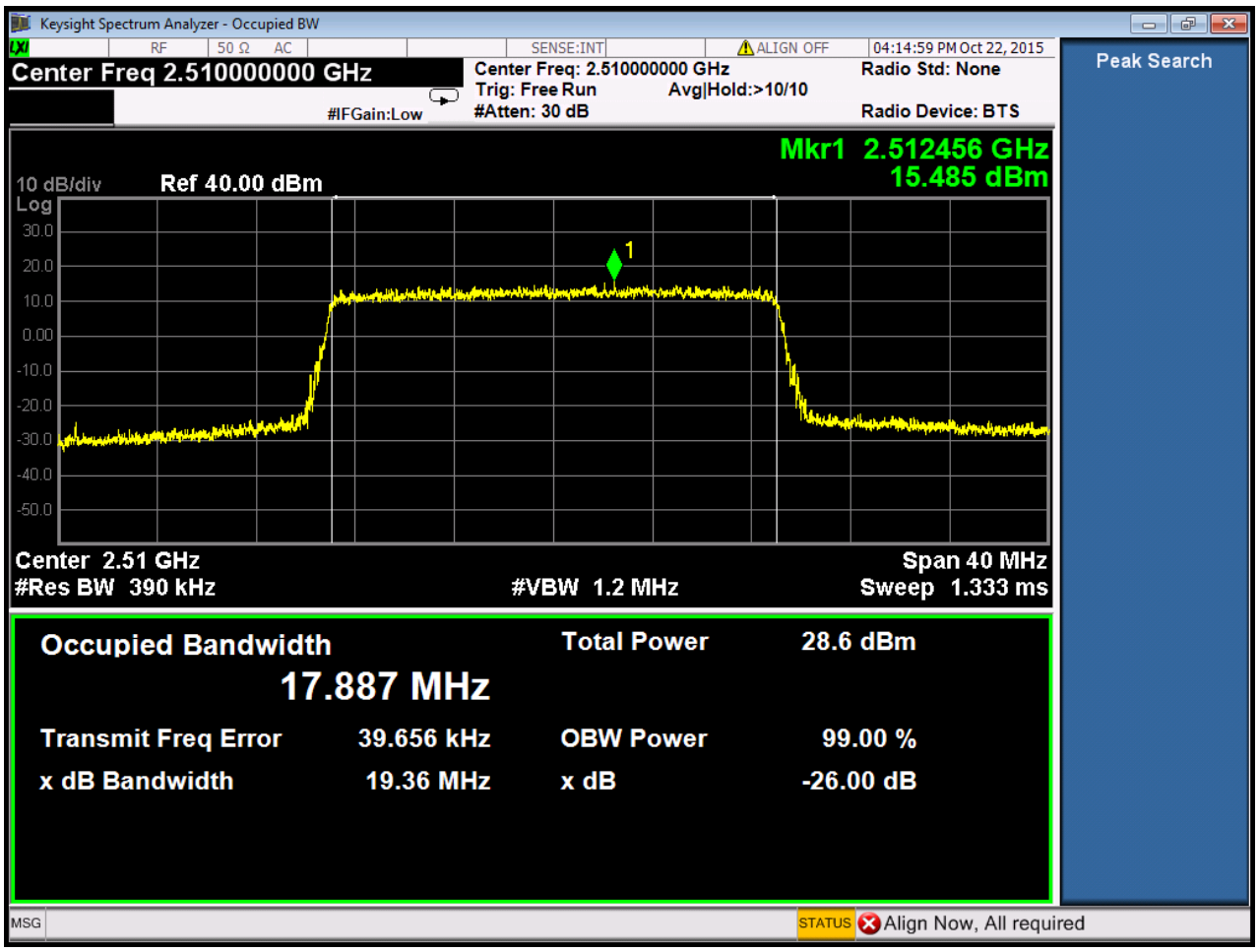


#### 4.1.4.6.3 Test Channel = HCH

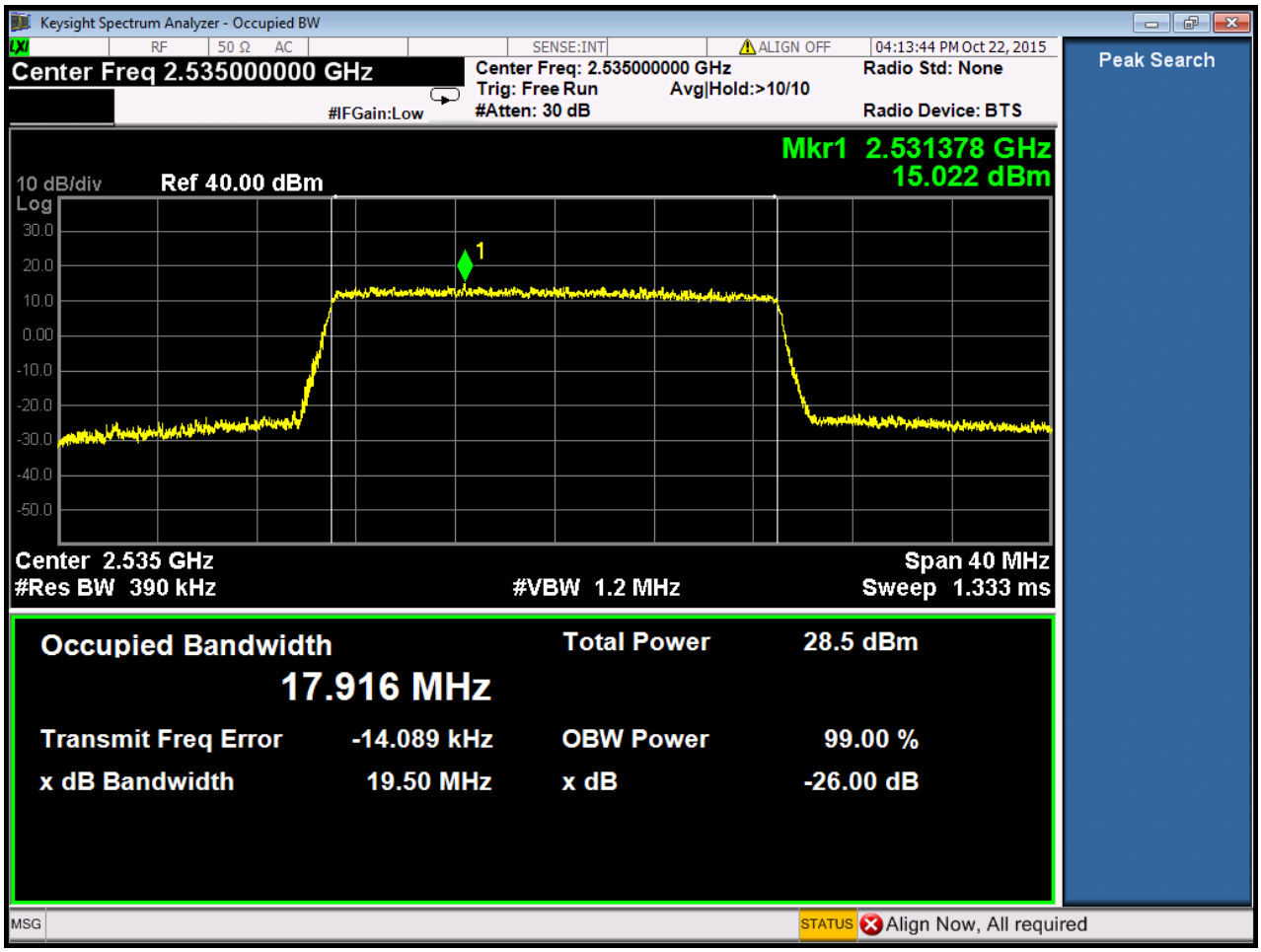


#### 4.1.4.7 Test Mode = LTE/TM1 20MHz

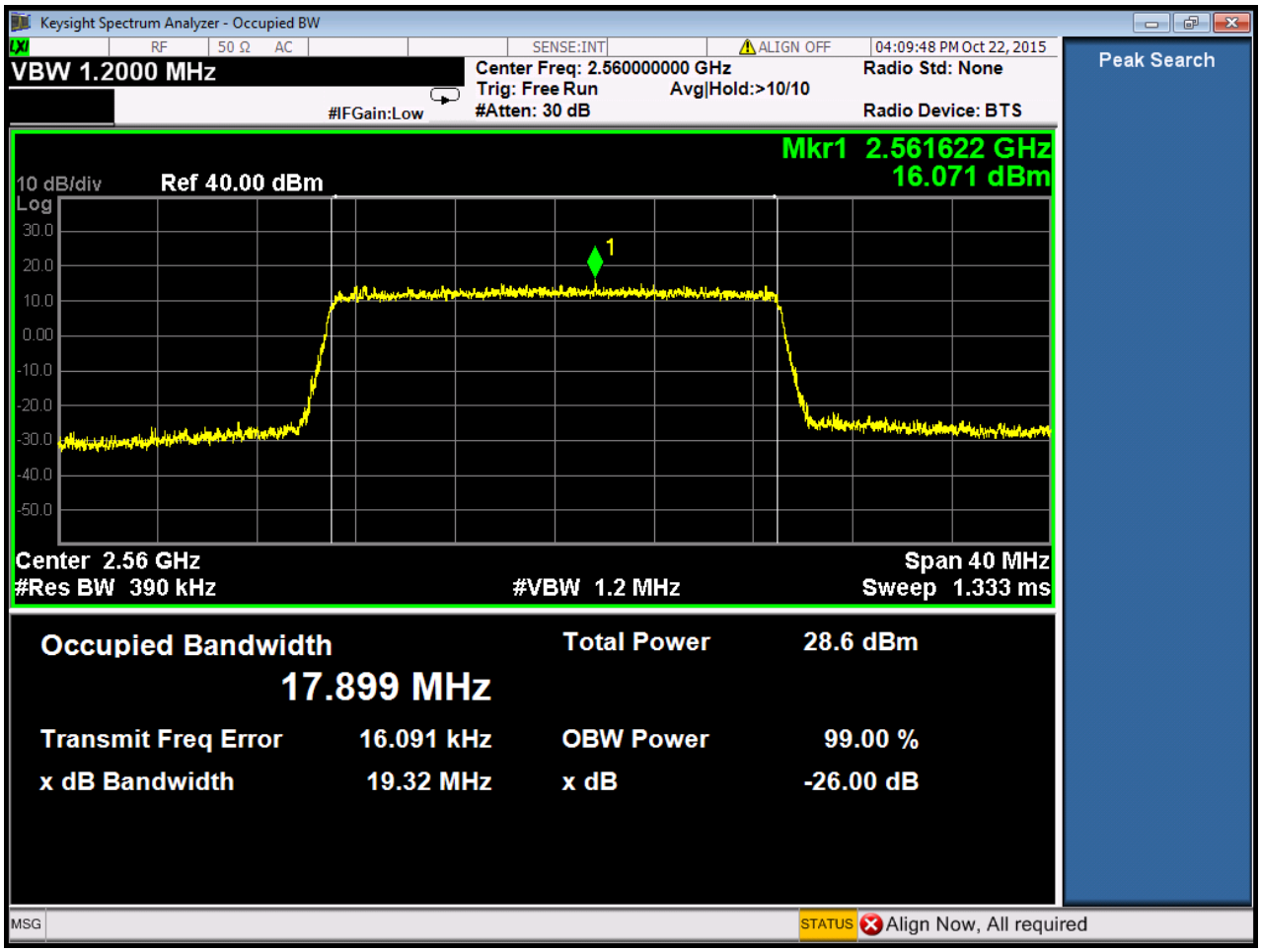
##### 4.1.4.7.1 Test Channel = LCH



#### 4.1.4.7.2 Test Channel = MCH

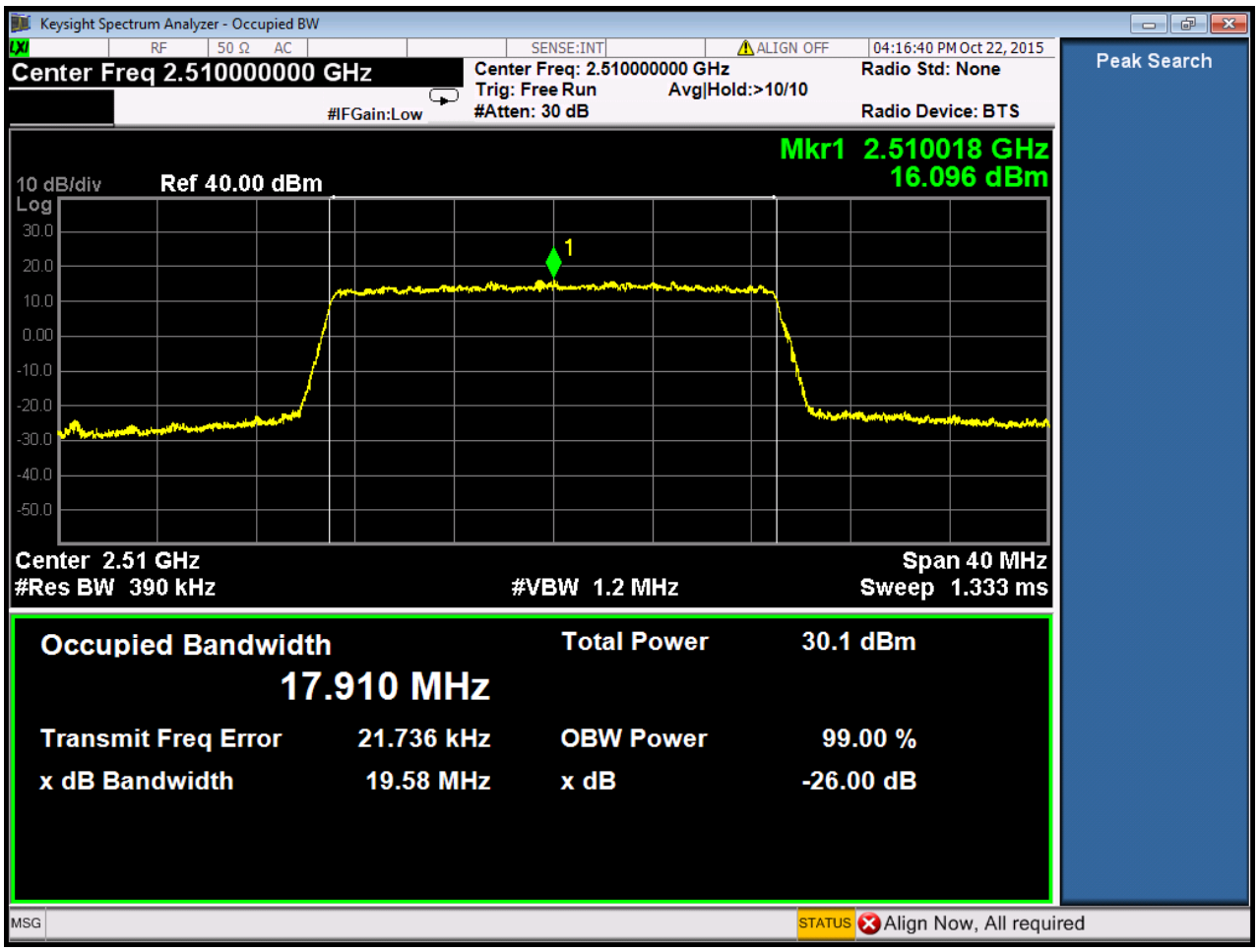


#### 4.1.4.7.3 Test Channel = HCH

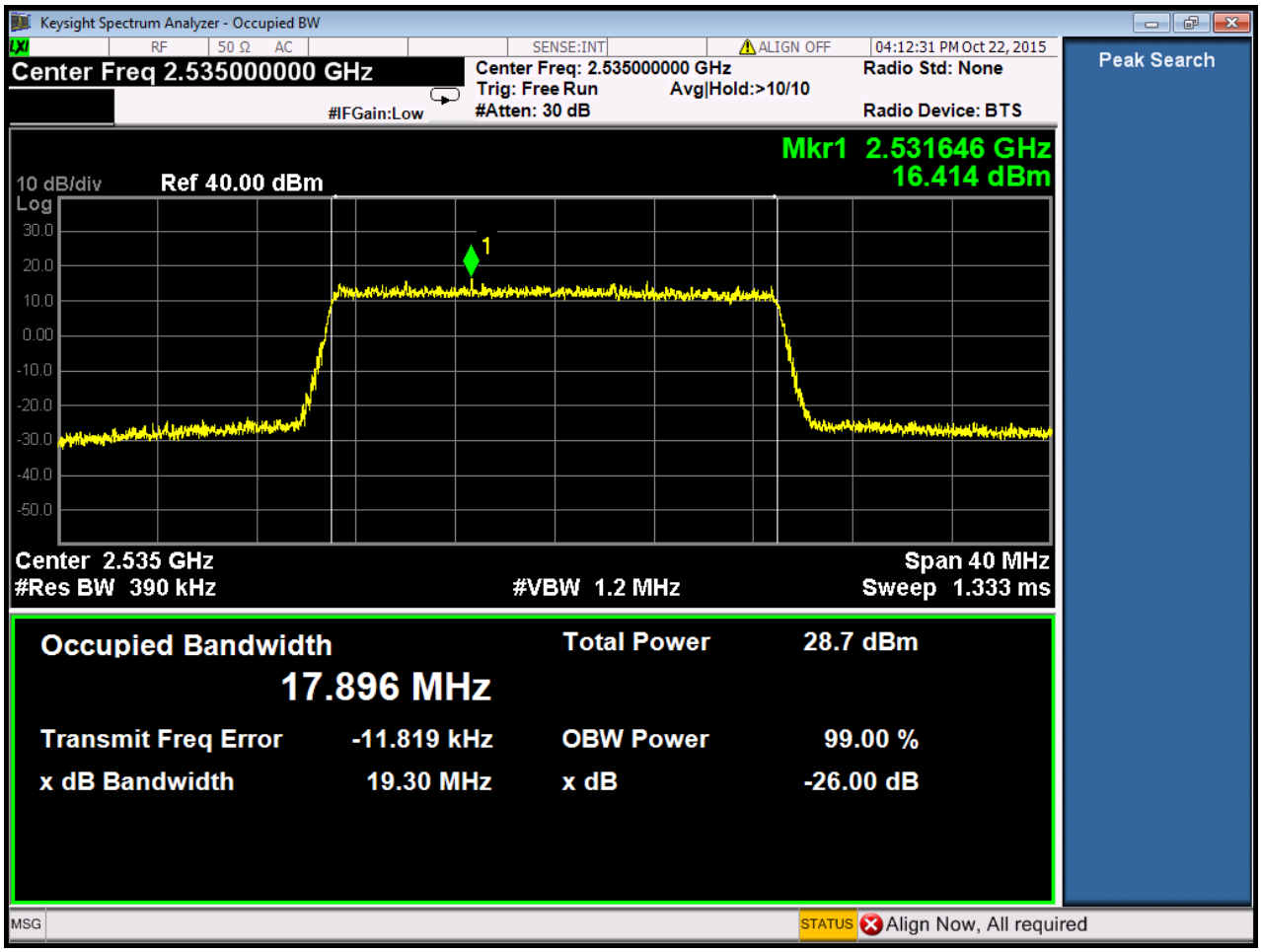


#### 4.1.4.8 Test Mode = LTE/TM2 20MHz

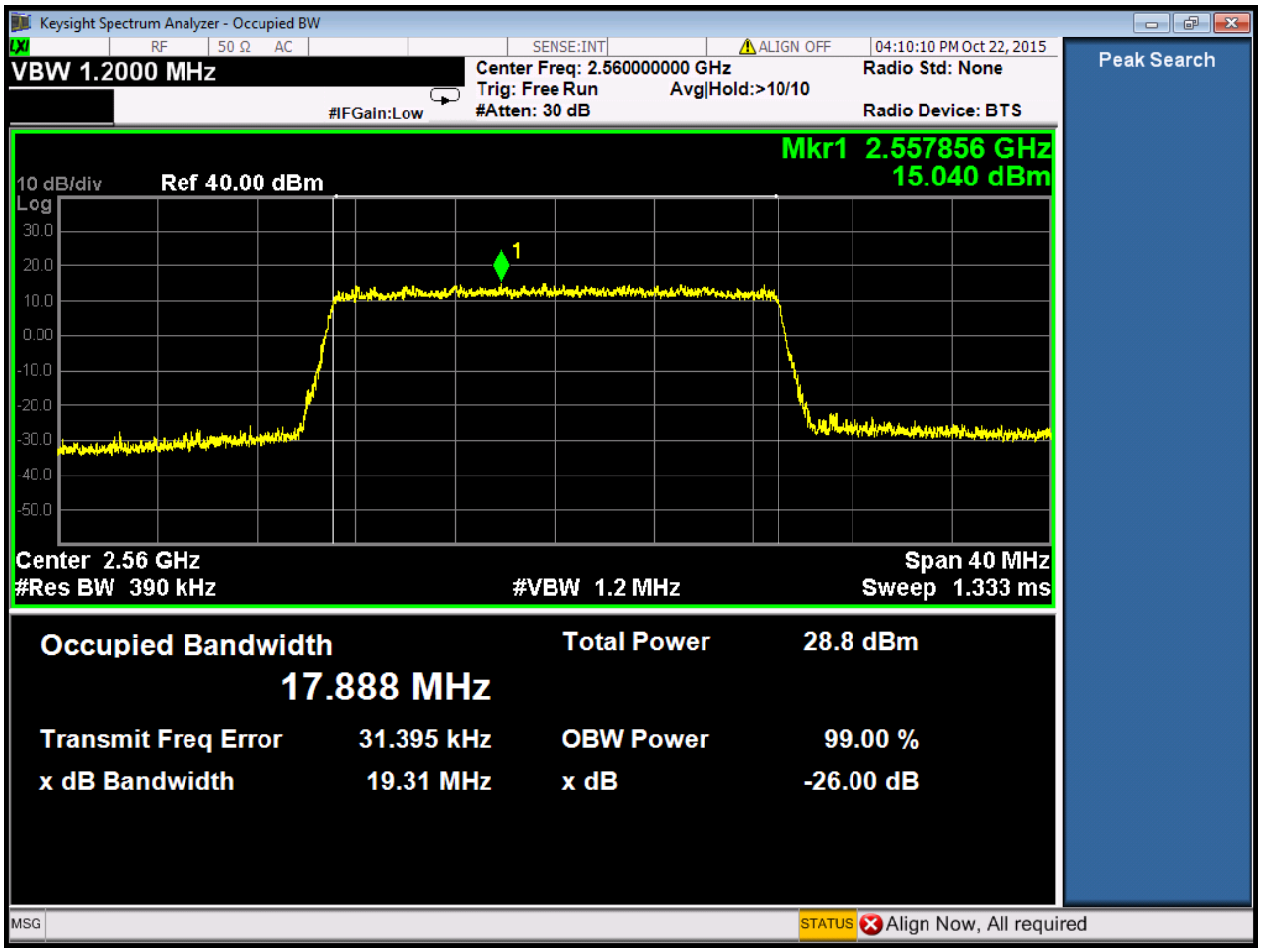
##### 4.1.4.8.1 Test Channel = LCH



#### 4.1.4.8.2 Test Channel = MCH



#### 4.1.4.8.3 Test Channel = HCH



# 5 Band Edges Compliance

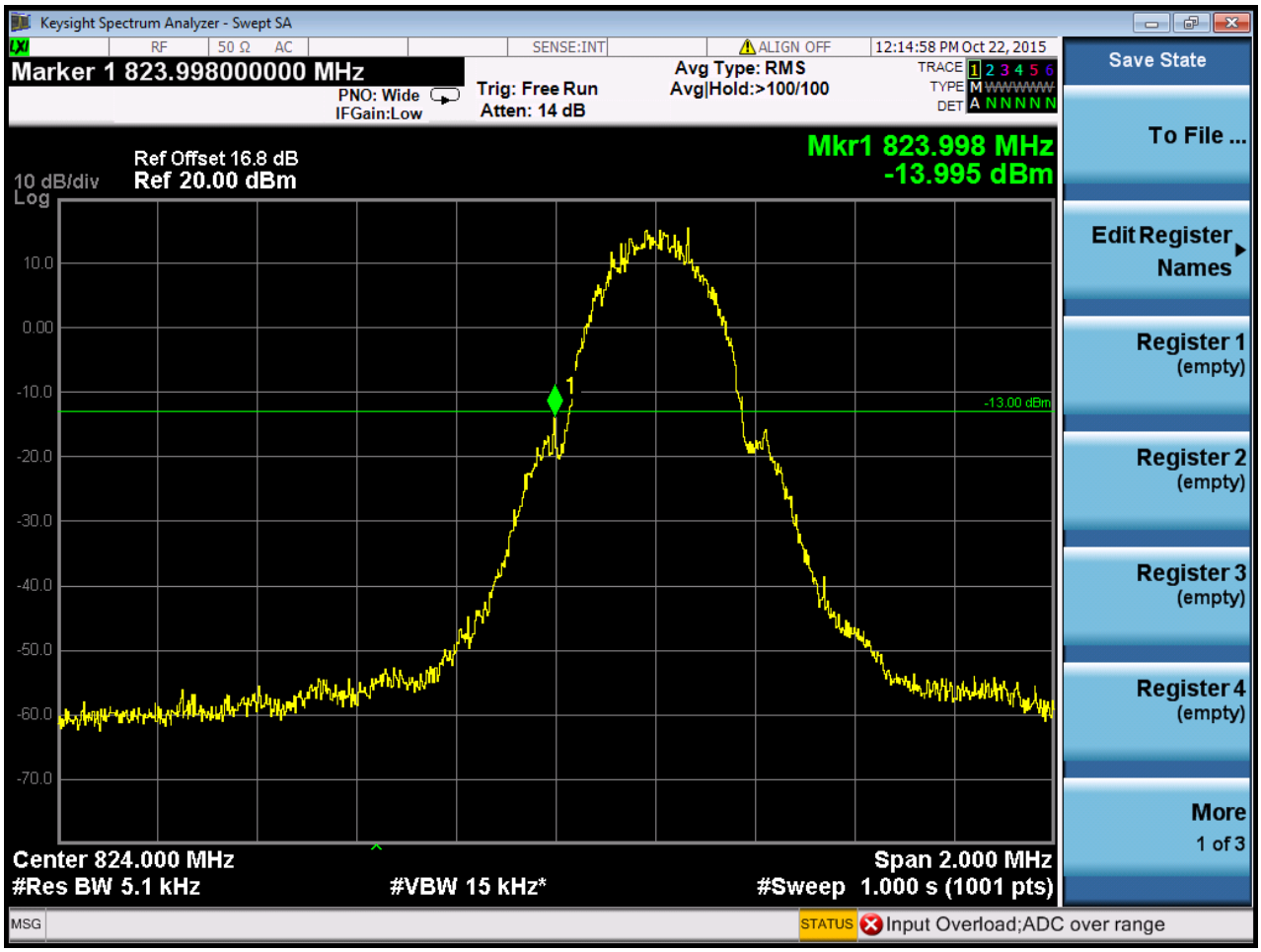
