



**MOTOROLA**

*Global Telecom Solutions Sector*

---

**FCC ID: IHET5BQ1**

## **SECTION C**

# **SPURIOUS & HARMONIC EMISSIONS RADIATED**

APPLICANT: MOTOROLA

TRANSCEIVER TYPE: IHET5BQ1

## Radiated RF Measurements

### Worst Case Radiated RF Spur Levels for SC4812ET @ 800MHz

Radiated Data			Substituted Power				Spec	Result
TX Channel	Spurious Frequency (MHz)	Antenna Polarity	Measured Radiated Field Strength (dBuV/m)	Measured Radiated Field Strength (dBm) (Note 1)	TX Antenna Terminal Voltage (dBm) (Note 2)	EDRP (dBm) (Note 3)	FCC Part 24 MAX LIMIT (dBm)	Pass/Fail
1013	1648.959	H	25.3	-69.928	-86.1	-81.15	- 13	Pass
1013	9082.764	V	42.9	-52.328	-65.4	-57.95	- 13	Pass
777	1786.341	H	46.07	-49.158	-57.72	-52.67	- 13	Pass
777	1786.341	V	44.25	-50.978	-59.52	-54.47	- 13	Pass

Notes:

1. Converting dBuV/M to dBm at 3 meters  
(dBuV/M) +9.542-104.77dB=dBm  
Converting dBuV/M to dBm at 10 meters  
(dBuV/M) +20 -104.77dB=dBm
2. The same horn antenna and measurement system was used for EUT scan and during substitution method. After maximizing the receive antenna and adjusting signal generator power level to measure the same emission level with the spectrum analyzer as with the EUT. Signal generator output level was recorded for each of the spurious frequencies. Test cable was then disconnected from the transmit horn and was connected to the input of the S/A measuring the voltage at the terminals of the antenna.
3. This value was obtained by converting the Equivalent Isotropic Radiated Power (EIRP) to ideal half-wave dipole reference power - (Equivalent Di-Pole Radiated Power - EDRP) per (TIA-603, 2.2.12.2(i)(m))



8/13/01

Radiated Engineer

Date

Terry Schwenk



**MOTOROLA**

*Global Telecom Solutions Sector*

---

**FCC ID: IHET5BQ1**

## **SECTION D**

# **SPURIOUS & HARMONIC EMISSIONS CONDUCTED**

**APPLICANT: MOTOROLA**

**TRANSCEIVER TYPE: IHET5BQ1**

## Summary of Conducted RF Measurements

**SC4812ET @800MHz**

**FCC Part 22**

CHANNEL	FREQUENCY (MHz)	SPUR LEVEL MEASURED (dBμV)	SPUR LEVEL MEASURED (dBm)	FCC MAX LIMIT dBm	PASS/FAIL
777	6952.559	83.83	-23.17	-13	PASS
1013	8420.436	83.42	-23.58	-13	PASS

FCC Max. Limit Per 47 CFR:

“ =Transmitted Power ( $10 \log_{10} (P_{\text{watt}})$ ) - ( $43 + 10 \log_{10} (P_{\text{watt}})$ )dBW

“ = $10 \log_{10} (P_{\text{watt}})$  - ( $43 + 10 \log_{10} (P_{\text{watt}})$ )dBW

