WLAN Signal Check with SA-CC3351MOD

System Version

- WLAN Chipset : CC3351MODENIAMOZR
- Host Processor : AM62L
- Linux Kernel Version : 6.12.24
- Calibrator Tool Version : 1.0.0.93
- WLAN Driver :

```
#define CC33XX_CONF_FW_MAJOR_VERSION    0x0001
#define CC33XX_CONF_FW_MINOR_VERSION    0x0007
#define CC33XX_CONF_FW_API_VERSION      0x0000
#define CC33XX_CONF_FW_BUILD_VERSION    0x013C
```

AIM : To measure the 2.4Ghz 802.11b/g/n/ax and BLE waveform using calibrator tool in spectrum analyser.

Observation :

1) In 2.4 GHz Wi-Fi, while increasing the transmit power using the calibration tool, the transmitted signal bandwidth is also increasing.

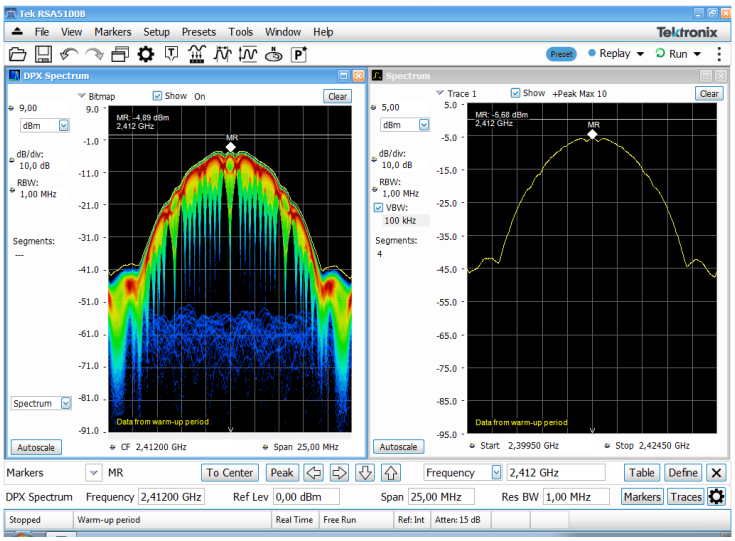
Test 1 : 2.4Ghz 802.11b, Channel1&6, Datarate 1Mbps, TX power 0dbm, 5dbm, 10dbm, 15dbm

Commands:

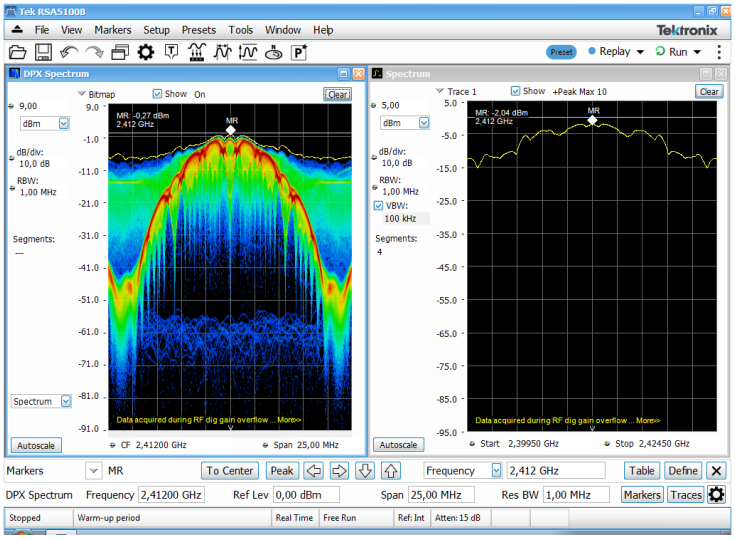
calibrator wlan0 cc33xx_plt stop_tx
calibrator wlan0 cc33xx_plt tune_channel 1 0 0
calibrator wlan0 cc33xx_plt set_manual_calib -tx 1 -rx 1
calibrator wlan0 cc33xx_plt set_tx -default 0
calibrator wlan0 cc33xx_plt set_tx -preamble_type 1 -phy_rate 1 -tx_power 15 -length const packet 1500 -delay 50
calibrator wlan0 cc33xx_plt start_tx