Part I - Test Plots

## 5.1 For GSM

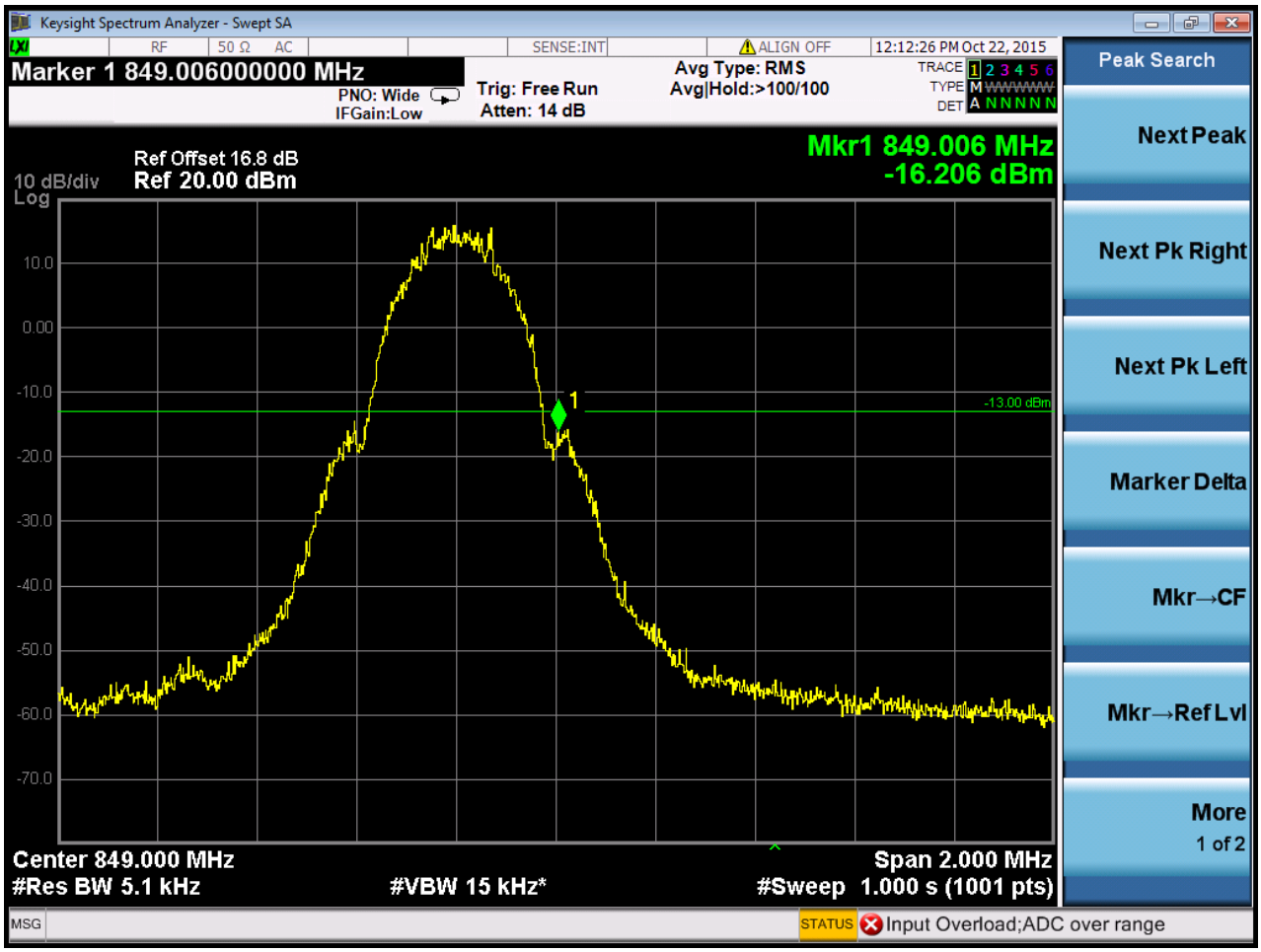
### 5.1.1 Test Band = GSM850

#### 5.1.1.1 Test Mode = GSM/TM1

##### 5.1.1.1.1 Test Channel = LCH

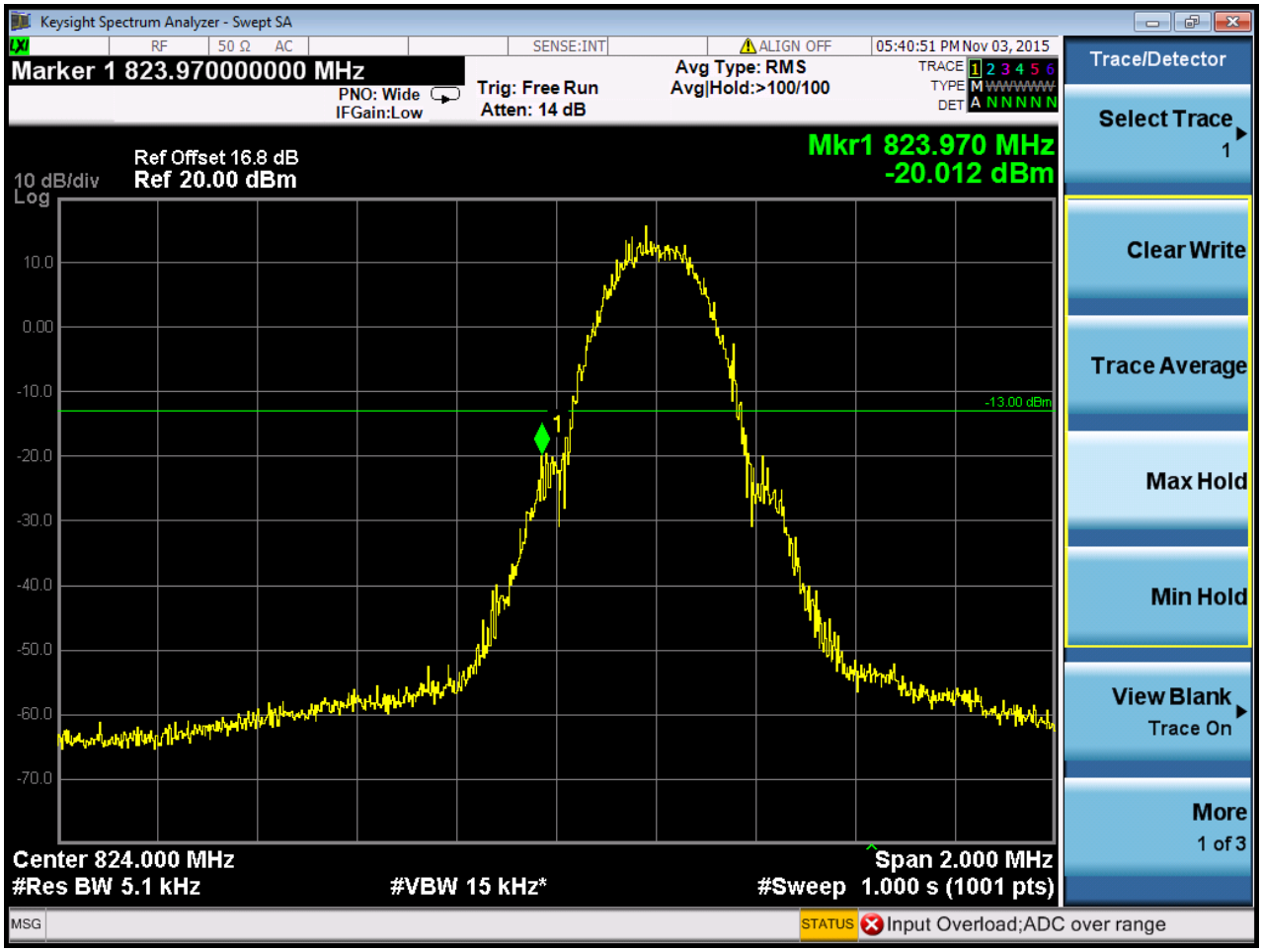


#### 5.1.1.1.2 Test Channel = HCH

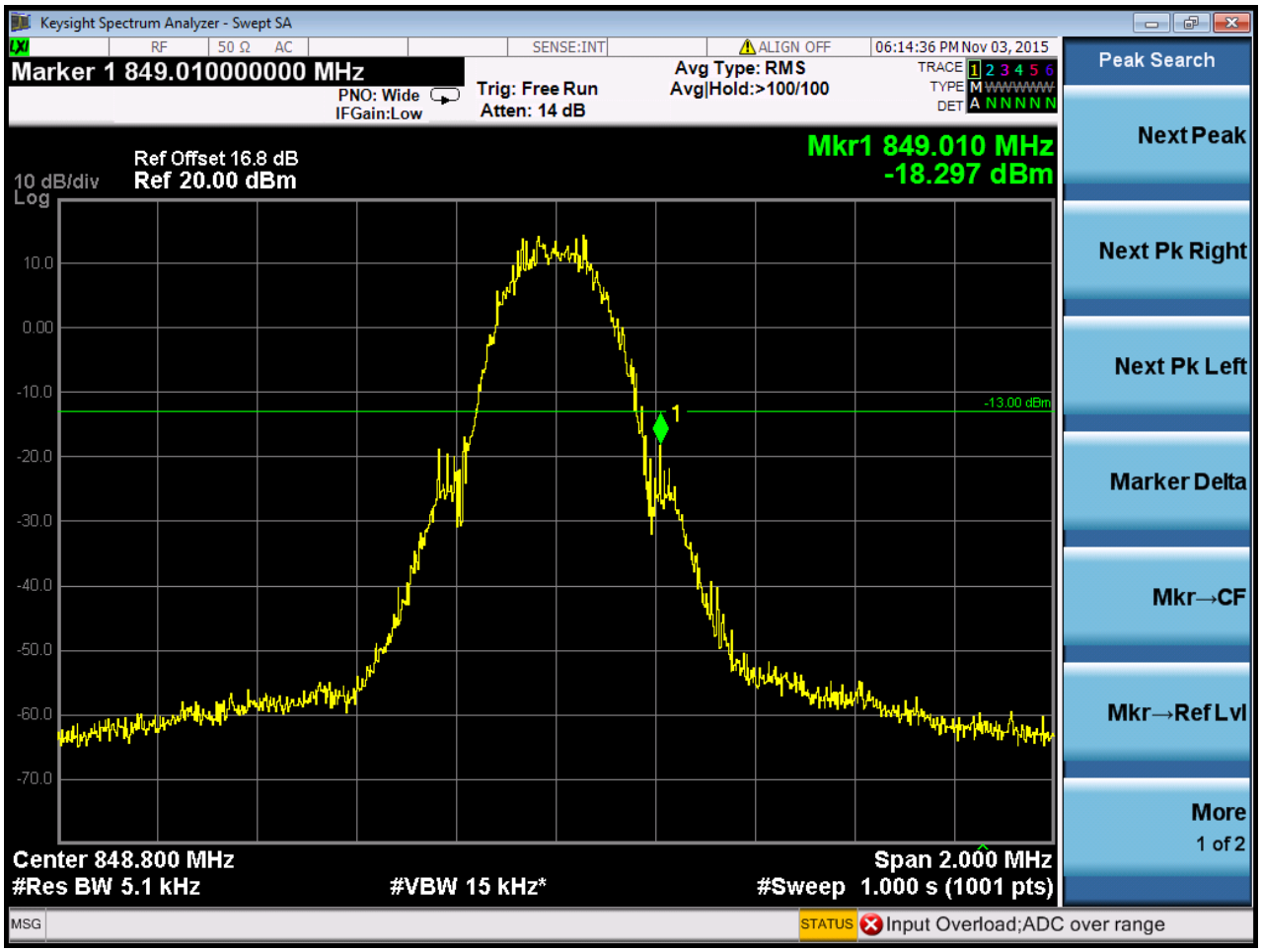


### 5.1.1.2 Test Mode = GSM/TM2

#### 5.1.1.2.1 Test Channel = LCH



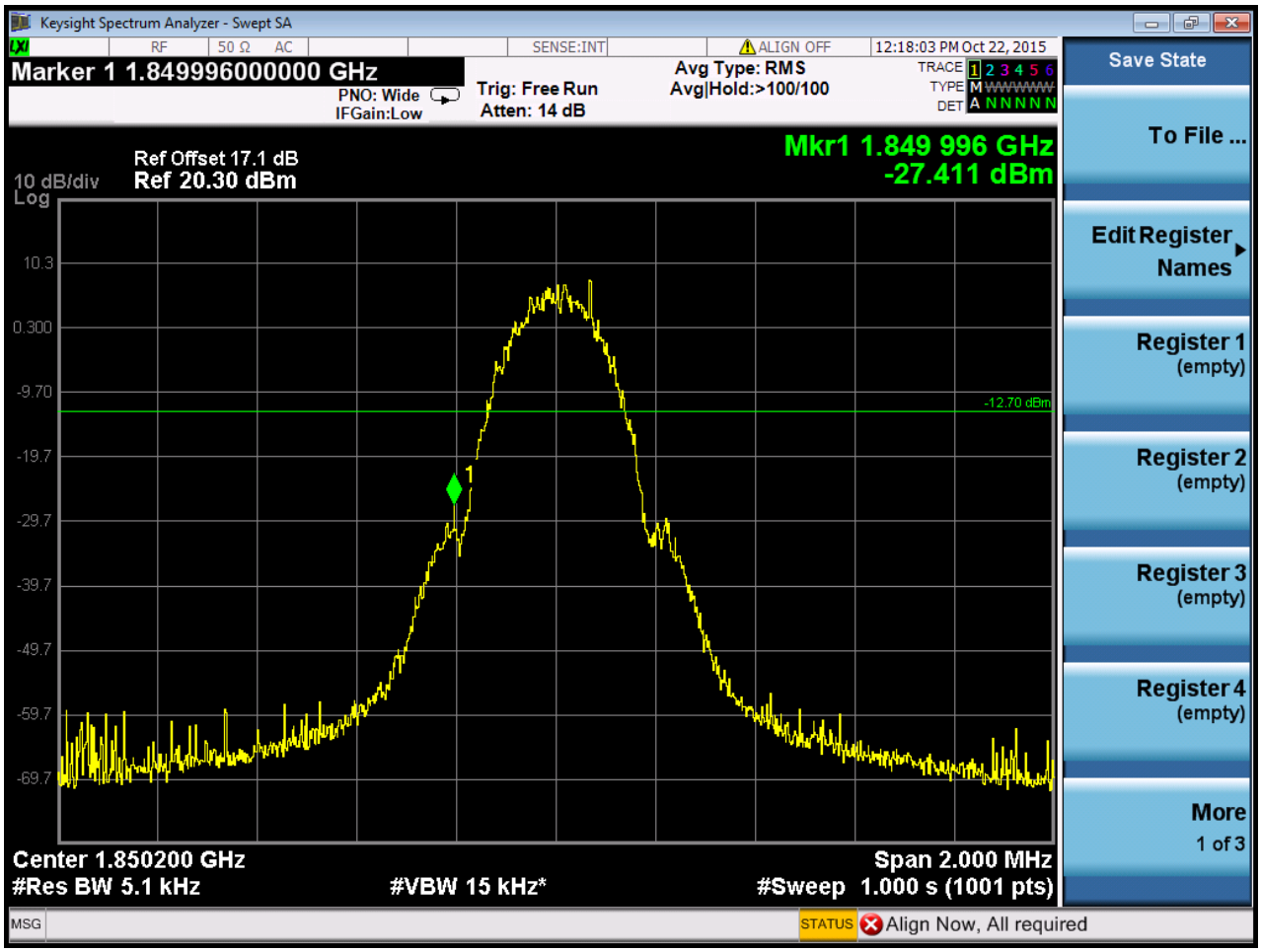
#### 5.1.1.2.2 Test Channel = HCH



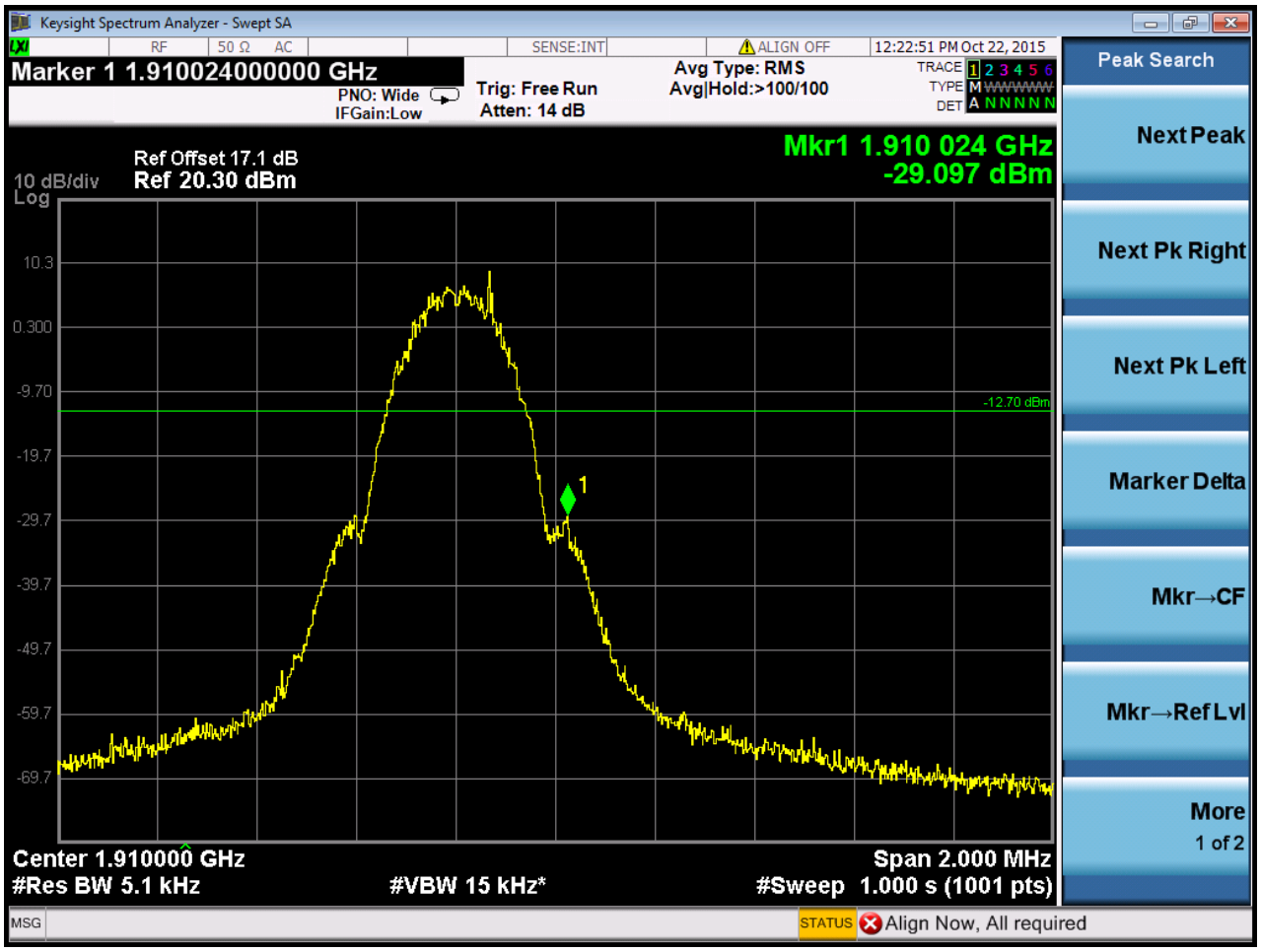
## 5.1.2 Test Band = GSM1900

### 5.1.2.1 Test Mode = GSM/TM1

#### 5.1.2.1.1 Test Channel = LCH

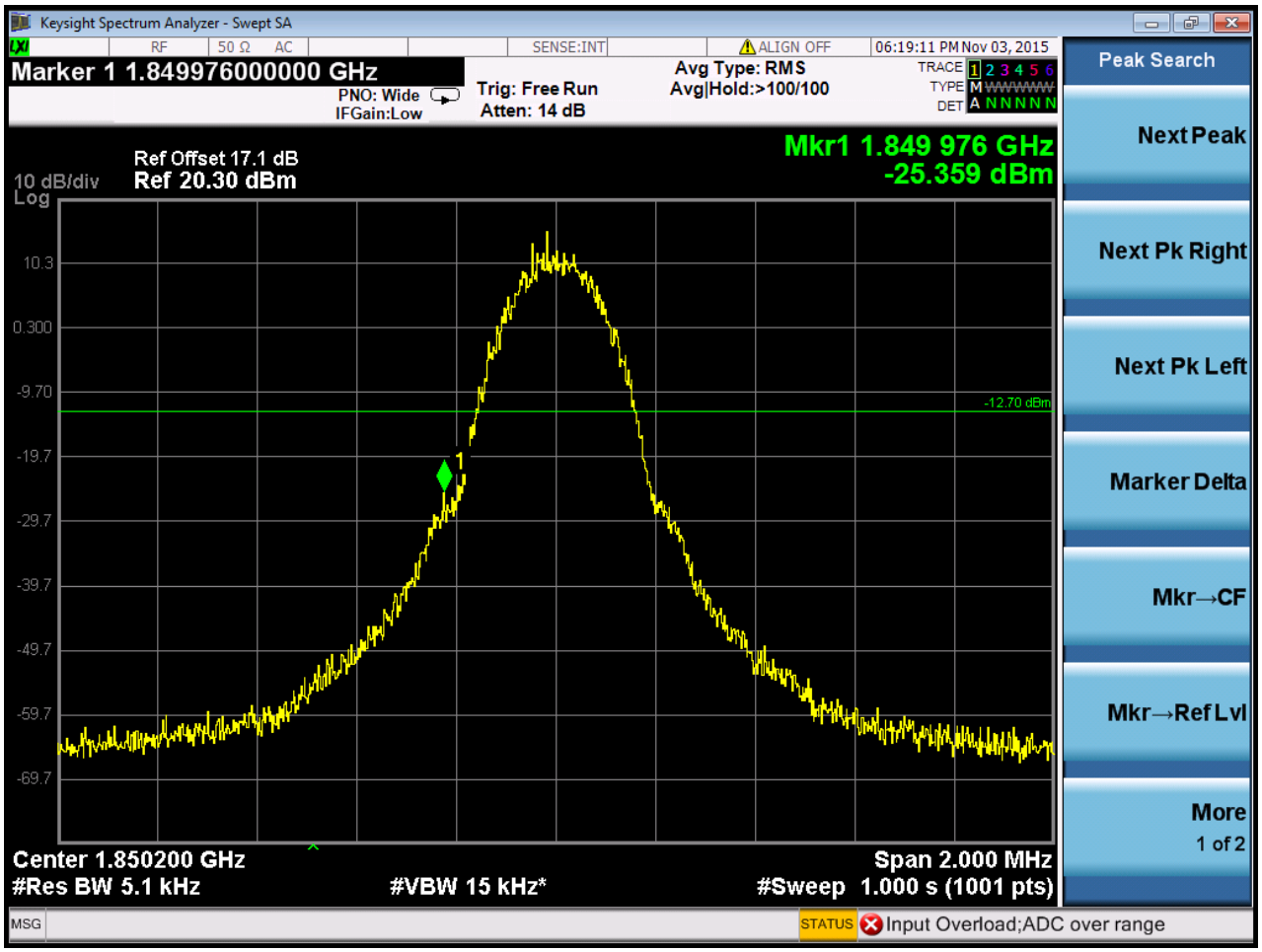