“ =-43 dBW

“ =-13 dBm

dBuV-107 = dBm

Engineer: \_\_\_\_\_

Date

Terry Schwenk



**MOTOROLA**

*Global Telecom Solutions Sector*

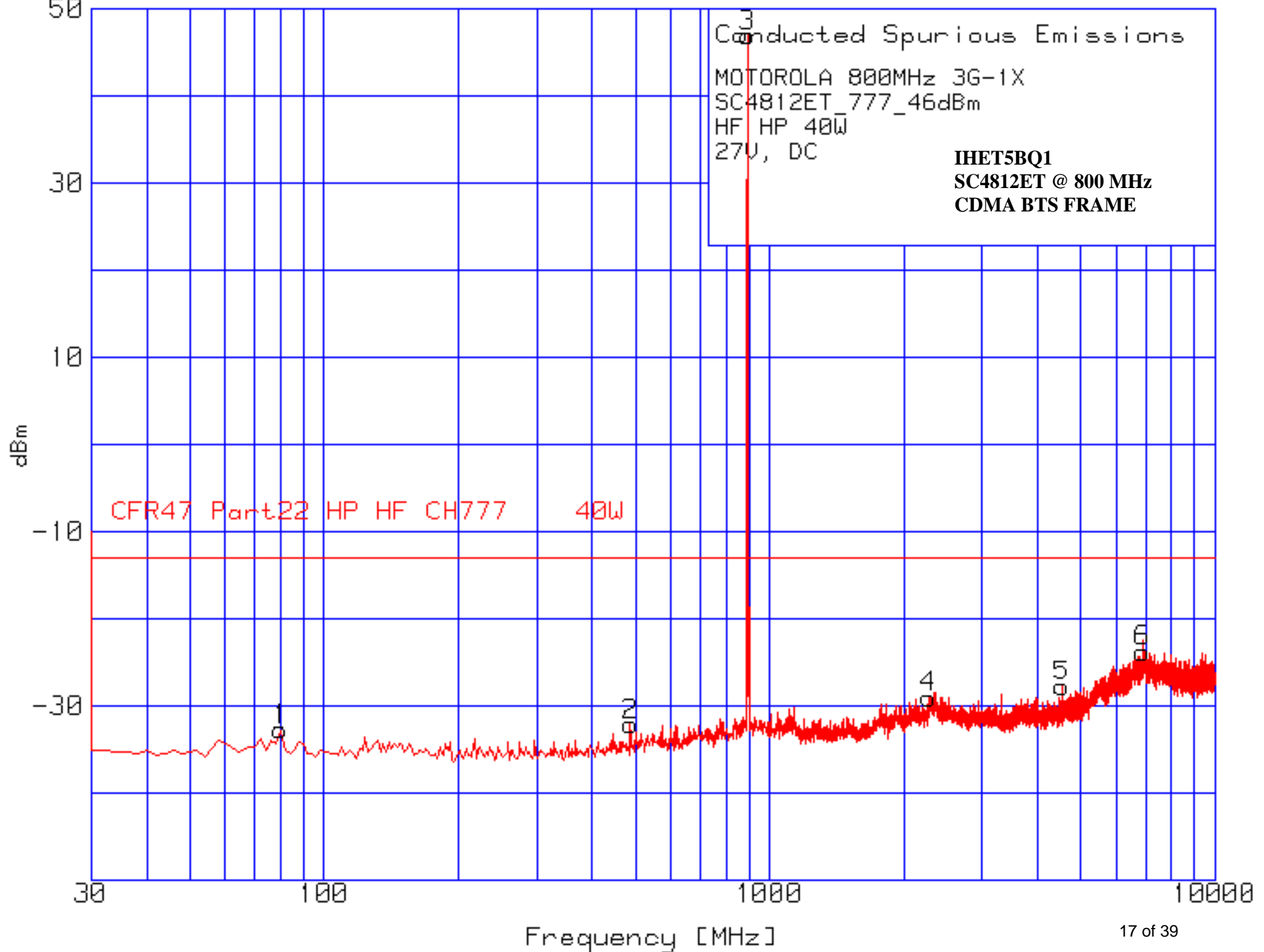
---

