

QCC730 FM01.1 WLAN xPA DVT Test Report

80-WL730-71 Rev. AC

Revision History

Revision	Date	Description
AA	April 2024	Initial release
AB	July 2024	Updated test results for CS release
AC	March 2025	Updated for customer release. No technical content was changed in this revision.

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Section 1

Test Setup Information

DUT Information

This document describes the hardware used for DVT test data.

■ Test sample information:

- MCN: 30-72410-710 Rev: A
- Sample size: 1
- Tx/Rx chains: One Tx, one Rx.
- Firmware: FW147
- Sample type: 1xTT
- Temperature: 25°C, - 20°C, and 85°C
- Boards tested: D377

■ Board configuration:

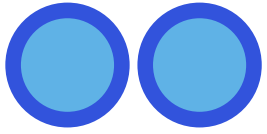
- 38.4 MHz on module
- 2G xPA: SGM22001AYTLAF18G
- 5G/6G xPA: SGM23001AYTLAG16G



Section 2

WLAN Tx Pout Vs. EVM

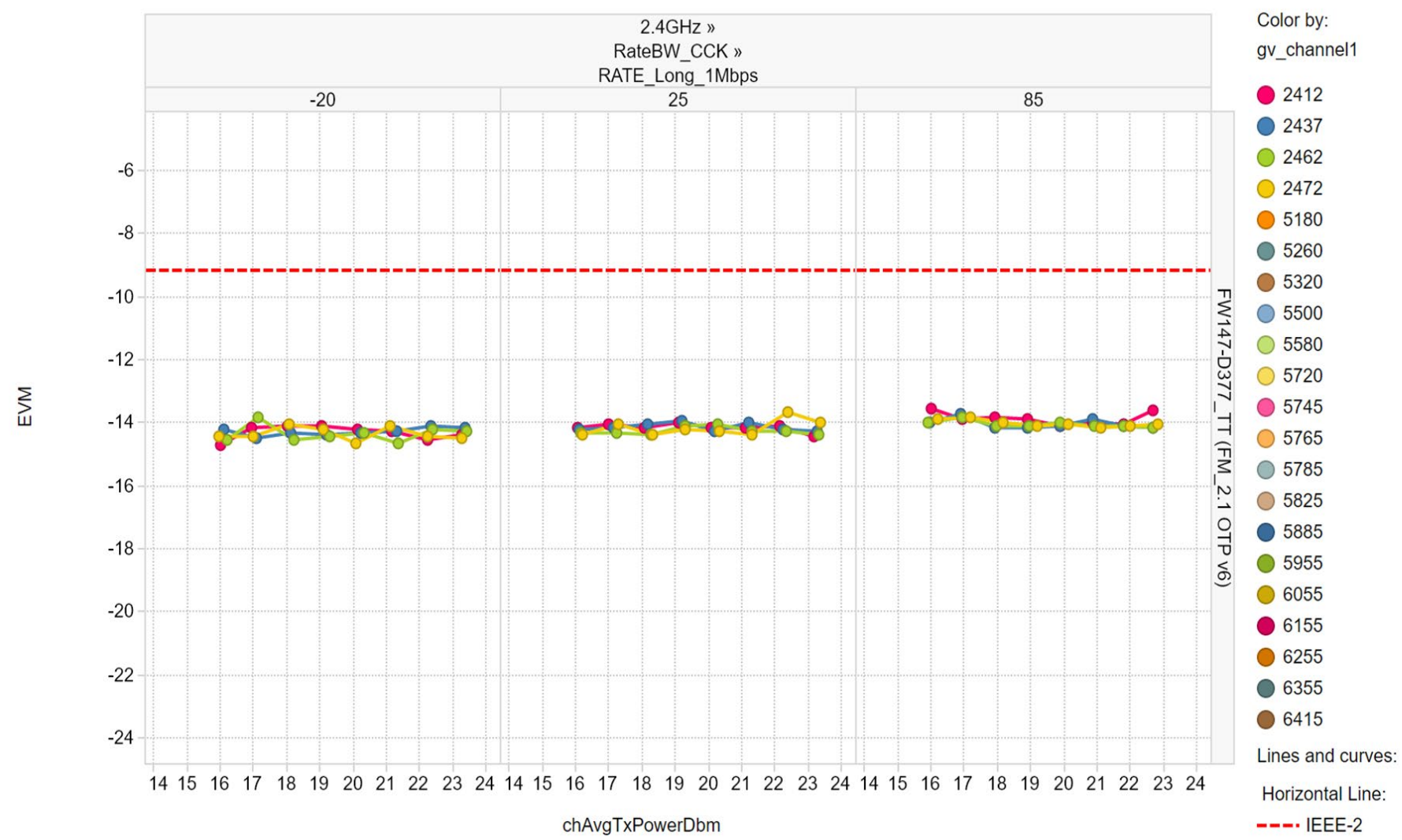
2.1 Tx EVM 2.4 GHz	7
2.2 Tx EVM 5 GHz	14
2.3 Tx EVM 6 GHz	19



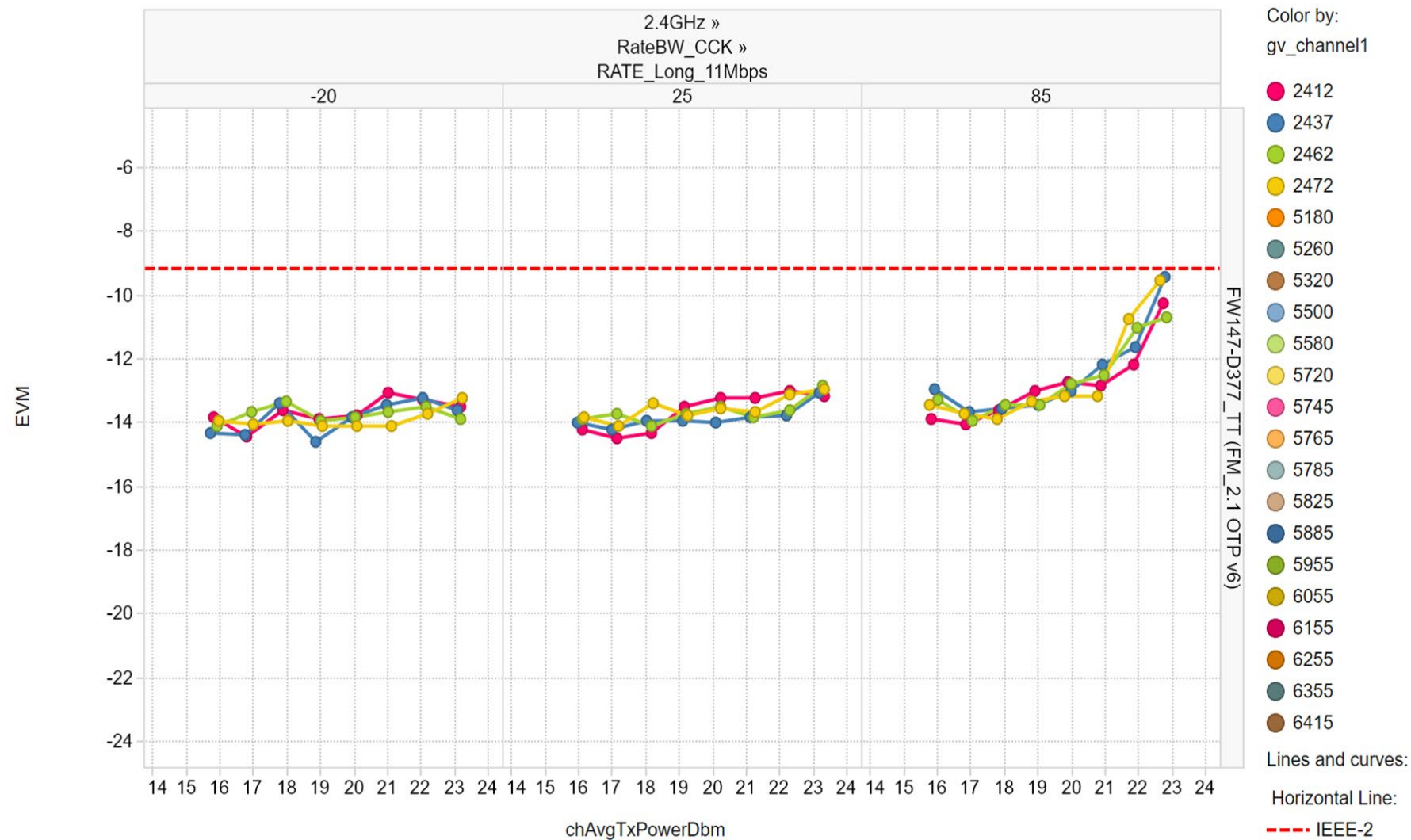
Section 2.1

Tx EVM 2.4 GHz

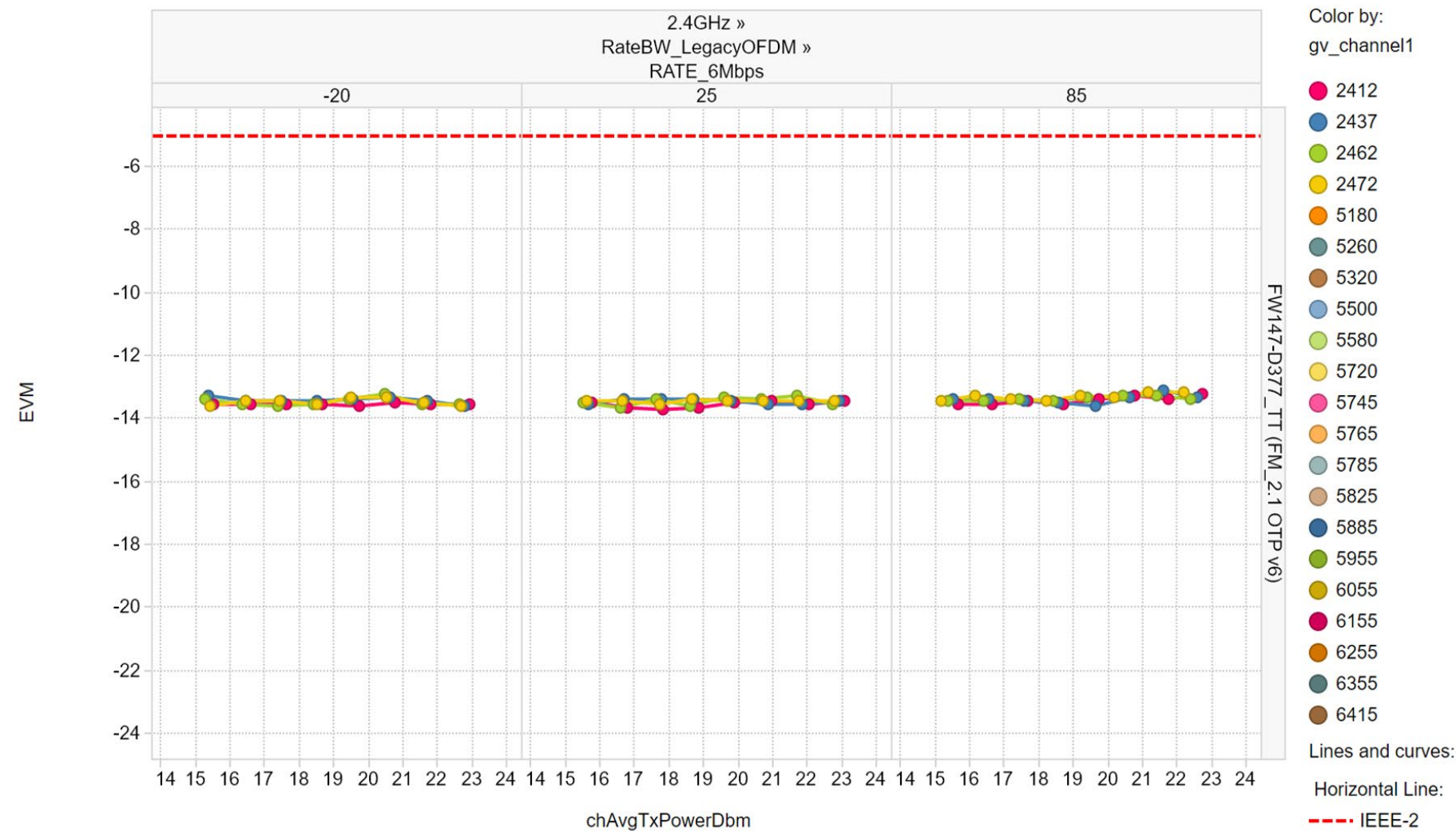
Tx EVM Summary 2.4 GHz



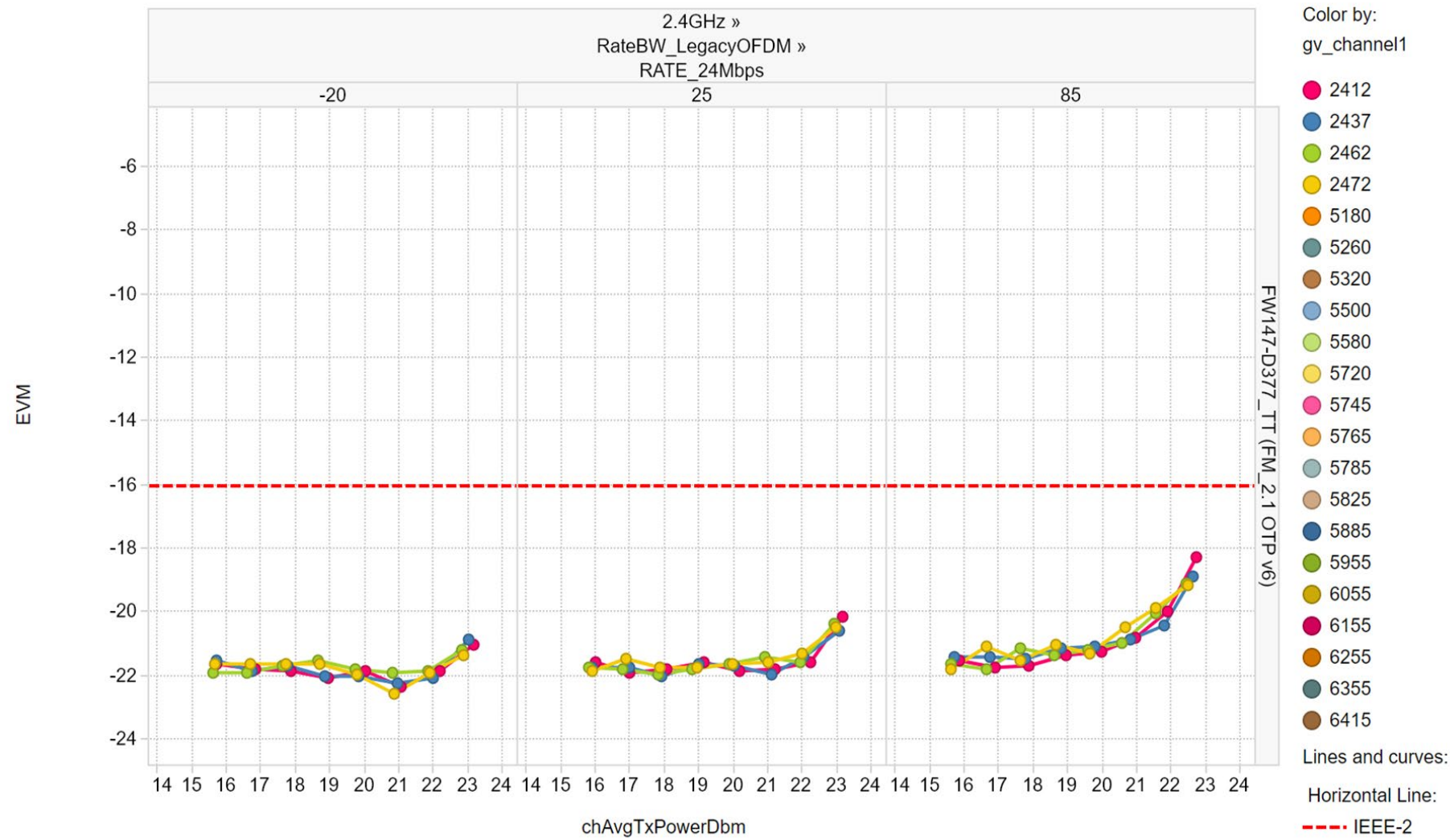
Tx EVM Summary 2.4 GHz (cont.)



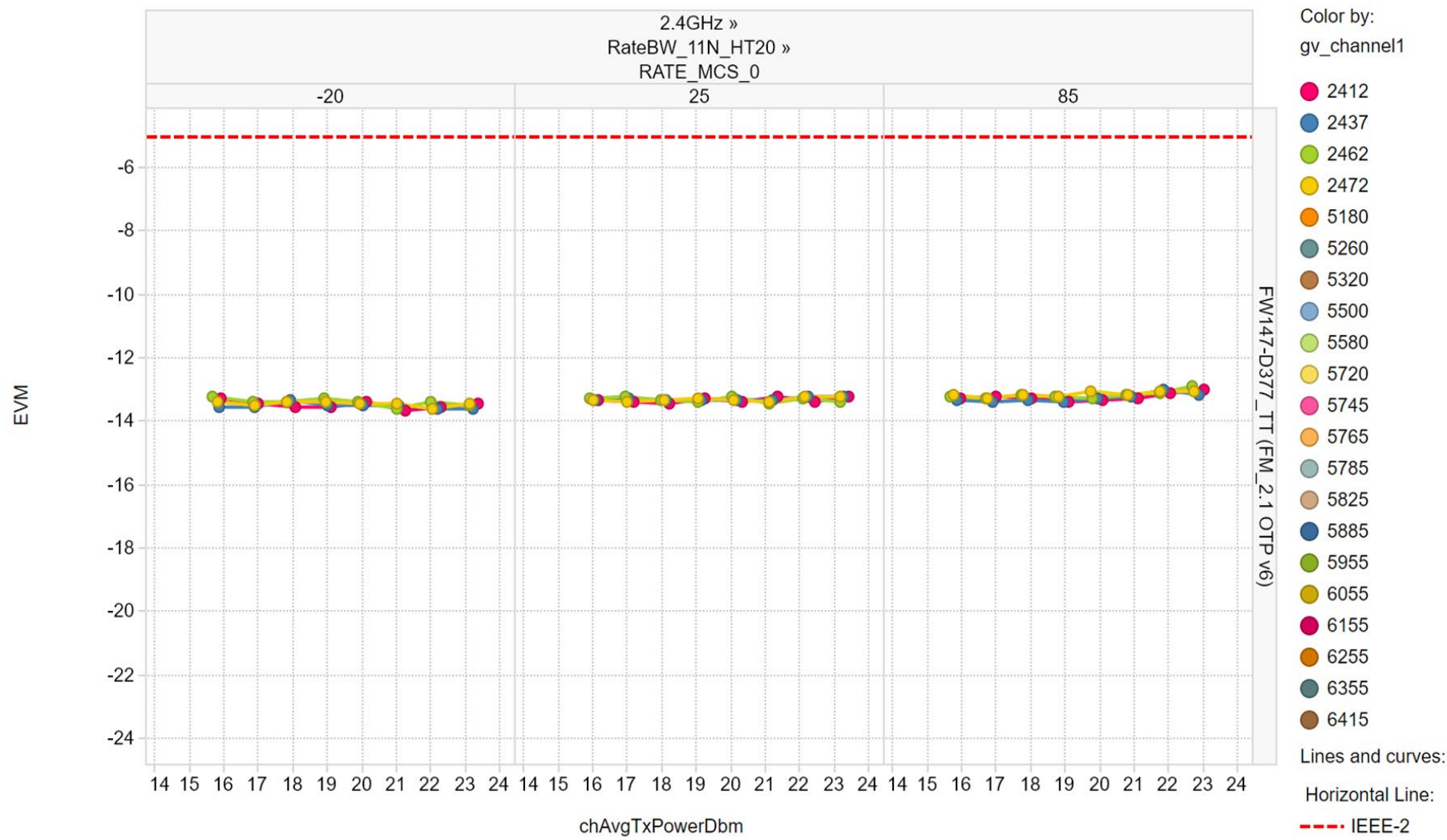
Tx EVM Summary 2.4 GHz (cont.)