### 5.1.2.1.2 Test Channel = HCH

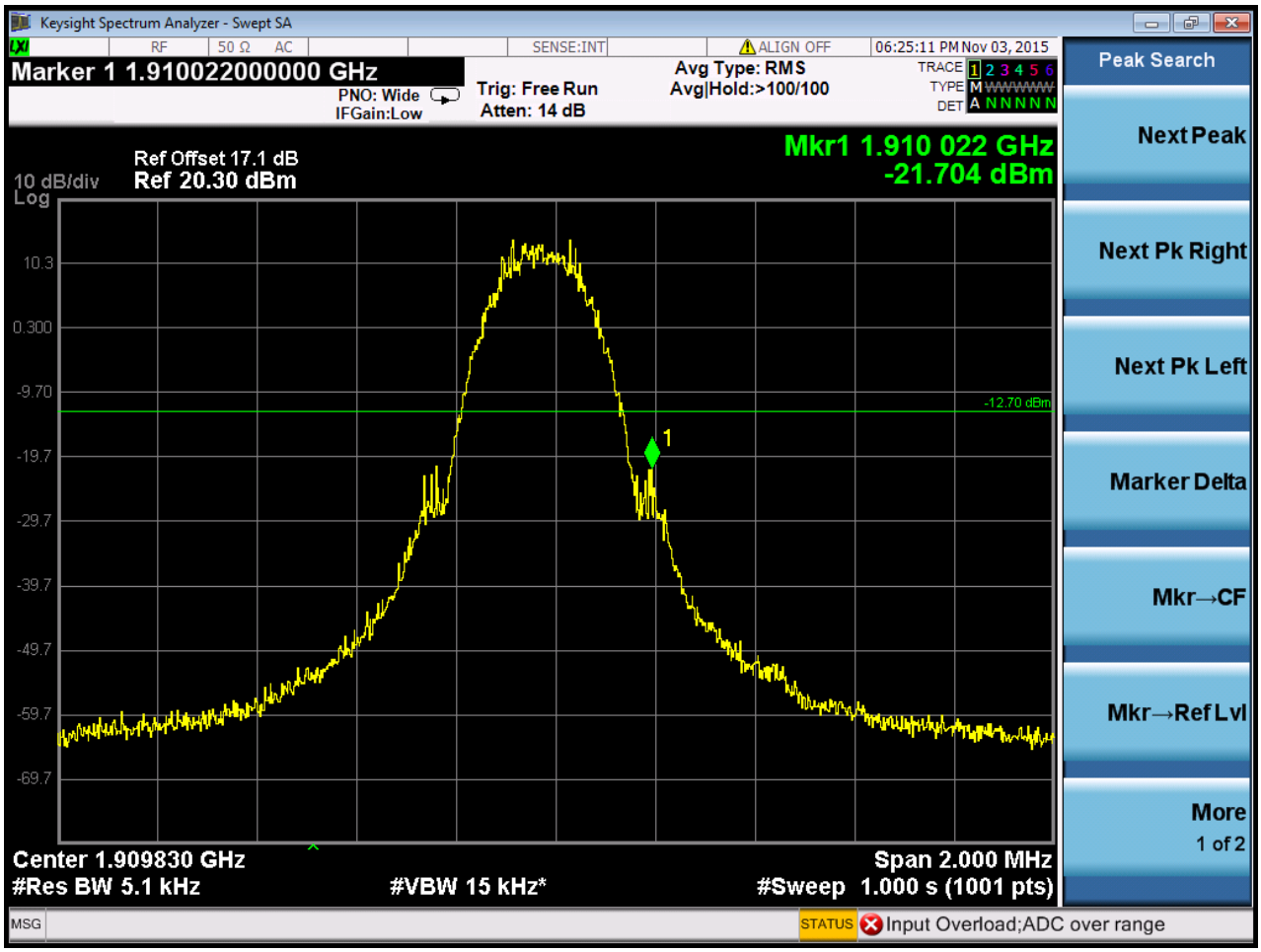


### 5.1.2.2 Test Mode = GSM/TM2

#### 5.1.2.2.1 Test Channel = LCH



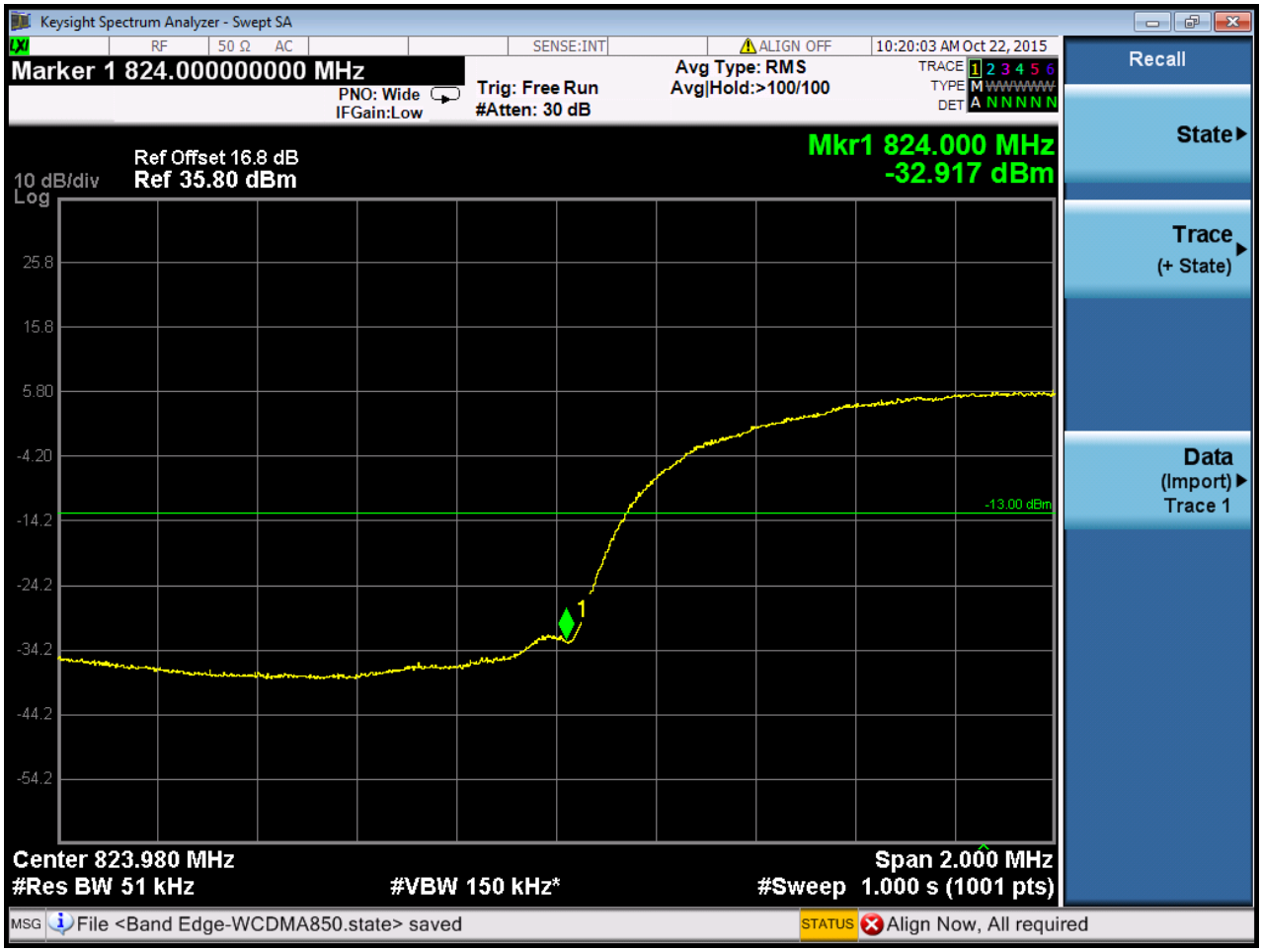
### 5.1.2.2.2 Test Channel = HCH



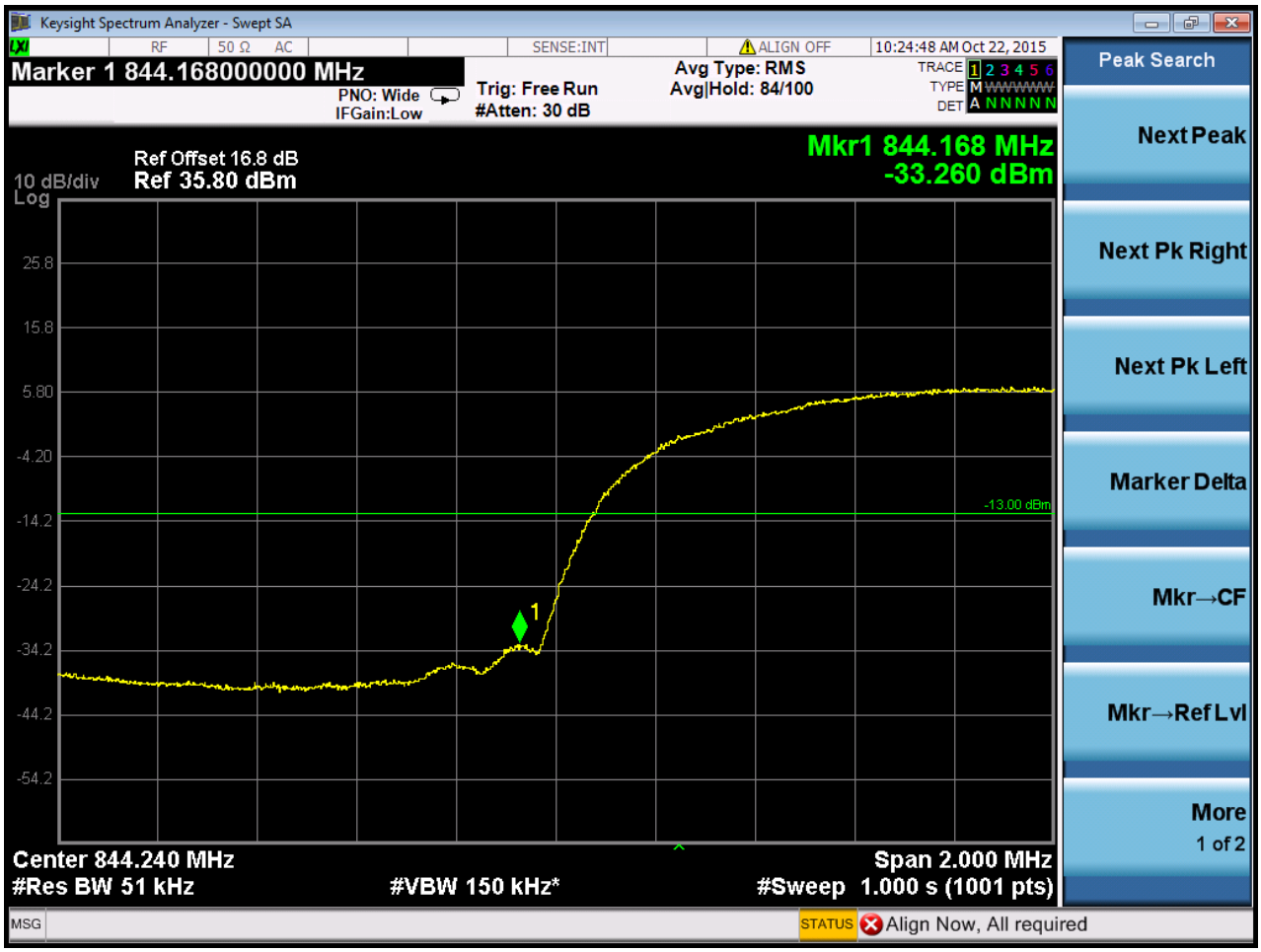
## 5.2 For WCDMA 850 Band 5

#### 5.2.1.1 Test Mode = UMTS/TM1

#### 5.2.1.1.1 Test Channel = LCH



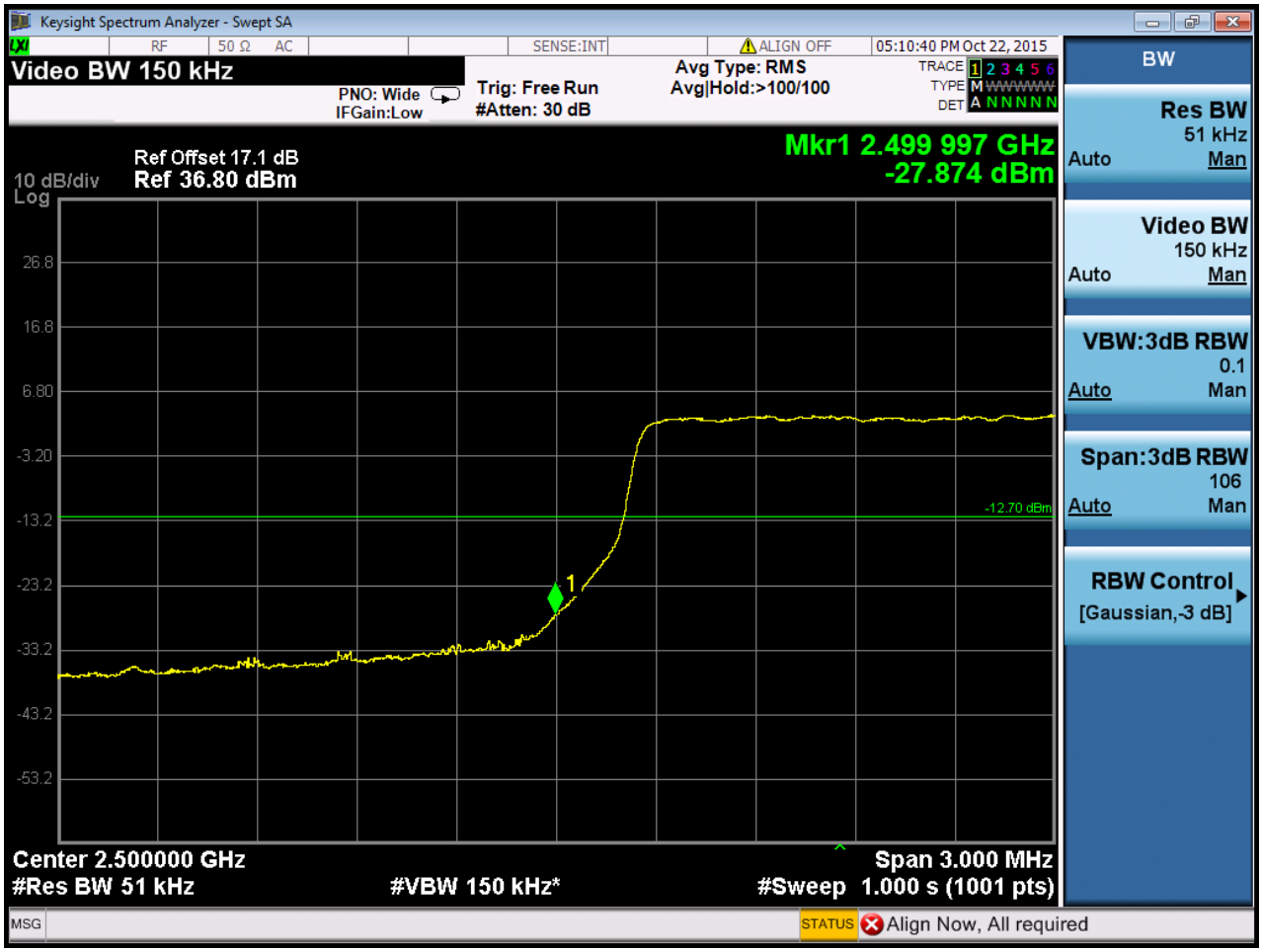
### 5.2.1.1.2 Test Channel = HCH



## 5.3 For LTE Band 7

#### 5.3.1.1 Test Mode = LTE/TM1 5MHz

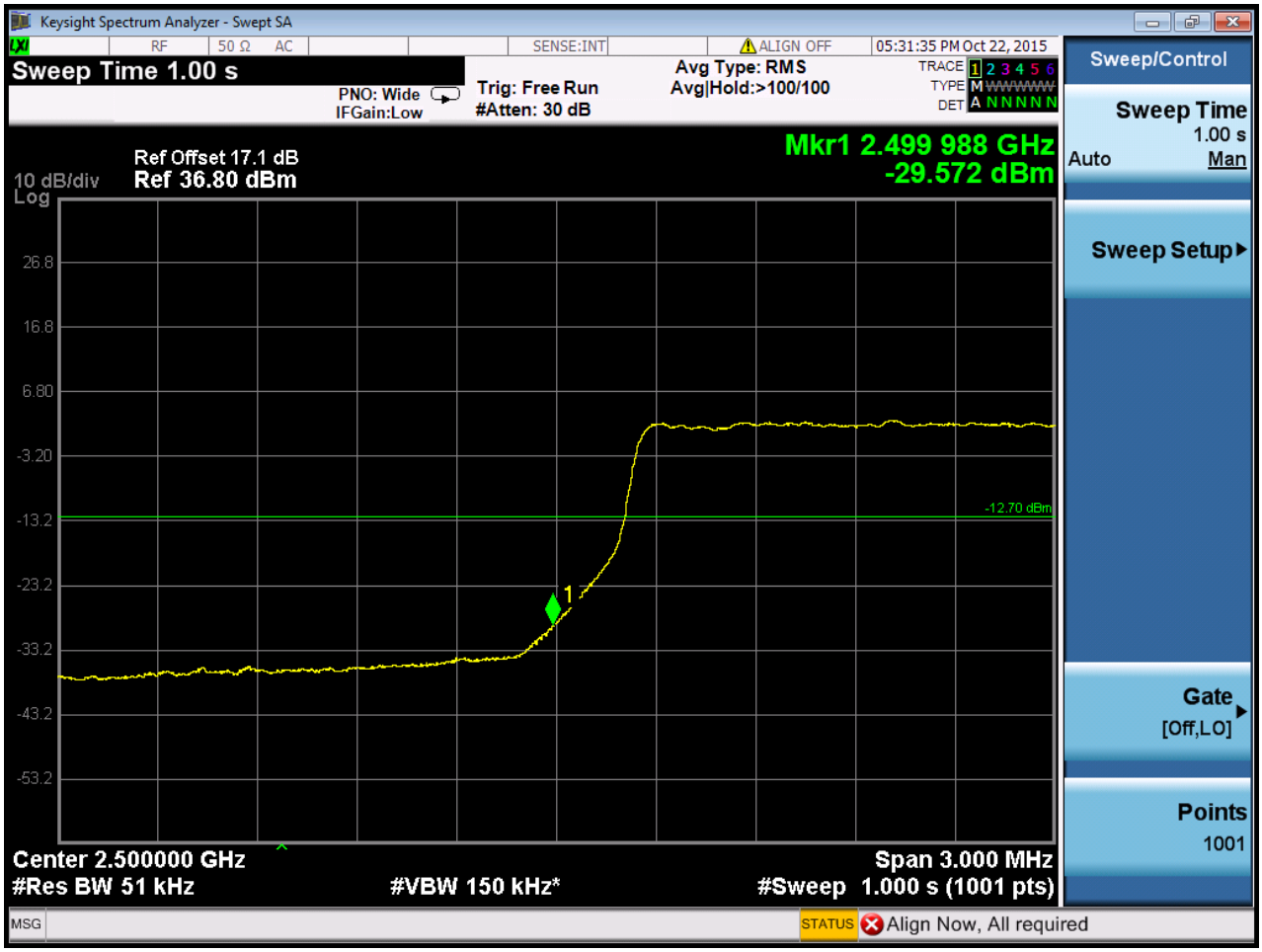
#### 5.3.1.1.1 Test Channel = LCH



### 5.3.1.1.2 Test Channel = HCH

### 5.3.1.2 Test Mode = LTE/TM2 5MHz

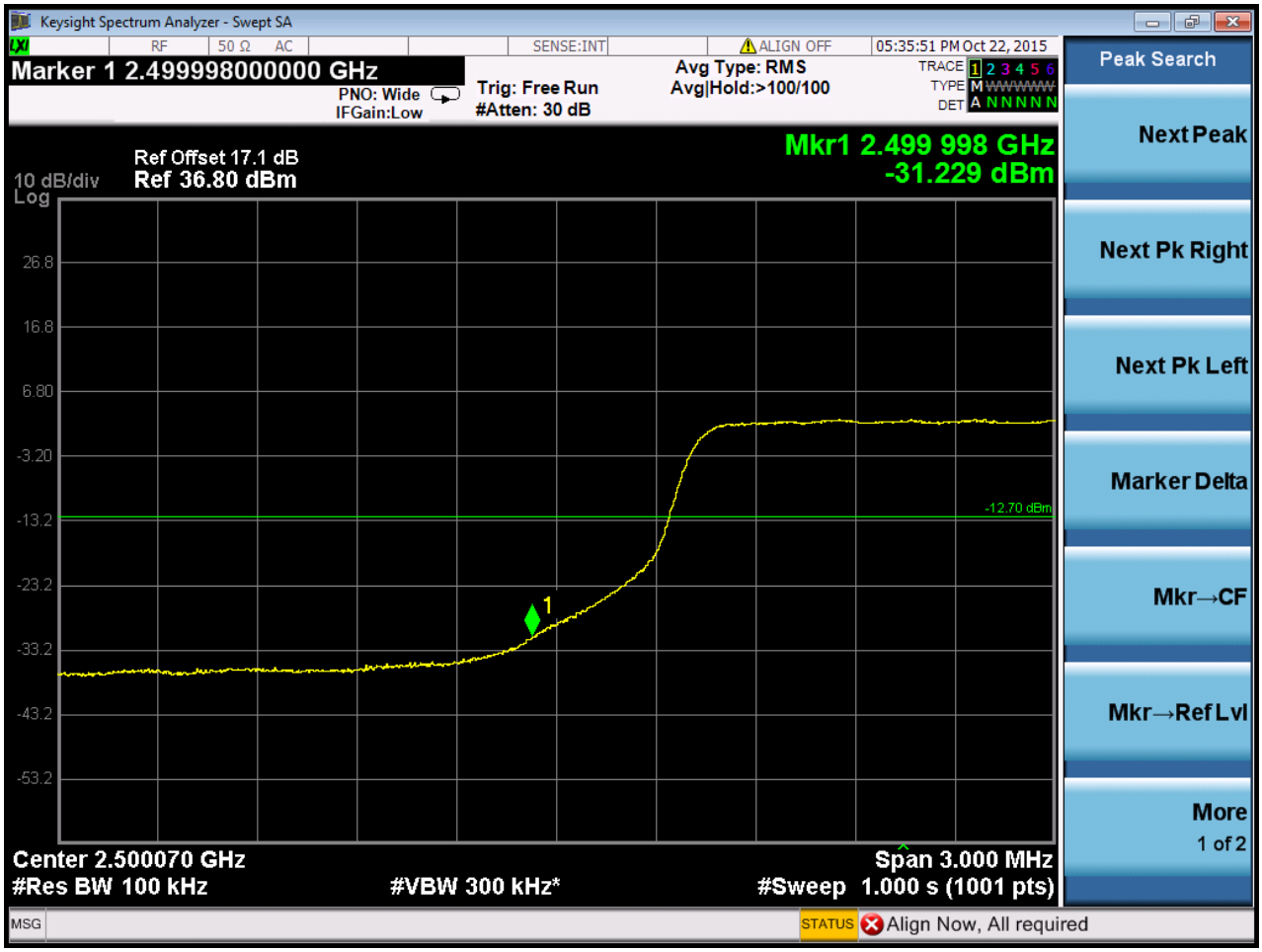