Waveforms:

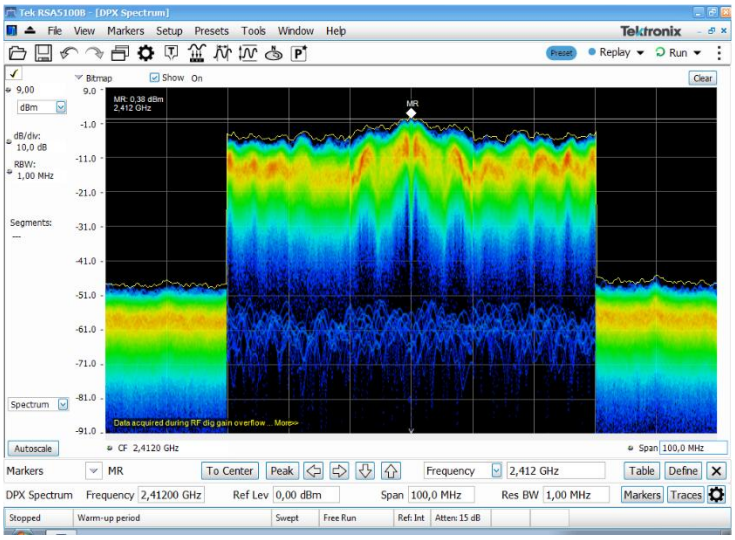
b_ch1_1Mbps_0dbm



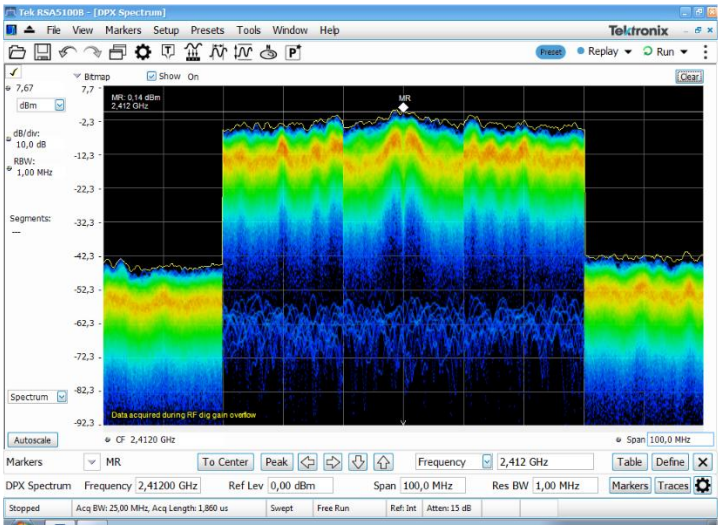
b_ch1_1Mbps_5dbm



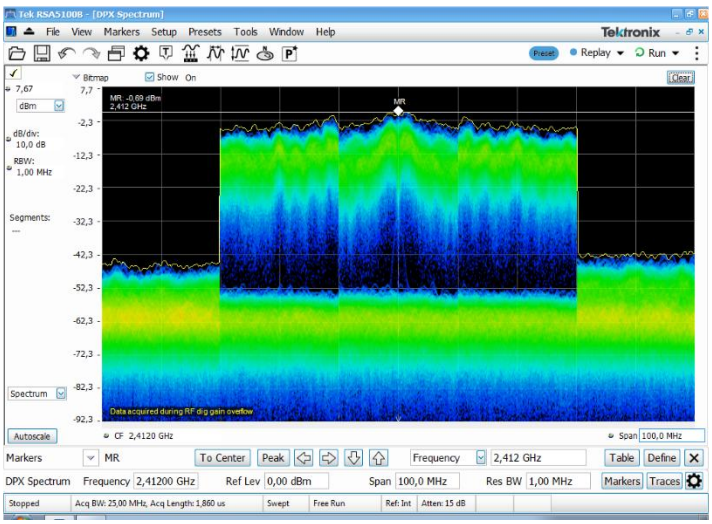
b_ch1_1Mbps_10dbm



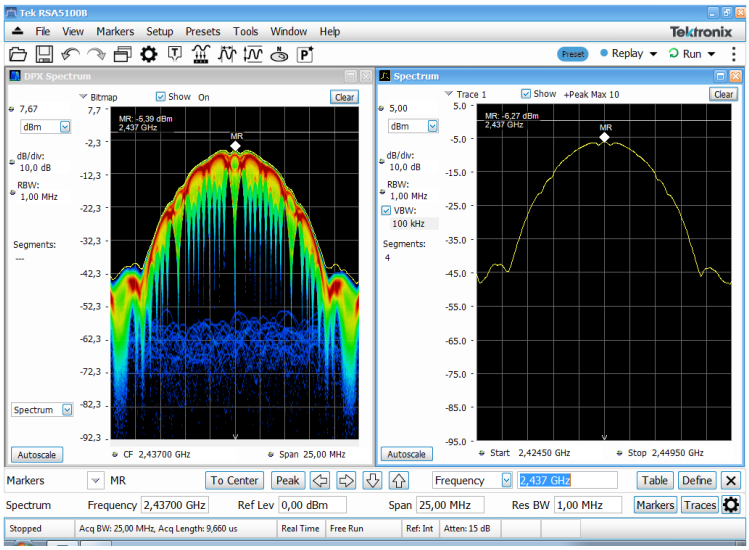
b_ch1_1Mbps_15dbm