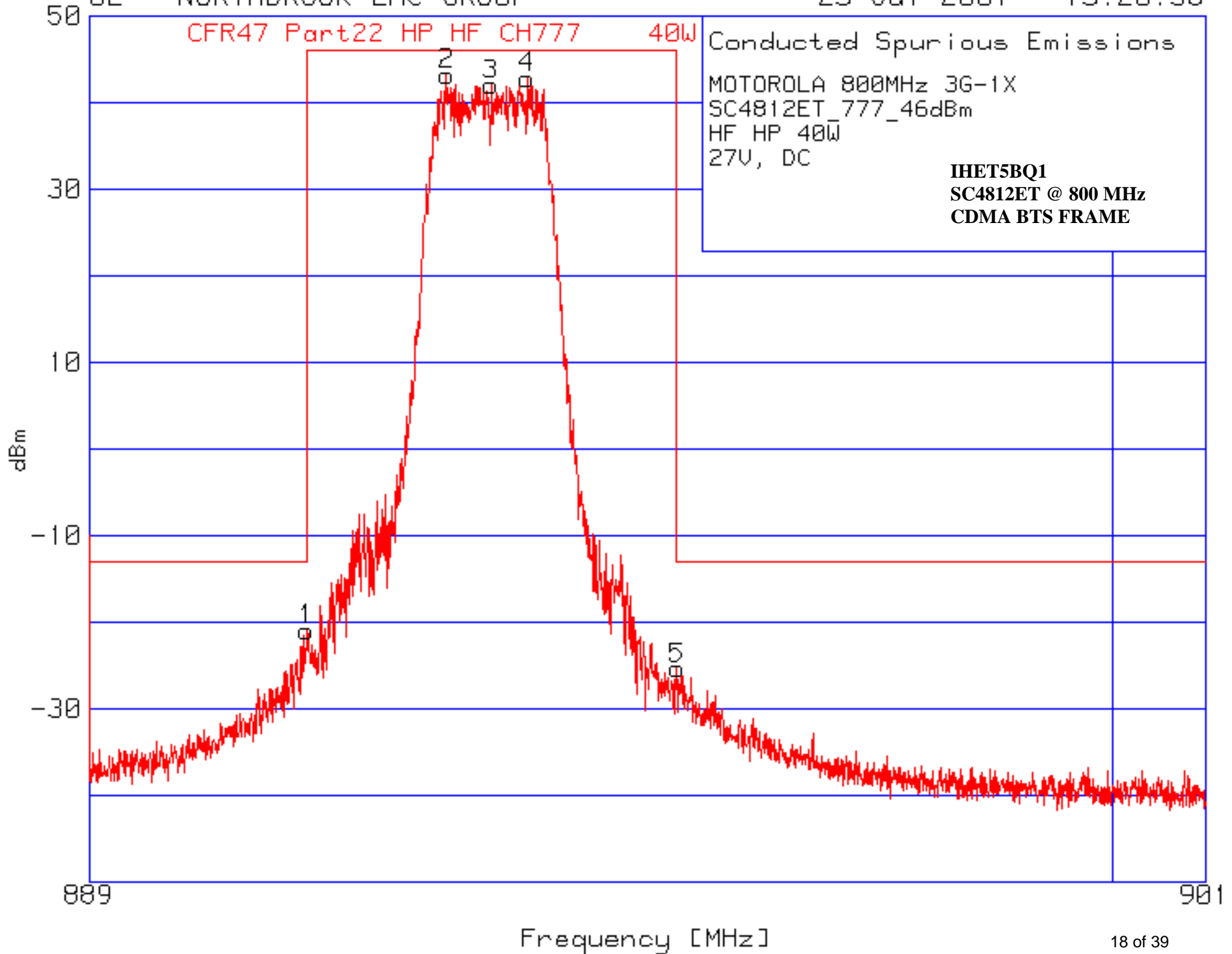
FCC ID: IHET5BQ1

# **SPURIOUS & HARMONIC EMISSIONS CONDUCTED**

## **CDMA Transmitter Channel 1013**

### **Maximum Power**







**MOTOROLA**