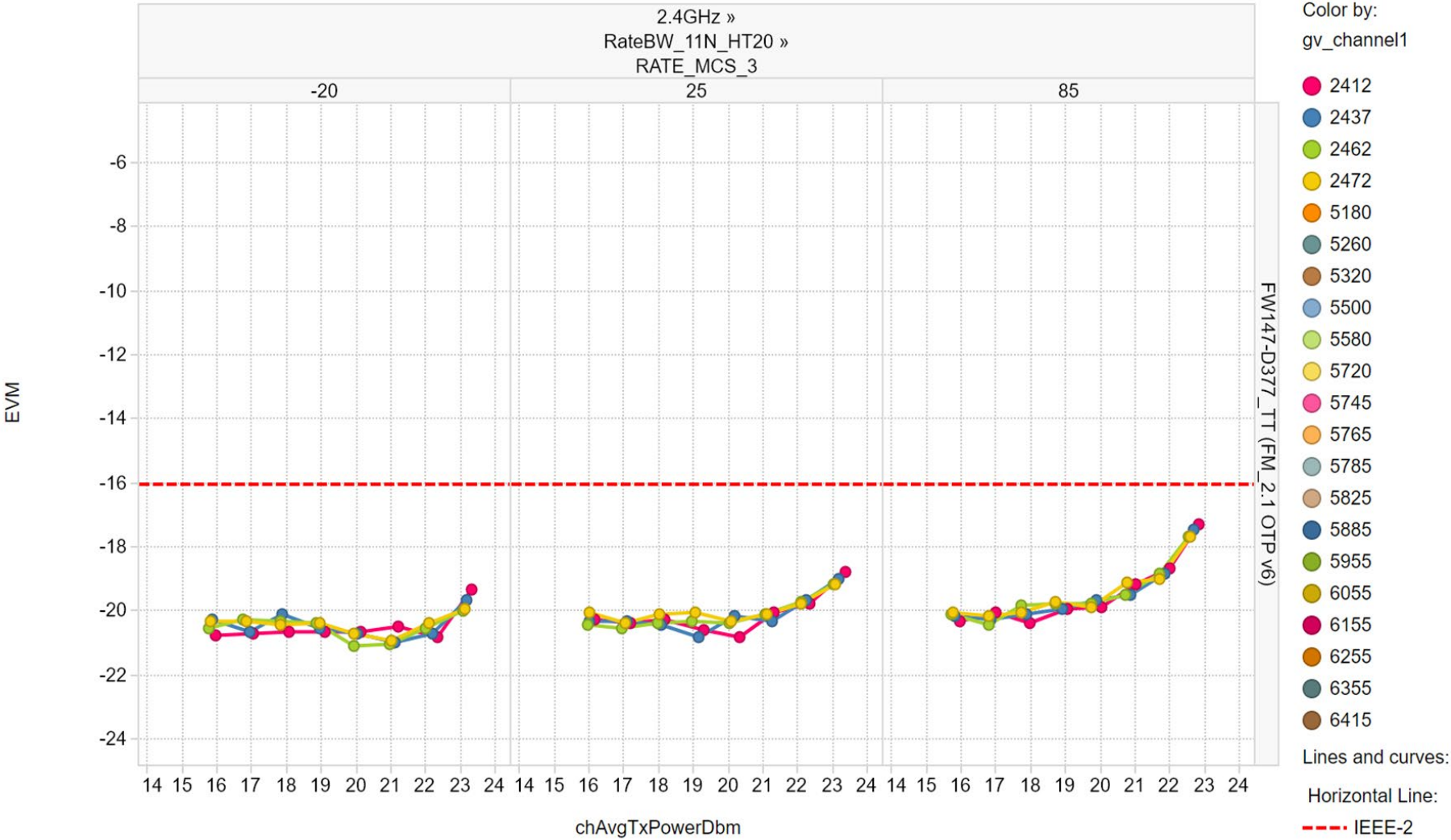
Tx EVM Summary 2.4 GHz (cont.)

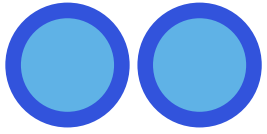


Tx EVM Summary 2.4 GHz (cont.)



Tx EVM Summary 2.4 GHz (cont.)

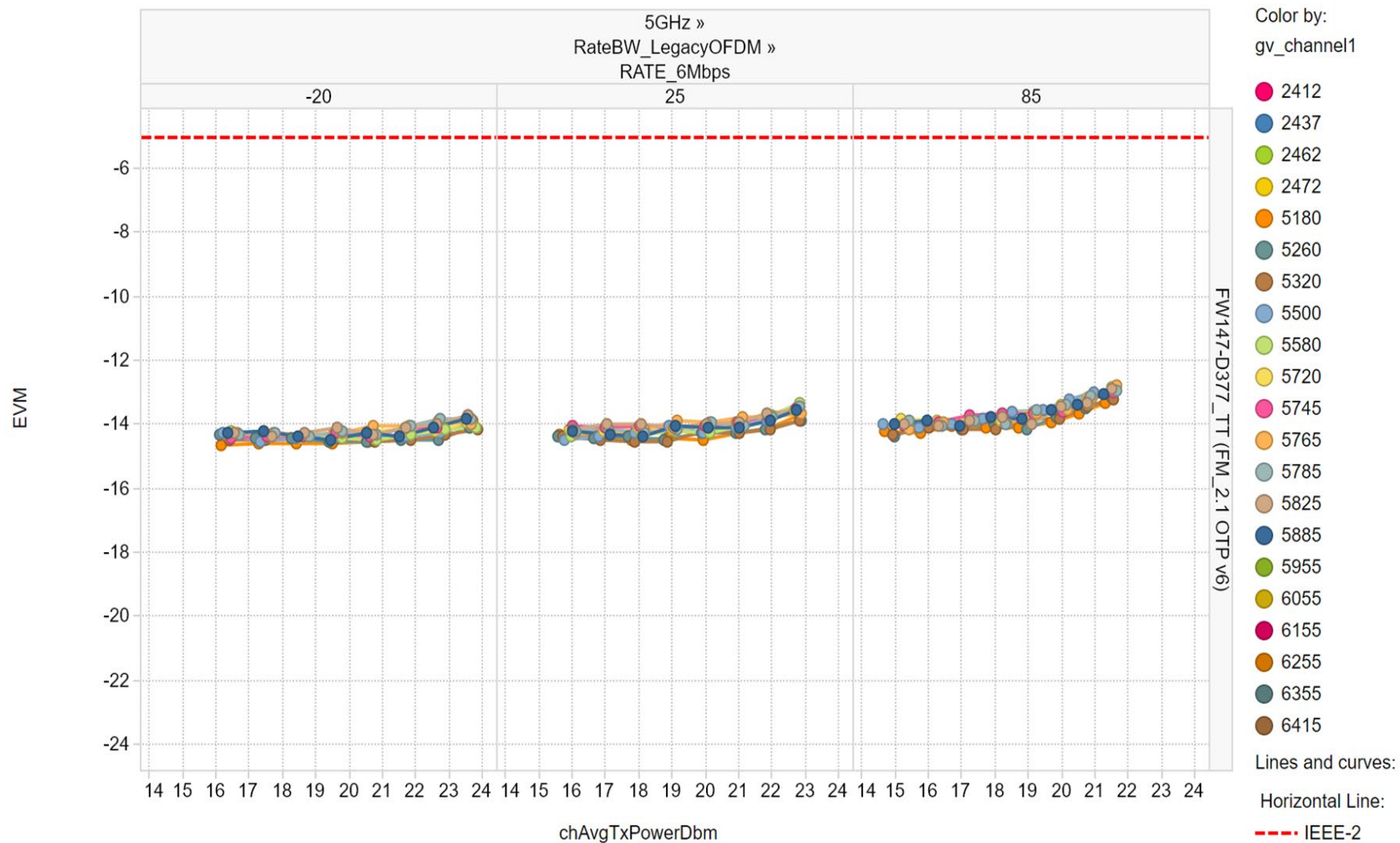




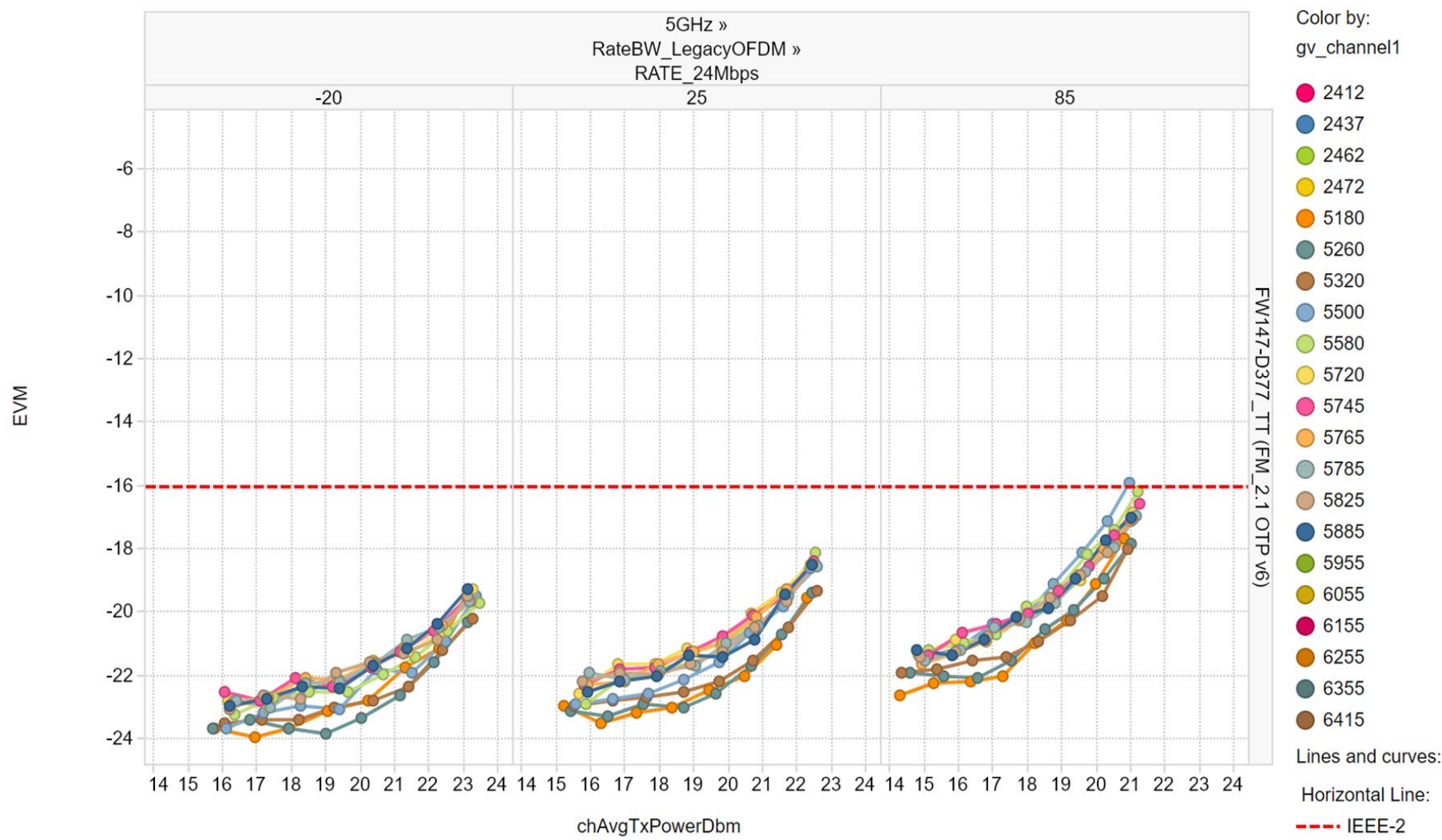
Section 2.2

Tx EVM 5 GHz

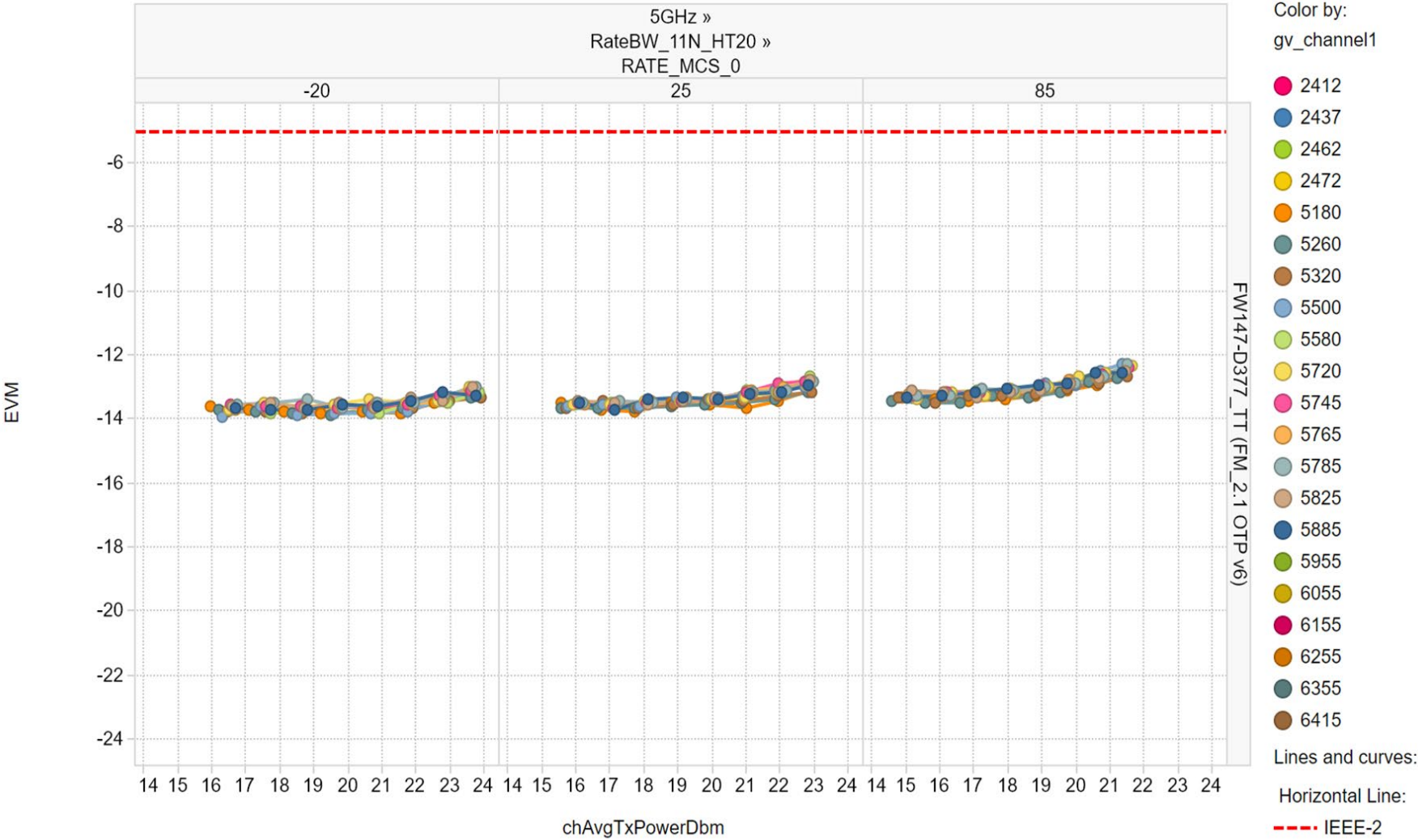
Tx EVM Summary 5 GHz



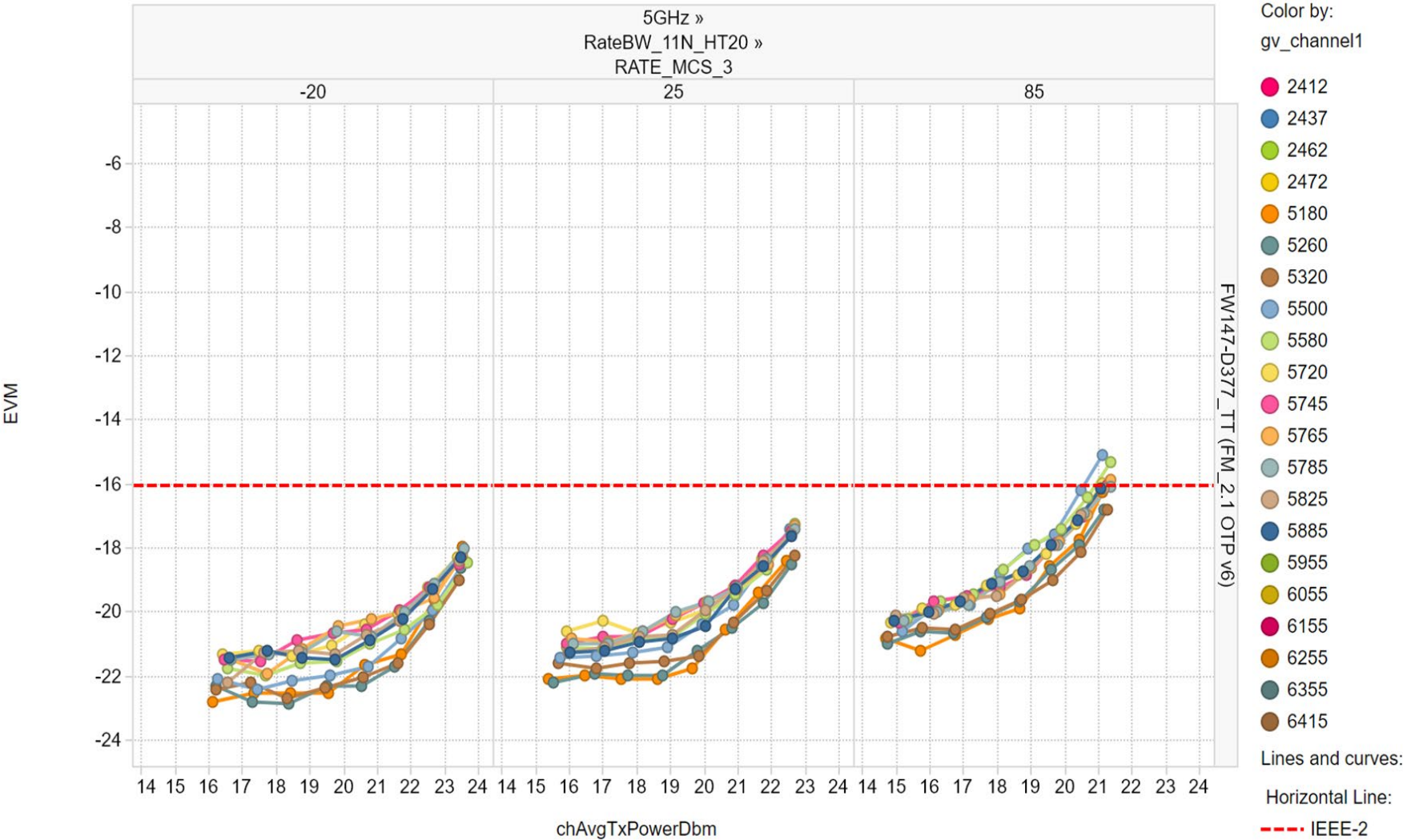
Tx EVM Summary 5 GHz (cont.)

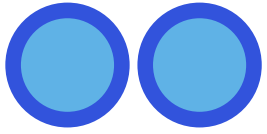


Tx EVM Summary 5 GHz (cont.)



Tx EVM Summary 5 GHz (cont.)