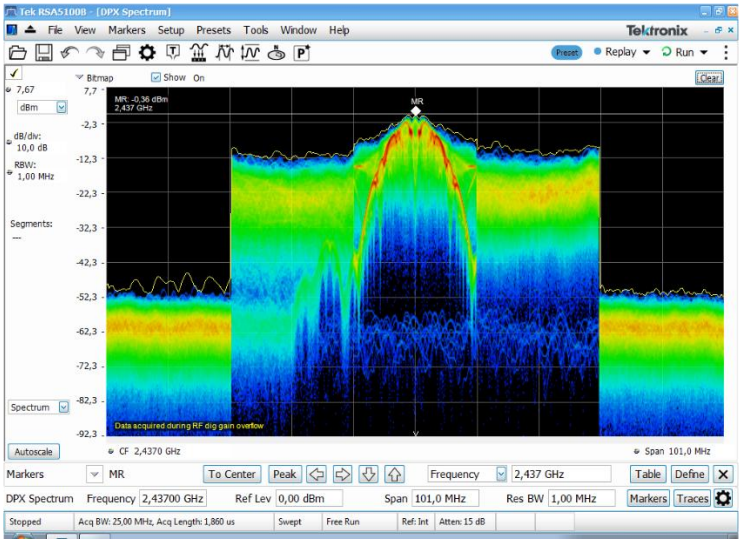
b_ch1_1Mbps_15dbm_delay-1800_length const packet-100



b_ch6_1Mbps_0dbm



b_ch6_1Mbps_5dbm



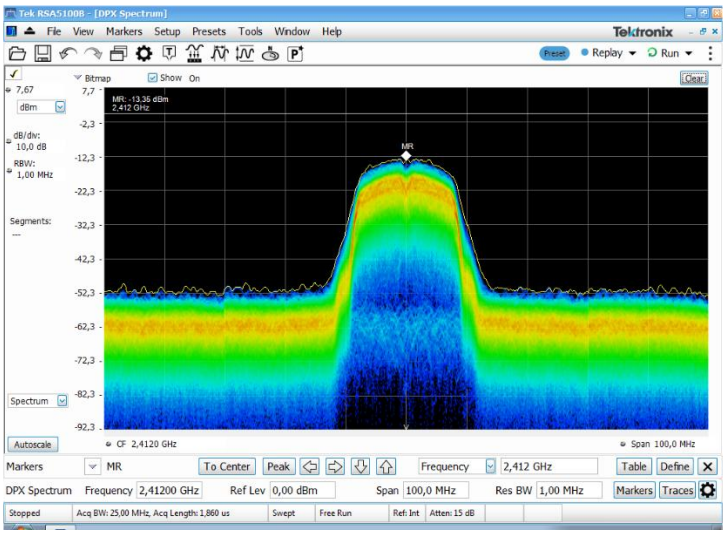
Test 2 : 2.4Ghz 802.11g, Channel1, Datarate 6Mbps, TX power -10dbm, 0dbm, 5dbm, 10dbm, 20dbm