*Global Telecom Solutions Sector*

---

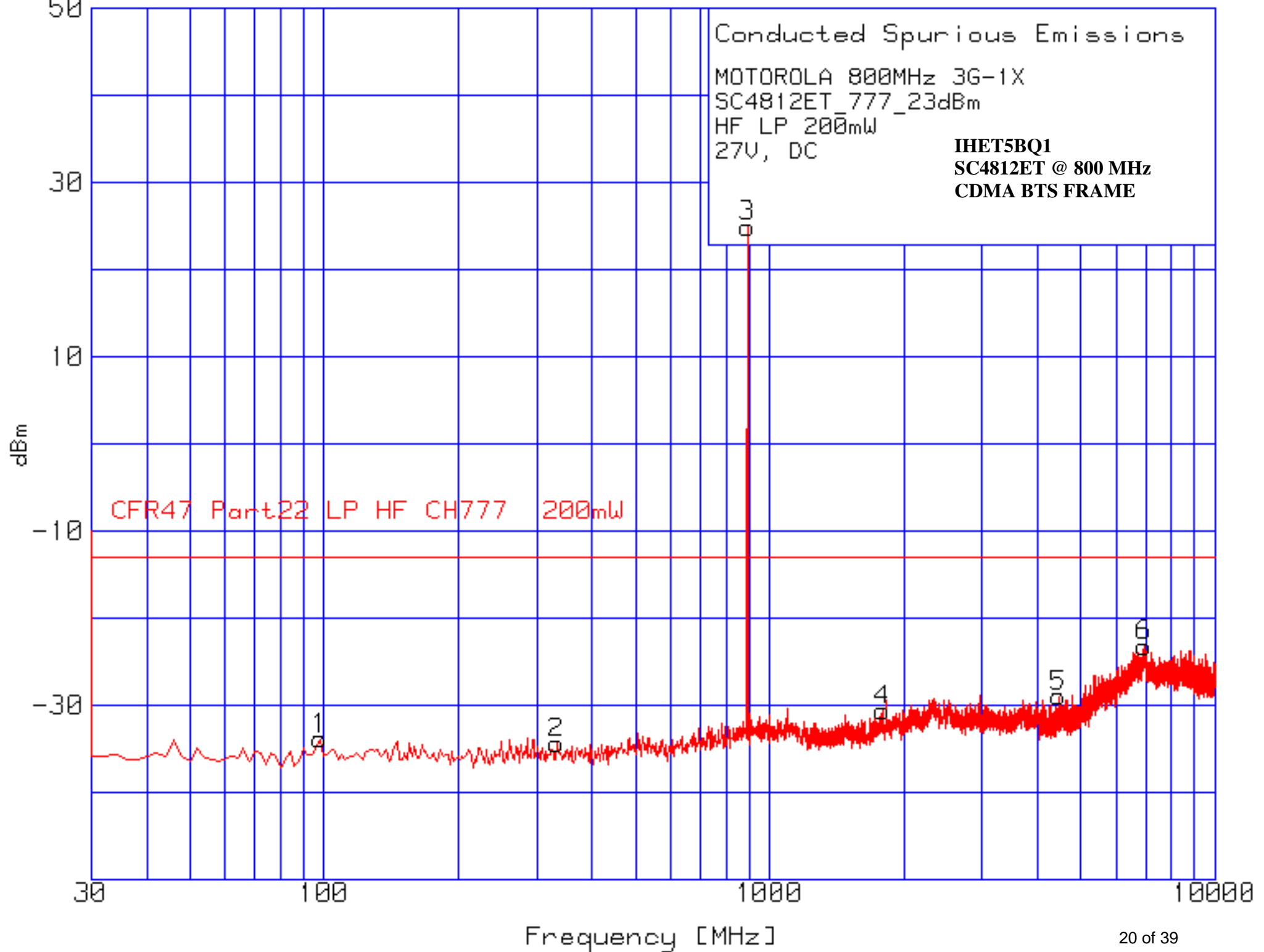
FCC ID: IHET5BQ1

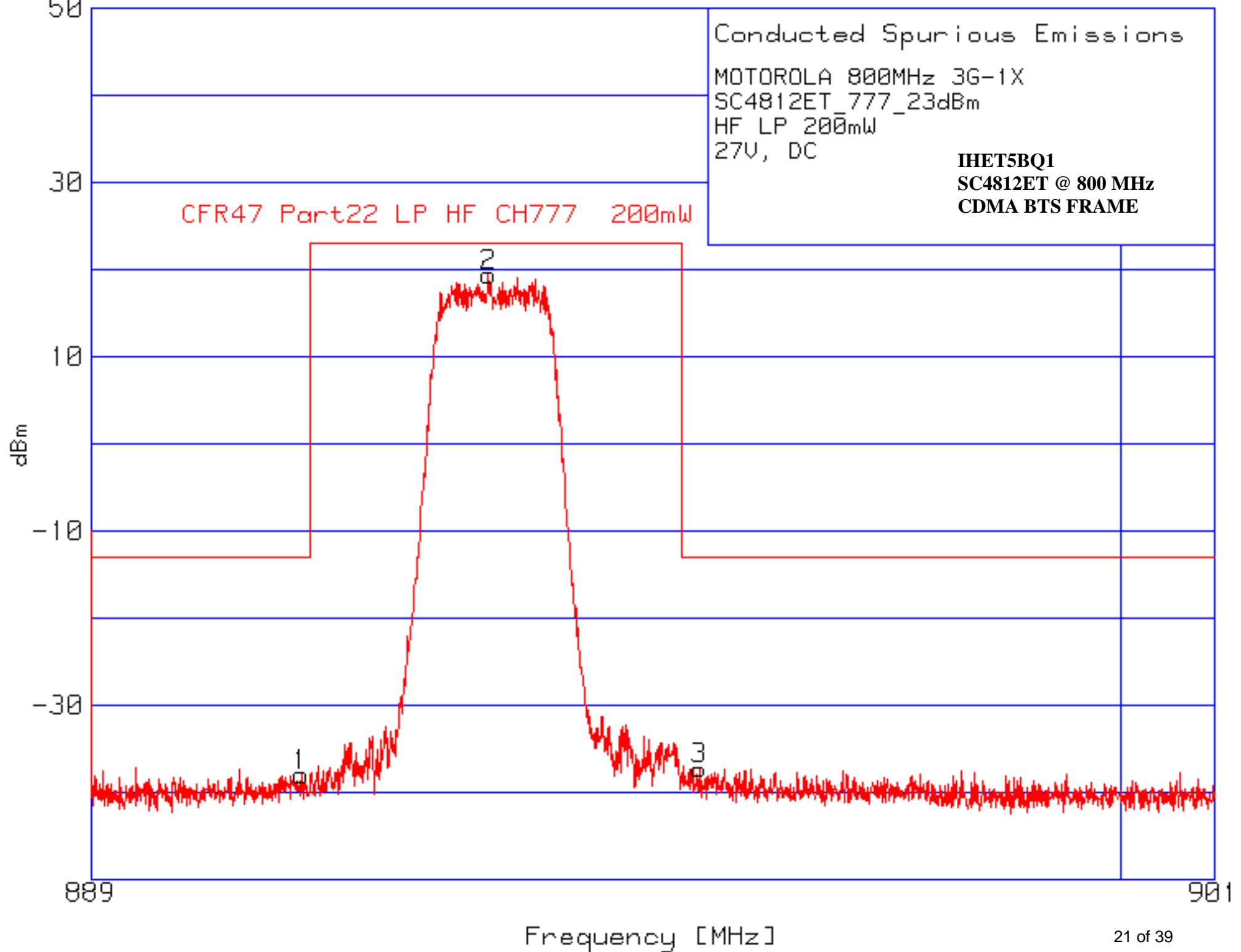
# **SPURIOUS & HARMONIC EMISSIONS CONDUCTED**