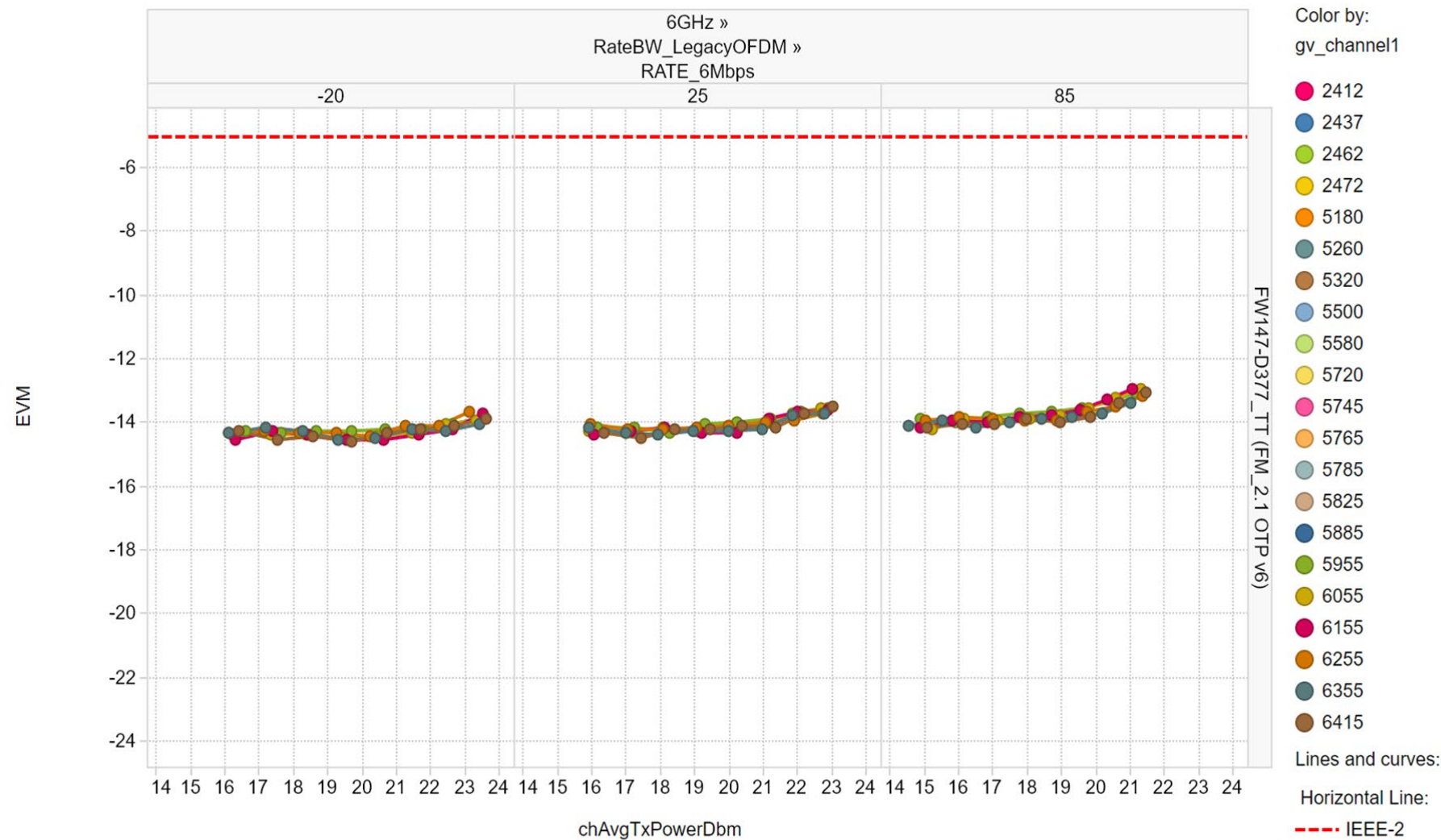




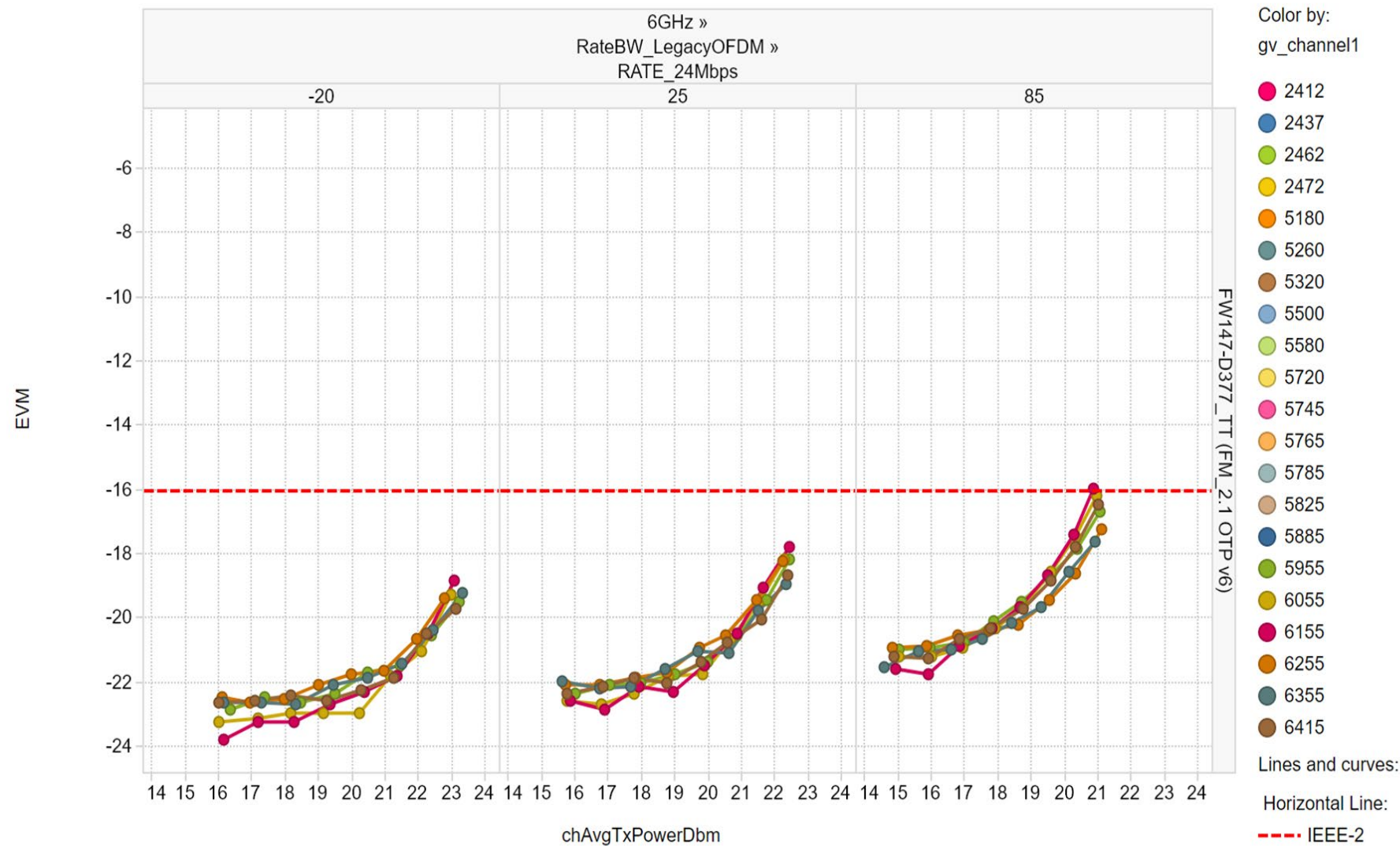
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Tx EVM 6 GHz

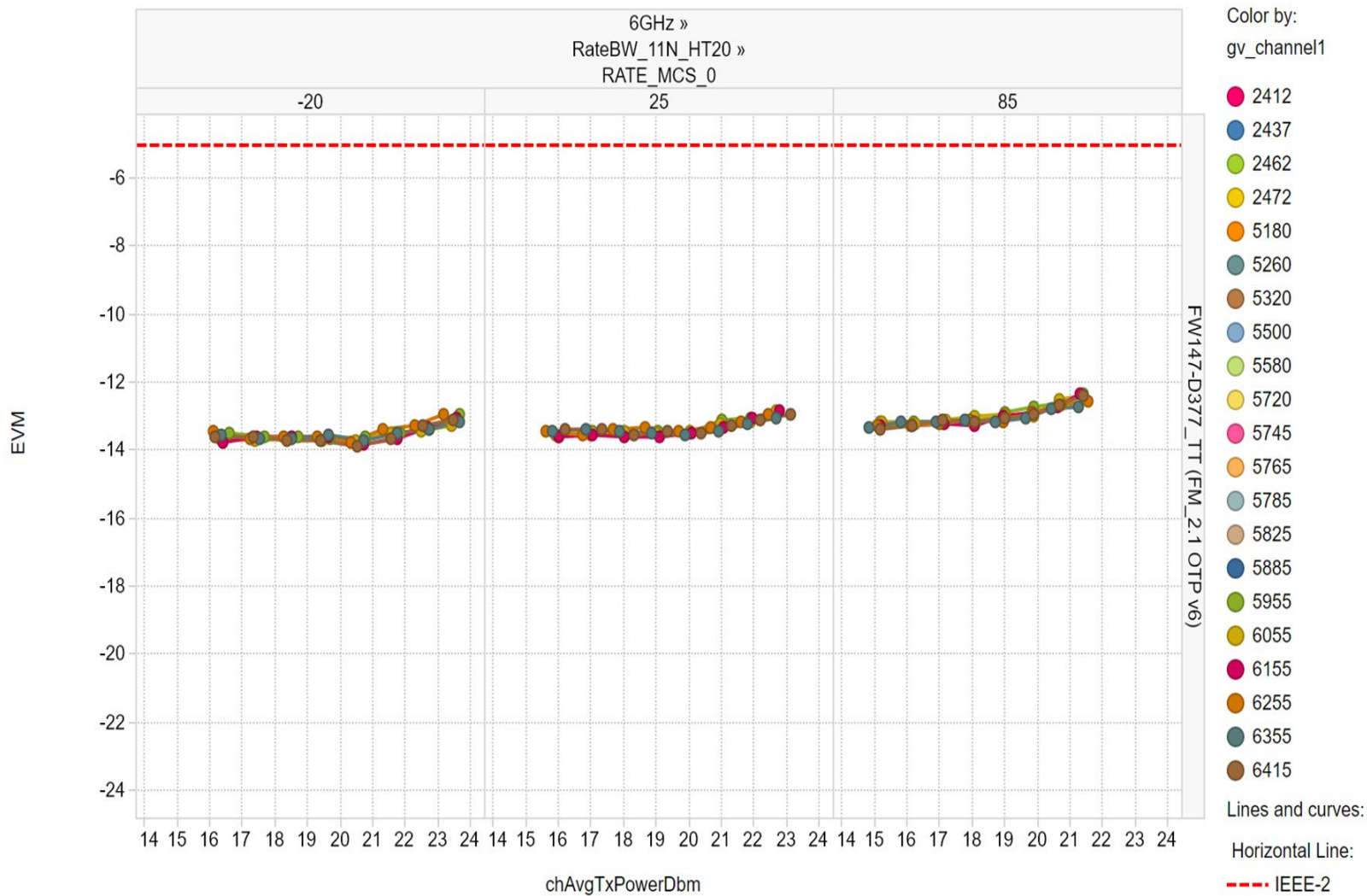
Tx EVM Summary 6 GHz



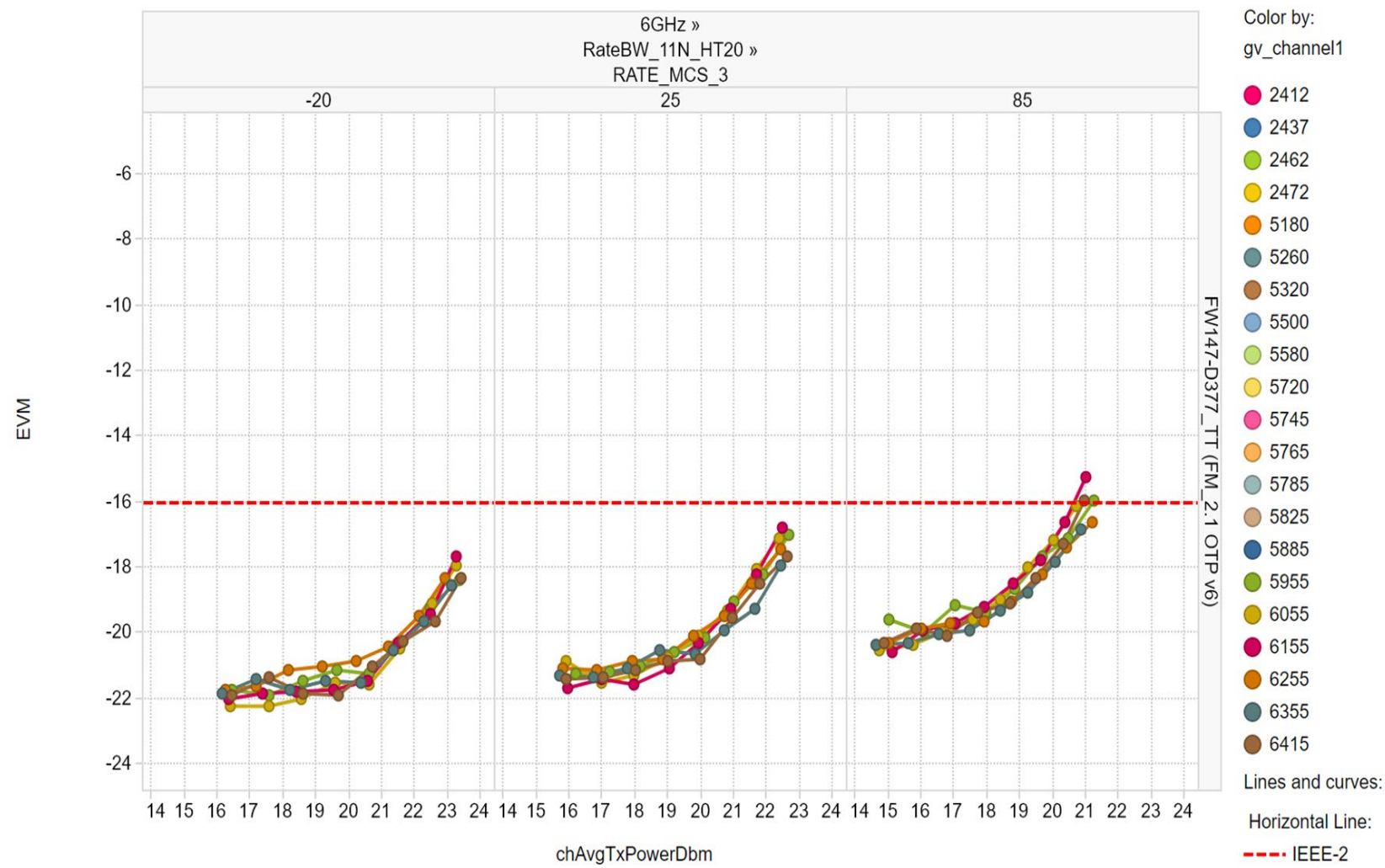
Tx EVM Summary 6 GHz (cont.)



Tx EVM Summary 6 GHz (cont.)



Tx EVM Summary 6 GHz (cont.)

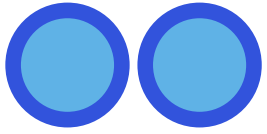




Section 3

WLAN Tx Mask (SEM)

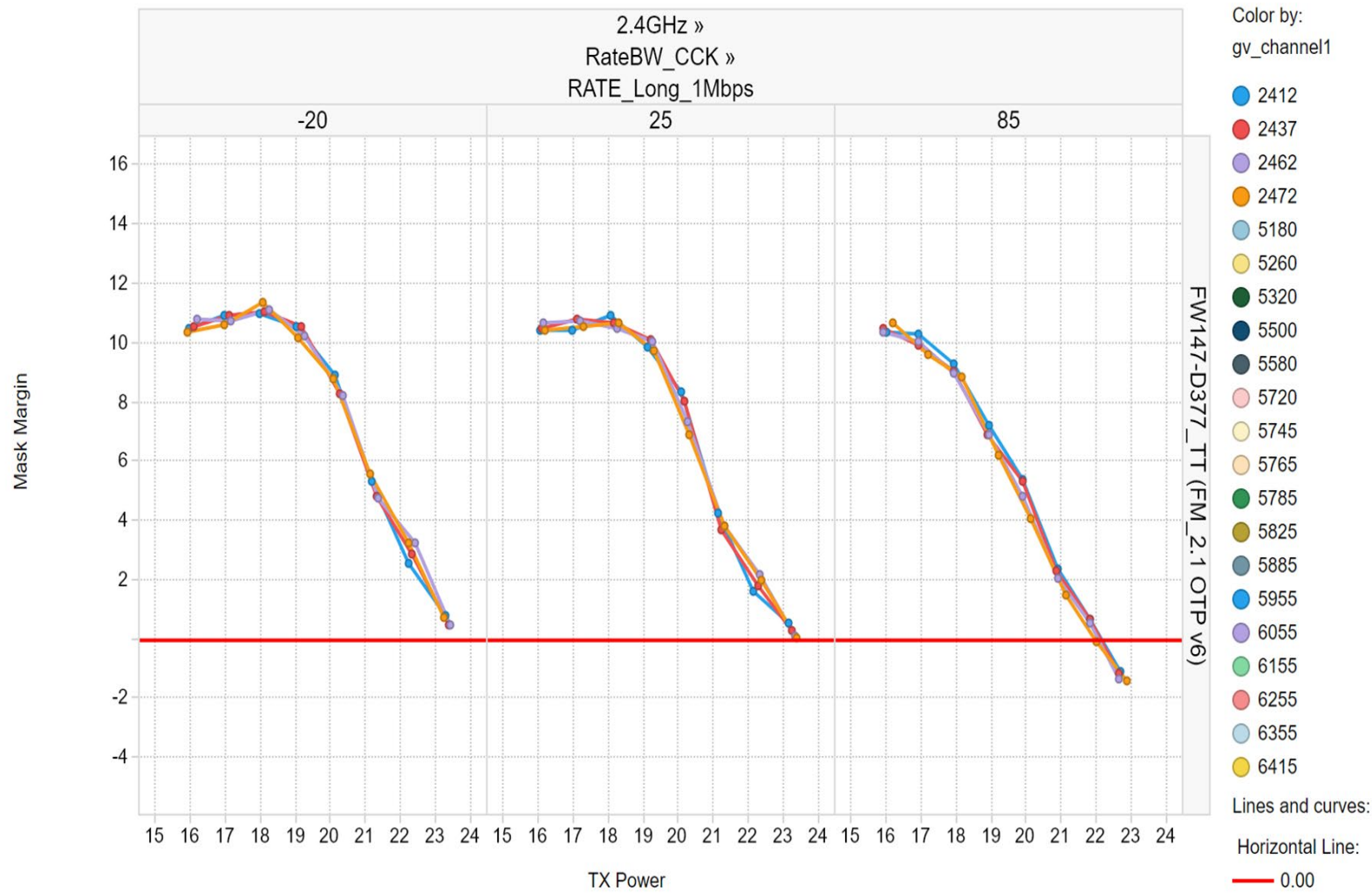
3.1 Tx Mask 2.4 GHz	<u>25</u>
3.2 Tx Mask 5 GHz	<u>32</u>
3.3 Tx Mask 6 GHz	<u>37</u>