#### 5.3.1.2.1 Test Channel = LCH



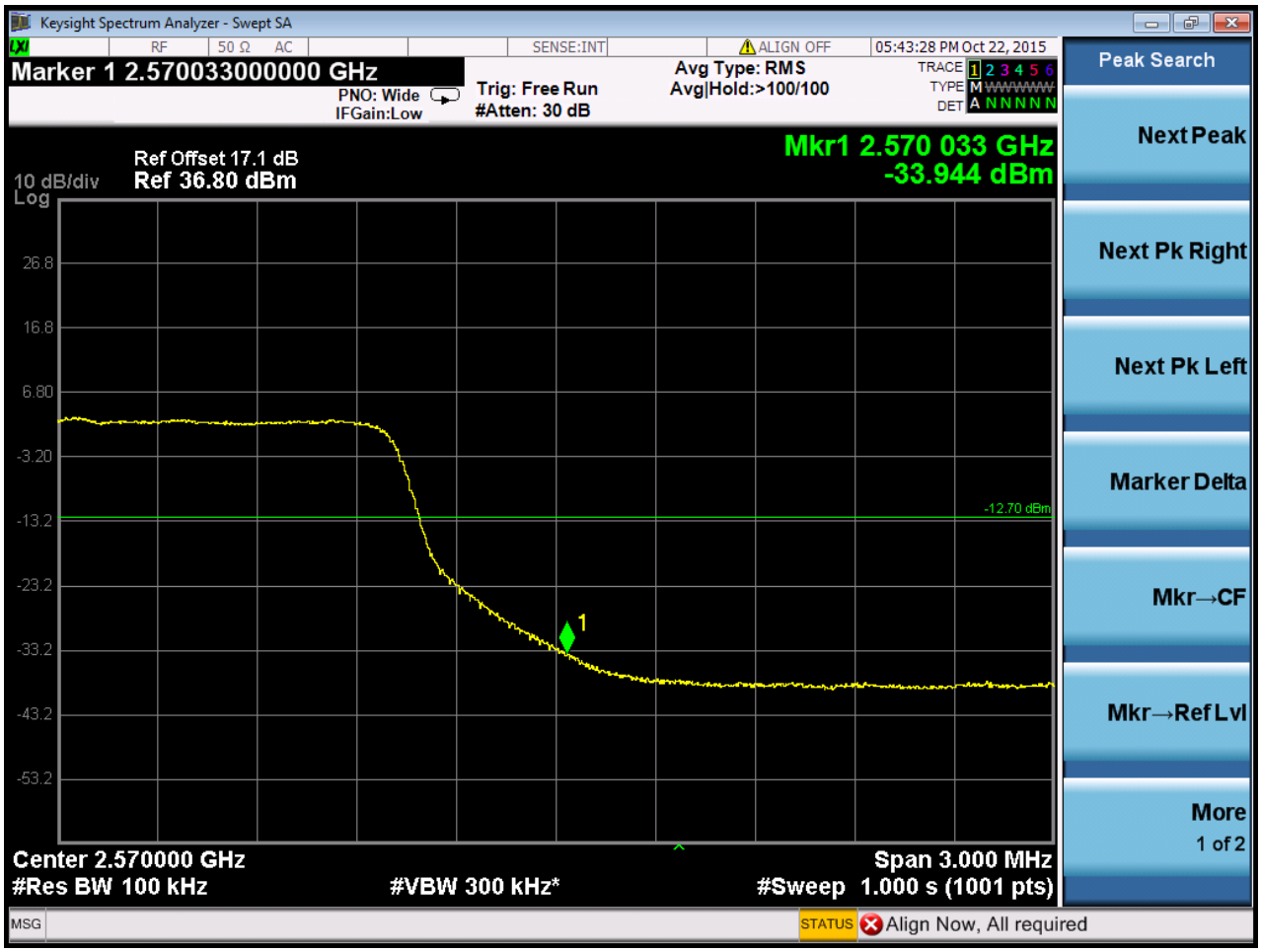
### 5.3.1.2.2 Test Channel = HCH

### 5.3.1.3 Test Mode = LTE/TM1 10MHz

#### 5.3.1.3.1 Test Channel = LCH

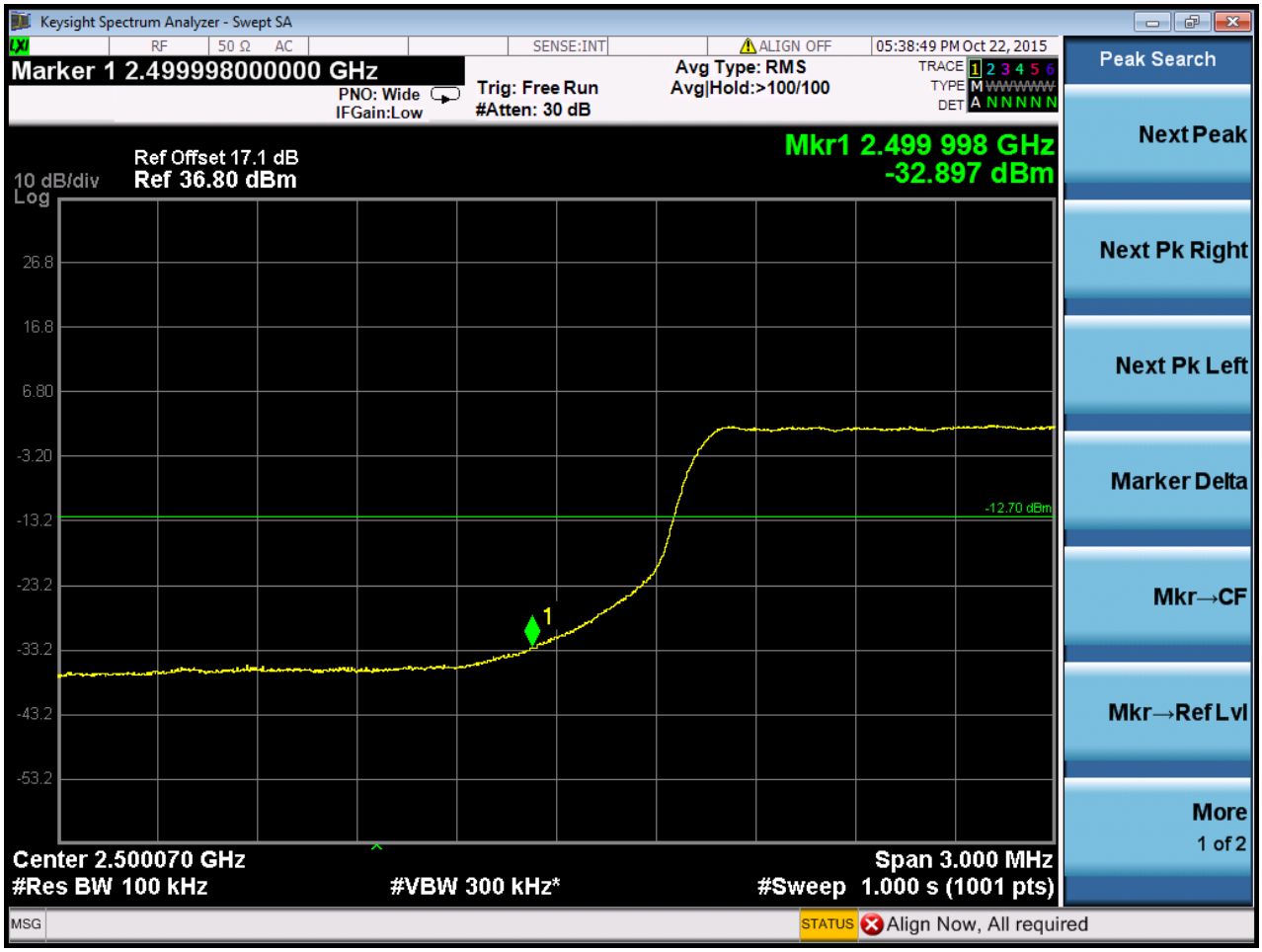


### 5.3.1.3.2 Test Channel = HCH



### 5.3.1.4 Test Mode = LTE/TM2 10MHz

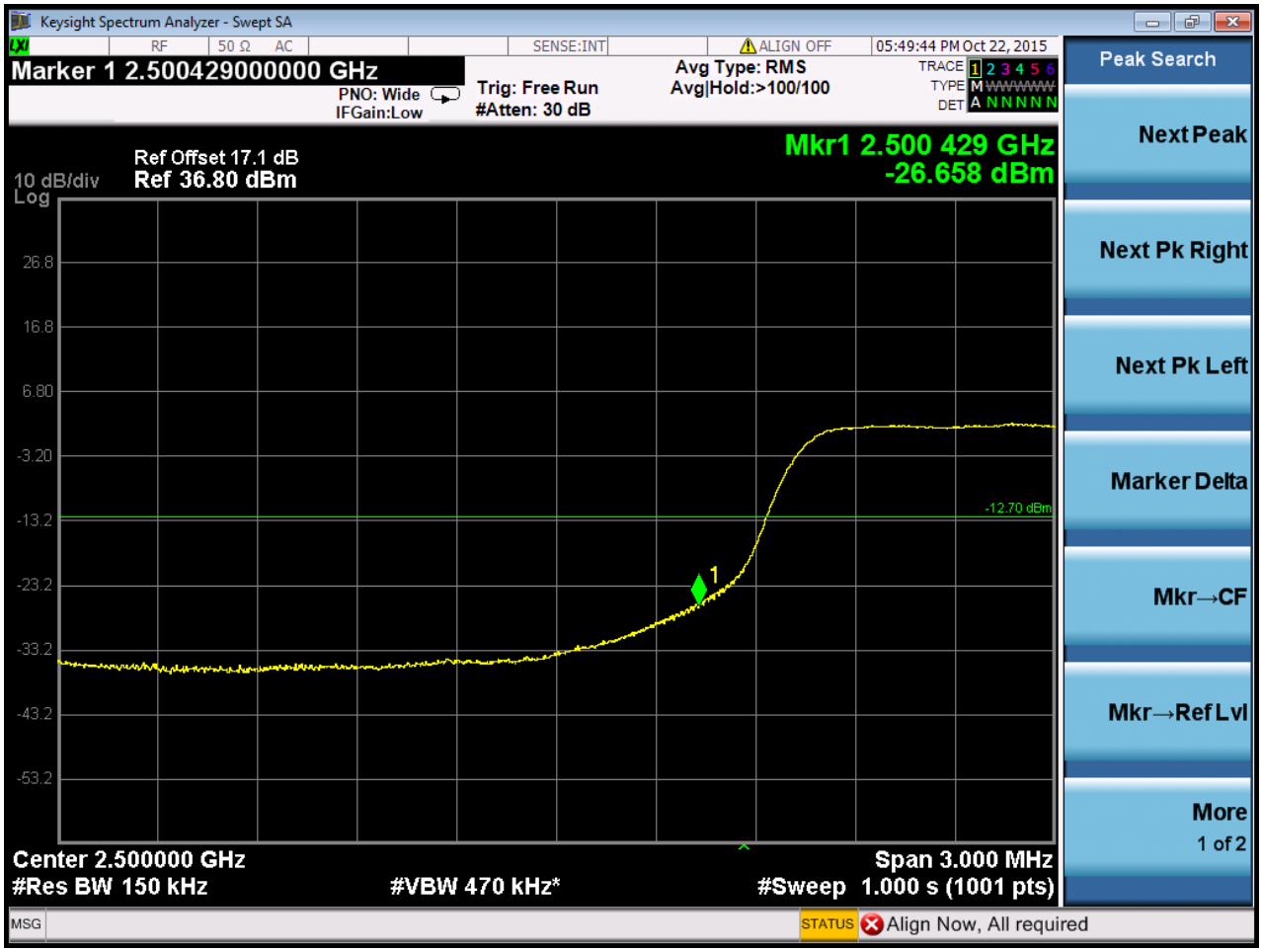
#### 5.3.1.4.1 Test Channel = LCH



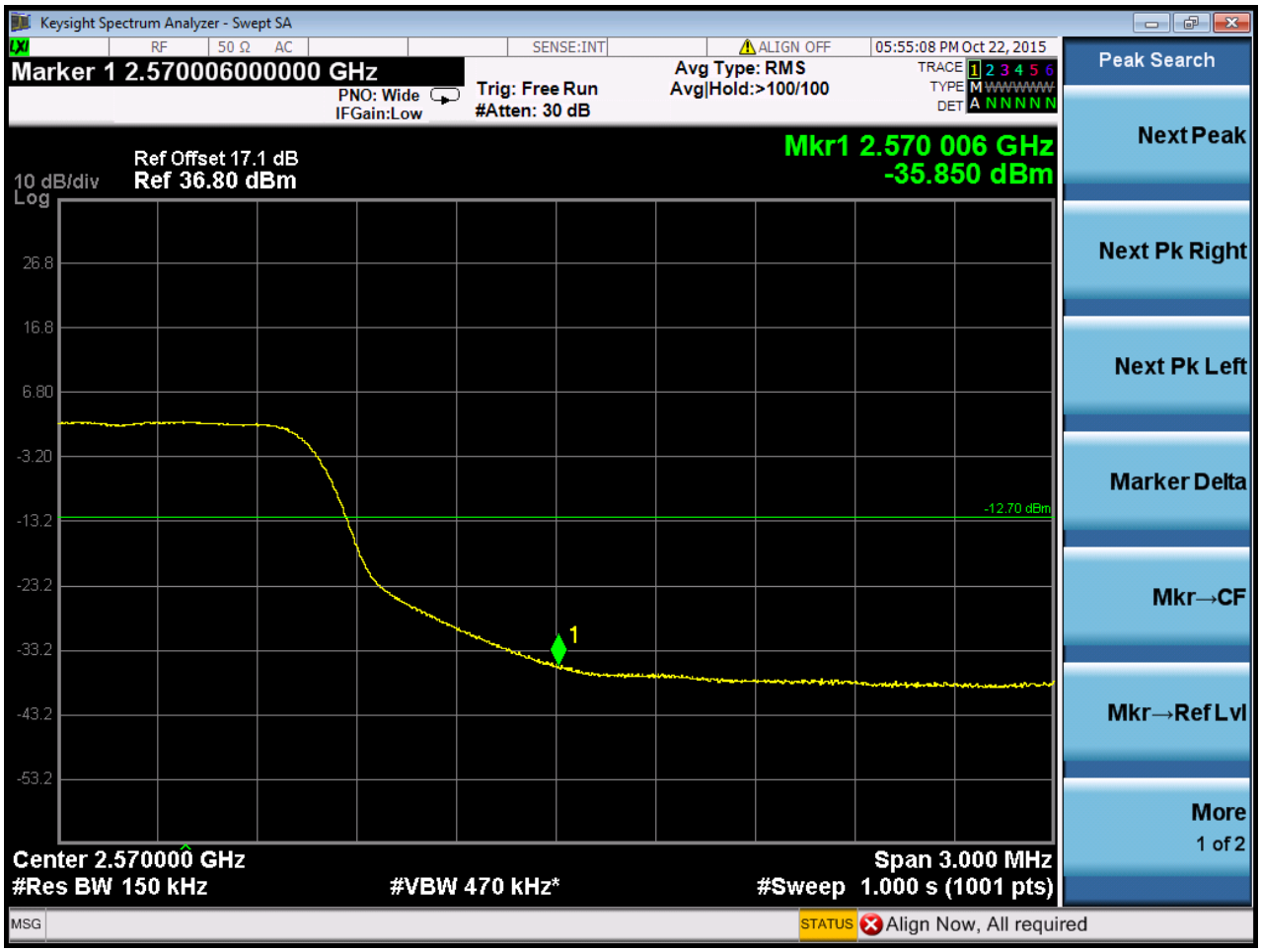
### 5.3.1.4.2 Test Channel = HCH

### 5.3.1.5 Test Mode = LTE/TM1 15MHz

#### 5.3.1.5.1 Test Channel = LCH

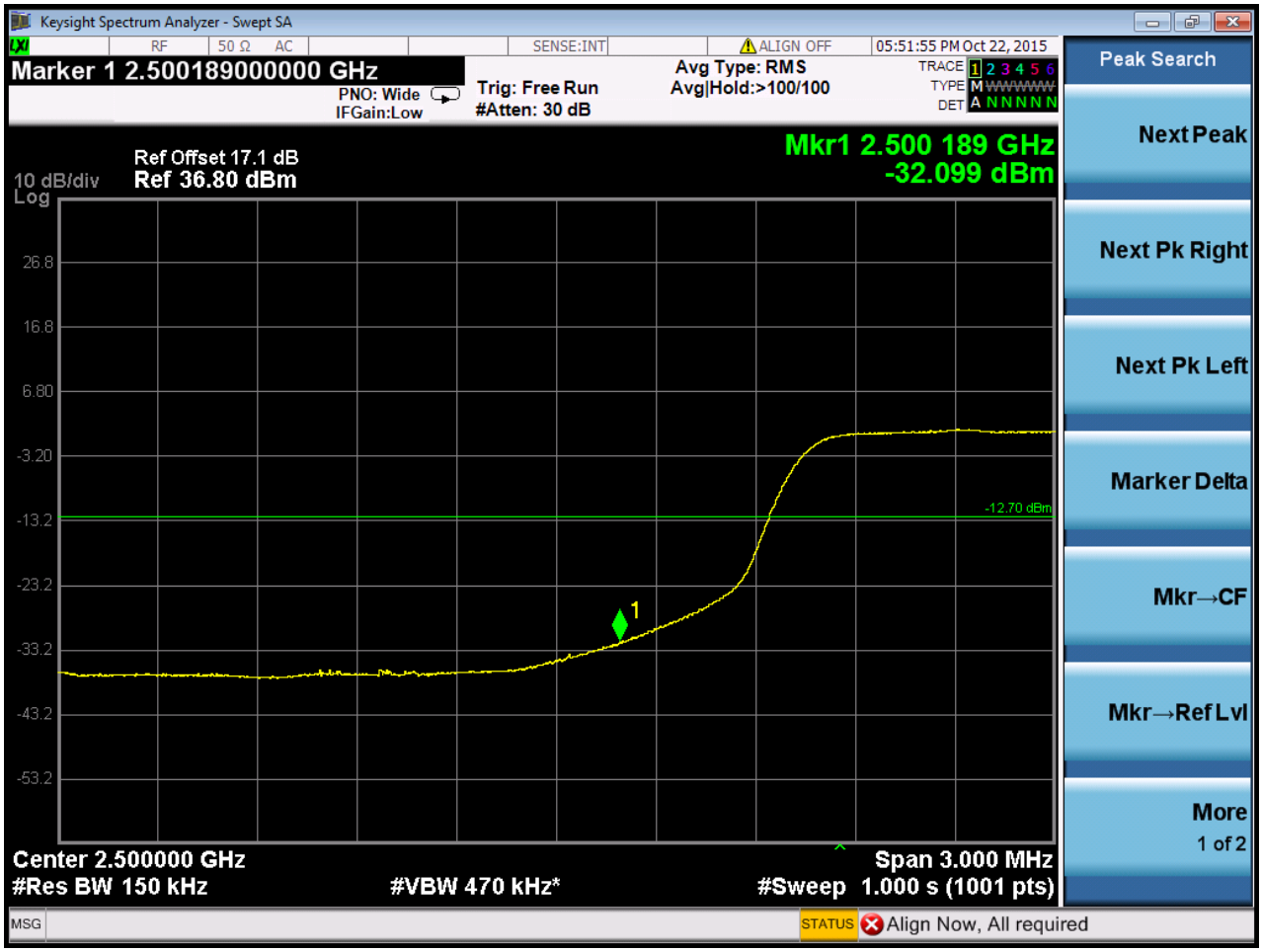


### 5.3.1.5.2 Test Channel = HCH

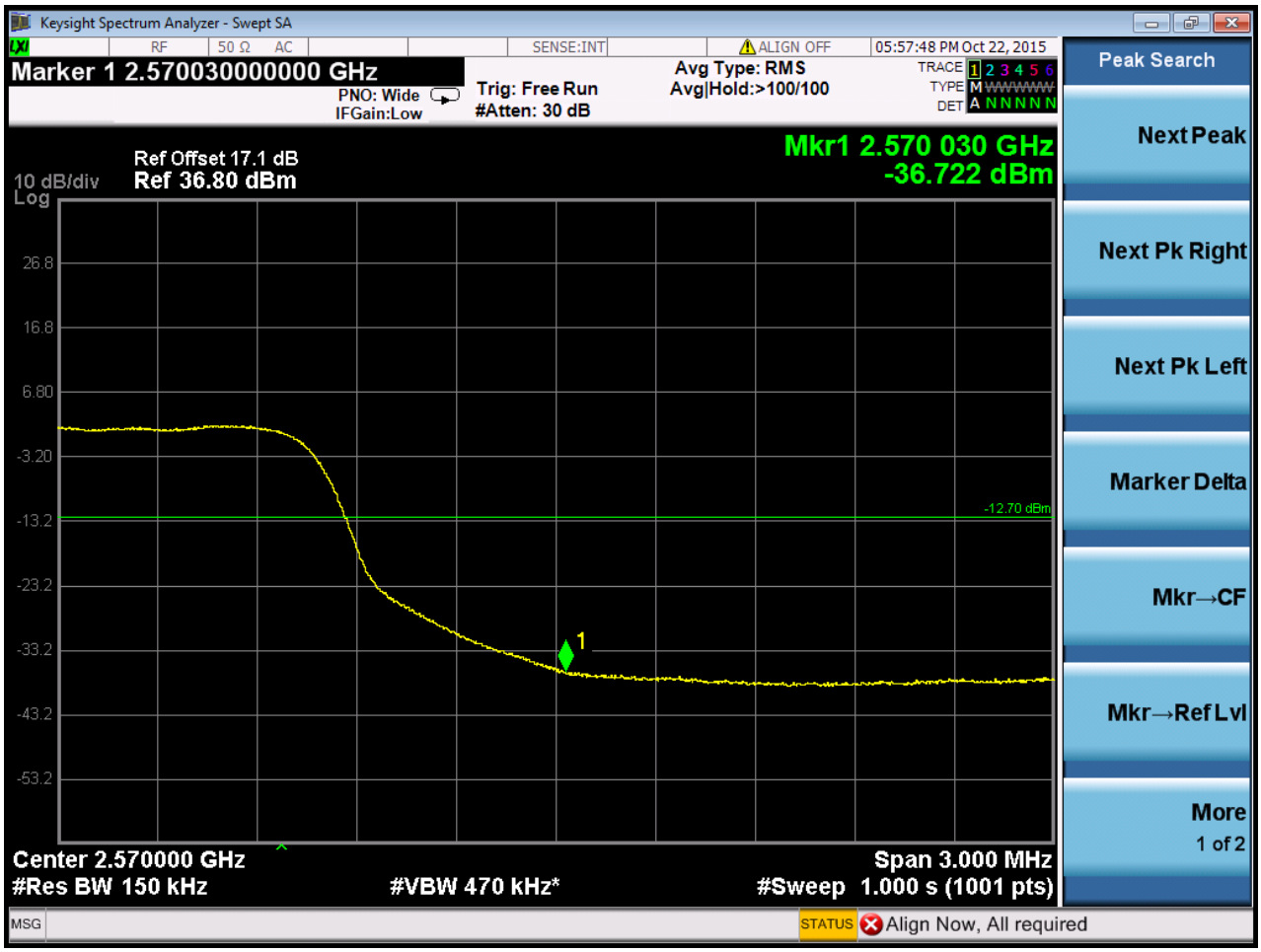