## **CDMA Transmitter Channel 1013**

### **Minimum Power**









**MOTOROLA**

*Global Telecom Solutions Sector*

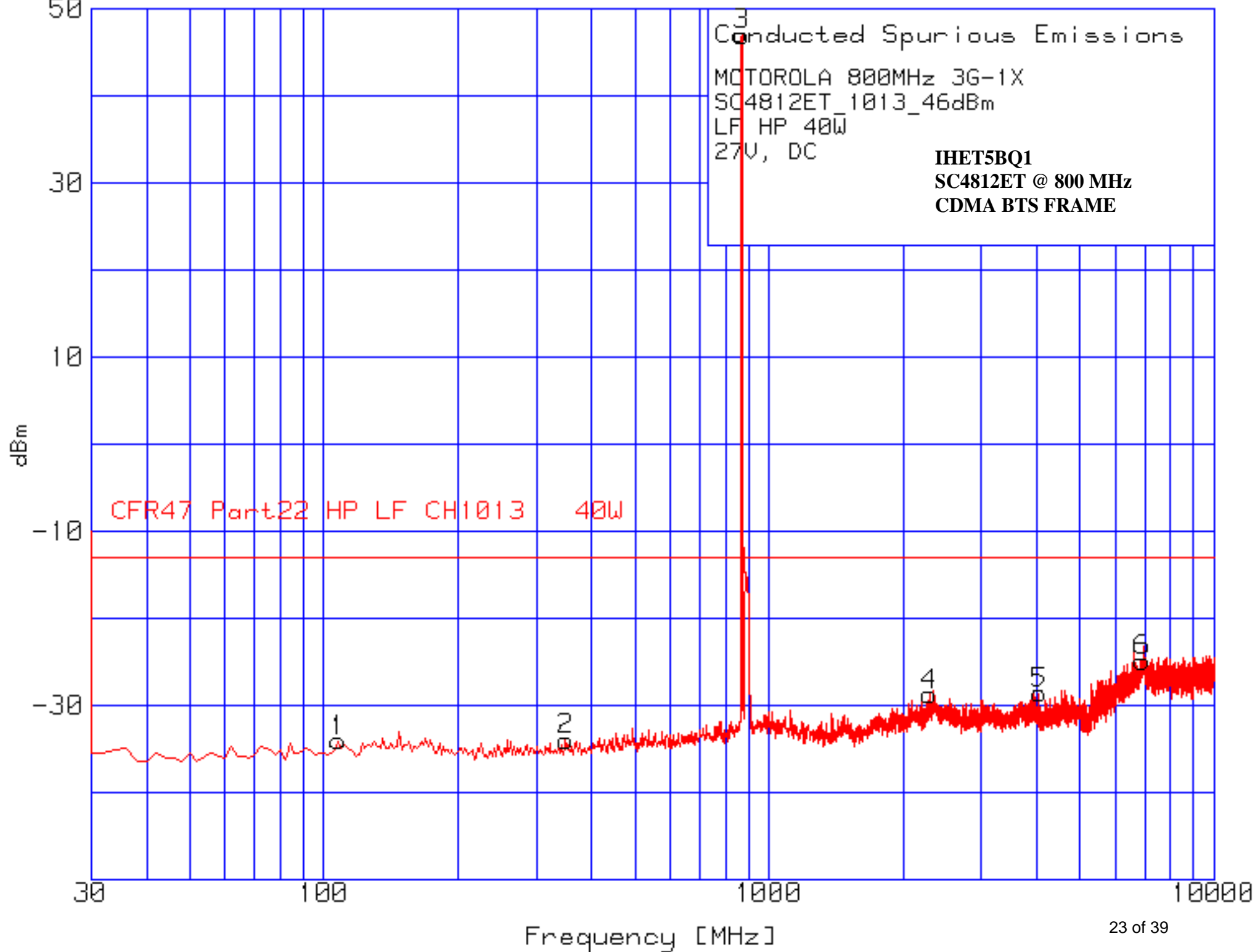
---

FCC ID: IHET5BQ1

# **SPURIOUS & HARMONIC EMISSIONS CONDUCTED**

## **CDMA Transmitter Channel 777**

### **Maximum Power**



CFR47 Part22 HP LF CH1013 40W

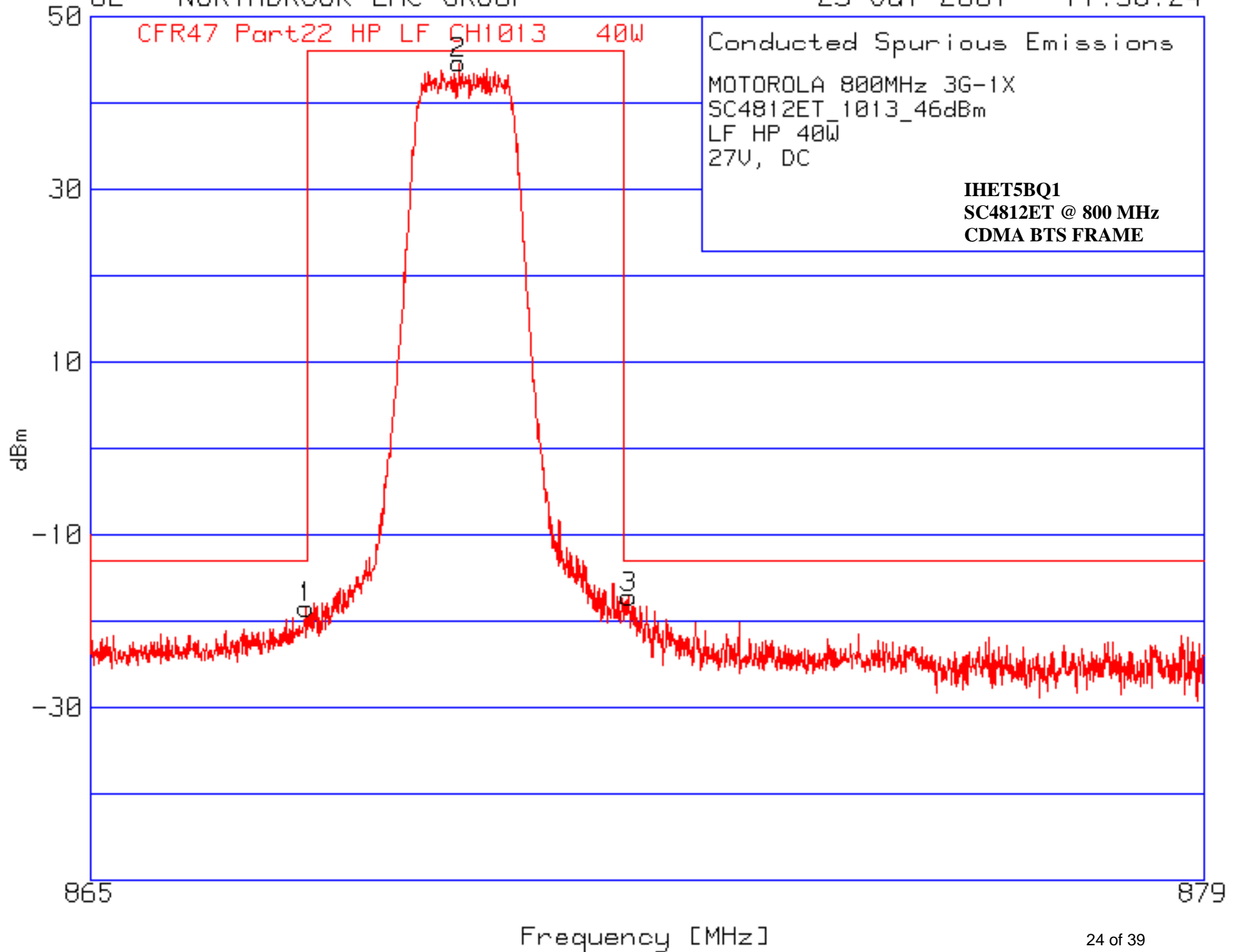
Conducted Spurious Emissions

MOTOROLA 800MHz 3G-1X

SC4812ET\_1013\_46dBm

LF HP 40W

27V, DC