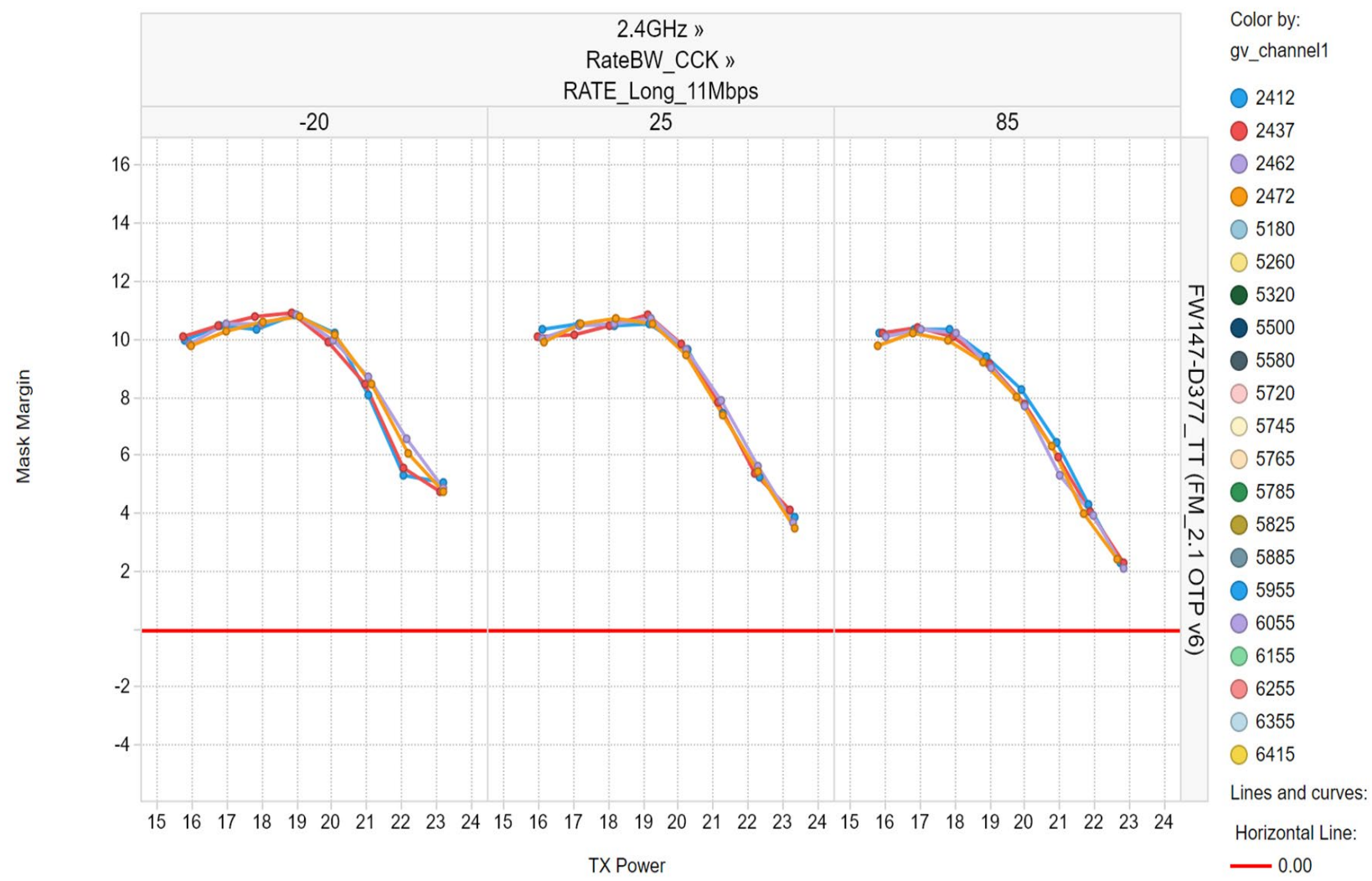
Section 3.1

Tx Mask 2.4 GHz

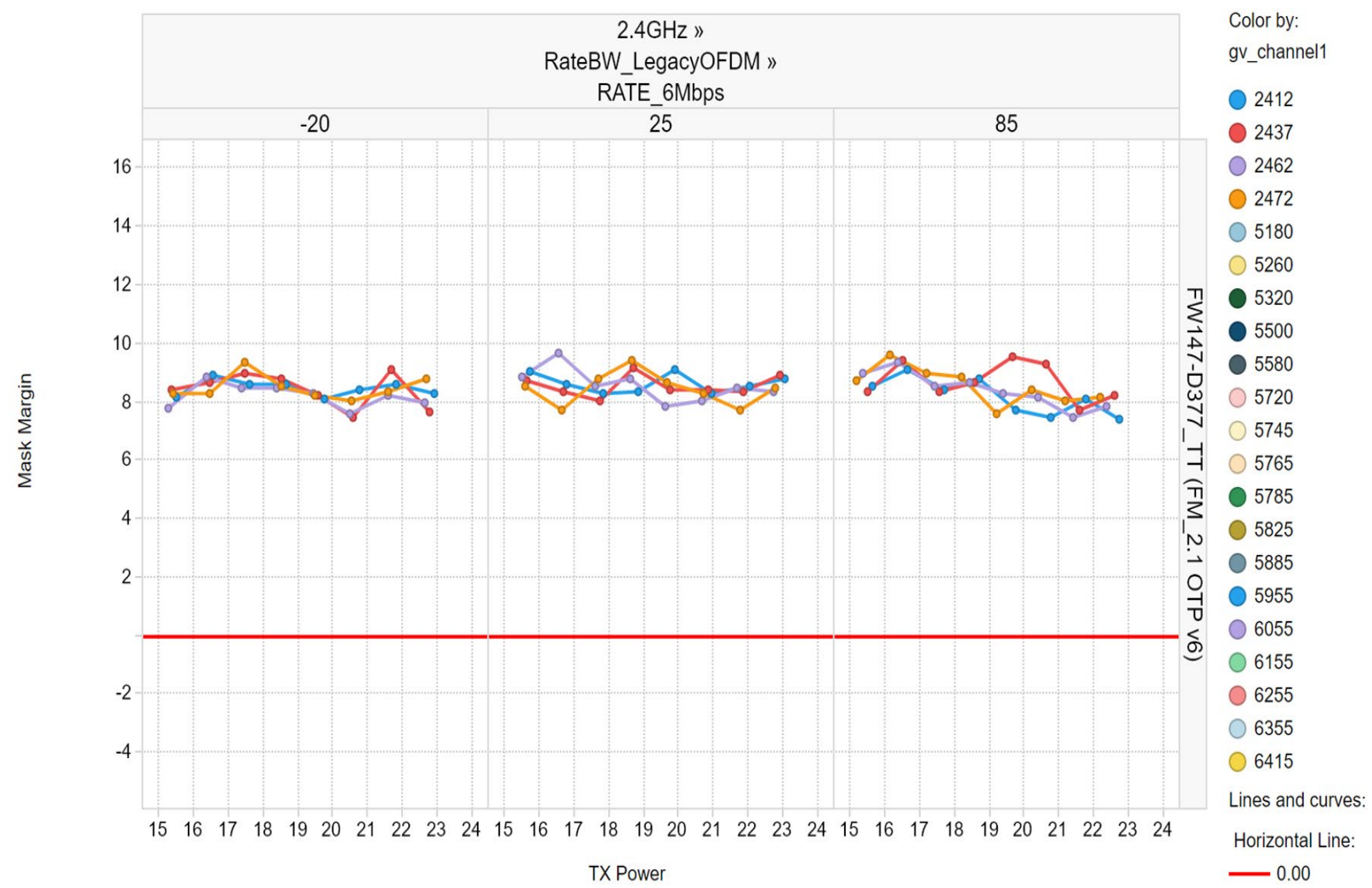
Tx Mask 2.4 GHz



Tx Mask 2.4 GHz (cont.)



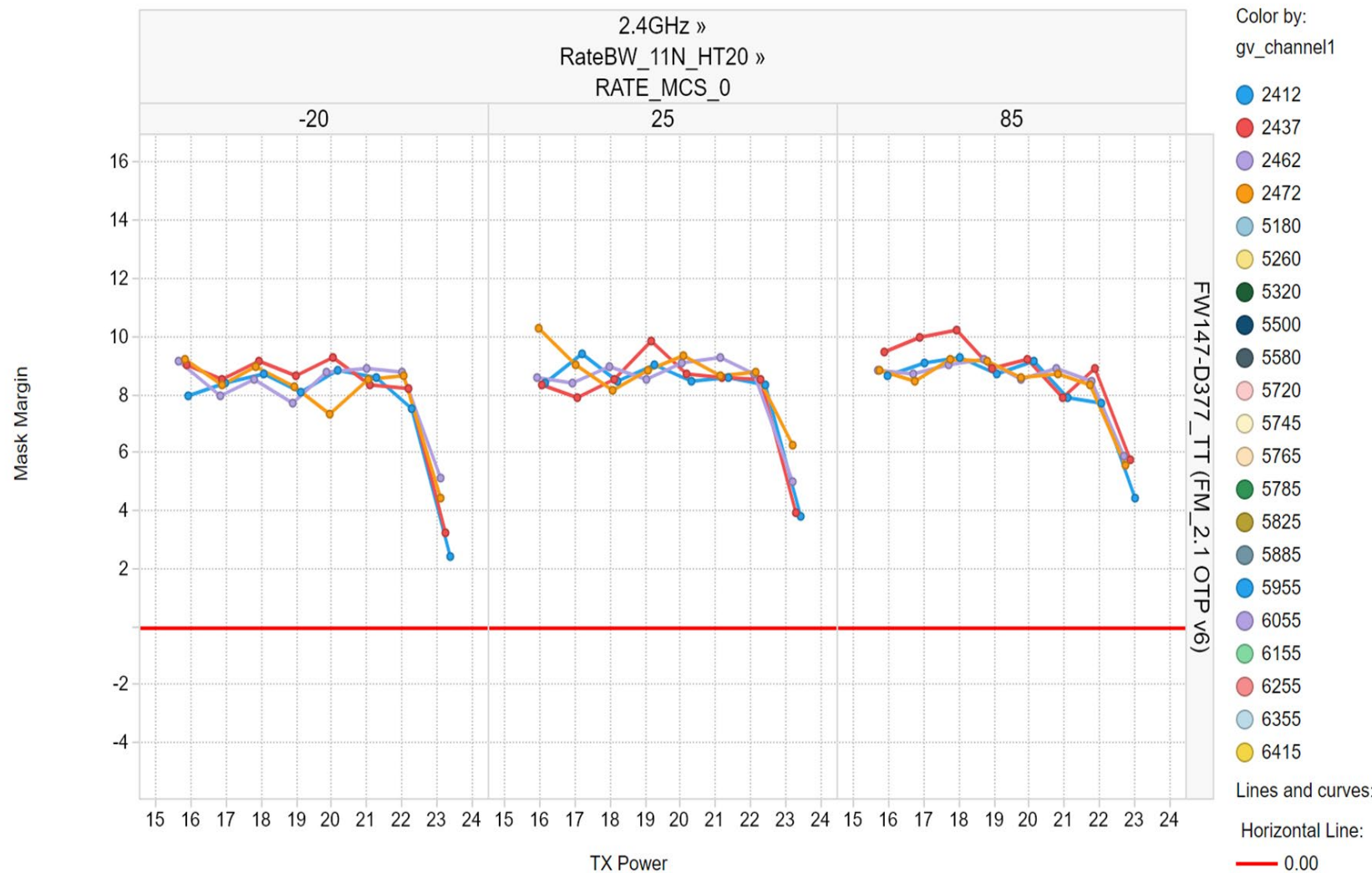
Tx Mask 2.4 GHz (cont.)



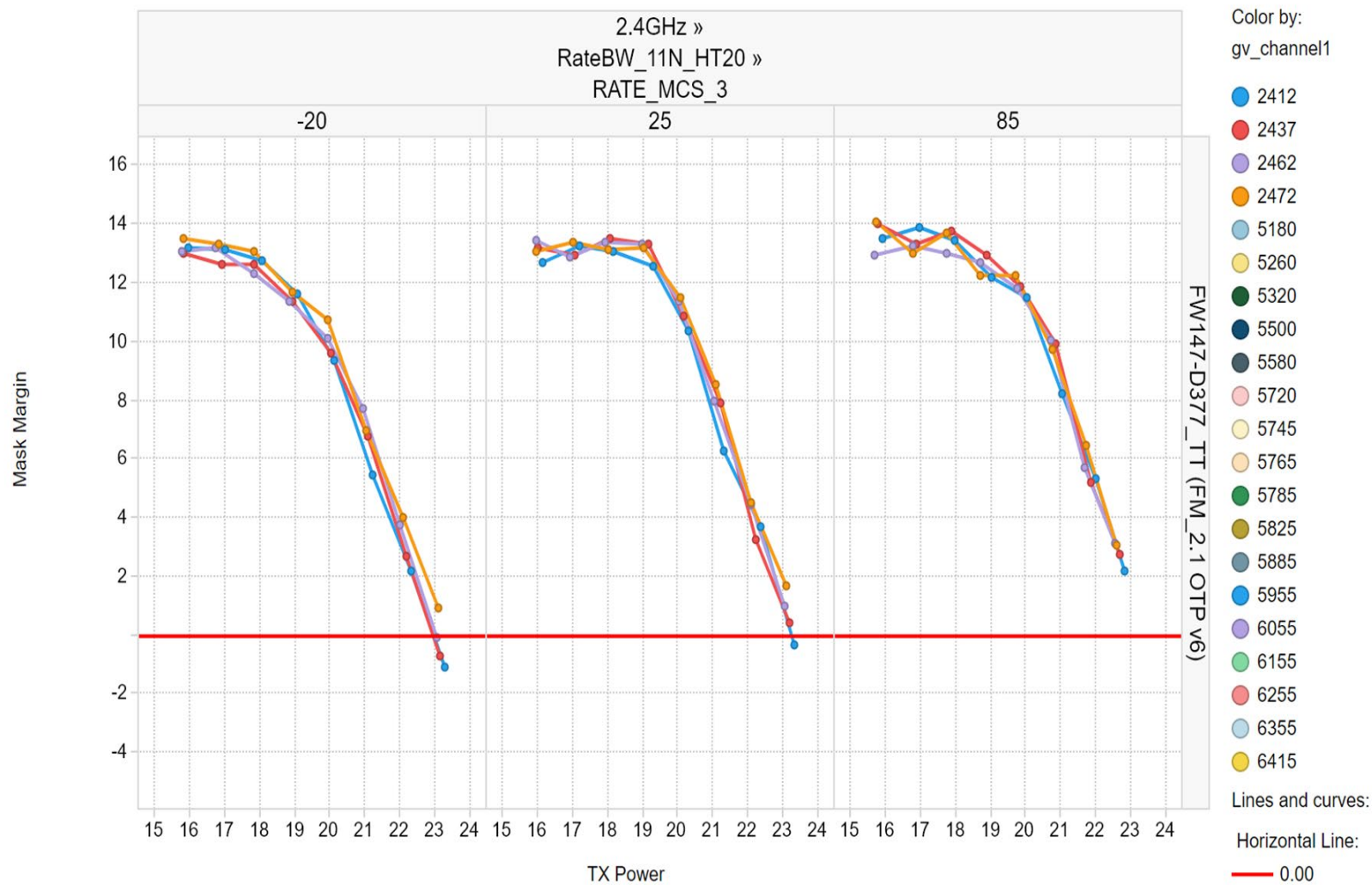
Tx Mask 2.4 GHz (cont.)

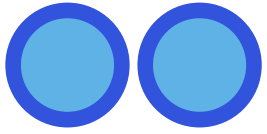


Tx Mask 2.4 GHz (cont.)



Tx Mask 2.4 GHz (cont.)