### 5.3.1.6 Test Mode = LTE/TM2 15MHz

#### 5.3.1.6.1 Test Channel = LCH

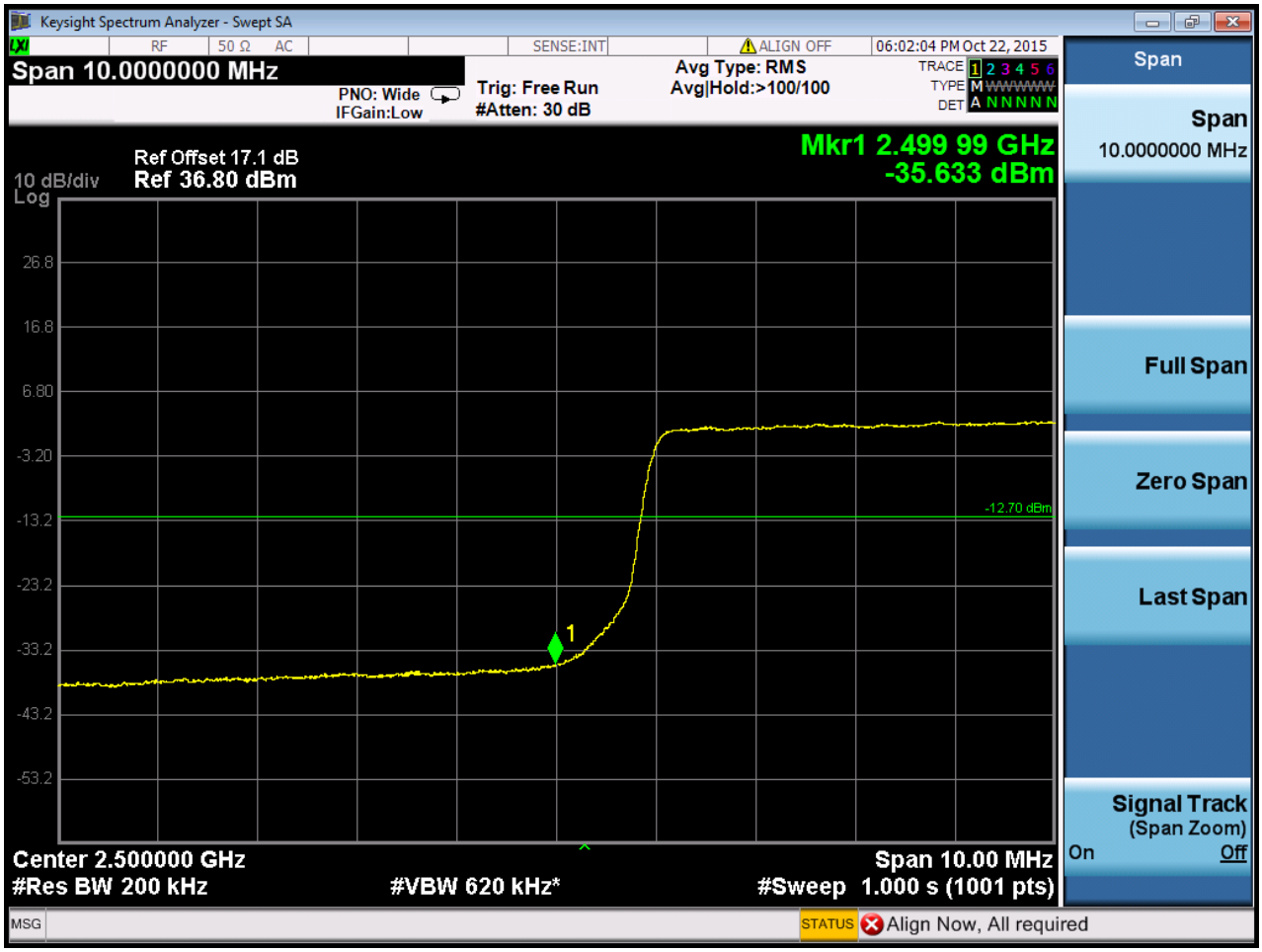


### 5.3.1.6.2 Test Channel = HCH

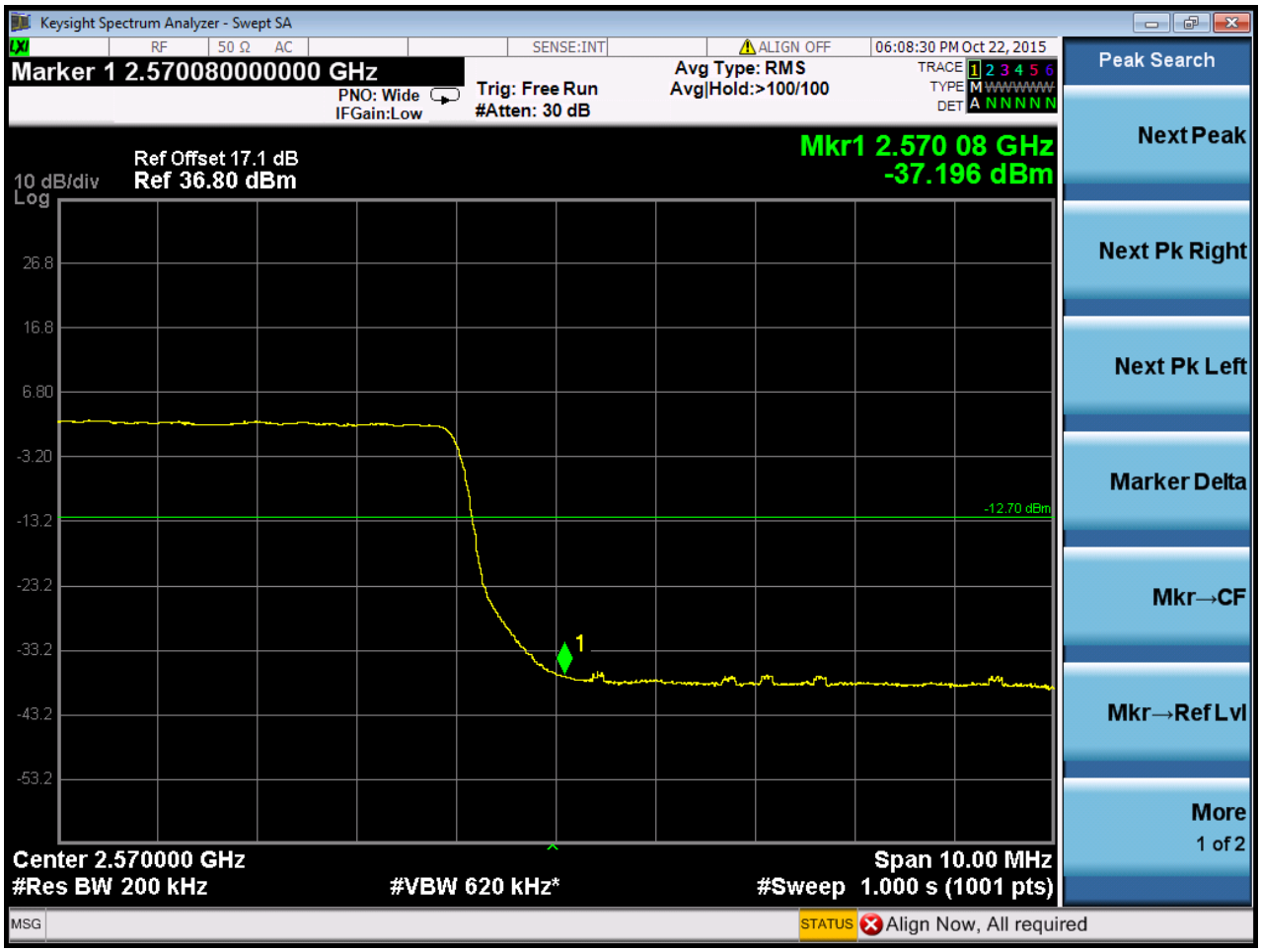


### 5.3.1.7 Test Mode = LTE/TM1 20MHz

#### 5.3.1.7.1 Test Channel = LCH

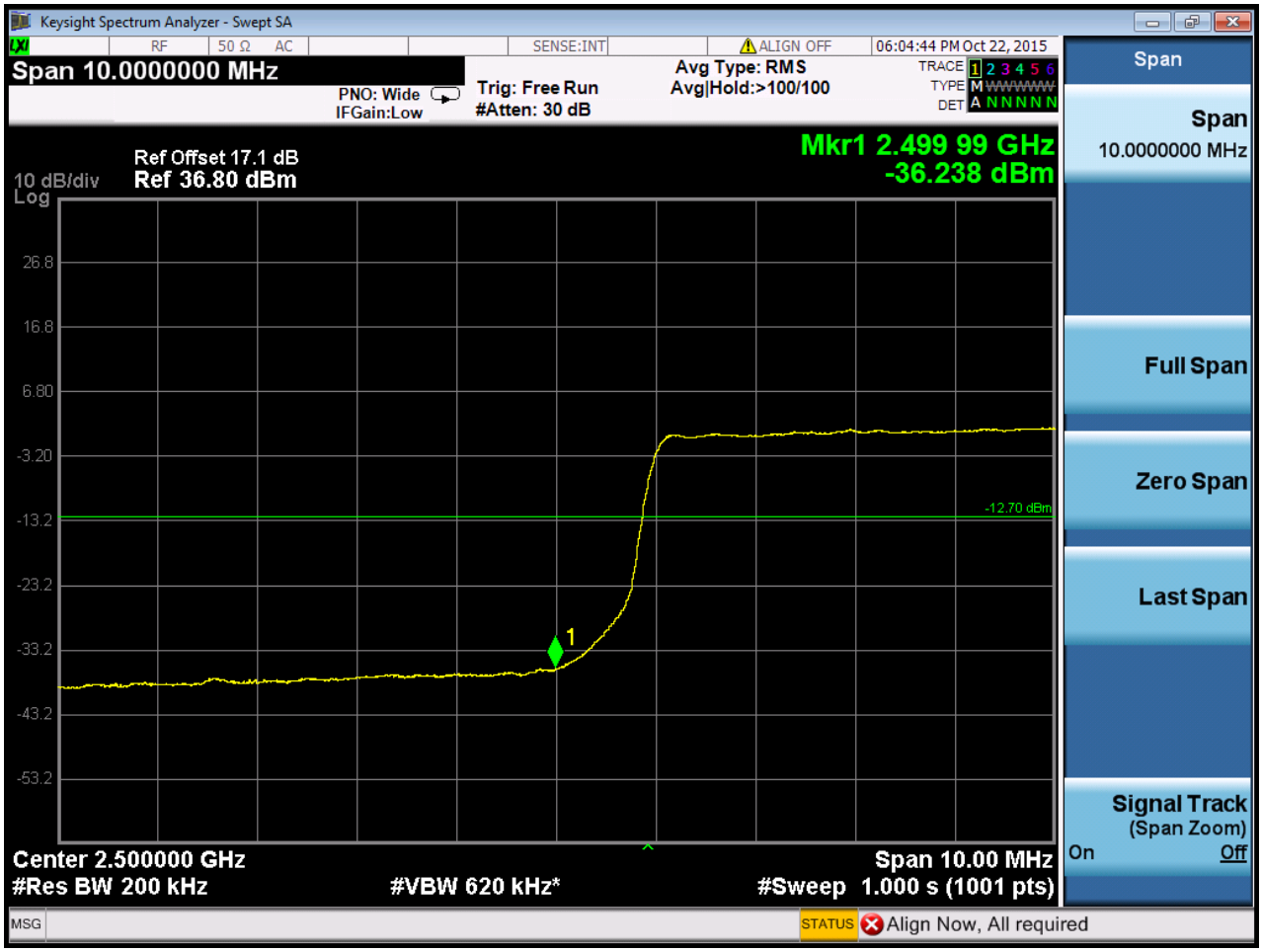


### 5.3.1.7.2 Test Channel = HCH



### 5.3.1.8 Test Mode = LTE/TM2 20MHz

#### 5.3.1.8.1 Test Channel = LCH



### 5.3.1.8.2 Test Channel = HCH

# 6 Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of < RBW/2 so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = k * (Span / RBW)" with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