Commands:

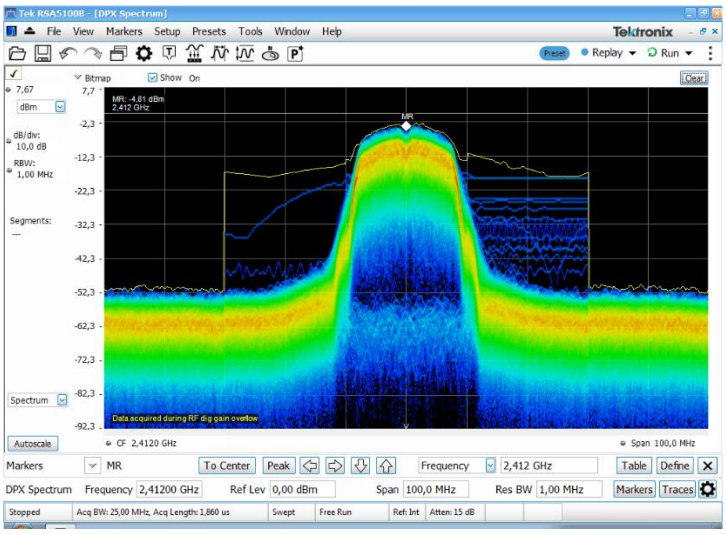
calibrator wlan0 cc33xx_plt stop_tx
calibrator wlan0 cc33xx_plt tune_channel 1 0 0
calibrator wlan0 cc33xx_plt set_manual_calib -tx 1 -rx 1
calibrator wlan0 cc33xx_plt set_tx -default 0
calibrator wlan0 cc33xx_plt set_tx -preamble_type 2 -phy_rate 5 -tx_power 15 -length const packet 1500 -delay 50
calibrator wlan0 cc33xx_plt start_tx

Waveforms:

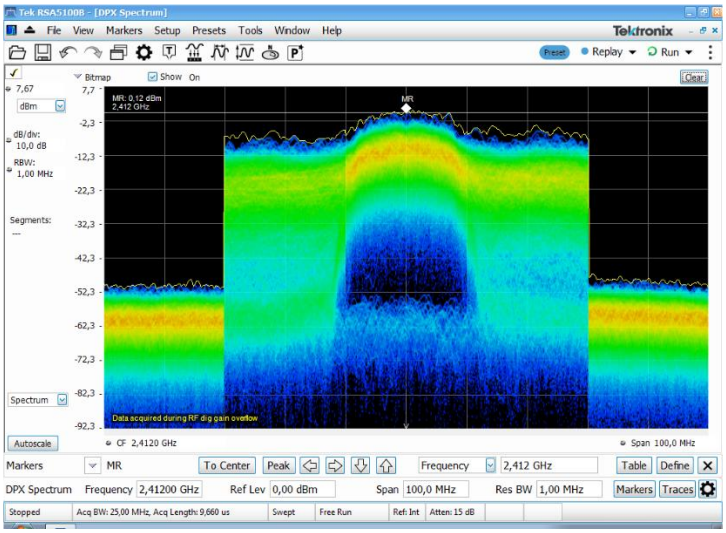
g_ch1_6Mbps_-10dbm



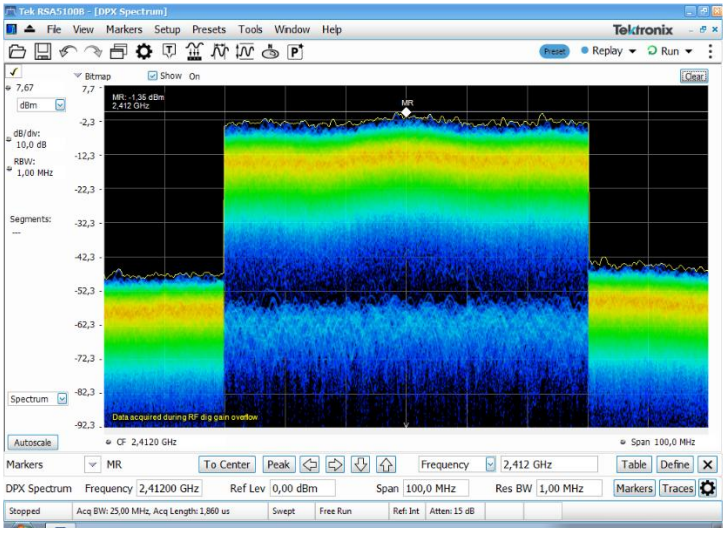
g_ch1_6Mbps_0dbm



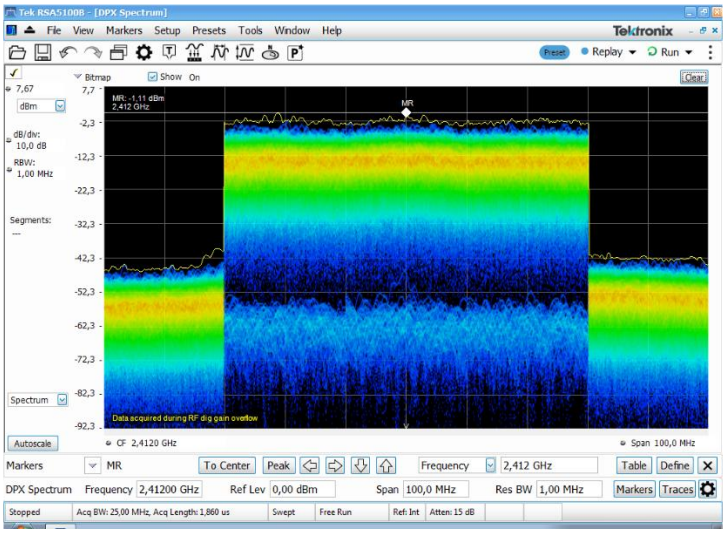
g_ch1_6Mbps_5dbm



g_ch1_6Mbps_10dbm



g_ch1_6Mbps_20dbm



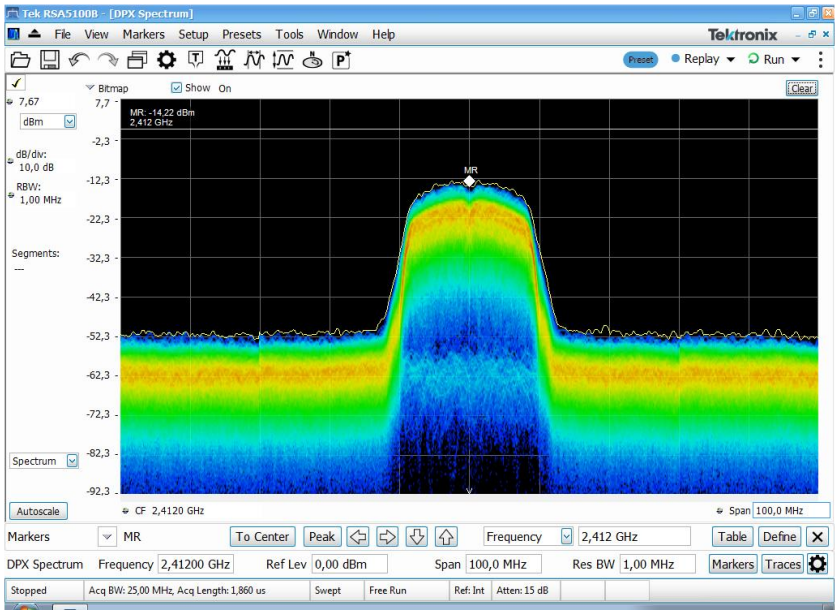
Test 3 : 2.4Ghz 802.11n, Channel1, Datarate MCS0, TX power -10dbm, 0dbm, 5dbm, 10dbm