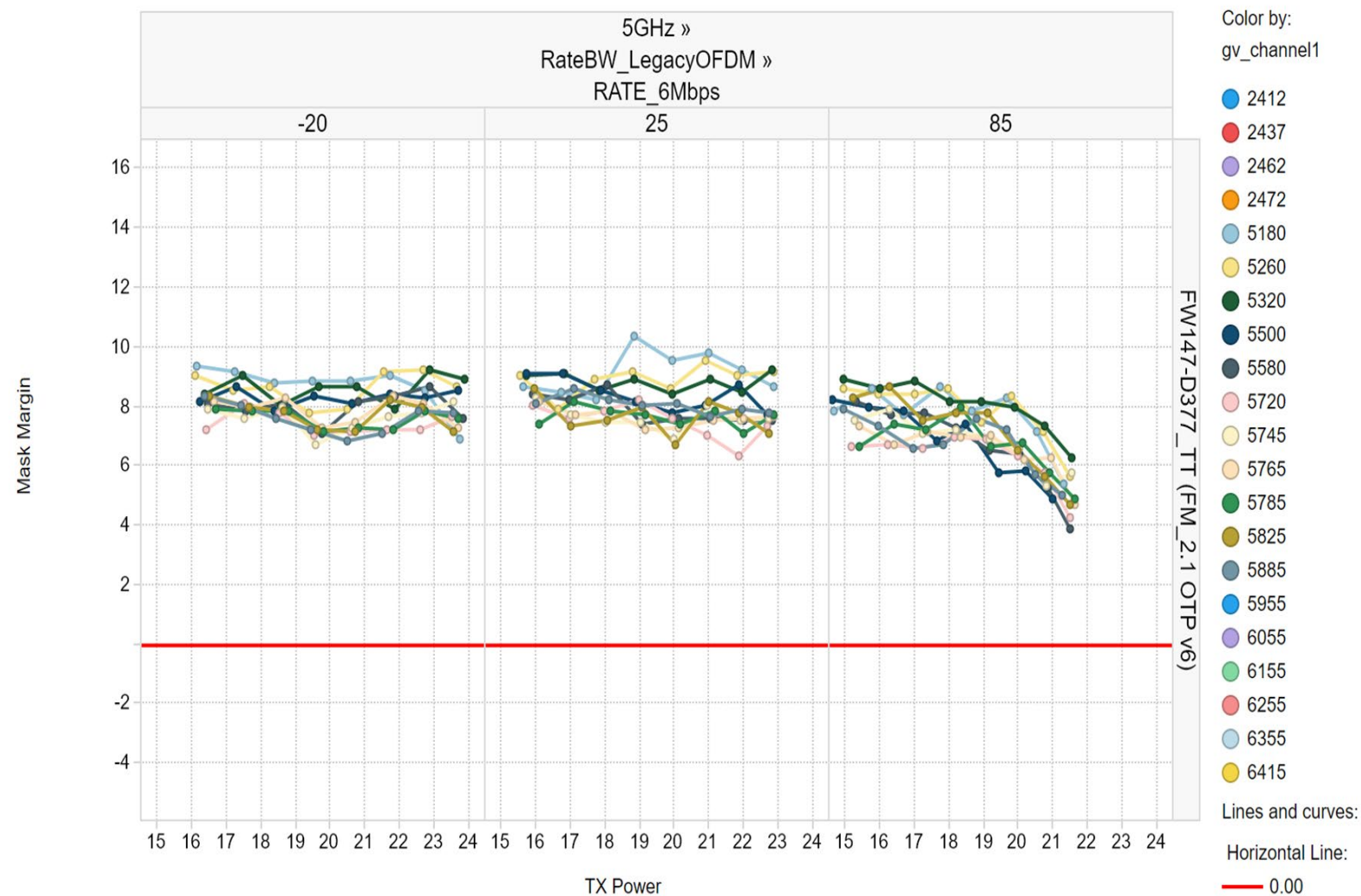




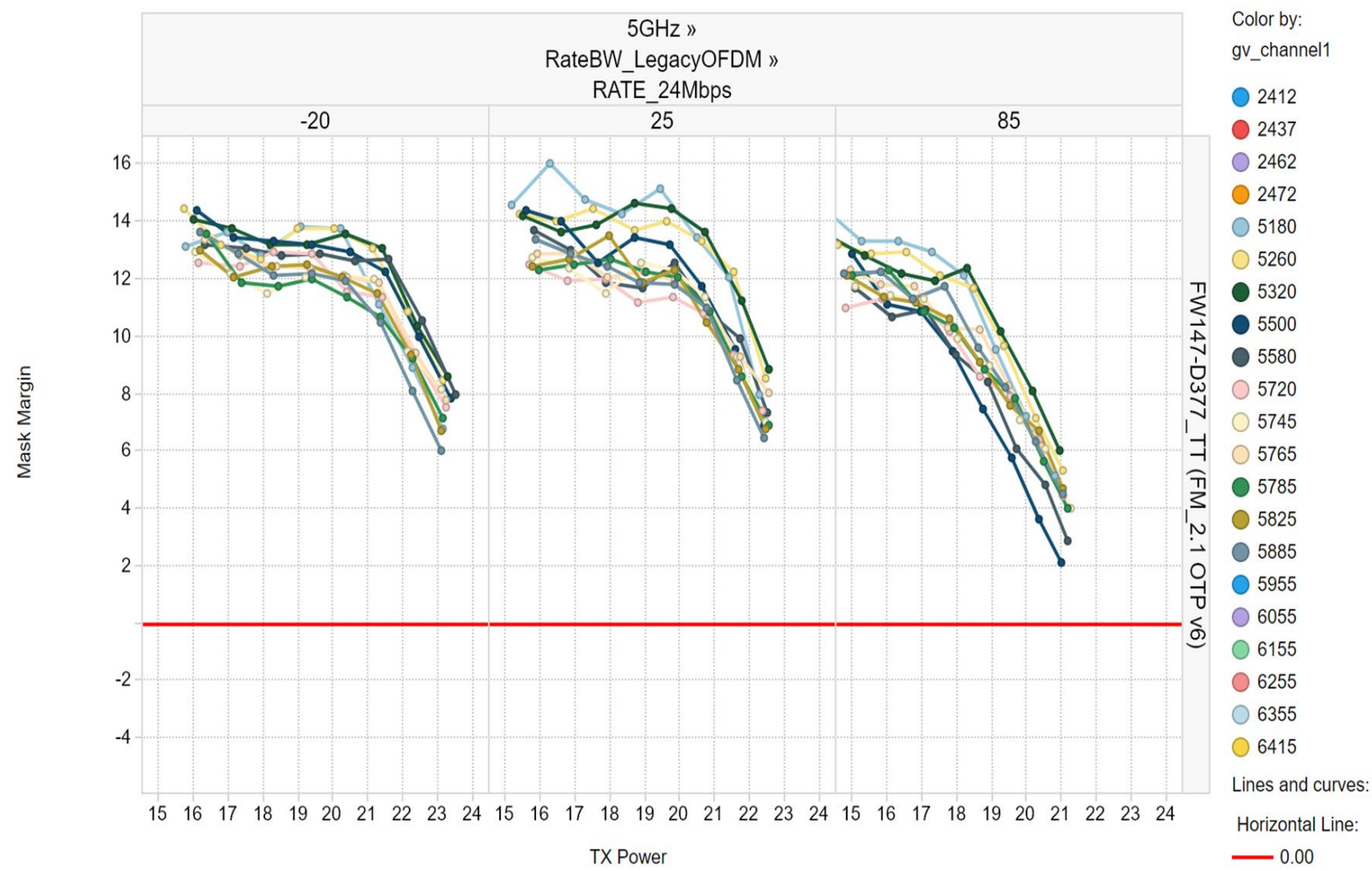
Section 3.2

Tx Mask 5 GHz

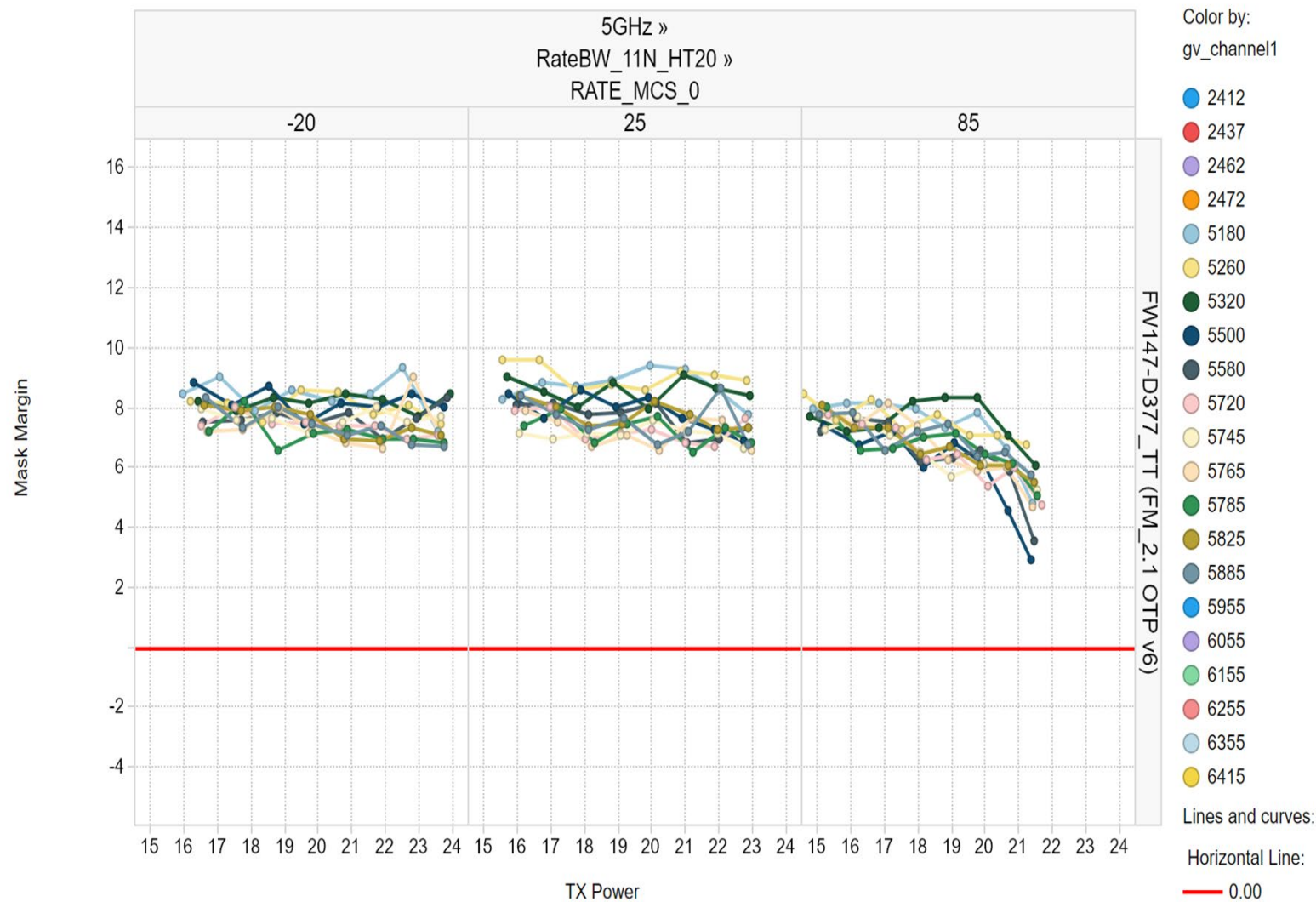
Tx Mask 5 GHz



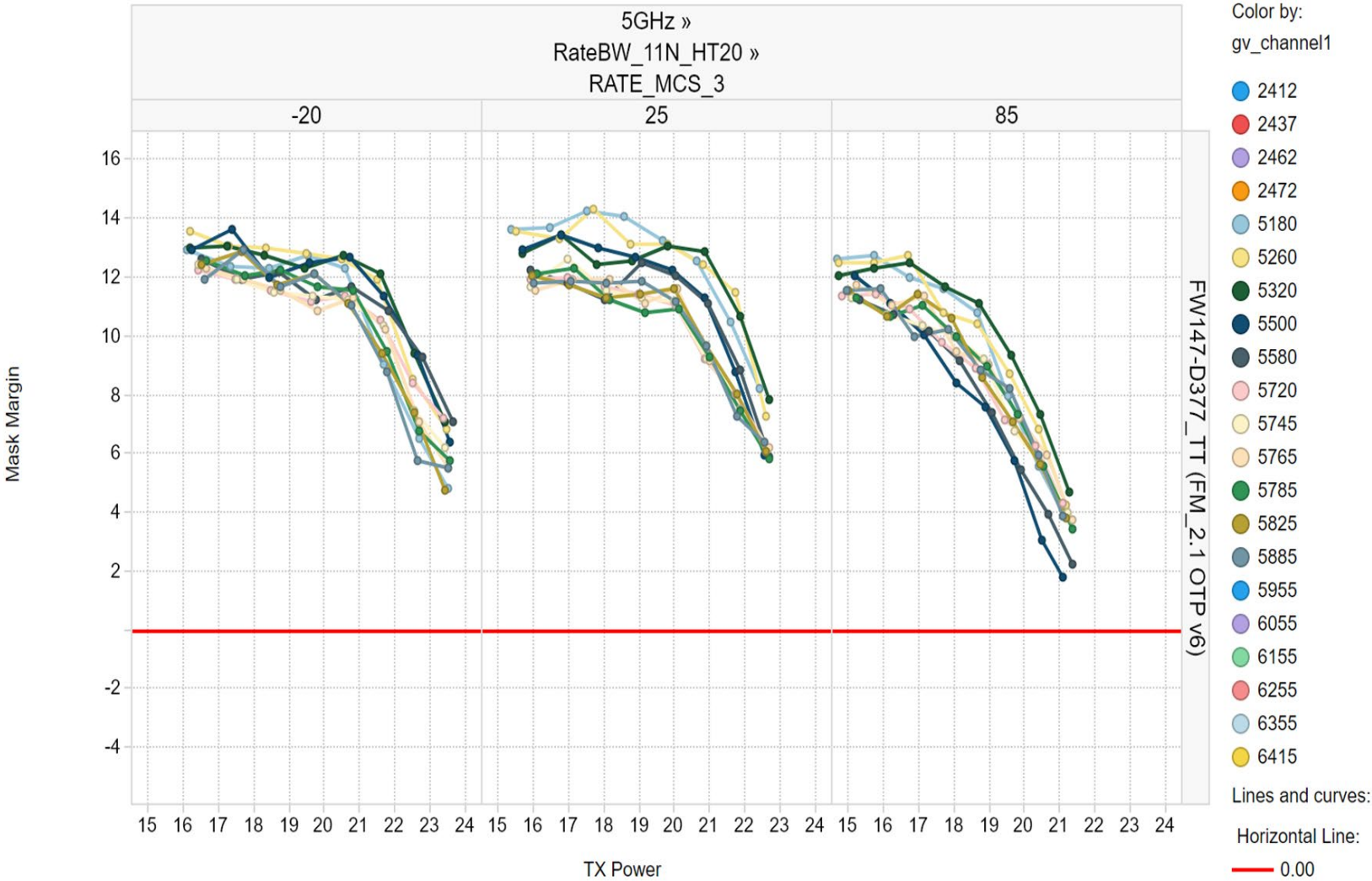
Tx Mask 5 GHz (cont.)

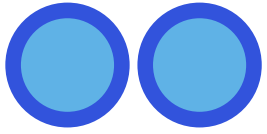


Tx Mask 5 GHz (cont.)



Tx Mask 5 GHz (cont.)

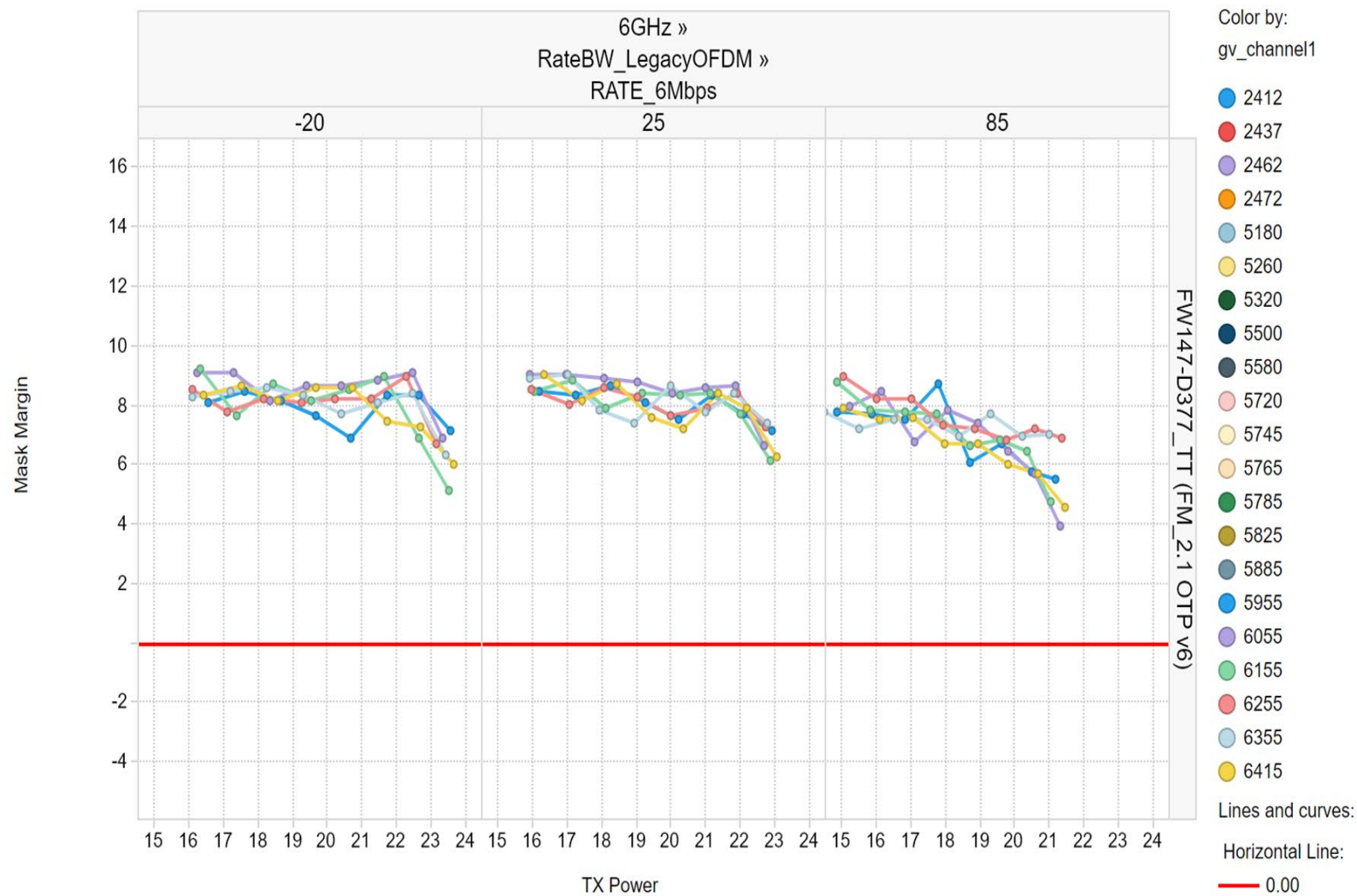




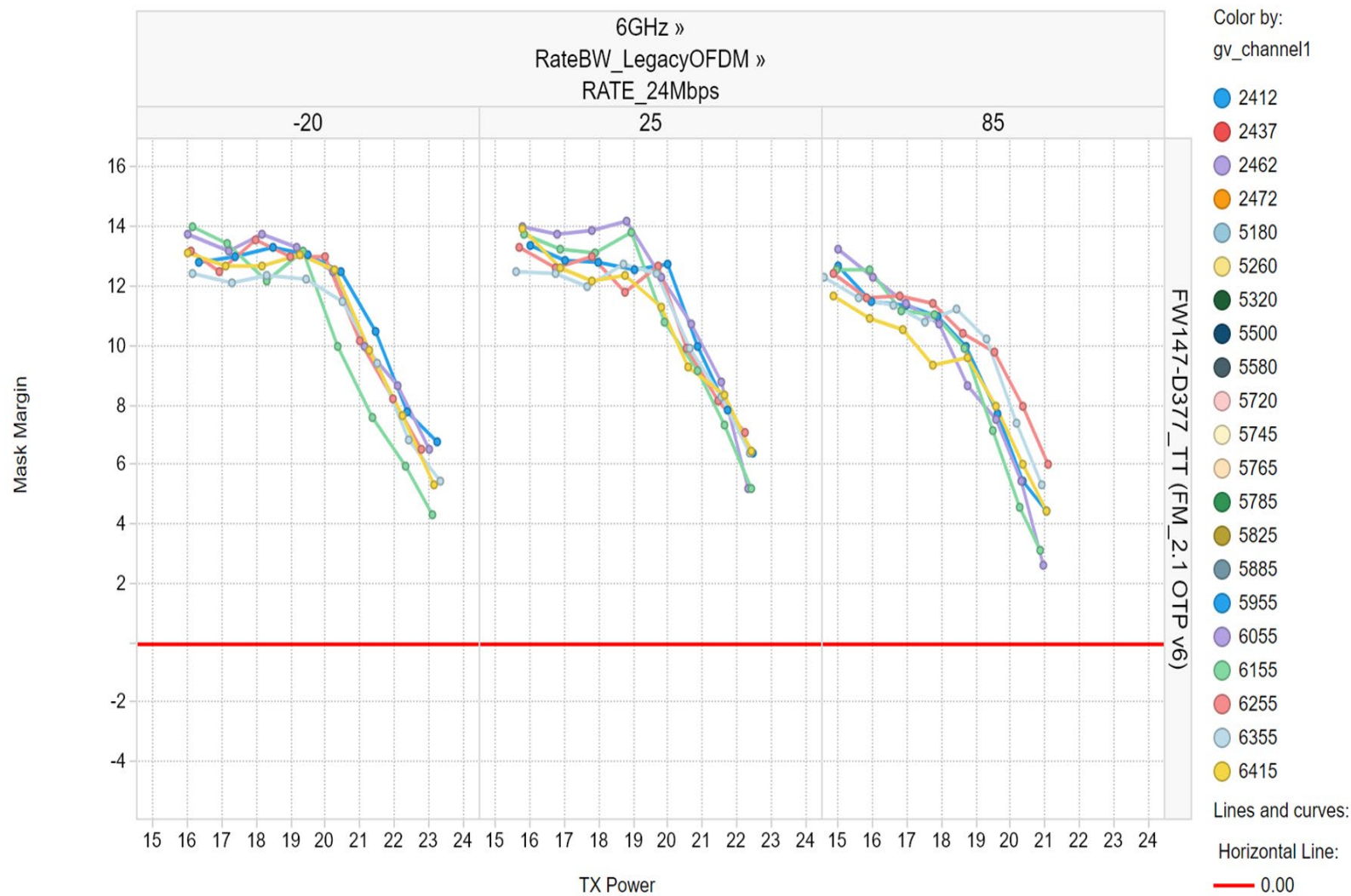
Section 3.3

Tx Mask 6 GHz

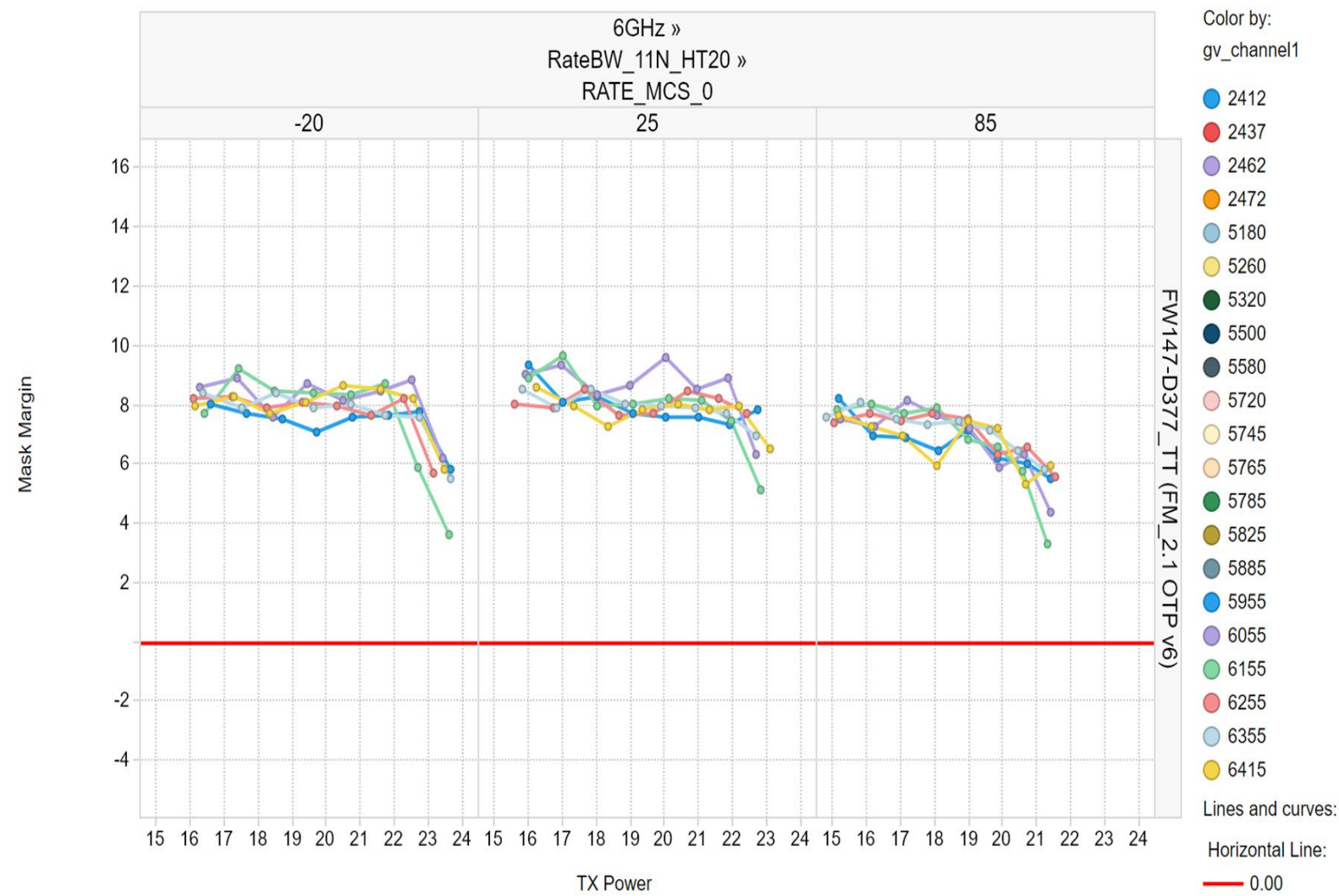
Tx Mask 6 GHz



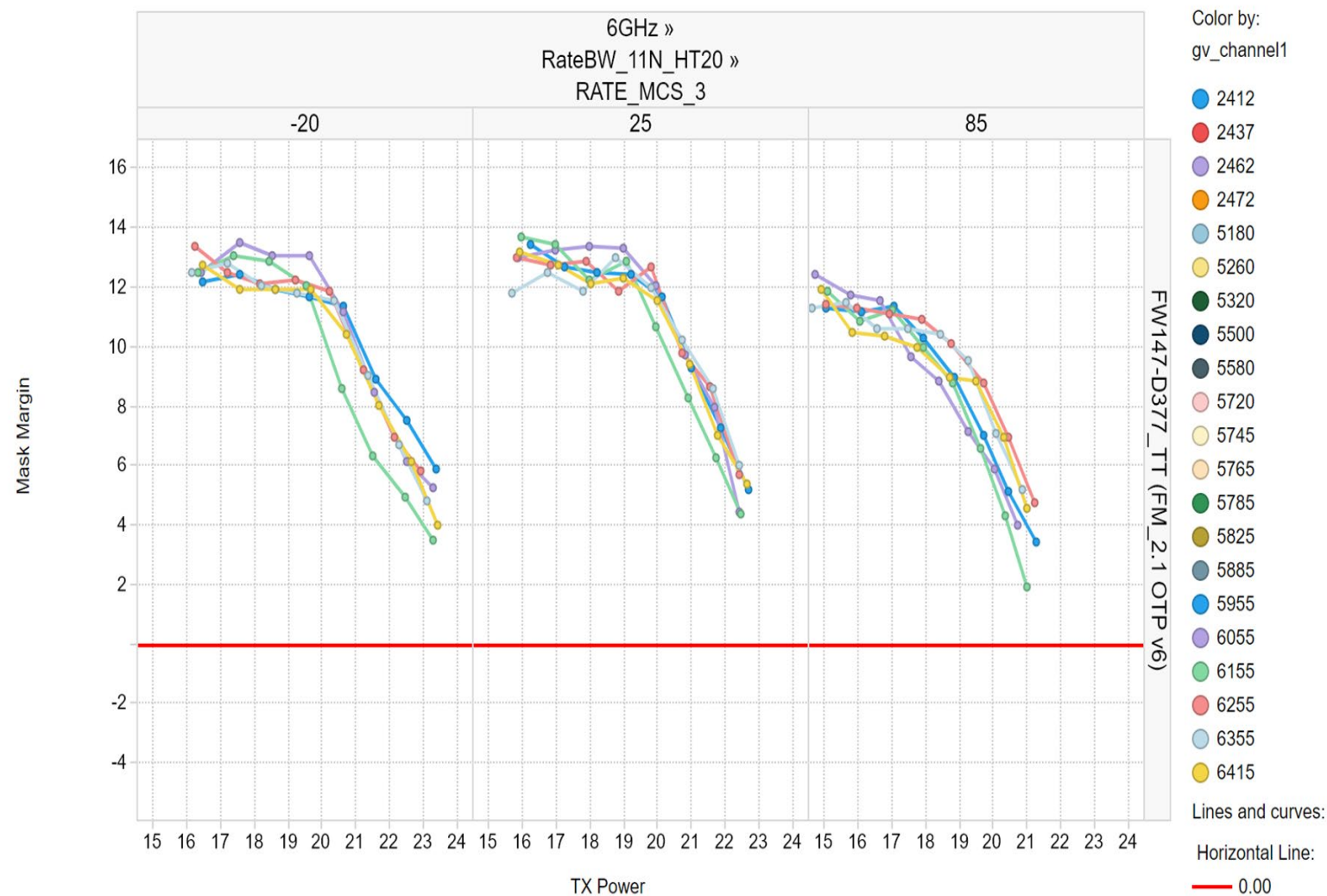
Tx Mask 6 GHz (cont.)