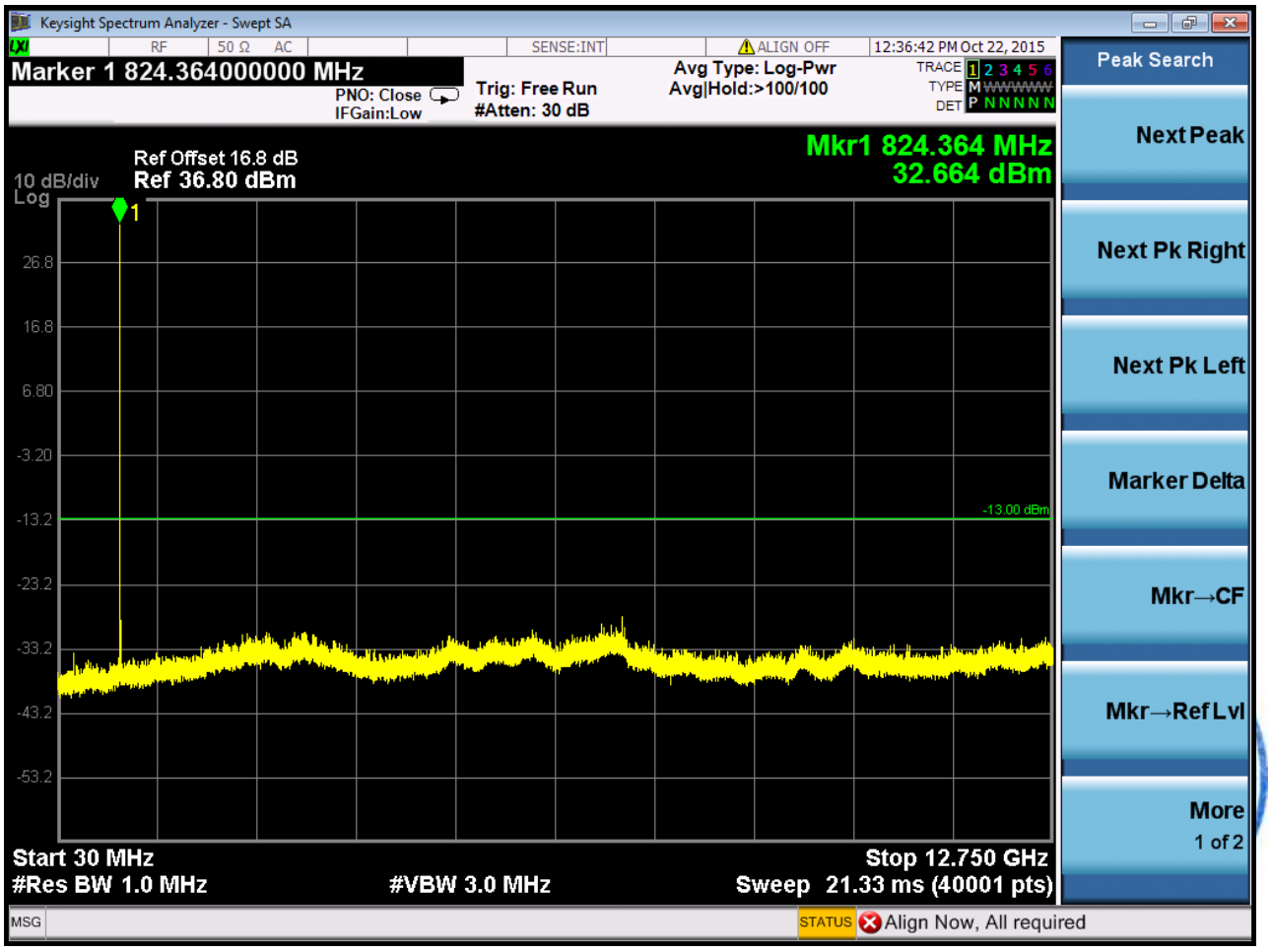
Part I - Test Plots

## 6.1 For GSM

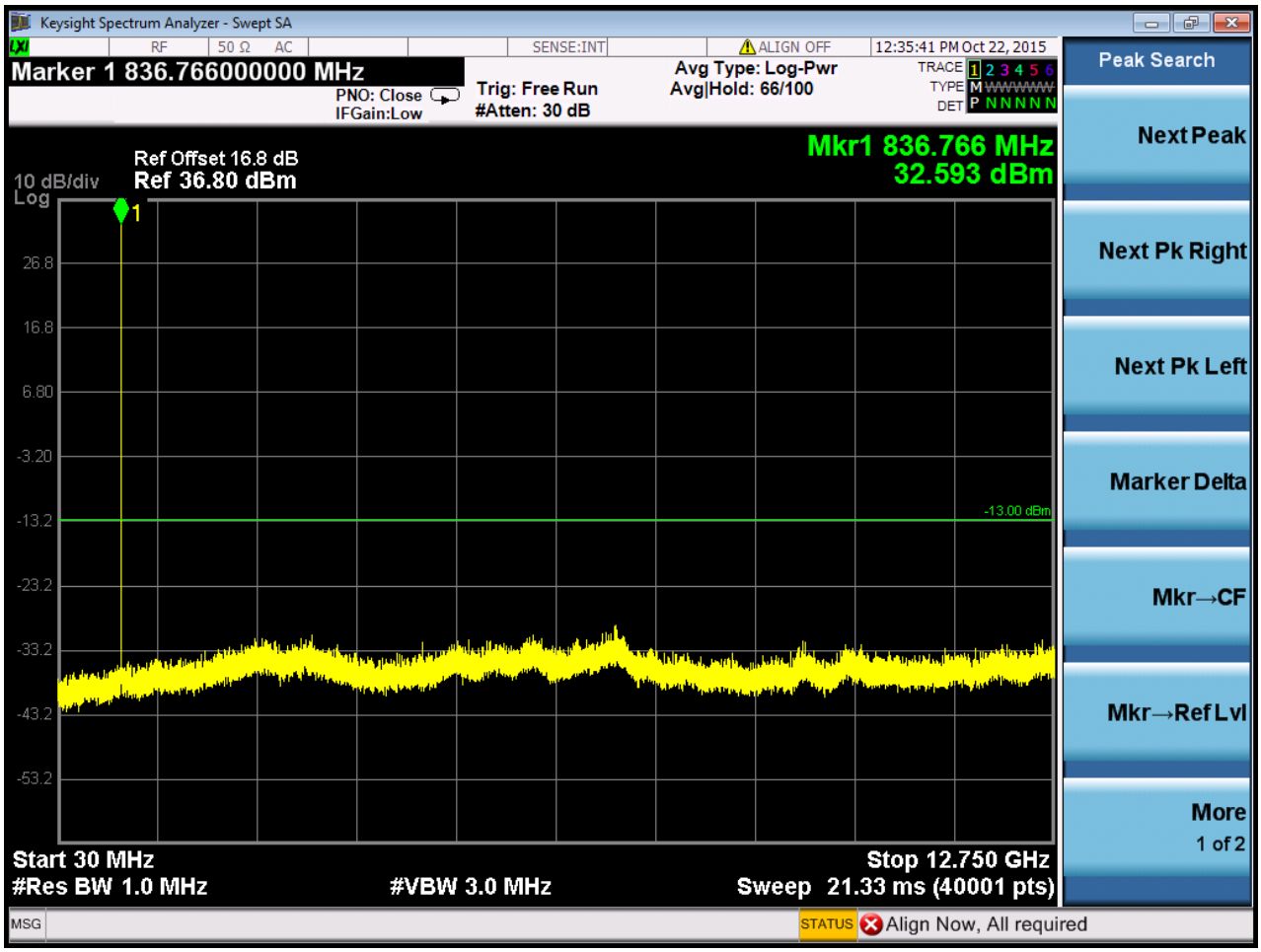
### 6.1.1 Test Band = GSM850

#### 6.1.1.1 Test Mode = GSM/TM1

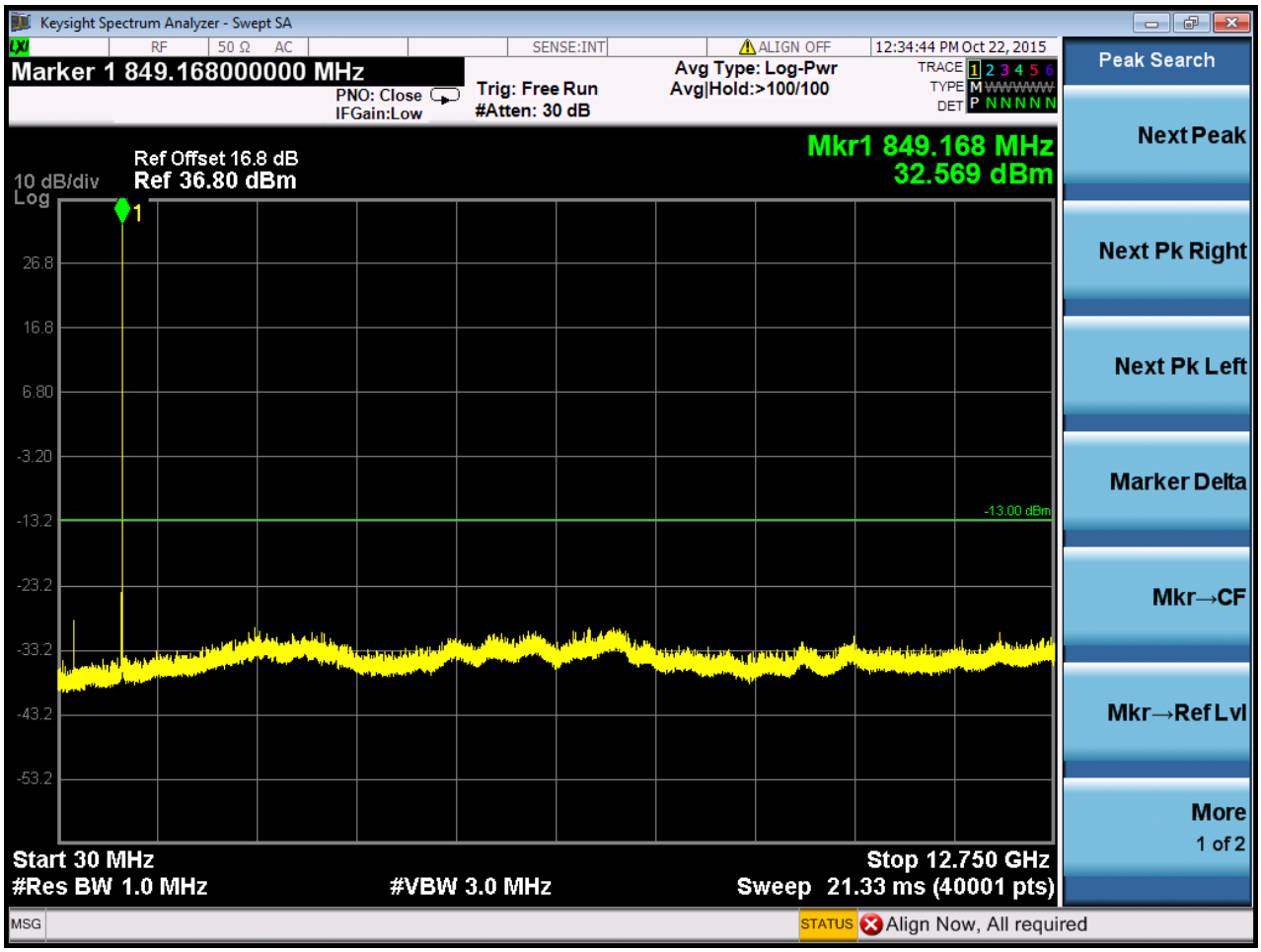
##### 6.1.1.1.1 Test Channel = LCH



### 6.1.1.1.2 Test Channel = MCH



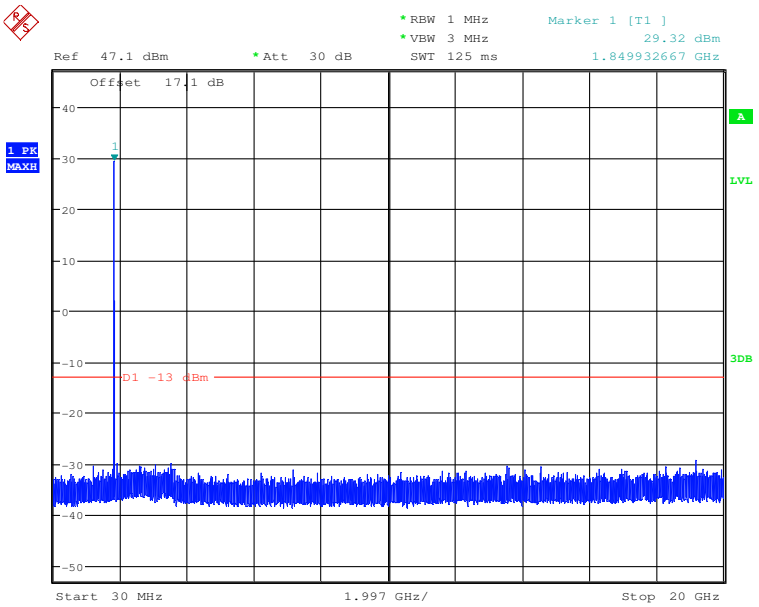
### 6.1.1.1.3 Test Channel = HCH



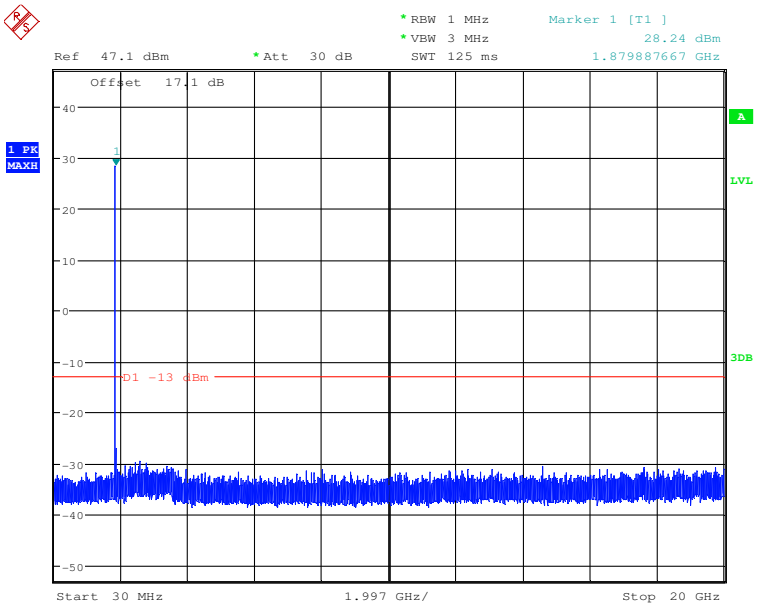
## 6.1.2 Test Band = GSM1900

### 6.1.2.1 Test Mode = GSM/TM1

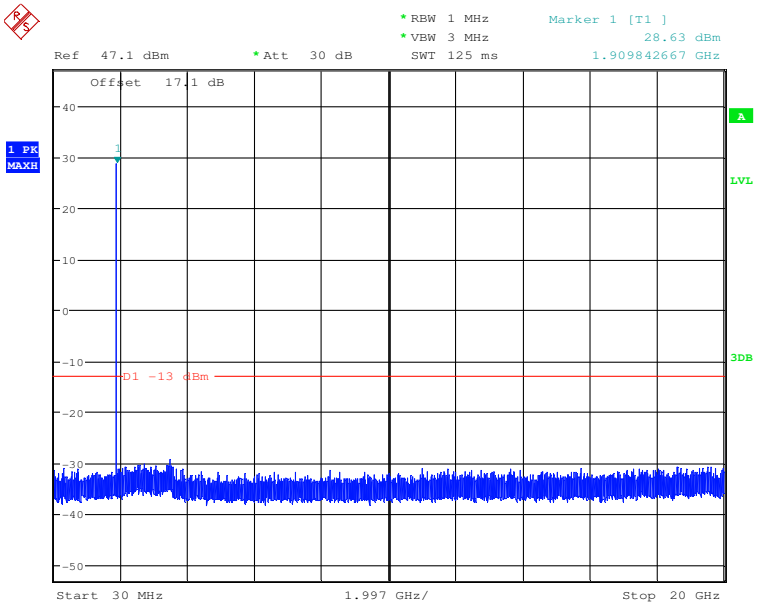
#### 6.1.2.1.1 Test Channel = LCH




#### 6.1.2.1.2 Test Channel = MCH



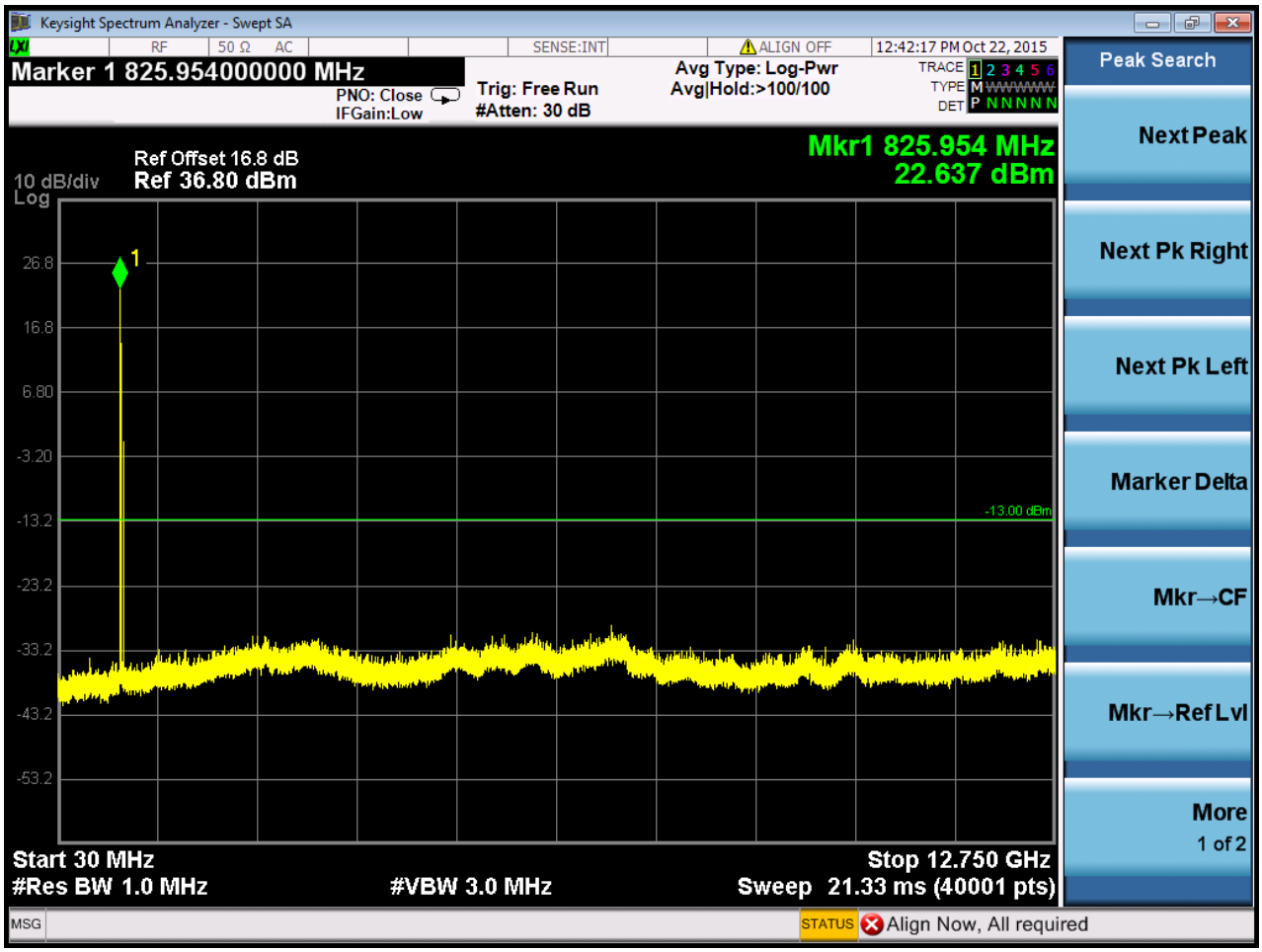
### 6.1.2.1.3 Test Channel = HCH



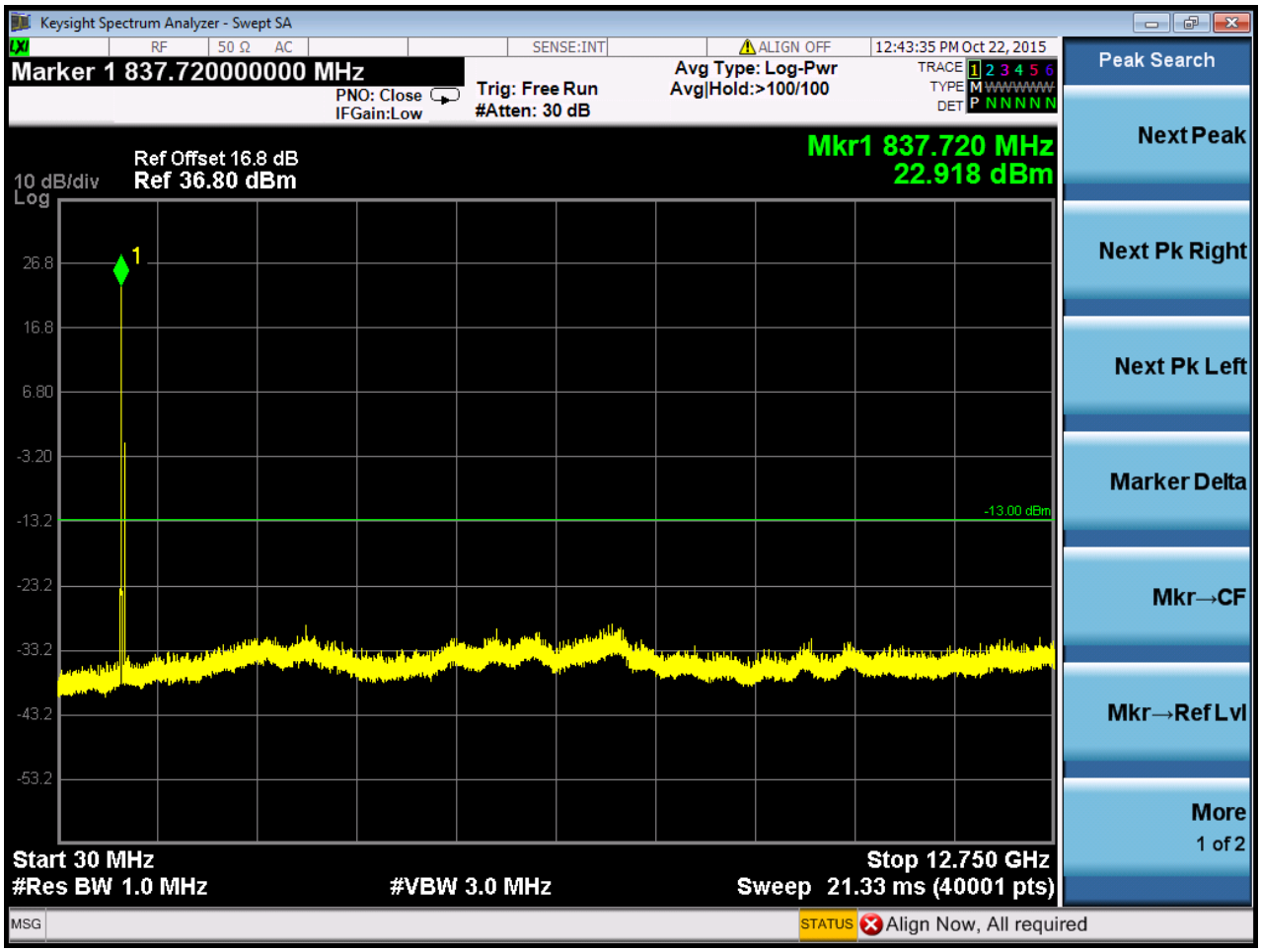
## 6.2 For WCDMA850 BAND 5

### 8.1.1.2 Test Mode = UMTS/TM1

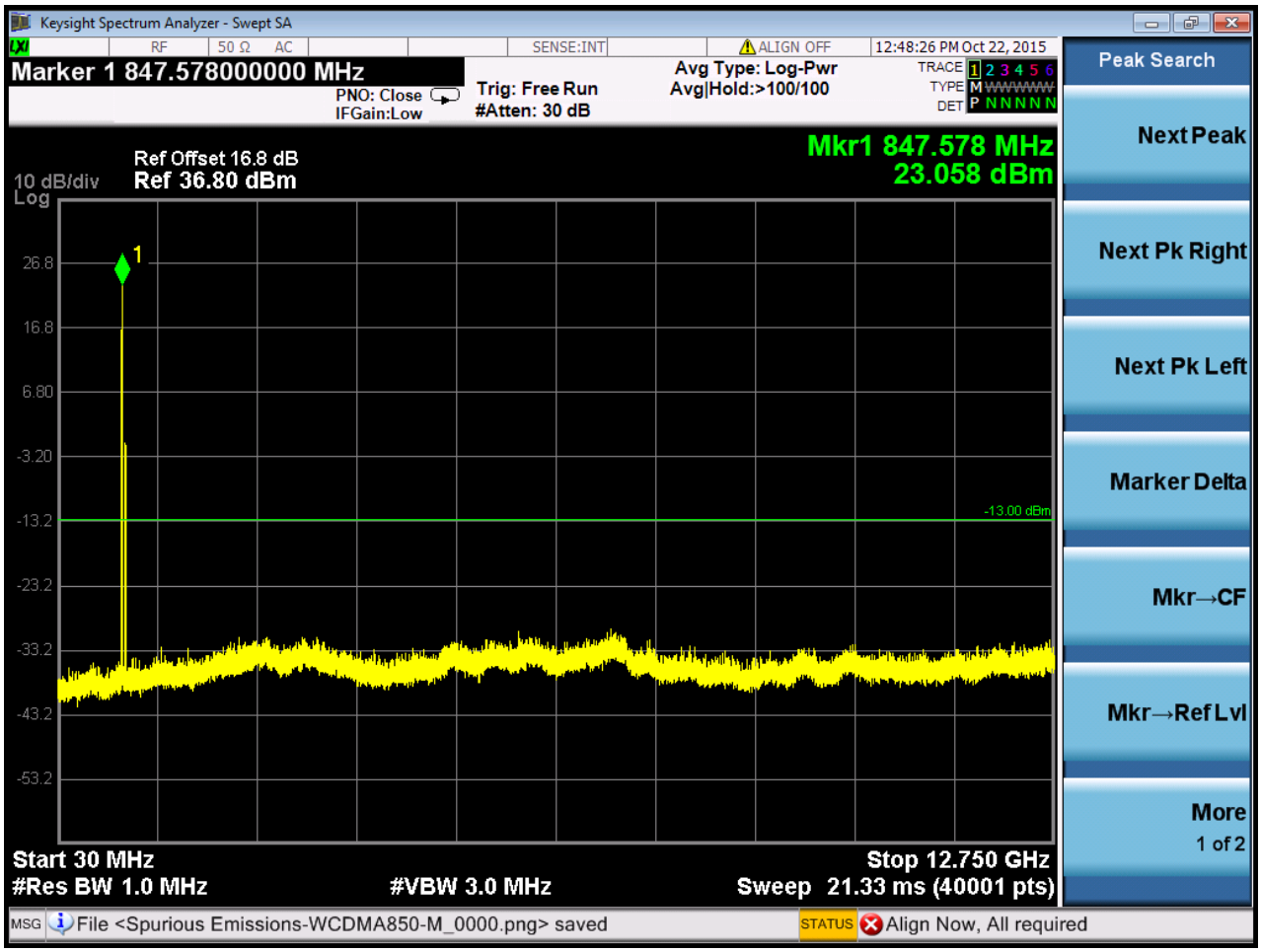
### 6.2.1.1.1 Test Channel = LCH



### 6.2.1.1.2 Test Channel = MCH



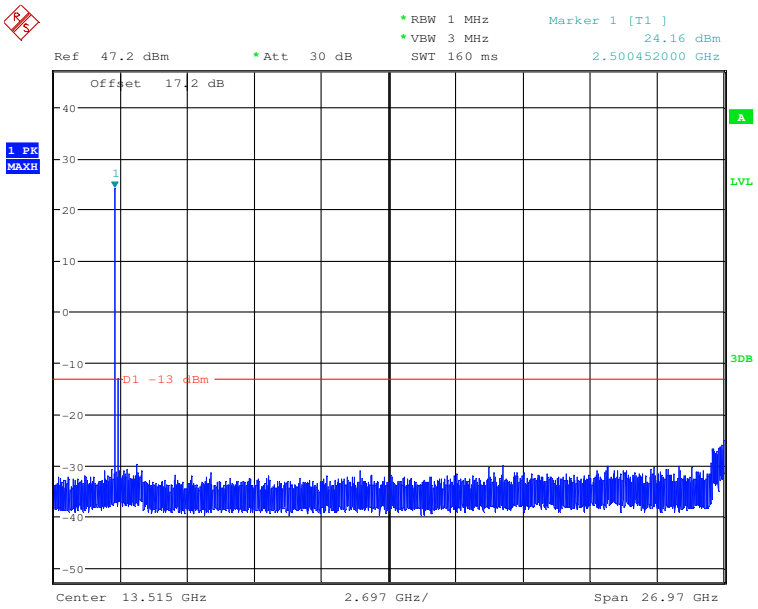
### 6.2.1.1.3 Test Channel = HCH



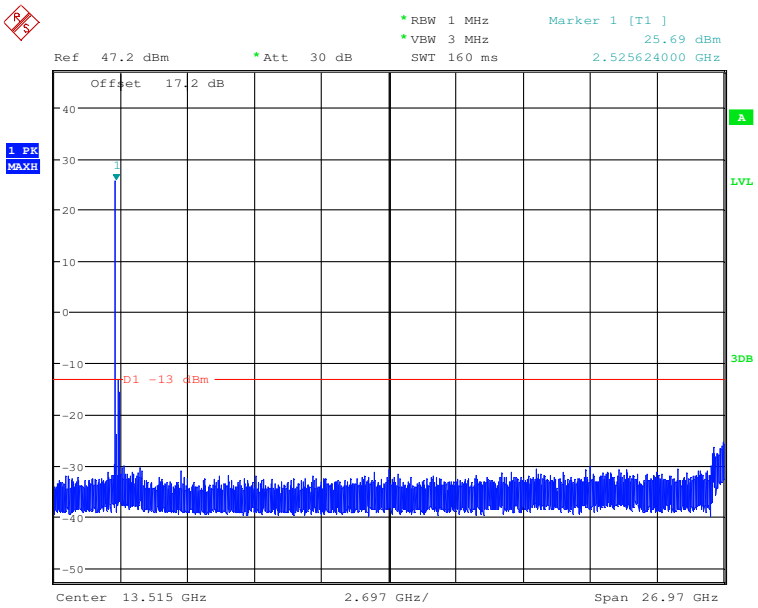
# 6.3 For LTE BAND 7

### 6.3.1.1 Test Mode = LTE BAND 7 TM1/20MHz

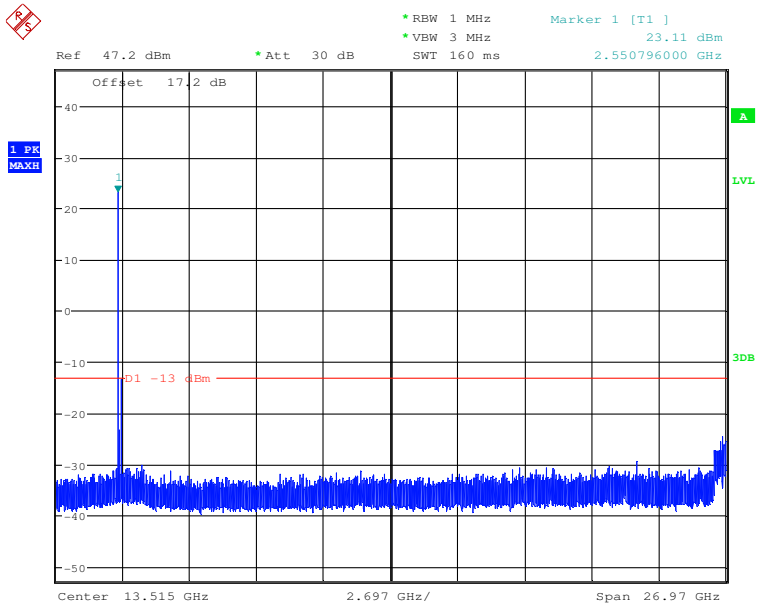
#### 6.3.1.1.1 Test Channel = LCH




#### 6.3.1.1.2 Test Channel = MCH



### 6.3.1.1.3 Test Channel = HCH



# 7 Field Strength of Spurious Radiation

**Part I - Test Plots**

## 7.1 For GSM

### 7.1.1 Test Band = GSM850

#### 7.1.1.1 Test Mode = GSM/TM1

**7.1.1.1.1 Test Channel = LCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -54.0 | -13.0 | -41.0 | Vertical |
| 161.040 | -62.1 | -13.0 | -49.1 | Vertical |
| 233.580 | -64.9 | -13.0 | -51.9 | Vertical |
| 344.730 | -58.0 | -13.0 | -45.0 | Vertical |
| 519.060 | -59.1 | -13.0 | -46.1 | Vertical |
| 727.320 | -56.3 | -13.0 | -43.3 | Vertical |
| 1673.400 | -38.2 | -13.0 | -25.2 | Vertical |
| 2479.800 | -36.6 | -13.0 | -23.6 | Vertical |
| 3560.000 | -52.3 | -13.0 | -39.3 | Vertical |
| 5170.000 | -49.6 | -13.0 | -36.6 | Vertical |
| 6913.000 | -47.5 | -13.0 | -34.5 | Vertical |
| 8915.000 | -43.6 | -13.0 | -30.6 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.889 | -56.6 | -13.0 | -43.6 | Horizontal |
| 162.210 | -63.4 | -13.0 | -50.4 | Horizontal |
| 235.920 | -64.8 | -13.0 | -51.8 | Horizontal |
| 327.180 | -58.9 | -13.0 | -45.9 | Horizontal |
| 486.300 | -60.0 | -13.0 | -47.0 | Horizontal |
| 634.890 | -58.2 | -13.0 | -45.2 | Horizontal |
| 1673.400 | -35.4 | -13.0 | -22.4 | Horizontal |
| 2479.800 | -34.4 | -13.0 | -21.4 | Horizontal |
| 3714.000 | -52.7 | -13.0 | -39.7 | Horizontal |
| 4603.000 | -49.3 | -13.0 | -36.3 | Horizontal |
| 6388.000 | -46.6 | -13.0 | -33.6 | Horizontal |
| 8789.000 | -45.0 | -13.0 | -32.0 | Horizontal |