Commands:

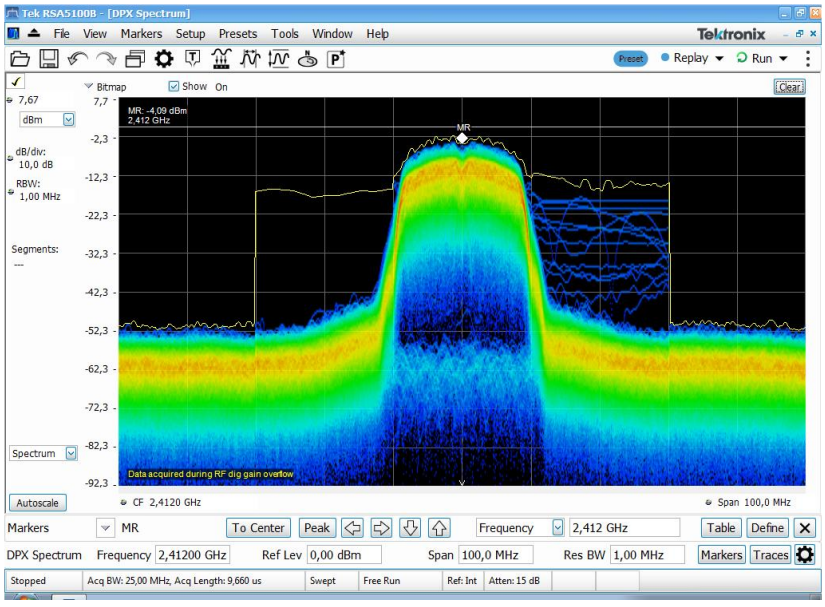
calibrator wlan0 cc33xx_plt stop_tx
calibrator wlan0 cc33xx_plt tune_channel 1 0 0
calibrator wlan0 cc33xx_plt set_manual_calib -tx 1 -rx 1
calibrator wlan0 cc33xx_plt set_tx -default 0
calibrator wlan0 cc33xx_plt set_tx -preamble_type 3 -phy_rate 13 -tx_power 15 -length const packet 1500 -delay 50
calibrator wlan0 cc33xx_plt start_tx

Waveforms:

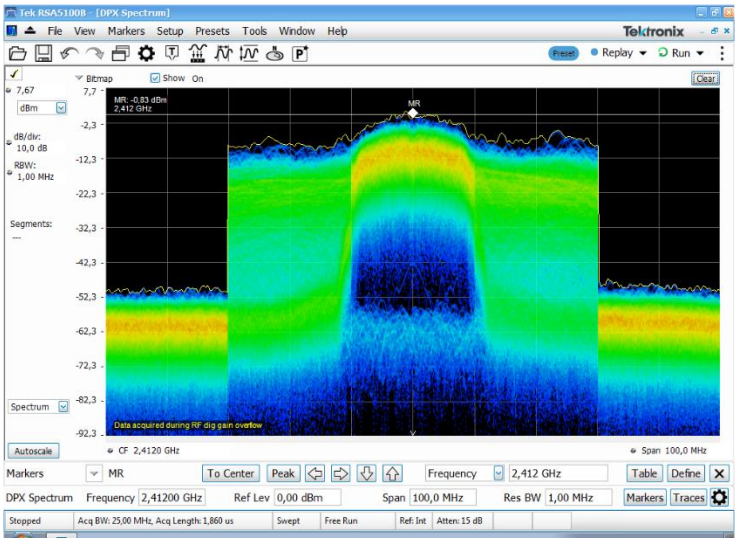
n_ch1_MCS0_-10dbm



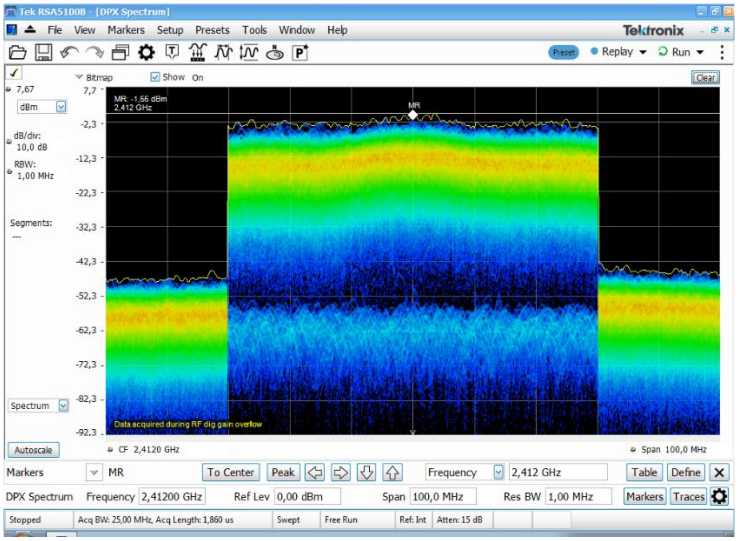
n_ch1_MCS0_0dbm



n_ch1_MCS0_5db



n_ch1_MCS0_10dbm



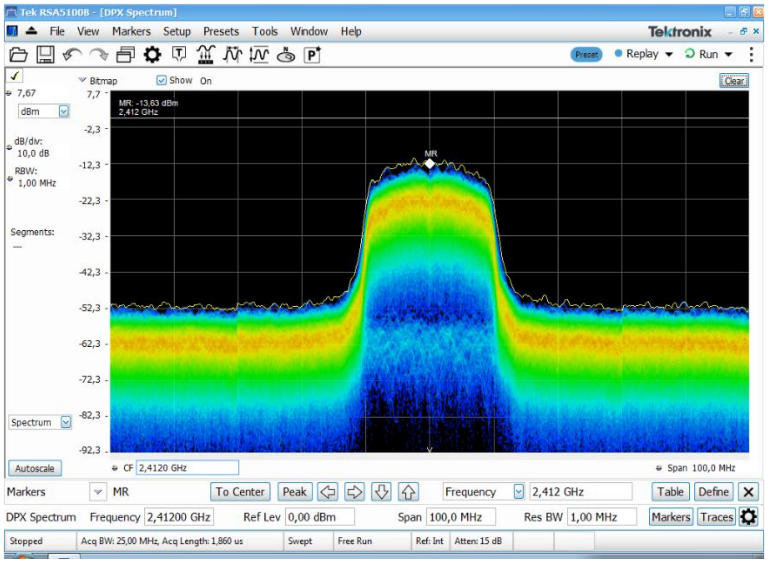
Test 4 : 2.4Ghz 802.11ax, Channel1, Datarate MCS0, TX power -10dbm, 0dbm, 5dbm

Commands:

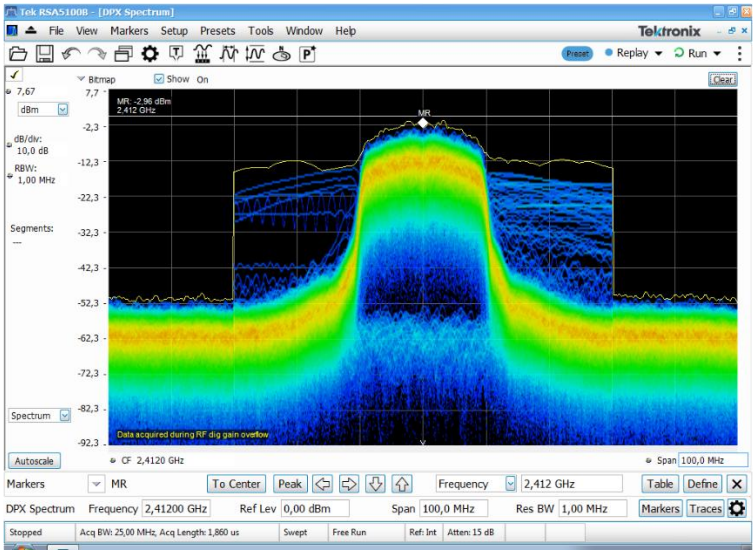
calibrator wlan0 cc33xx_plt stop_tx
calibrator wlan0 cc33xx_plt tune_channel 1 0 0
calibrator wlan0 cc33xx_plt set_manual_calib -tx 1 -rx 1
calibrator wlan0 cc33xx_plt set_tx -default 0
calibrator wlan0 cc33xx_plt set_tx -preamble_type 5 -phy_rate 13 -tx_power 15 -length const packet 1500 -delay 50
calibrator wlan0 cc33xx_plt start_tx