Tx Mask 6 GHz (cont.)



Tx Mask 6 GHz (cont.)

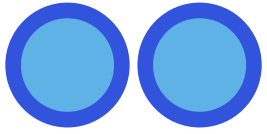




Section 4

WLAN Tx Power Accuracy

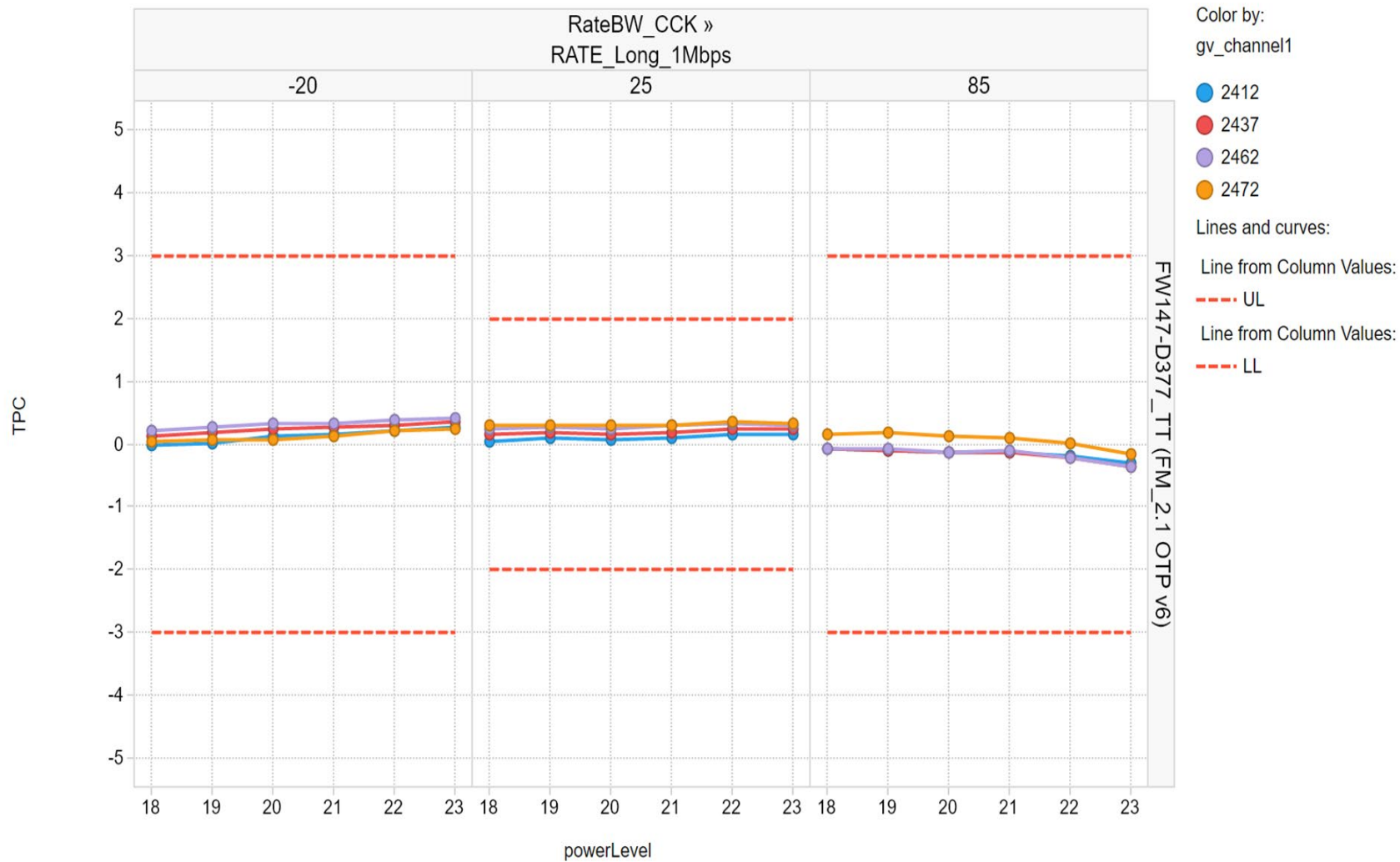
4.1 Tx TPC 2.4 GHz	43
4.2 Tx TPC 5 GHz	50
4.3 Tx TPC 6 GHz	55



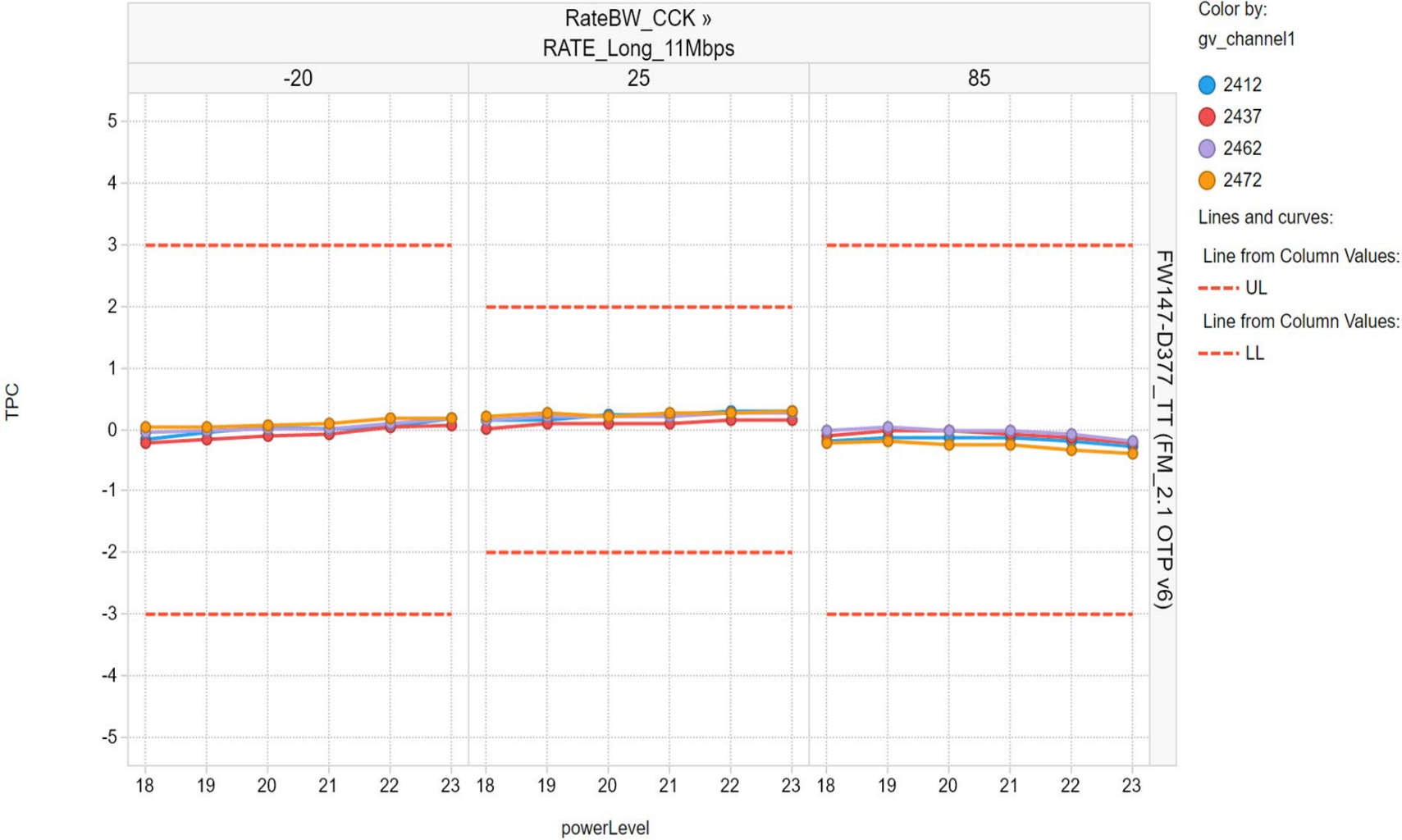
Section 4.1

Tx TPC 2.4 GHz

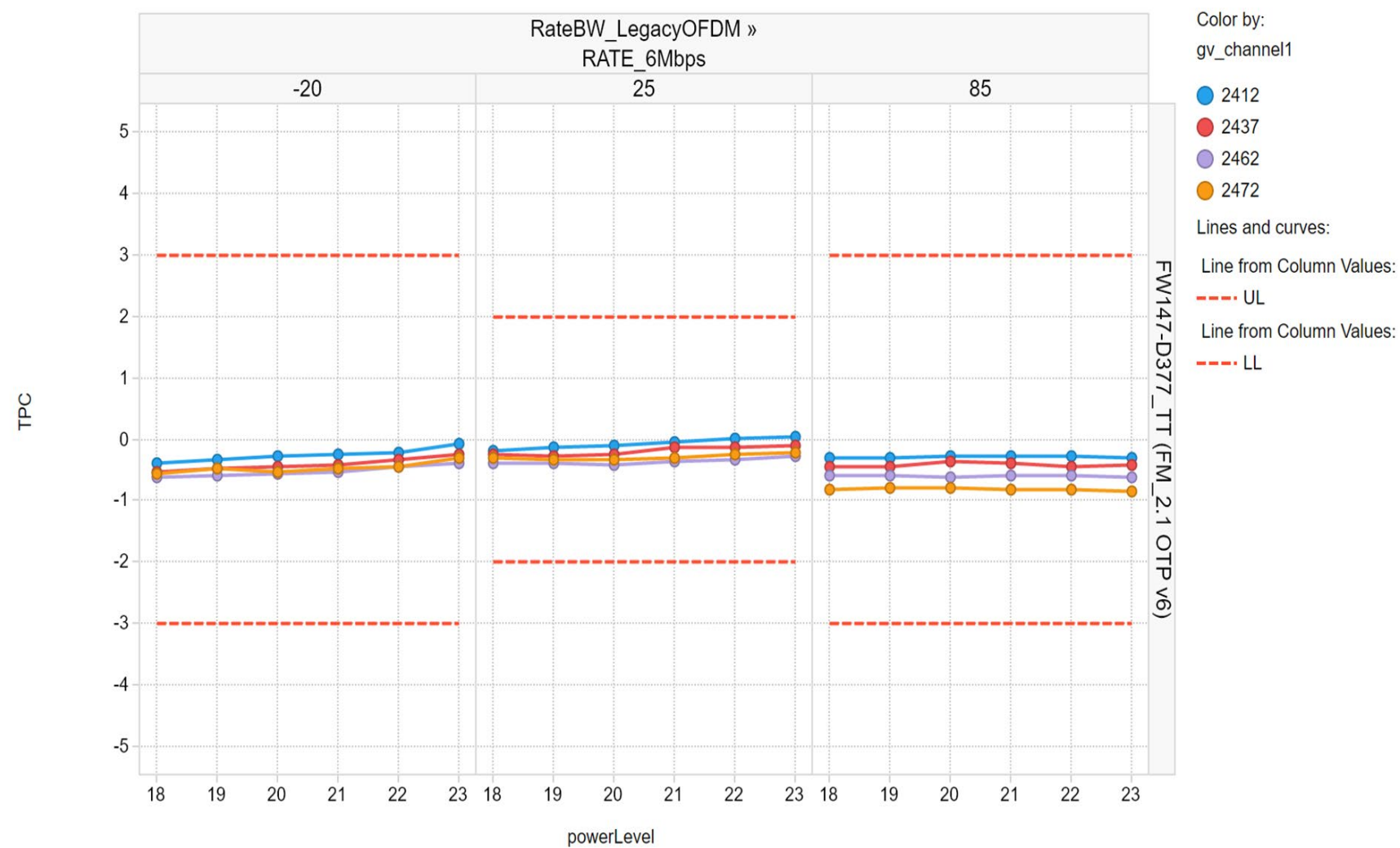
TPC Accuracy 2.4 GHz



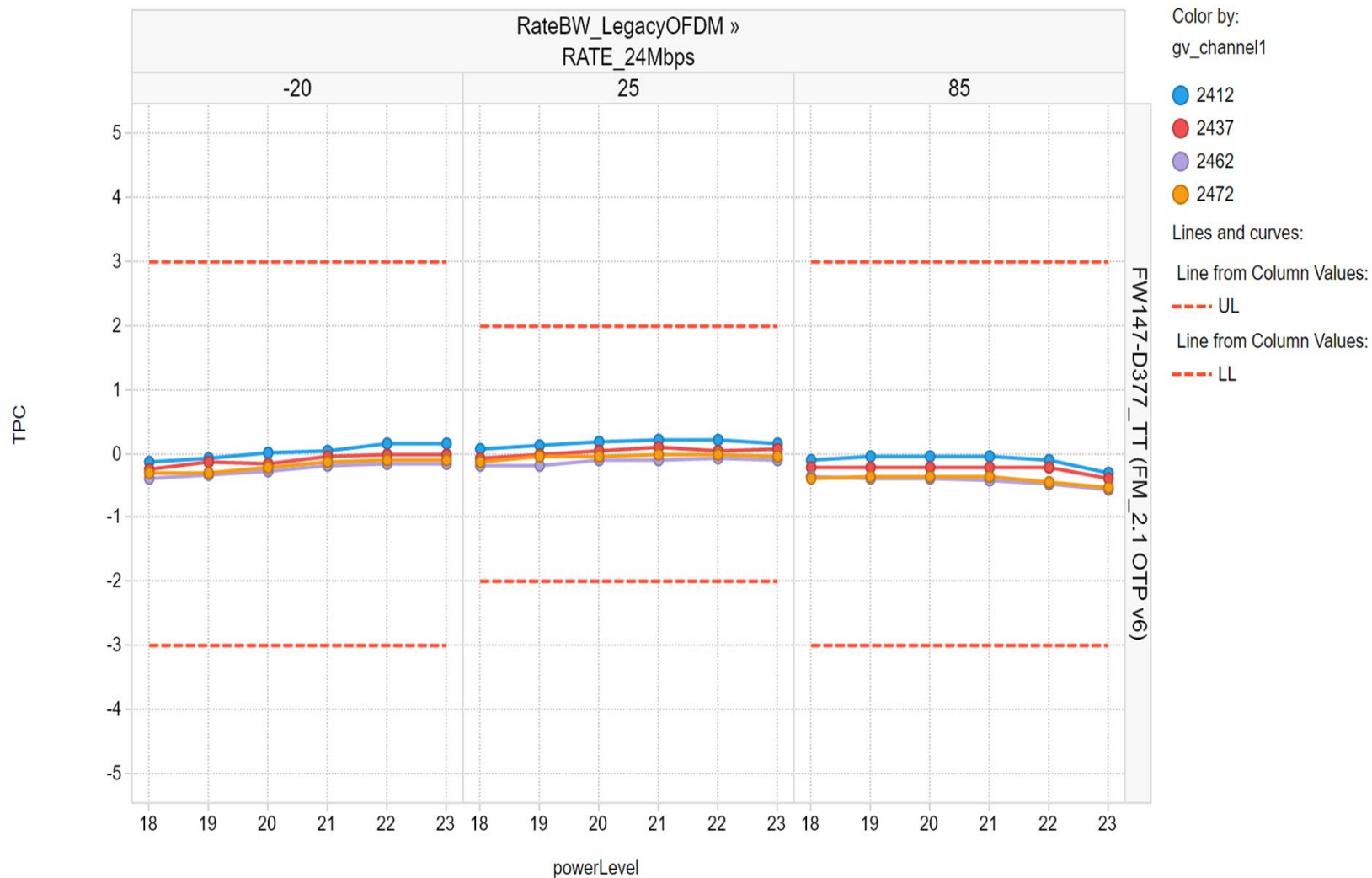
TPC Accuracy 2.4 GHz (cont.)



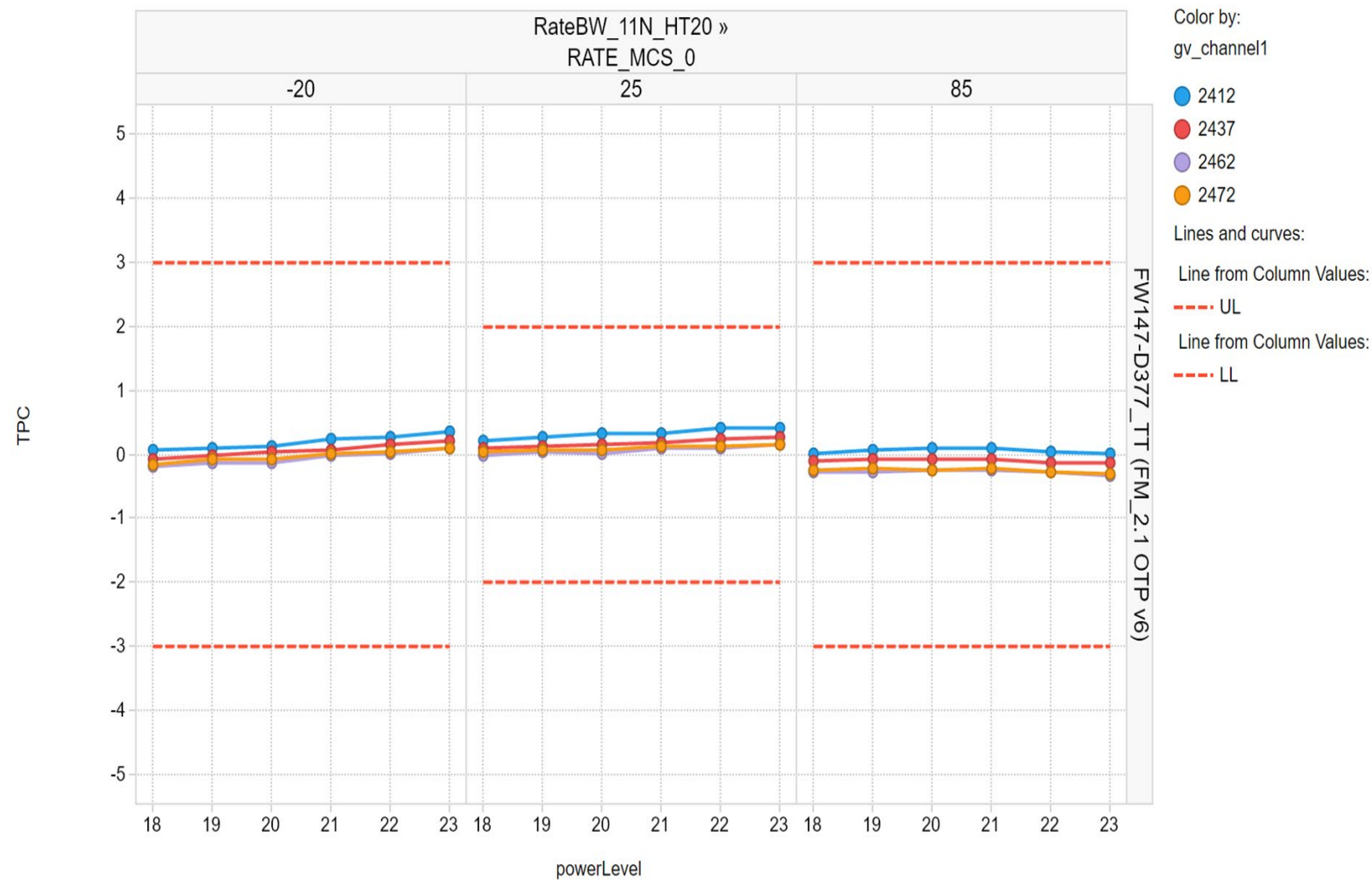
TPC Accuracy 2.4 GHz (cont.)