**7.1.1.1.2 Test Channel = MCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -54.2 | -13.0 | -41.2 | Vertical |
| 152.850 | -60.3 | -13.0 | -47.3 | Vertical |
| 199.650 | -65.3 | -13.0 | -52.3 | Vertical |
| 323.670 | -58.0 | -13.0 | -45.0 | Vertical |
| 475.770 | -61.0 | -13.0 | -48.0 | Vertical |
| 667.650 | -57.8 | -13.0 | -44.8 | Vertical |
| 1673.400 | -37.2 | -13.0 | -24.2 | Vertical |
| 2431.200 | -35.7 | -13.0 | -22.7 | Vertical |
| 3609.000 | -52.3 | -13.0 | -39.3 | Vertical |
| 5142.000 | -50.1 | -13.0 | -37.1 | Vertical |
| 6990.000 | -47.1 | -13.0 | -34.1 | Vertical |
| 8936.000 | -43.3 | -13.0 | -30.3 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 100.200 | -57.1 | -13.0 | -44.1 | Horizontal |
| 162.210 | -63.5 | -13.0 | -50.5 | Horizontal |
| 240.600 | -63.5 | -13.0 | -50.5 | Horizontal |
| 344.730 | -59.3 | -13.0 | -46.3 | Horizontal |
| 476.940 | -60.3 | -13.0 | -47.3 | Horizontal |
| 653.610 | -58.1 | -13.0 | -45.1 | Horizontal |
| 1673.400 | -35.9 | -13.0 | -22.9 | Horizontal |
| 2438.400 | -34.0 | -13.0 | -21.0 | Horizontal |
| 3721.000 | -52.0 | -13.0 | -39.0 | Horizontal |
| 4967.000 | -49.7 | -13.0 | -36.7 | Horizontal |
| 6486.000 | -43.3 | -13.0 | -30.3 | Horizontal |
| 8698.000 | -46.1 | -13.0 | -33.1 | Horizontal |

**7.1.1.1.3 Test Channel = HCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -53.1 | -13.0 | -40.1 | Vertical |
| 129.450 | -61.6 | -13.0 | -48.6 | Vertical |
| 191.460 | -63.8 | -13.0 | -50.8 | Vertical |
| 268.680 | -59.5 | -13.0 | -46.5 | Vertical |
| 441.840 | -62.7 | -13.0 | -49.7 | Vertical |
| 615.000 | -57.9 | -13.0 | -44.9 | Vertical |
| 1696.800 | -38.7 | -13.0 | -25.7 | Vertical |
| 2479.800 | -34.8 | -13.0 | -21.8 | Vertical |
| 3791.000 | -50.4 | -13.0 | -37.4 | Vertical |
| 5429.000 | -50.4 | -13.0 | -37.4 | Vertical |
| 7032.000 | -49.0 | -13.0 | -36.0 | Vertical |
| 9846.000 | -43.2 | -13.0 | -30.2 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 92.417 | -57.3 | -13.0 | -44.3 | Horizontal |
| 151.680 | -63.2 | -13.0 | -50.2 | Horizontal |
| 239.430 | -63.6 | -13.0 | -50.6 | Horizontal |
| 333.030 | -59.3 | -13.0 | -46.3 | Horizontal |
| 490.980 | -60.2 | -13.0 | -47.2 | Horizontal |
| 673.500 | -57.9 | -13.0 | -44.9 | Horizontal |
| 1696.800 | -38.6 | -13.0 | -25.6 | Horizontal |
| 2438.400 | -30.6 | -13.0 | -17.6 | Horizontal |
| 3749.000 | -52.2 | -13.0 | -39.2 | Horizontal |
| 5345.000 | -48.7 | -13.0 | -35.7 | Horizontal |
| 7410.000 | -45.9 | -13.0 | -32.9 | Horizontal |
| 9286.000 | -43.9 | -13.0 | -30.9 | Horizontal |

## 7.1.2 Test Band = EGPRS850

### 7.1.2.1 Test Mode = GSM/TM2

#### 7.1.2.1.1 Test Channel = LCH

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 94.350 | -53.6 | -13.0 | -40.6 | Vertical |
| 120.531 | -60.5 | -13.0 | -47.5 | Vertical |
| 170.400 | -62.8 | -13.0 | -49.8 | Vertical |
| 268.680 | -60.3 | -13.0 | -47.3 | Vertical |
| 392.700 | -62.3 | -13.0 | -49.3 | Vertical |
| 613.830 | -58.0 | -13.0 | -45.0 | Vertical |
| 1648.200 | -39.4 | -13.0 | -26.4 | Vertical |
| 2436.600 | -34.0 | -13.0 | -21.0 | Vertical |
| 3378.000 | -52.7 | -13.0 | -39.7 | Vertical |
| 4498.000 | -52.2 | -13.0 | -39.2 | Vertical |
| 6493.000 | -48.4 | -13.0 | -35.4 | Vertical |
| 8901.000 | -43.6 | -13.0 | -30.6 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 89.670 | -56.9 | -13.0 | -43.9 | Horizontal |
| 158.700 | -63.7 | -13.0 | -50.7 | Horizontal |
| 237.090 | -63.4 | -13.0 | -50.4 | Horizontal |
| 342.390 | -59.5 | -13.0 | -46.5 | Horizontal |
| 481.620 | -60.1 | -13.0 | -47.1 | Horizontal |
| 643.080 | -58.1 | -13.0 | -45.1 | Horizontal |
| 1648.200 | -40.6 | -13.0 | -27.6 | Horizontal |
| 2442.000 | -32.9 | -13.0 | -19.9 | Horizontal |
| 3574.000 | -52.8 | -13.0 | -39.8 | Horizontal |
| 5268.000 | -49.3 | -13.0 | -36.3 | Horizontal |
| 6598.000 | -44.0 | -13.0 | -31.0 | Horizontal |
| 8719.000 | -43.5 | -13.0 | -30.5 | Horizontal |

**7.1.2.1.2 Test Channel = MCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -52.9 | -13.0 | -39.9 | Vertical |
| 148.170 | -60.7 | -13.0 | -47.7 | Vertical |
| 228.900 | -65.3 | -13.0 | -52.3 | Vertical |
| 345.900 | -56.5 | -13.0 | -43.5 | Vertical |
| 502.680 | -60.2 | -13.0 | -47.2 | Vertical |
| 717.960 | -57.2 | -13.0 | -44.2 | Vertical |
| 1612.200 | -45.4 | -13.0 | -32.4 | Vertical |
| 2443.800 | -33.8 | -13.0 | -20.8 | Vertical |
| 3742.000 | -50.8 | -13.0 | -37.8 | Vertical |
| 5338.000 | -49.8 | -13.0 | -36.8 | Vertical |
| 6955.000 | -47.5 | -13.0 | -34.5 | Vertical |
| 8901.000 | -43.2 | -13.0 | -30.2 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 94.350 | -57.1 | -13.0 | -44.1 | Horizontal |
| 126.452 | -64.1 | -13.0 | -51.1 | Horizontal |
| 197.310 | -64.9 | -13.0 | -51.9 | Horizontal |
| 318.990 | -59.1 | -13.0 | -46.1 | Horizontal |
| 464.070 | -60.7 | -13.0 | -47.7 | Horizontal |
| 692.220 | -57.2 | -13.0 | -44.2 | Horizontal |
| 1752.600 | -42.4 | -13.0 | -29.4 | Horizontal |
| 2623.800 | -36.4 | -13.0 | -23.4 | Horizontal |
| 3567.000 | -52.4 | -13.0 | -39.4 | Horizontal |
| 5058.000 | -49.3 | -13.0 | -36.3 | Horizontal |
| 6640.000 | -43.4 | -13.0 | -30.4 | Horizontal |
| 8943.000 | -44.7 | -13.0 | -31.7 | Horizontal |

**7.1.2.1.3 Test Channel = HCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -51.9 | -13.0 | -38.9 | Vertical |
| 161.040 | -61.6 | -13.0 | -48.6 | Vertical |
| 242.940 | -62.9 | -13.0 | -49.9 | Vertical |
| 345.900 | -57.7 | -13.0 | -44.7 | Vertical |
| 503.850 | -60.8 | -13.0 | -47.8 | Vertical |
| 673.500 | -57.0 | -13.0 | -44.0 | Vertical |
| 1696.800 | -41.1 | -13.0 | -28.1 | Vertical |
| 2445.600 | -33.2 | -13.0 | -20.2 | Vertical |
| 3763.000 | -50.8 | -13.0 | -37.8 | Vertical |
| 5198.000 | -49.8 | -13.0 | -36.8 | Vertical |
| 6997.000 | -46.9 | -13.0 | -33.9 | Vertical |
| 8719.000 | -45.8 | -13.0 | -32.8 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 100.200 | -57.2 | -13.0 | -44.2 | Horizontal |
| 159.870 | -63.7 | -13.0 | -50.7 | Horizontal |
| 238.260 | -63.8 | -13.0 | -50.8 | Horizontal |
| 347.070 | -58.9 | -13.0 | -45.9 | Horizontal |
| 541.290 | -59.3 | -13.0 | -46.3 | Horizontal |
| 737.850 | -56.6 | -13.0 | -43.6 | Horizontal |
| 1696.800 | -42.6 | -13.0 | -29.6 | Horizontal |
| 2431.200 | -37.9 | -13.0 | -24.9 | Horizontal |
| 3588.000 | -53.0 | -13.0 | -40.0 | Horizontal |
| 5359.000 | -48.6 | -13.0 | -35.6 | Horizontal |
| 6682.000 | -43.9 | -13.0 | -30.9 | Horizontal |
| 8705.000 | -45.5 | -13.0 | -32.5 | Horizontal |

## 7.1.3 Test Band = GSM1900

### 7.1.3.1 Test Mode = GSM/TM1

#### 7.1.3.1.1 Test Channel = LCH

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -56.5 | -13.0 | -43.5 | Vertical |
| 161.040 | -62.0 | -13.0 | -49.0 | Vertical |
| 239.430 | -71.5 | -13.0 | -58.5 | Vertical |
| 345.900 | -61.4 | -13.0 | -48.4 | Vertical |
| 499.170 | -65.7 | -13.0 | -52.7 | Vertical |
| 722.640 | -64.1 | -13.0 | -51.1 | Vertical |
| 3675.000 | -53.6 | -13.0 | -40.6 | Vertical |
| 5055.000 | -51.9 | -13.0 | -38.9 | Vertical |
| 6990.000 | -48.2 | -13.0 | -35.2 | Vertical |
| 8895.000 | -45.7 | -13.0 | -32.7 | Vertical |
| 11055.000 | -41.9 | -13.0 | -28.9 | Vertical |
| 15195.000 | -37.3 | -13.0 | -24.3 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -62.3 | -13.0 | -49.3 | Horizontal |
| 148.170 | -62.4 | -13.0 | -49.4 | Horizontal |
| 213.690 | -69.2 | -13.0 | -56.2 | Horizontal |
| 344.730 | -67.8 | -13.0 | -54.8 | Horizontal |
| 537.780 | -67.9 | -13.0 | -54.9 | Horizontal |
| 769.440 | -64.2 | -13.0 | -51.2 | Horizontal |
| 3825.000 | -54.9 | -13.0 | -41.9 | Horizontal |
| 5505.000 | -50.5 | -13.0 | -37.5 | Horizontal |
| 7320.000 | -48.0 | -13.0 | -35.0 | Horizontal |
| 9240.000 | -44.9 | -13.0 | -31.9 | Horizontal |
| 11745.000 | -40.3 | -13.0 | -27.3 | Horizontal |
| 15585.000 | -33.7 | -13.0 | -20.7 | Horizontal |

**7.1.3.1.2 Test Channel = MCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -58.9 | -13.0 | -45.9 | Vertical |
| 155.190 | -63.2 | -13.0 | -50.2 | Vertical |
| 268.680 | -62.9 | -13.0 | -49.9 | Vertical |
| 421.950 | -65.8 | -13.0 | -52.8 | Vertical |
| 613.830 | -65.4 | -13.0 | -52.4 | Vertical |
| 901.650 | -62.1 | -13.0 | -49.1 | Vertical |
| 3750.000 | -53.6 | -13.0 | -40.6 | Vertical |
| 4980.000 | -52.3 | -13.0 | -39.3 | Vertical |
| 6825.000 | -49.6 | -13.0 | -36.6 | Vertical |
| 8895.000 | -44.9 | -13.0 | -31.9 | Vertical |
| 12060.000 | -40.4 | -13.0 | -27.4 | Vertical |
| 15285.000 | -36.3 | -13.0 | -23.3 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -63.2 | -13.0 | -50.2 | Horizontal |
| 154.020 | -67.2 | -13.0 | -54.2 | Horizontal |
| 223.050 | -67.0 | -13.0 | -54.0 | Horizontal |
| 341.220 | -67.9 | -13.0 | -54.9 | Horizontal |
| 562.350 | -68.4 | -13.0 | -55.4 | Horizontal |
| 873.570 | -63.5 | -13.0 | -50.5 | Horizontal |
| 3630.000 | -55.5 | -13.0 | -42.5 | Horizontal |
| 4740.000 | -51.8 | -13.0 | -38.8 | Horizontal |
| 6930.000 | -44.8 | -13.0 | -31.8 | Horizontal |
| 9255.000 | -45.3 | -13.0 | -32.3 | Horizontal |
| 12270.000 | -40.9 | -13.0 | -27.9 | Horizontal |
| 16680.000 | -32.5 | -13.0 | -19.5 | Horizontal |

**7.1.3.1.3 Test Channel = HCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -57.0 | -13.0 | -44.0 | Vertical |
| 147.000 | -64.6 | -13.0 | -51.6 | Vertical |
| 230.070 | -66.1 | -13.0 | -53.1 | Vertical |
| 345.900 | -61.3 | -13.0 | -48.3 | Vertical |
| 499.170 | -65.4 | -13.0 | -52.4 | Vertical |
| 768.270 | -64.3 | -13.0 | -51.3 | Vertical |
| 3720.000 | -53.3 | -13.0 | -40.3 | Vertical |
| 5040.000 | -51.9 | -13.0 | -38.9 | Vertical |
| 6810.000 | -48.6 | -13.0 | -35.6 | Vertical |
| 8895.000 | -45.1 | -13.0 | -32.1 | Vertical |
| 11730.000 | -40.1 | -13.0 | -27.1 | Vertical |
| 15900.000 | -33.9 | -13.0 | -20.9 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -62.8 | -13.0 | -49.8 | Horizontal |
| 154.020 | -63.9 | -13.0 | -50.9 | Horizontal |
| 260.490 | -70.9 | -13.0 | -57.9 | Horizontal |
| 345.900 | -68.4 | -13.0 | -55.4 | Horizontal |
| 524.910 | -68.8 | -13.0 | -55.8 | Horizontal |
| 765.930 | -64.1 | -13.0 | -51.1 | Horizontal |
| 3615.000 | -55.8 | -13.0 | -42.8 | Horizontal |
| 5205.000 | -51.7 | -13.0 | -38.7 | Horizontal |
| 6540.000 | -45.0 | -13.0 | -32.0 | Horizontal |
| 8730.000 | -47.1 | -13.0 | -34.1 | Horizontal |
| 11550.000 | -40.8 | -13.0 | -27.8 | Horizontal |
| 15570.000 | -34.5 | -13.0 | -21.5 | Horizontal |

## 7.1.4 Test Band = EGPRS1900

### 7.1.4.1 Test Mode = GSM/TM2

#### 7.1.4.1.1 Test Channel = LCH

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -58.1 | -13.0 | -45.1 | Vertical |
| 161.040 | -66.0 | -13.0 | -53.0 | Vertical |
| 268.680 | -63.4 | -13.0 | -50.4 | Vertical |
| 421.950 | -66.2 | -13.0 | -53.2 | Vertical |
| 615.000 | -66.7 | -13.0 | -53.7 | Vertical |
| 920.370 | -61.7 | -13.0 | -48.7 | Vertical |
| 3750.000 | -53.0 | -13.0 | -40.0 | Vertical |
| 5040.000 | -52.0 | -13.0 | -39.0 | Vertical |
| 6990.000 | -47.8 | -13.0 | -34.8 | Vertical |
| 8925.000 | -45.1 | -13.0 | -32.1 | Vertical |
| 11715.000 | -40.1 | -13.0 | -27.1 | Vertical |
| 15975.000 | -32.9 | -13.0 | -19.9 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -63.9 | -13.0 | -50.9 | Horizontal |
| 152.850 | -64.9 | -13.0 | -51.9 | Horizontal |
| 225.390 | -71.8 | -13.0 | -58.8 | Horizontal |
| 321.330 | -67.6 | -13.0 | -54.6 | Horizontal |
| 489.810 | -68.0 | -13.0 | -55.0 | Horizontal |
| 749.550 | -63.9 | -13.0 | -50.9 | Horizontal |
| 3726.298 | -55.2 | -13.0 | -42.2 | Horizontal |
| 5385.000 | -51.5 | -13.0 | -38.5 | Horizontal |
| 6570.000 | -45.0 | -13.0 | -32.0 | Horizontal |
| 8010.000 | -46.8 | -13.0 | -33.8 | Horizontal |
| 10290.000 | -43.5 | -13.0 | -30.5 | Horizontal |
| 13980.000 | -40.3 | -13.0 | -27.3 | Horizontal |

**7.1.4.1.2 Test Channel = MCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -57.3 | -13.0 | -44.3 | Vertical |
| 161.040 | -68.2 | -13.0 | -55.2 | Vertical |
| 255.810 | -67.7 | -13.0 | -54.7 | Vertical |
| 399.720 | -65.3 | -13.0 | -52.3 | Vertical |
| 615.000 | -65.2 | -13.0 | -52.2 | Vertical |
| 934.410 | -62.2 | -13.0 | -49.2 | Vertical |
| 3165.000 | -53.0 | -13.0 | -40.0 | Vertical |
| 4292.907 | -53.5 | -13.0 | -40.5 | Vertical |
| 6600.000 | -49.8 | -13.0 | -36.8 | Vertical |
| 8910.000 | -45.4 | -13.0 | -32.4 | Vertical |
| 12285.000 | -39.9 | -13.0 | -26.9 | Vertical |
| 15930.000 | -34.0 | -13.0 | -21.0 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 106.050 | -59.0 | -13.0 | -46.0 | Horizontal |
| 162.210 | -67.1 | -13.0 | -54.1 | Horizontal |
| 252.300 | -70.0 | -13.0 | -57.0 | Horizontal |
| 395.040 | -69.8 | -13.0 | -56.8 | Horizontal |
| 625.530 | -66.8 | -13.0 | -53.8 | Horizontal |
| 918.030 | -61.8 | -13.0 | -48.8 | Horizontal |
| 3375.000 | -56.4 | -13.0 | -43.4 | Horizontal |
| 4545.000 | -50.9 | -13.0 | -37.9 | Horizontal |
| 6555.000 | -45.4 | -13.0 | -32.4 | Horizontal |
| 8910.000 | -46.4 | -13.0 | -33.4 | Horizontal |
| 11880.000 | -40.4 | -13.0 | -27.4 | Horizontal |
| 15900.000 | -32.8 | -13.0 | -19.8 | Horizontal |

**7.1.4.1.3 Test Channel = HCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -58.2 | -13.0 | -45.2 | Vertical |
| 162.210 | -65.8 | -13.0 | -52.8 | Vertical |
| 260.490 | -69.8 | -13.0 | -56.8 | Vertical |
| 421.950 | -66.6 | -13.0 | -53.6 | Vertical |
| 595.110 | -66.9 | -13.0 | -53.9 | Vertical |
| 853.680 | -63.9 | -13.0 | -50.9 | Vertical |
| 3443.808 | -55.7 | -13.0 | -42.7 | Vertical |
| 4875.000 | -54.2 | -13.0 | -41.2 | Vertical |
| 6960.000 | -48.2 | -13.0 | -35.2 | Vertical |
| 8910.000 | -45.3 | -13.0 | -32.3 | Vertical |
| 11730.000 | -40.9 | -13.0 | -27.9 | Vertical |
| 15165.000 | -36.2 | -13.0 | -23.2 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -63.8 | -13.0 | -50.8 | Horizontal |
| 183.270 | -69.5 | -13.0 | -56.5 | Horizontal |
| 293.250 | -68.2 | -13.0 | -55.2 | Horizontal |
| 403.230 | -69.7 | -13.0 | -56.7 | Horizontal |
| 599.790 | -66.0 | -13.0 | -53.0 | Horizontal |
| 891.120 | -62.8 | -13.0 | -49.8 | Horizontal |
| 3720.000 | -55.6 | -13.0 | -42.6 | Horizontal |
| 5085.000 | -52.0 | -13.0 | -39.0 | Horizontal |
| 7365.000 | -47.2 | -13.0 | -34.2 | Horizontal |
| 9480.000 | -46.4 | -13.0 | -33.4 | Horizontal |
| 12330.000 | -40.0 | -13.0 | -27.0 | Horizontal |
| 15900.000 | -33.2 | -13.0 | -20.2 | Horizontal |

NOTE:

1) The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

# For WCDMA

## 7.1.5 Test Band = WCDMA850

### 7.1.5.1 Test Mode = UMTS/TM1

#### 7.1.5.1.1 Test Channel = LCH

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -58.3 | -13.0 | -45.3 | Vertical |
| 130.620 | -68.5 | -13.0 | -55.5 | Vertical |
| 179.760 | -67.0 | -13.0 | -54.0 | Vertical |
| 268.680 | -62.9 | -13.0 | -49.9 | Vertical |
| 383.340 | -59.3 | -13.0 | -46.3 | Vertical |
| 615.000 | -64.9 | -13.0 | -51.9 | Vertical |
| 1650.000 | -37.5 | -13.0 | -24.5 | Vertical |
| 2571.600 | -37.4 | -13.0 | -24.4 | Vertical |
| 3735.000 | -50.7 | -13.0 | -37.7 | Vertical |
| 5121.000 | -49.5 | -13.0 | -36.5 | Vertical |
| 6717.000 | -47.5 | -13.0 | -34.5 | Vertical |
| 8908.000 | -43.7 | -13.0 | -30.7 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 87.330 | -67.4 | -13.0 | -54.4 | Horizontal |
| 127.110 | -72.6 | -13.0 | -59.6 | Horizontal |
| 191.460 | -69.6 | -13.0 | -56.6 | Horizontal |
| 307.290 | -64.9 | -13.0 | -51.9 | Horizontal |
| 461.730 | -69.0 | -13.0 | -56.0 | Horizontal |
| 634.890 | -67.1 | -13.0 | -54.1 | Horizontal |
| 1650.000 | -35.5 | -13.0 | -22.5 | Horizontal |
| 2442.000 | -37.2 | -13.0 | -24.2 | Horizontal |
| 3728.000 | -52.3 | -13.0 | -39.3 | Horizontal |
| 4498.000 | -48.9 | -13.0 | -35.9 | Horizontal |
| 6927.000 | -43.3 | -13.0 | -30.3 | Horizontal |
| 9216.000 | -43.4 | -13.0 | -30.4 | Horizontal |