Waveforms:

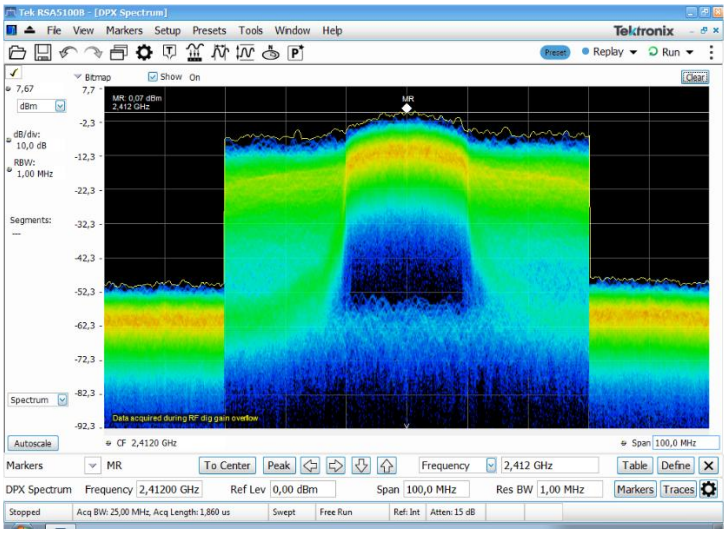
ax_ch1_MCS0_-10dbm



ax_ch1_MCS0_0dbm

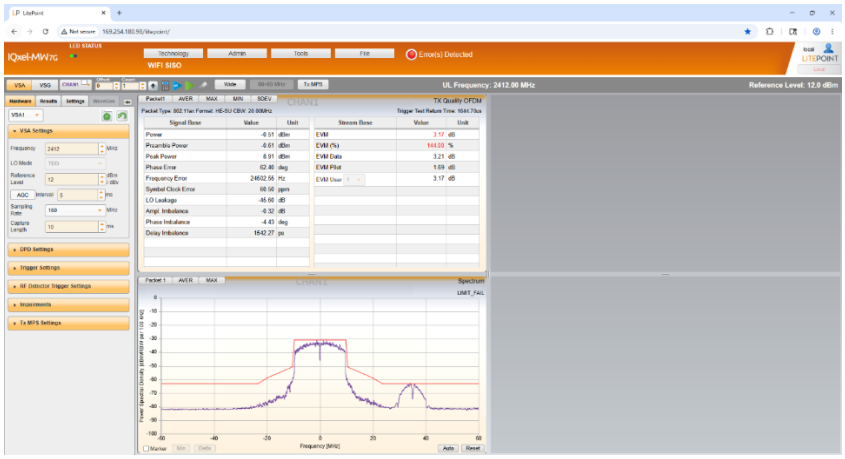


ax_ch1_MCS0_5dbm



Commands: ax_ch1_MCS0_0dbm

calibrator wlan0 cc33xx_plt stop_tx
calibrator wlan0 cc33xx_plt tune_channel 1 0 0
calibrator wlan0 cc33xx_plt set_manual_calib -tx 1 -rx 1
calibrator wlan0 cc33xx_plt set_tx -default 0
calibrator wlan0 cc33xx_plt set_tx -preamble_type 5 -phy_rate 13 -tx_power 15 -length const packet 1500 -delay 50
calibrator wlan0 cc33xx_plt start_tx



Observed the spike in the channel