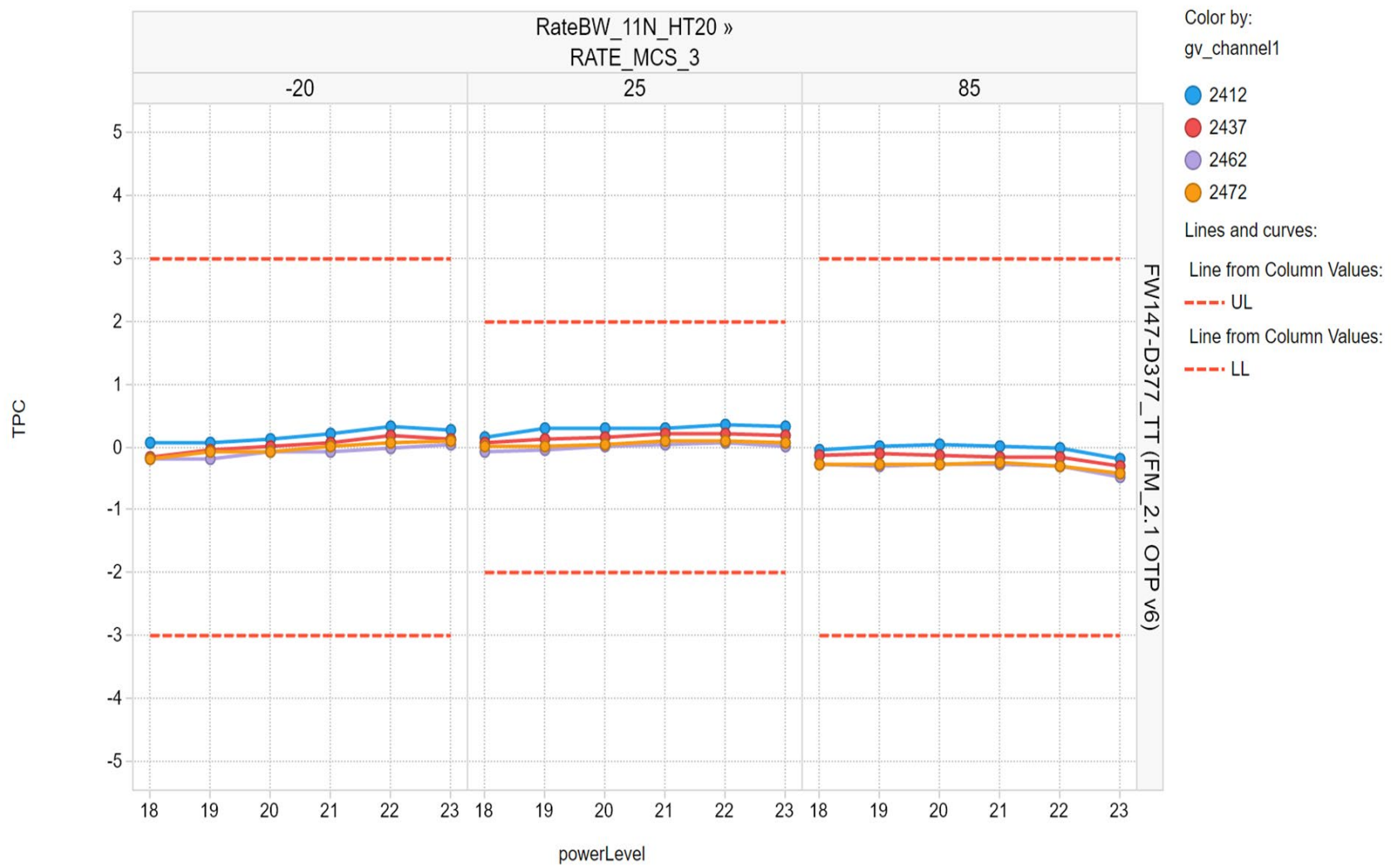
TPC Accuracy 2.4 GHz (cont.)

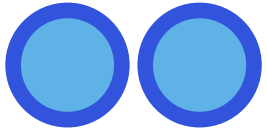


TPC Accuracy 2.4 GHz (cont.)



TPC Accuracy 2.4 GHz (cont.)

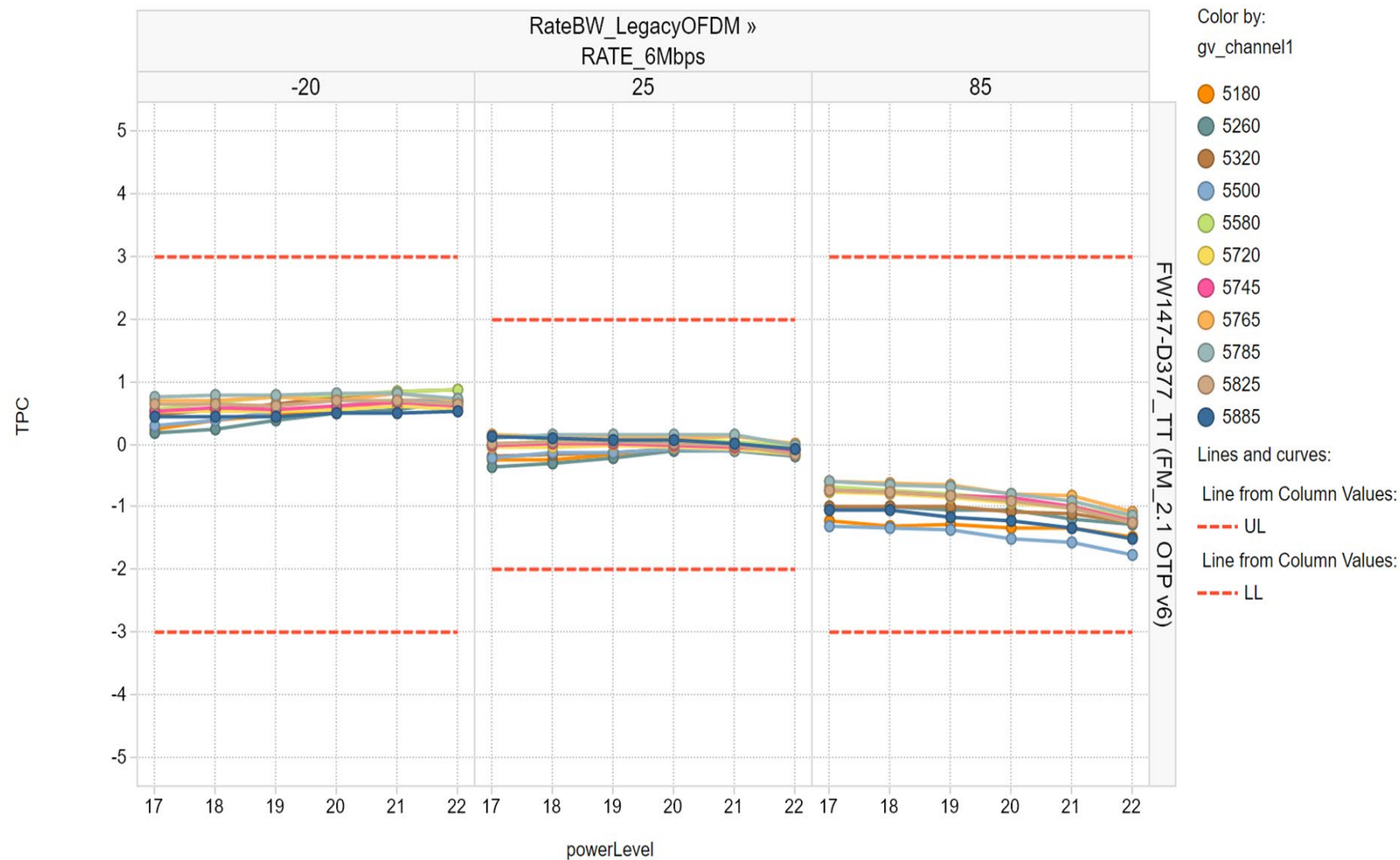




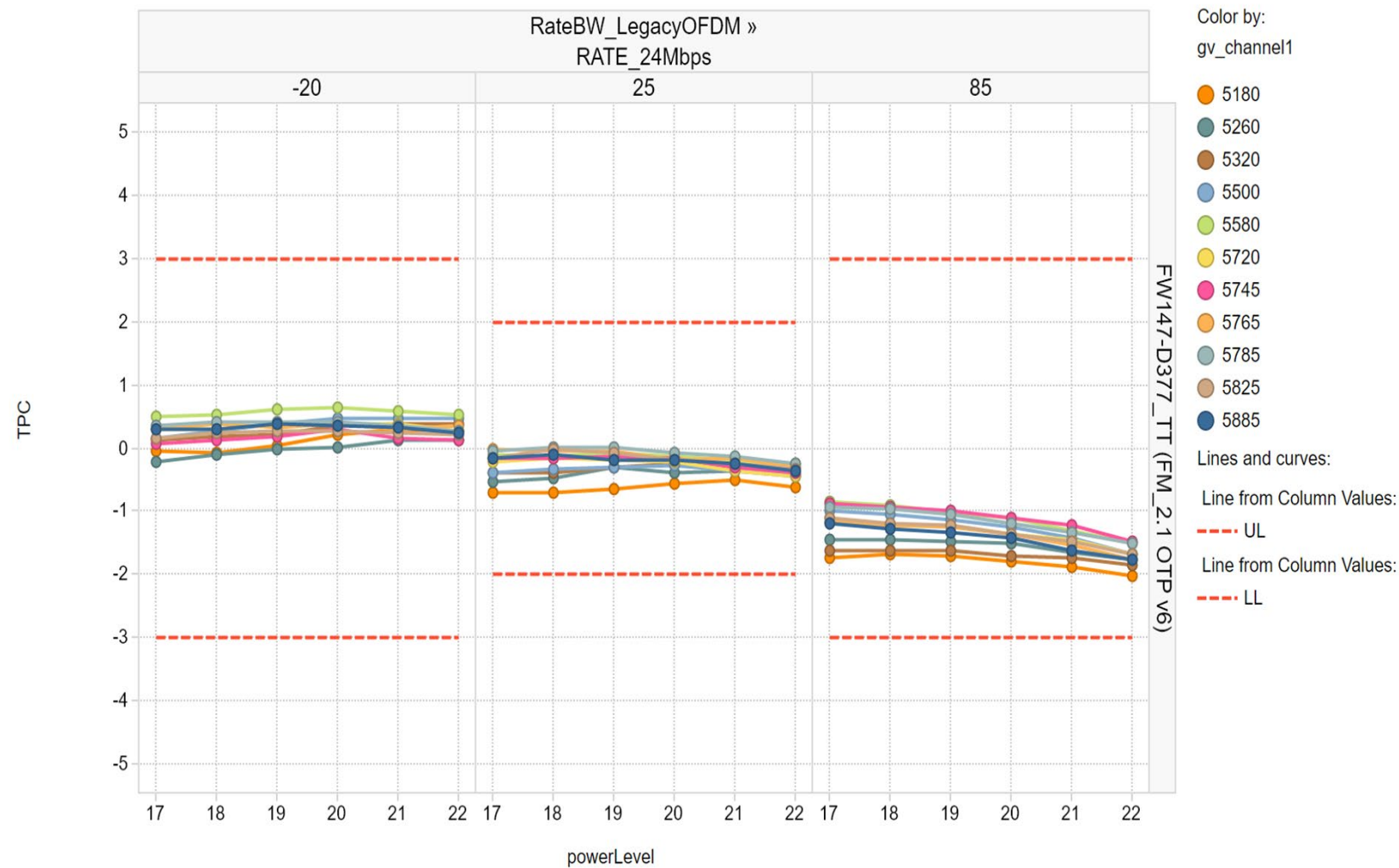
Section 4.2

Tx TPC 5 GHz

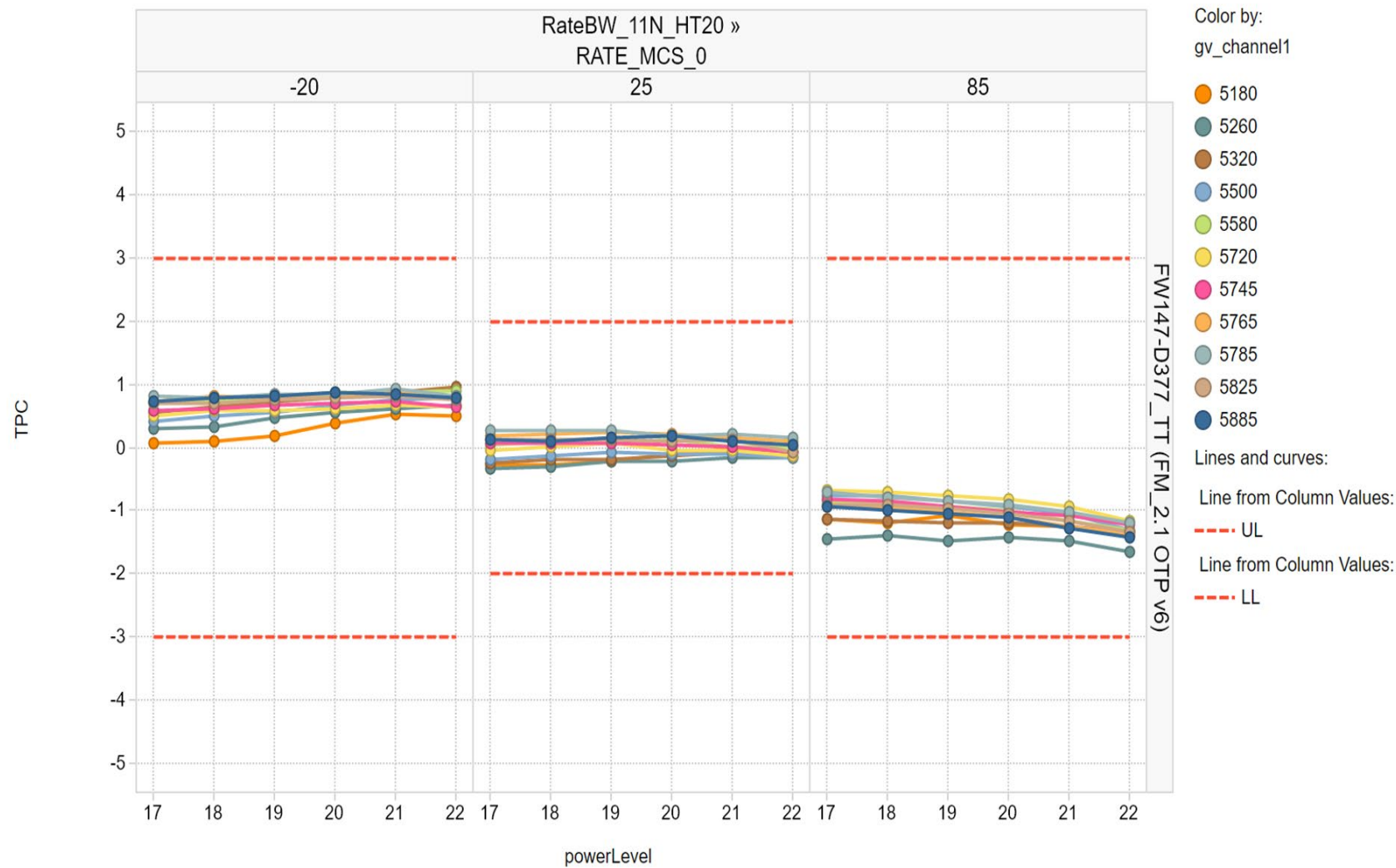
TPC Accuracy 5 GHz



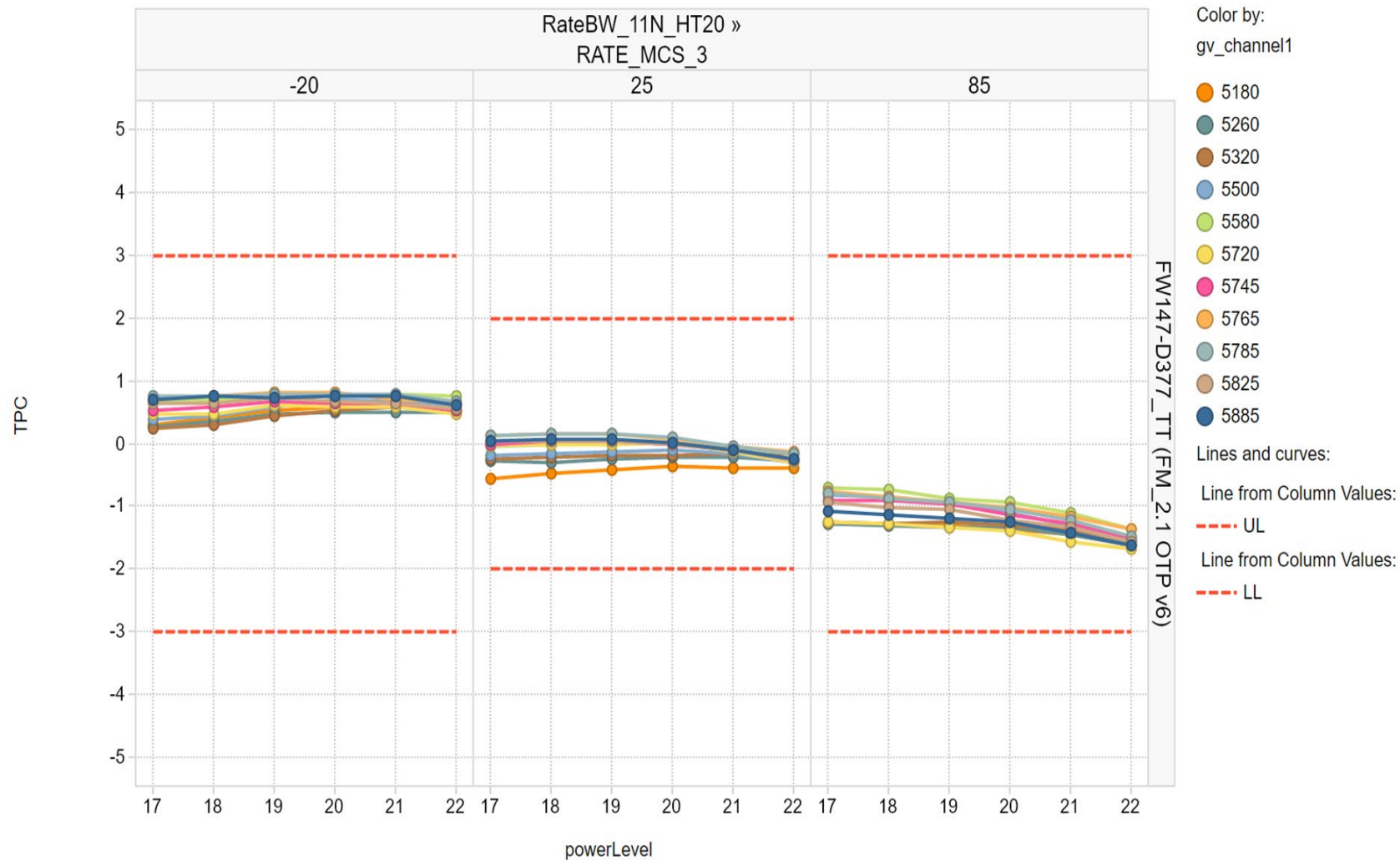
TPC Accuracy 5 GHz (cont.)

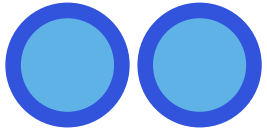


TPC Accuracy 5 GHz (cont.)



TPC Accuracy 5 GHz (cont.)