**7.1.5.1.2 Test Channel = MCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 88.500 | -62.7 | -13.0 | -49.7 | Vertical |
| 128.280 | -63.4 | -13.0 | -50.4 | Vertical |
| 178.590 | -67.9 | -13.0 | -54.9 | Vertical |
| 307.290 | -60.4 | -13.0 | -47.4 | Vertical |
| 421.950 | -62.9 | -13.0 | -49.9 | Vertical |
| 613.830 | -64.5 | -13.0 | -51.5 | Vertical |
| 1675.200 | -37.4 | -13.0 | -24.4 | Vertical |
| 2429.400 | -37.8 | -13.0 | -24.8 | Vertical |
| 3238.000 | -50.6 | -13.0 | -37.6 | Vertical |
| 4967.000 | -50.7 | -13.0 | -37.7 | Vertical |
| 6696.000 | -48.0 | -13.0 | -35.0 | Vertical |
| 8894.000 | -42.6 | -13.0 | -29.6 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 103.710 | -64.4 | -13.0 | -51.4 | Horizontal |
| 162.504 | -68.4 | -13.0 | -55.4 | Horizontal |
| 249.960 | -71.1 | -13.0 | -58.1 | Horizontal |
| 395.040 | -69.2 | -13.0 | -56.2 | Horizontal |
| 517.890 | -68.7 | -13.0 | -55.7 | Horizontal |
| 689.880 | -65.9 | -13.0 | -52.9 | Horizontal |
| 1673.400 | -35.6 | -13.0 | -22.6 | Horizontal |
| 2434.800 | -31.4 | -13.0 | -18.4 | Horizontal |
| 3756.000 | -52.1 | -13.0 | -39.1 | Horizontal |
| 5261.000 | -48.6 | -13.0 | -35.6 | Horizontal |
| 6990.000 | -42.9 | -13.0 | -29.9 | Horizontal |
| 9265.000 | -43.7 | -13.0 | -30.7 | Horizontal |

**7.1.5.1.3 Test Channel = HCH**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.536 | -57.2 | -13.0 | -44.2 | Vertical |
| 127.388 | -69.9 | -13.0 | -56.9 | Vertical |
| 176.250 | -69.0 | -13.0 | -56.0 | Vertical |
| 268.680 | -63.0 | -13.0 | -50.0 | Vertical |
| 421.950 | -63.0 | -13.0 | -50.0 | Vertical |
| 672.330 | -65.6 | -13.0 | -52.6 | Vertical |
| 1695.000 | -37.6 | -13.0 | -24.6 | Vertical |
| 2616.600 | -36.3 | -13.0 | -23.3 | Vertical |
| 3308.000 | -51.5 | -13.0 | -38.5 | Vertical |
| 4715.000 | -51.4 | -13.0 | -38.4 | Vertical |
| 6962.000 | -46.9 | -13.0 | -33.9 | Vertical |
| 9314.000 | -43.8 | -13.0 | -30.8 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 86.160 | -67.7 | -13.0 | -54.7 | Horizontal |
| 121.872 | -68.2 | -13.0 | -55.2 | Horizontal |
| 184.440 | -68.9 | -13.0 | -55.9 | Horizontal |
| 268.680 | -67.0 | -13.0 | -54.0 | Horizontal |
| 383.340 | -68.2 | -13.0 | -55.2 | Horizontal |
| 648.930 | -66.4 | -13.0 | -53.4 | Horizontal |
| 1691.400 | -36.7 | -13.0 | -23.7 | Horizontal |
| 2434.800 | -37.4 | -13.0 | -24.4 | Horizontal |
| 3525.000 | -53.7 | -13.0 | -40.7 | Horizontal |
| 4554.000 | -48.5 | -13.0 | -35.5 | Horizontal |
| 5884.000 | -49.9 | -13.0 | -36.9 | Horizontal |
| 8152.000 | -45.6 | -13.0 | -32.6 | Horizontal |

NOTE:

1) The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

# 7.2 For LTE Band 7

## 7.2.1 Test Band = LTE

### 7.2.1.1 Test Mode =LTE/TM1 5MHz

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 87.330 | -60.9 | -13.0 | -47.9 | Vertical |
| 150.510 | -65.4 | -13.0 | -52.4 | Vertical |
| 237.090 | -69.6 | -13.0 | -56.6 | Vertical |
| 363.450 | -67.6 | -13.0 | -54.6 | Vertical |
| 563.520 | -66.7 | -13.0 | -53.7 | Vertical |
| 913.350 | -61.9 | -13.0 | -48.9 | Vertical |
| 3675.000 | -54.5 | -13.0 | -41.5 | Vertical |
| 5055.000 | -36.8 | -13.0 | -23.8 | Vertical |
| 6885.000 | -48.9 | -13.0 | -35.9 | Vertical |
| 8895.000 | -45.8 | -13.0 | -32.8 | Vertical |
| 12255.000 | -39.9 | -13.0 | -26.9 | Vertical |
| 15570.000 | -35.1 | -13.0 | -22.1 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 96.690 | -66.8 | -13.0 | -53.8 | Horizontal |
| 145.830 | -65.8 | -13.0 | -52.8 | Horizontal |
| 297.930 | -68.3 | -13.0 | -55.3 | Horizontal |
| 448.860 | -69.0 | -13.0 | -56.0 | Horizontal |
| 650.100 | -66.7 | -13.0 | -53.7 | Horizontal |
| 909.840 | -61.7 | -13.0 | -48.7 | Horizontal |
| 3600.000 | -56.5 | -13.0 | -43.5 | Horizontal |
| 5055.000 | -37.8 | -13.0 | -24.8 | Horizontal |
| 6975.000 | -44.4 | -13.0 | -31.4 | Horizontal |
| 9195.000 | -45.9 | -13.0 | -32.9 | Horizontal |
| 12360.000 | -40.8 | -13.0 | -27.8 | Horizontal |
| 15915.000 | -34.0 | -13.0 | -21.0 | Horizontal |

**7.2.1.2 Test Mode =LTE/TM1 20MHz**

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -58.1 | -13.0 | -45.1 | Vertical |
| 139.980 | -67.0 | -13.0 | -54.0 | Vertical |
| 197.310 | -69.5 | -13.0 | -56.5 | Vertical |
| 345.900 | -59.8 | -13.0 | -46.8 | Vertical |
| 600.960 | -66.1 | -13.0 | -53.1 | Vertical |
| 888.780 | -52.0 | -13.0 | -39.0 | Vertical |
| 3330.000 | -54.6 | -13.0 | -41.6 | Vertical |
| 5040.000 | -33.0 | -13.0 | -20.0 | Vertical |
| 6945.000 | -48.6 | -13.0 | -35.6 | Vertical |
| 8895.000 | -44.9 | -13.0 | -31.9 | Vertical |
| 11280.000 | -40.9 | -13.0 | -27.9 | Vertical |
| 15570.000 | -33.9 | -13.0 | -20.9 | Vertical |

| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|
| 95.520 | -64.7 | -13.0 | -51.7 | Horizontal |
| 156.360 | -68.5 | -13.0 | -55.5 | Horizontal |
| 304.950 | -68.4 | -13.0 | -55.4 | Horizontal |
| 458.220 | -68.7 | -13.0 | -55.7 | Horizontal |
| 643.080 | -66.3 | -13.0 | -53.3 | Horizontal |
| 875.910 | -61.6 | -13.0 | -48.6 | Horizontal |
| 3630.000 | -55.7 | -13.0 | -42.7 | Horizontal |
| 5040.000 | -35.5 | -13.0 | -22.5 | Horizontal |
| 6960.000 | -44.0 | -13.0 | -31.0 | Horizontal |
| 9195.000 | -44.7 | -13.0 | -31.7 | Horizontal |
| 12315.000 | -40.0 | -13.0 | -27.0 | Horizontal |
| 15960.000 | -32.7 | -13.0 | -19.7 | Horizontal |

NOTE:

1) The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

2) Pretest was performed at the EUT in low, middle, high channel, but only the worst test channel (Channel 21100) and only the data of the worst case show in the test report.

# 8 Frequency Stability

## 8.1 For GSM

### 8.1.1 Frequency Error VS. Voltage

| Test Band | Test Mode | Test Channel | Test Temp. | Test Volt. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|---|---|---|---|---|---|---|---|
| GSM850 | GSM/TM1 | LCH | TN | VL | -2.91 | -0.00353 | PASS |
| | | | | VN | -7.81 | -0.00948 | PASS |
| | | | | VH | 0.71 | 0.00086 | PASS |
| | | MCH | TN | VL | -7.55 | -0.00902 | PASS |
| | | | | VN | -6.33 | -0.00757 | PASS |
| | | | | VH | -4.97 | -0.00594 | PASS |
| | | HCH | TN | VL | -1.03 | -0.00121 | PASS |
| | | | | VN | -5.75 | -0.00677 | PASS |
| | | | | VH | -9.17 | -0.0108 | PASS |
| GSM850 | GSM/TM2 | LCH | TN | VL | -12.79 | -0.00691 | PASS |
| | | | | VN | -10.14 | -0.00548 | PASS |
| | | | | VH | -8.59 | -0.00464 | PASS |
| | | MCH | TN | VL | -2.45 | -0.0013 | PASS |
| | | | | VN | -1.74 | -0.00093 | PASS |
| | | | | VH | -7.43 | -0.00395 | PASS |
| | | HCH | TN | VL | -1.10 | -0.00058 | PASS |
| | | | | VN | -8.33 | -0.00436 | PASS |
| | | | | VH | -18.98 | -0.00994 | PASS |

| Test Band | Test Mode | Test Channel | Test Temp. | Test Volt. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|---|---|---|---|---|---|---|---|
| GSM1900 | GSM/TM1 | LCH | TN | VL | -12.56 | -0.00679 | PASS |
| | | | | VN | -9.91 | -0.00536 | PASS |
| | | | | VH | -8.36 | -0.00452 | PASS |
| | | MCH | TN | VL | -2.22 | -0.00118 | PASS |
| | | | | VN | -1.51 | -0.00080 | PASS |
| | | | | VH | -7.20 | -0.00383 | PASS |
| | | HCH | TN | VL | -1.16 | -0.00061 | PASS |
| | | | | VN | -8.39 | -0.00439 | PASS |
| | | | | VH | -19.04 | -0.00997 | PASS |
| GSM1900 | GSM/TM2 | LCH | TN | VL | 3.57 | 0.00193 | PASS |
| | | | | VN | -5.73 | -0.00310 | PASS |
| | | | | VH | -7.99 | -0.00432 | PASS |
| | | MCH | TN | VL | -18.97 | -0.01009 | PASS |
| | | | | VN | -1.77 | -0.00094 | PASS |
| | | | | VH | -14.30 | -0.00761 | PASS |
| | | HCH | TN | VL | -6.81 | -0.00357 | PASS |
| | | | | VN | -10.62 | -0.00556 | PASS |
| | | | | VH | -9.36 | -0.00490 | PASS |

### 8.1.2 Frequency Error VS. Temperature

| Test Band | Test Mode | Test Channel | Test Volt. | Test Temp. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|---|---|---|---|---|---|---|---|
| GSM850 | GSM/TM1 | LCH | VN | -30 | -1.81 | -0.00220 | PASS |
| | | | | -20 | -1.10 | -0.00133 | PASS |
| | | | | -10 | -1.42 | -0.00172 | PASS |
| | | | | 0 | -3.36 | -0.00408 | PASS |
| | | | | 10 | 1.42 | 0.00172 | PASS |
| | | | | 20 | 2.65 | 0.00322 | PASS |
| | | | | 30 | 2.32 | 0.00281 | PASS |
| | | | | 40 | 0.84 | 0.00102 | PASS |
| | | | | 50 | 5.94 | 0.00721 | PASS |
| | | MCH | VN | -30 | 0.00 | 0.00000 | PASS |
| | | | | -20 | 2.71 | 0.00324 | PASS |
| | | | | -10 | -0.52 | -0.00062 | PASS |
| | | | | 0 | -1.87 | -0.00224 | PASS |
| | | | | 10 | 0.52 | 0.00062 | PASS |
| | | | | 20 | -1.03 | -0.00123 | PASS |
| | | | | 30 | 1.03 | 0.00123 | PASS |
| | | | | 40 | 1.61 | 0.00192 | PASS |
| | | | | 50 | 2.45 | 0.00293 | PASS |
| | | HCH | VN | -30 | 0.26 | 0.00031 | PASS |
| | | | | -20 | 4.91 | 0.00578 | PASS |
| | | | | -10 | -0.71 | -0.00084 | PASS |
| | | | | 0 | -1.16 | -0.00137 | PASS |
| | | | | 10 | -0.90 | -0.00106 | PASS |
| | | | | 20 | -1.16 | -0.00137 | PASS |
| | | | | 30 | -1.36 | -0.00160 | PASS |
| | | | | 40 | -2.26 | -0.00266 | PASS |
| | | | | 50 | -0.19 | -0.00022 | PASS |

### 8.1.3 Frequency Error VS. Temperature

| Test Band | Test Mode | Test Channel | Test Volt. | Test Temp. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|---|---|---|---|---|---|---|---|
| GSM1900 | GSM/TM1 | LCH | VN | -30 | -14.91 | -0.00806 | PASS |
| | | | | -20 | -8.84 | -0.00478 | PASS |
| | | | | -10 | -14.01 | -0.00757 | PASS |
| | | | | 0 | -2.19 | -0.00118 | PASS |
| | | | | 10 | 1.68 | 0.00091 | PASS |
| | | | | 20 | -5.03 | -0.00272 | PASS |
| | | | | 30 | -13.81 | -0.00746 | PASS |
| | | | | 40 | -10.39 | -0.00562 | PASS |
| | | | | 50 | 1.36 | 0.00074 | PASS |
| | | MCH | VN | -30 | -5.74 | -0.00305 | PASS |
| | | | | -20 | -7.36 | -0.00391 | PASS |
| | | | | -10 | -13.10 | -0.00697 | PASS |
| | | | | 0 | -0.42 | -0.00022 | PASS |
| | | | | 10 | -15.08 | -0.00802 | PASS |
| | | | | 20 | -7.39 | -0.00393 | PASS |
| | | | | 30 | 2.68 | 0.00143 | PASS |
| | | | | 40 | -8.62 | -0.00459 | PASS |
| | | | | 50 | -11.66 | -0.00620 | PASS |
| | | HCH | VN | -30 | -14.43 | -0.00756 | PASS |
| | | | | -20 | -5.21 | -0.00273 | PASS |
| | | | | -10 | -6.76 | -0.00354 | PASS |
| | | | | 0 | -11.73 | -0.00614 | PASS |
| | | | | 10 | 1.05 | 0.00055 | PASS |
| | | | | 20 | 2.60 | 0.00136 | PASS |
| | | | | 30 | -6.31 | -0.00330 | PASS |
| | | | | 40 | -13.61 | -0.00713 | PASS |
| | | | | 50 | -2.18 | -0.00114 | PASS |

## 8.2 For WCDMA

### 8.2.1 Frequency Error VS. Voltage

| Test Band | Test Mode | Test Channel | Test Temp. | Test Volt. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|---|---|---|---|---|---|---|---|
| WCDMA | UMTS/TM 1 | LCH | TN | VL | 0.40 | 0.00048 | PASS |
| | | | | VN | -0.06 | -0.00007 | PASS |
| | | | | VH | 0.14 | 0.00017 | PASS |
| | | MCH | TN | VL | 0.96 | 0.00115 | PASS |
| | | | | VN | 0.87 | 0.00104 | PASS |
| | | | | VH | -1.23 | -0.00147 | PASS |
| | | HCH | TN | VL | 1.86 | 0.00220 | PASS |
| | | | | VN | -2.52 | -0.00298 | PASS |
| | | | | VH | 2.62 | 0.00309 | PASS |

### 8.2.2 Frequency Error VS. Temperature

| Test Band | Test Mode | Test Channel | Test Volt. | Test Temp. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|---|---|---|---|---|---|---|---|
| WCDMA | UMTS/TM1 | LCH | VN | -30 | 2.70 | 0.00327 | PASS |
| | | | | -20 | 1.47 | 0.00178 | PASS |
| | | | | -10 | 0.61 | 0.00074 | PASS |
| | | | | 0 | -2.70 | -0.00327 | PASS |
| | | | | 10 | 0.55 | 0.00067 | PASS |
| | | | | 20 | -1.86 | -0.00225 | PASS |
| | | | | 30 | 1.62 | 0.00196 | PASS |
| | | | | 40 | -0.07 | -0.00008 | PASS |
| | | | | 50 | -1.20 | -0.00145 | PASS |
| | | MCH | VN | -30 | -1.95 | -0.00233 | PASS |
| | | | | -20 | -1.22 | -0.00146 | PASS |
| | | | | -10 | -0.48 | -0.00057 | PASS |
| | | | | 0 | -1.49 | -0.00178 | PASS |
| | | | | 10 | 2.19 | 0.00262 | PASS |
| | | | | 20 | 1.61 | 0.00192 | PASS |
| | | | | 30 | 1.50 | 0.00179 | PASS |
| | | | | 40 | -0.04 | -0.00005 | PASS |
| | | | | 50 | -0.50 | -0.00060 | PASS |
| | | HCH | VN | -30 | -0.30 | -0.00035 | PASS |
| | | | | -20 | 0.52 | 0.00061 | PASS |
| | | | | -10 | 0.72 | 0.00085 | PASS |
| | | | | 0 | -1.38 | -0.00163 | PASS |
| | | | | 10 | 1.71 | 0.00202 | PASS |
| | | | | 20 | -2.67 | -0.00315 | PASS |
| | | | | 30 | 2.81 | 0.00332 | PASS |
| | | | | 40 | -0.42 | -0.00050 | PASS |
| | | | | 50 | -2.45 | -0.00289 | PASS |

## 8.3 For LTE

### 8.3.1 Frequency Error VS. Voltage

| Test Band | Test Mode | Test Channel | Test Temp. | Test Volt. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|---|---|---|---|---|---|---|---|
| LTE | LTE/TM1 5MHz | LCH | TN | VL | -8.29 | -0.00331 | PASS |
| | | | | VN | -4.34 | -0.00173 | PASS |
| | | | | VH | -7.76 | -0.00310 | PASS |
| | | MCH | TN | VL | -5.10 | -0.00201 | PASS |
| | | | | VN | -6.43 | -0.00254 | PASS |
| | | | | VH | -9.13 | -0.00360 | PASS |
| | | HCH | TN | VL | -8.00 | -0.00312 | PASS |
| | | | | VN | -6.00 | -0.00234 | PASS |
| | | | | VH | -7.30 | -0.00284 | PASS |
| | LTE/TM2 5MHz | LCH | TN | VL | -6.42 | -0.00257 | PASS |
| | | | | VN | -6.54 | -0.00261 | PASS |
| | | | | VH | -7.77 | -0.00310 | PASS |
| | | MCH | TN | VL | -7.30 | -0.00288 | PASS |
| | | | | VN | -7.07 | -0.00279 | PASS |
| | | | | VH | -4.03 | -0.00159 | PASS |
| | | HCH | TN | VL | -7.22 | -0.00281 | PASS |
| | | | | VN | -2.84 | -0.00111 | PASS |
| | | | | VH | -5.07 | -0.00197 | PASS |
| | LTE/TM1 10MHz | LCH | TN | VL | -8.29 | -0.00331 | PASS |
| | | | | VN | -4.34 | -0.00173 | PASS |
| | | | | VH | -7.76 | -0.00310 | PASS |
| | | MCH | TN | VL | -5.10 | -0.00201 | PASS |
| | | | | VN | -6.43 | -0.00254 | PASS |
| | | | | VH | -9.13 | -0.00360 | PASS |
| | | HCH | TN | VL | -8.00 | -0.00312 | PASS |
| | | | | VN | -6.00 | -0.00234 | PASS |
| | | | | VH | -7.30 | -0.00285 | PASS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LTE | LTE/TM2 10MHz | LCH | TN | VL | 0.34 | 0.00014 | PASS |
| | | | | VN | 3.24 | 0.00129 | PASS |
| | | | | VH | 0.97 | 0.00039 | PASS |
| | | MCH | TN | VL | -0.89 | -0.00035 | PASS |
| | | | | VN | 0.53 | 0.00021 | PASS |
| | | | | VH | 1.25 | 0.00049 | PASS |
| | | HCH | TN | VL | -1.04 | -0.00041 | PASS |
| | | | | VN | -2.13 | -0.00083 | PASS |
| | | | | VH | -4.03 | -0.00157 | PASS |
| | LTE/TM1 15MHz | LCH | TN | VL | 0.70 | 0.00028 | PASS |
| | | | | VN | 3.43 | 0.00137 | PASS |
| | | | | VH | 1.16 | 0.00046 | PASS |
| | | MCH | TN | VL | -0.70 | -0.00028 | PASS |
| | | | | VN | 0.72 | 0.00028 | PASS |
| | | | | VH | 1.44 | 0.00057 | PASS |
| | | HCH | TN | VL | -0.85 | -0.00033 | PASS |
| | | | | VN | -1.94 | -0.00076 | PASS |
| | | | | VH | -4.03 | -0.00157 | PASS |
| | LTE/TM2 15MHz | LCH | TN | VL | -1.05 | -0.00042 | PASS |
| | | | | VN | 2.63 | 0.00105 | PASS |
| | | | | VH | 2.05 | 0.00082 | PASS |
| | | MCH | TN | VL | 1.94 | 0.00077 | PASS |
| | | | | VN | 0.40 | 0.00016 | PASS |
| | | | | VH | -0.06 | -0.00002 | PASS |
| | | HCH | TN | VL | 0.14 | 0.00005 | PASS |
| | | | | VN | 0.96 | 0.00037 | PASS |
| | | | | VH | 0.68 | 0.00027 | PASS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LTE | LTE/TM1 20MHz | LCH | TN | VL | -6.25 | -0.00249 | PASS |
| | | | | VN | -6.54 | -0.00261 | PASS |
| | | | | VH | -7.77 | -0.00310 | PASS |
| | | MCH | TN | VL | -7.30 | -0.00288 | PASS |
| | | | | VN | -7.07 | -0.00279 | PASS |
| | | | | VH | -4.03 | -0.00159 | PASS |
| | | HCH | TN | VL | -7.22 | -0.00282 | PASS |
| | | | | VN | -2.84 | -0.00111 | PASS |
| | | | | VH | -5.07 | -0.00198 | PASS |
| | LTE/TM2 20MHz | LCH | TN | VL | 1.67 | 0.00067 | PASS |
| | | | | VN | -4.34 | -0.00173 | PASS |
| | | | | VH | -7.76 | -0.00309 | PASS |
| | | MCH | TN | VL | -5.10 | -0.00201 | PASS |
| | | | | VN | -6.43 | -0.00254 | PASS |
| | | | | VH | -9.13 | -0.00360 | PASS |
| | | HCH | TN | VL | -8.00 | -0.00313 | PASS |
| | | | | VN | -6.00 | -0.00234 | PASS |
| | | | | VH | -7.30 | -0.00285 | PASS |

### 8.3.2 Frequency Error VS. Temperature

| Test Band | Test Mode | Test Channel | Test Temp. | Test Volt. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|---|---|---|---|---|---|---|---|
| LTE | LTE/TM1 20MHz | LCH | VN | -30 | -6.42 | -0.00256 | PASS |
| | | | | -20 | -6.54 | -0.00261 | PASS |
| | | | | -10 | -7.77 | -0.00310 | PASS |
| | | | | 0 | -7.30 | -0.00291 | PASS |
| | | | | 10 | -7.07 | -0.00282 | PASS |
| | | | | 20 | -4.03 | -0.00161 | PASS |
| | | | | 30 | -7.22 | -0.00288 | PASS |
| | | | | 40 | -2.84 | -0.00113 | PASS |
| | | | | 50 | -5.07 | -0.00202 | PASS |
| | | MCH | VN | -30 | -1.05 | -0.00041 | PASS |
| | | | | -20 | 2.63 | 0.00104 | PASS |
| | | | | -10 | 2.05 | 0.00081 | PASS |
| | | | | 0 | 1.94 | 0.00077 | PASS |
| | | | | 10 | 0.40 | 0.00016 | PASS |
| | | | | 20 | -0.06 | -0.00002 | PASS |
| | | | | 30 | 0.14 | 0.00006 | PASS |
| | | | | 40 | 0.96 | 0.00038 | PASS |
| | | | | 50 | 0.68 | 0.00027 | PASS |
| | | HCH | VN | -30 | -8.04 | -0.00314 | PASS |
| | | | | -20 | -6.04 | -0.00236 | PASS |
| | | | | -10 | -6.29 | -0.00246 | PASS |
| | | | | 0 | -6.58 | -0.00257 | PASS |
| | | | | 10 | -7.81 | -0.00305 | PASS |
| | | | | 20 | -7.34 | -0.00287 | PASS |
| | | | | 30 | -7.11 | -0.00278 | PASS |
| | | | | 40 | -4.07 | -0.00159 | PASS |
| | | | | 50 | -7.26 | -0.00284 | PASS |

The End