**IHET5BQ1****SC4812ET @ 800 MHz****CDMA BTS FRAME**



**MOTOROLA**

*Global Telecom Solutions Sector*

---

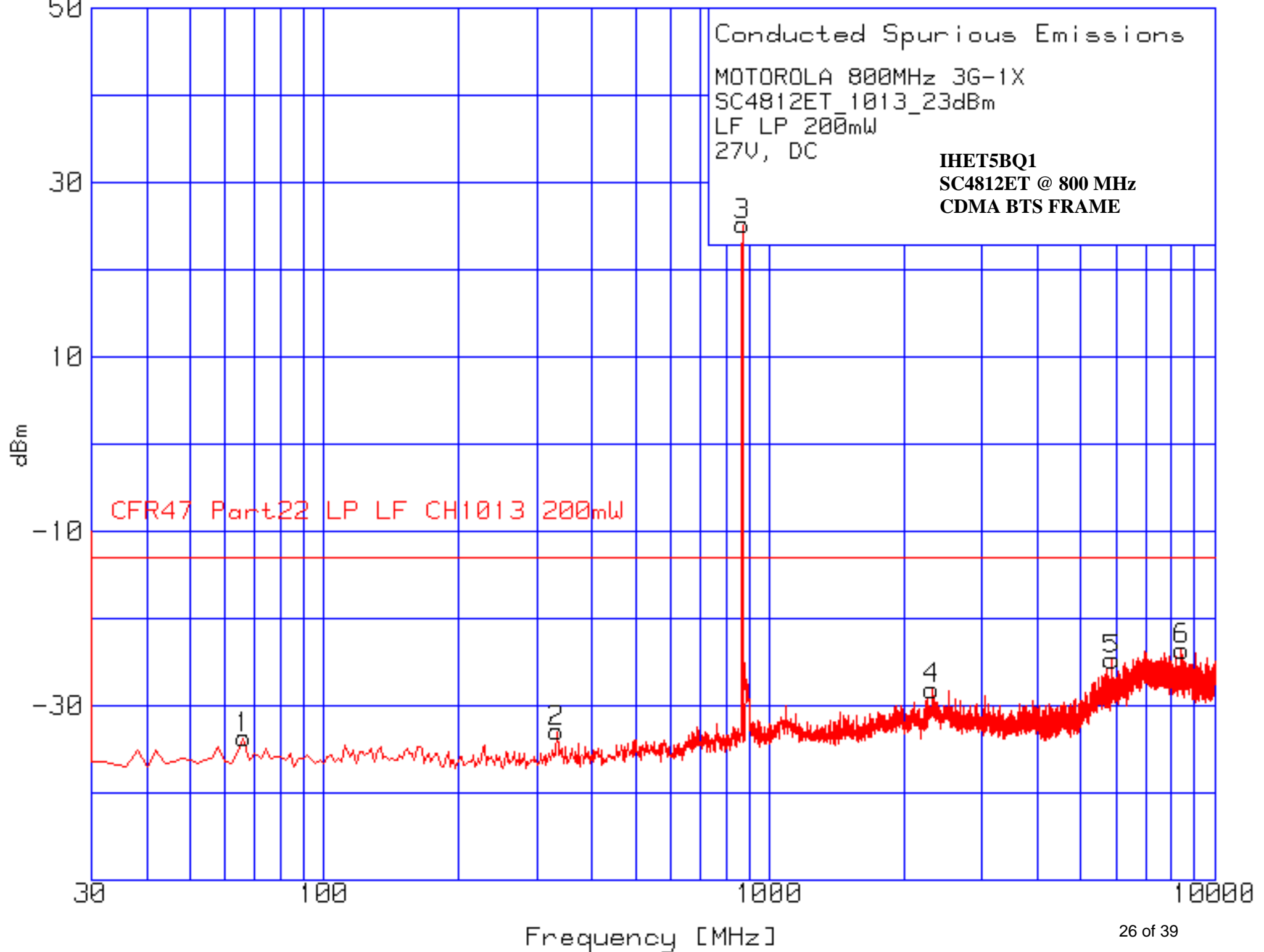
SECTION D

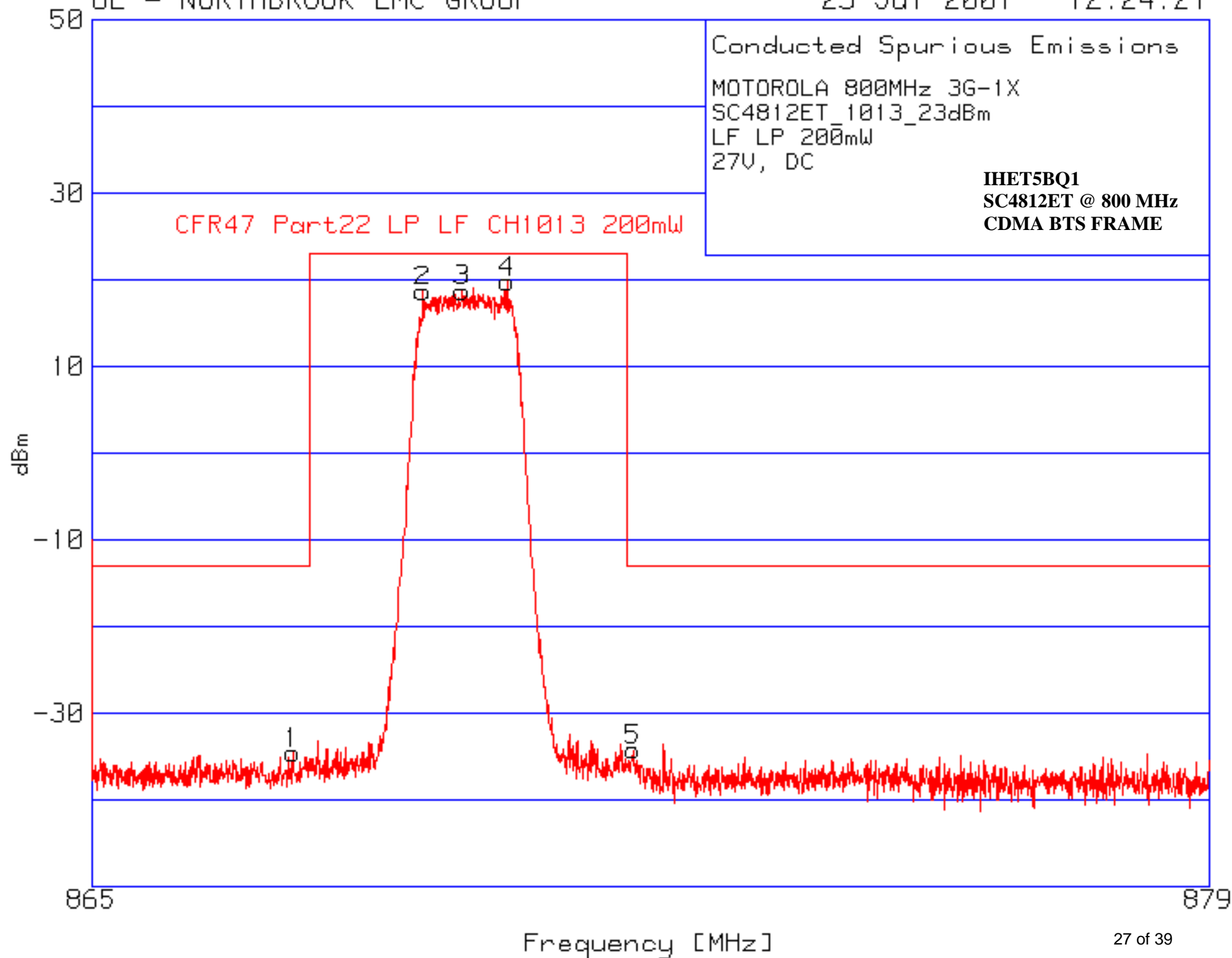
FCC ID: IHET5BQ1

## **SPURIOUS & HARMONIC EMISSIONS CONDUCTED**

### **CDMA Transmitter Channel 777**

### **Minimum Power**







**MOTOROLA***Global Telecom Solutions Sector***FCC ID: IHET5BQ1**

## **SECTION E**

### **OCCUPIED BANDWIDTH**

SC4812ET

NOTE: The BTS was configured for maximum power out of 46.0 dBm and minimum power out of 23.0 dBm respectively. The max and min output power was set to 40.0 Watts or 200 mWatts respectively using an HP437B power meter.

The following formula is used to obtain the correct set power reference point from which the OBW of the CDMA signal is obtained. See example calculation below:

$$\text{Power (measured in 30kHz bandwidth)} + 10 \log (1.2288 \text{ MHz} / 30 \text{ kHz})$$

$$\text{Example: } 29.88\text{dBm} + 16.12\text{dB} = 46.0\text{dBm}$$

The occupied bandwidth is measured in a 30 kHz resolution bandwidth. The summary is listed below.

CHANNEL/POWER	FREQUENCY (MHz)	MEASURED (MHz)	FCC LIMIT (MHz)	PASS/FAIL
1013/MAX	869.7	1.225	1.25	Pass
777/MAX	893.31	1.225	1.25	Pass
1013/MIN	869.7	1.225	1.25	Pass
777/MIN	893.31	1.225	1.25	Pass

Engineer: Francisco Avalos

Signature: Francisco Avalos 8/29/01

Date