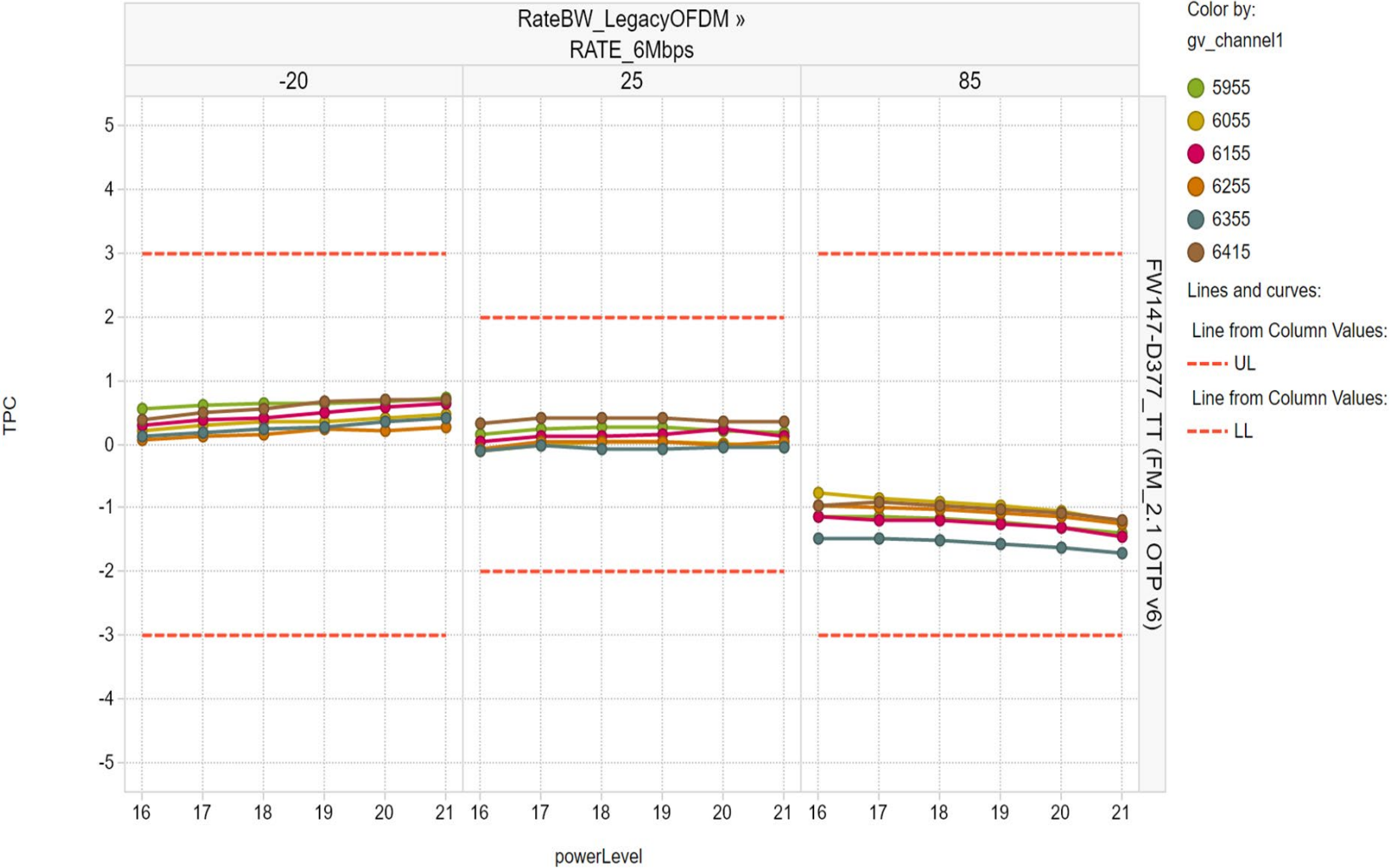




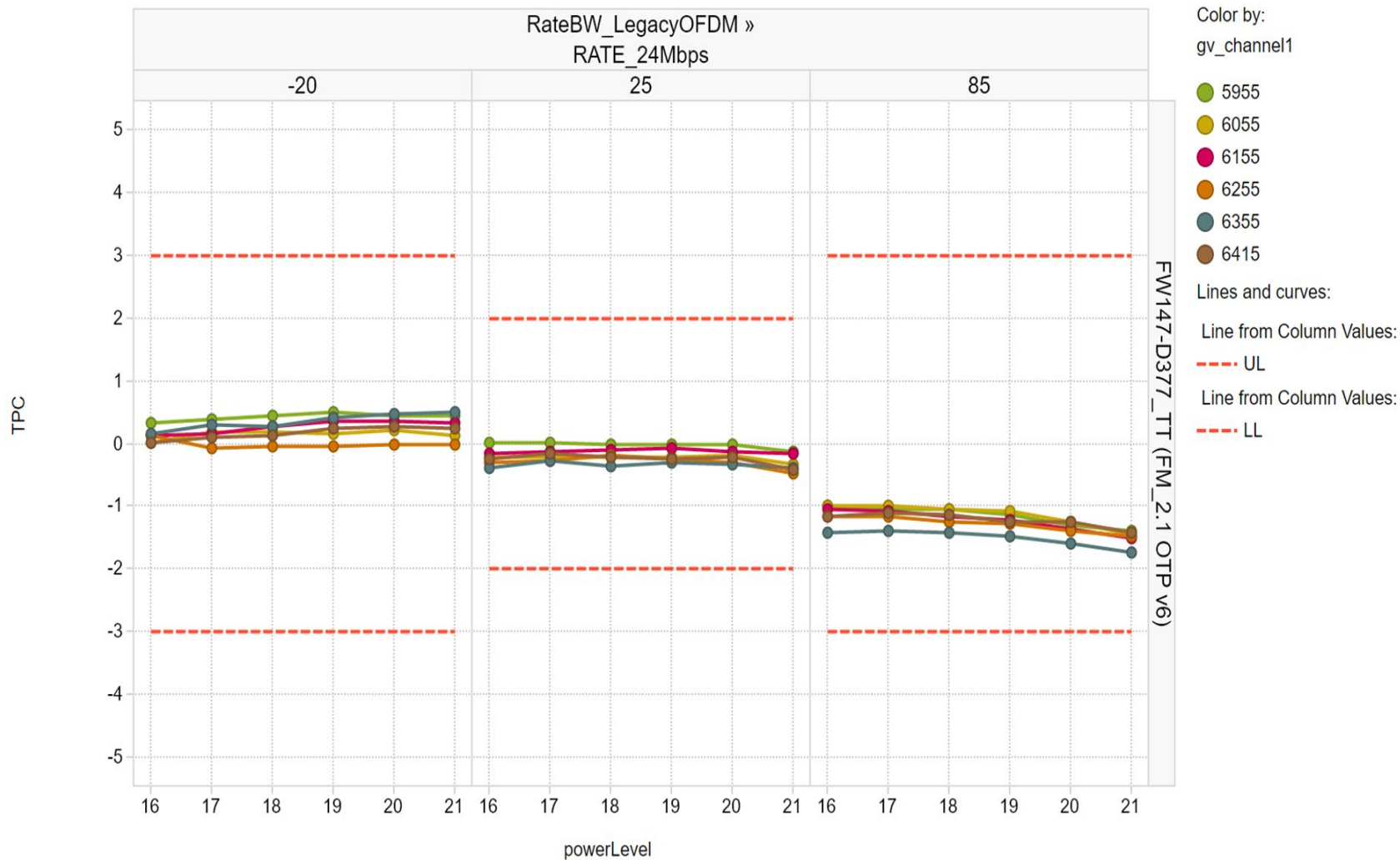
Section 4.3

Tx TPC 6 GHz

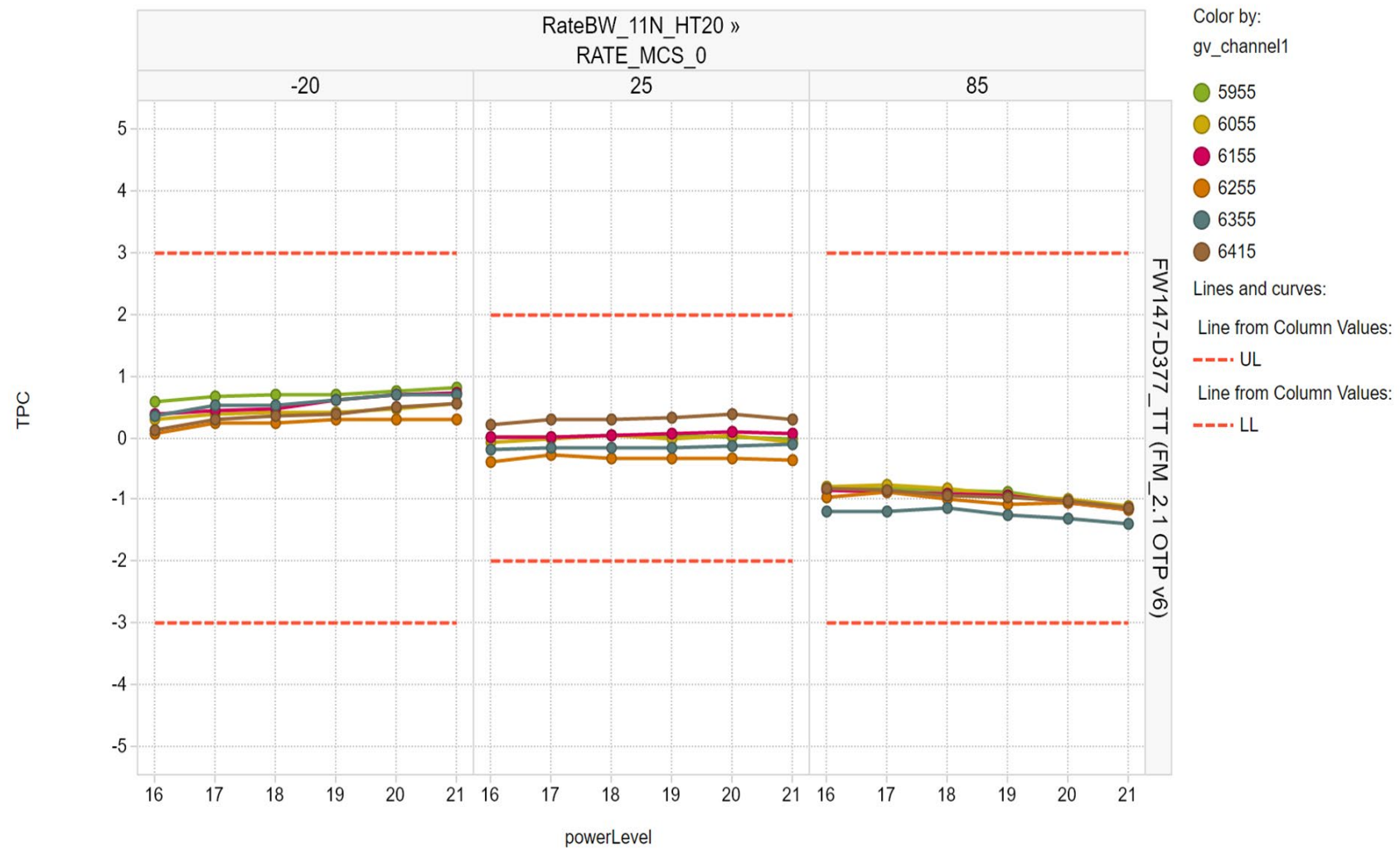
TPC Accuracy 6 GHz



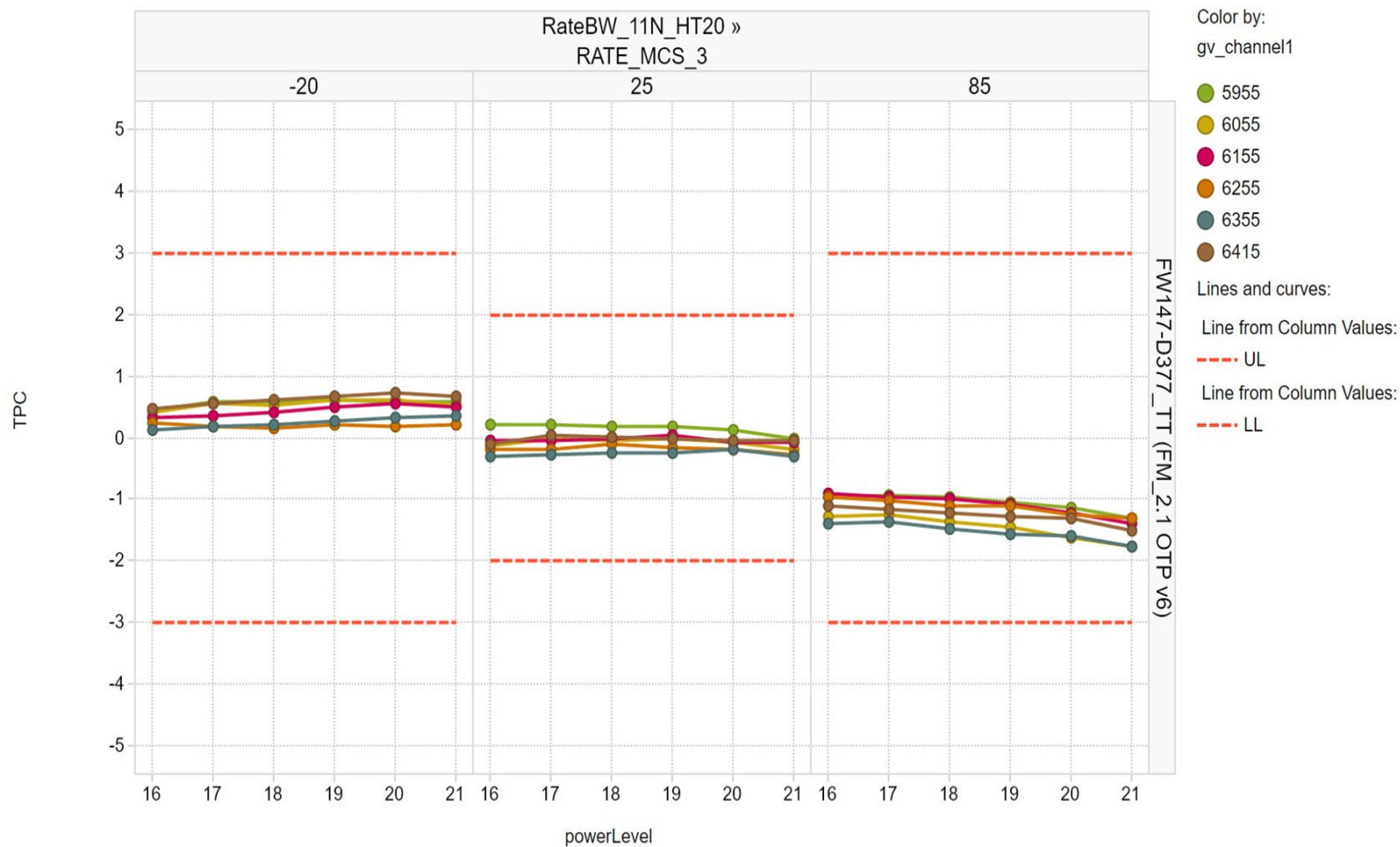
TPC Accuracy 6 GHz (cont.)



TPC Accuracy 6 GHz (cont.)



TPC Accuracy 6 GHz (cont.)

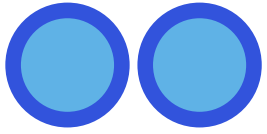




Section 5

WLAN Rx Sensitivity

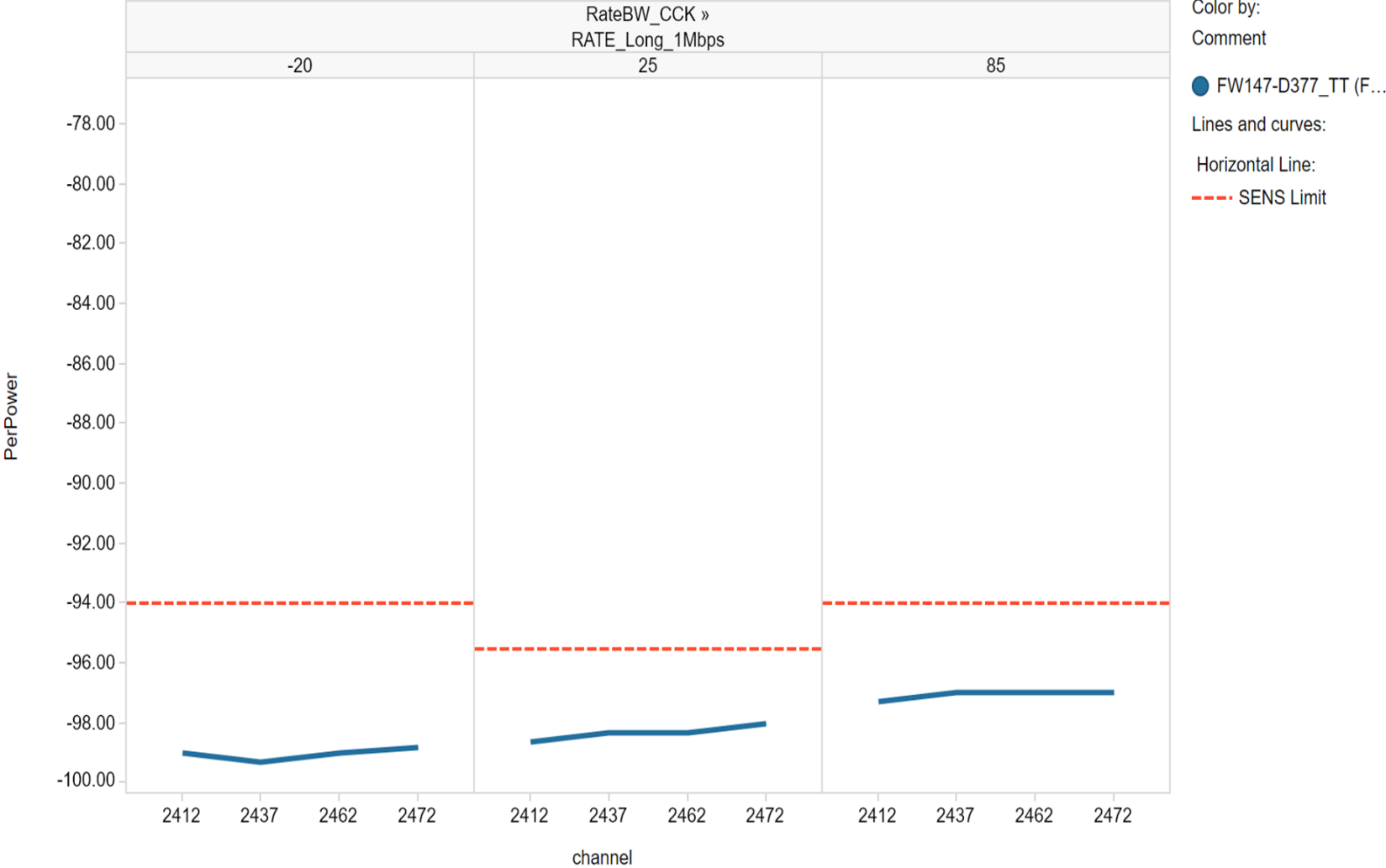
5.1 Rx Sensitivity 2.4 GHz	<u>61</u>
5.2 Rx Sensitivity 5 GHz	<u>68</u>
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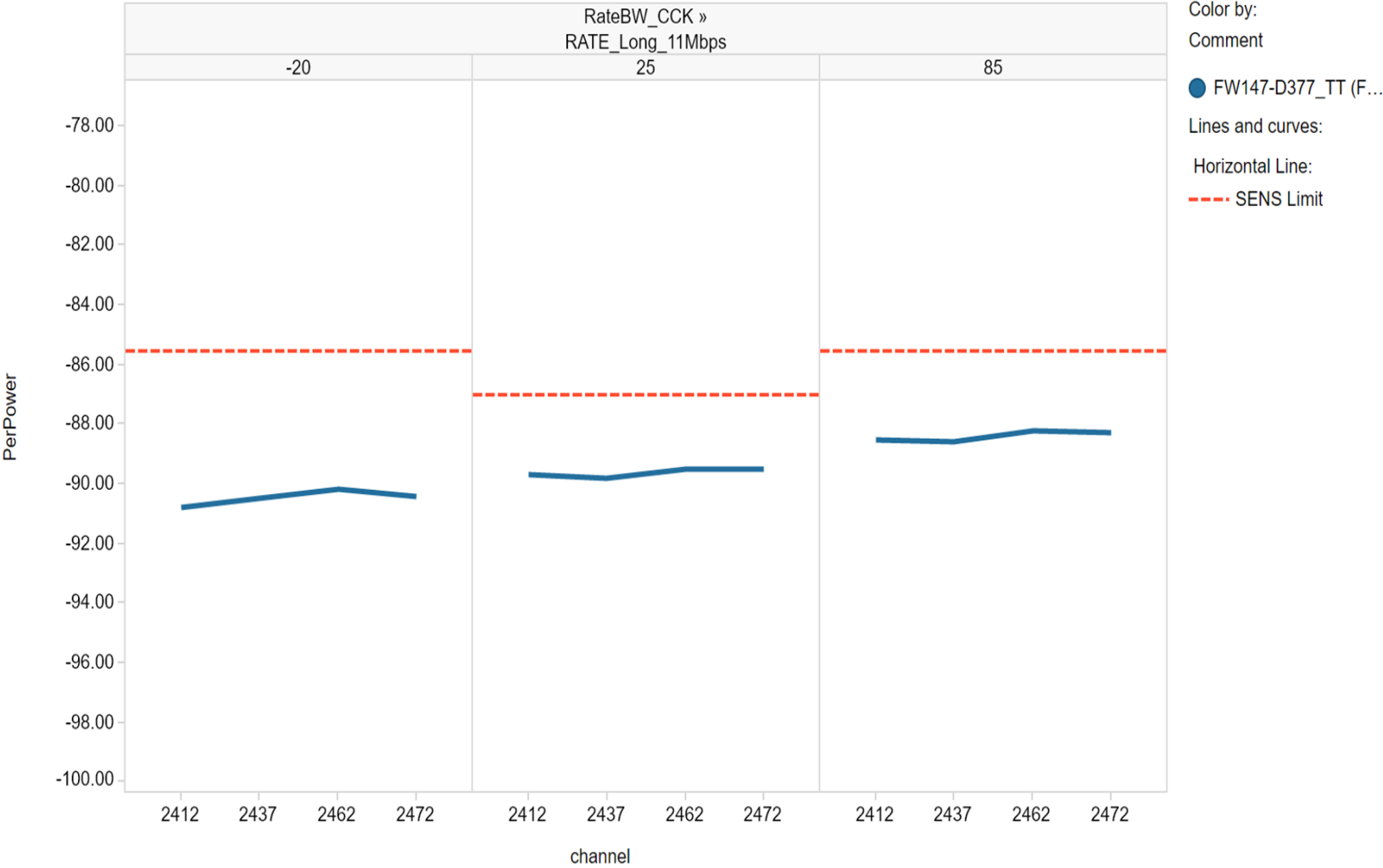
Section 5.1

Rx Sensitivity 2.4 GHz

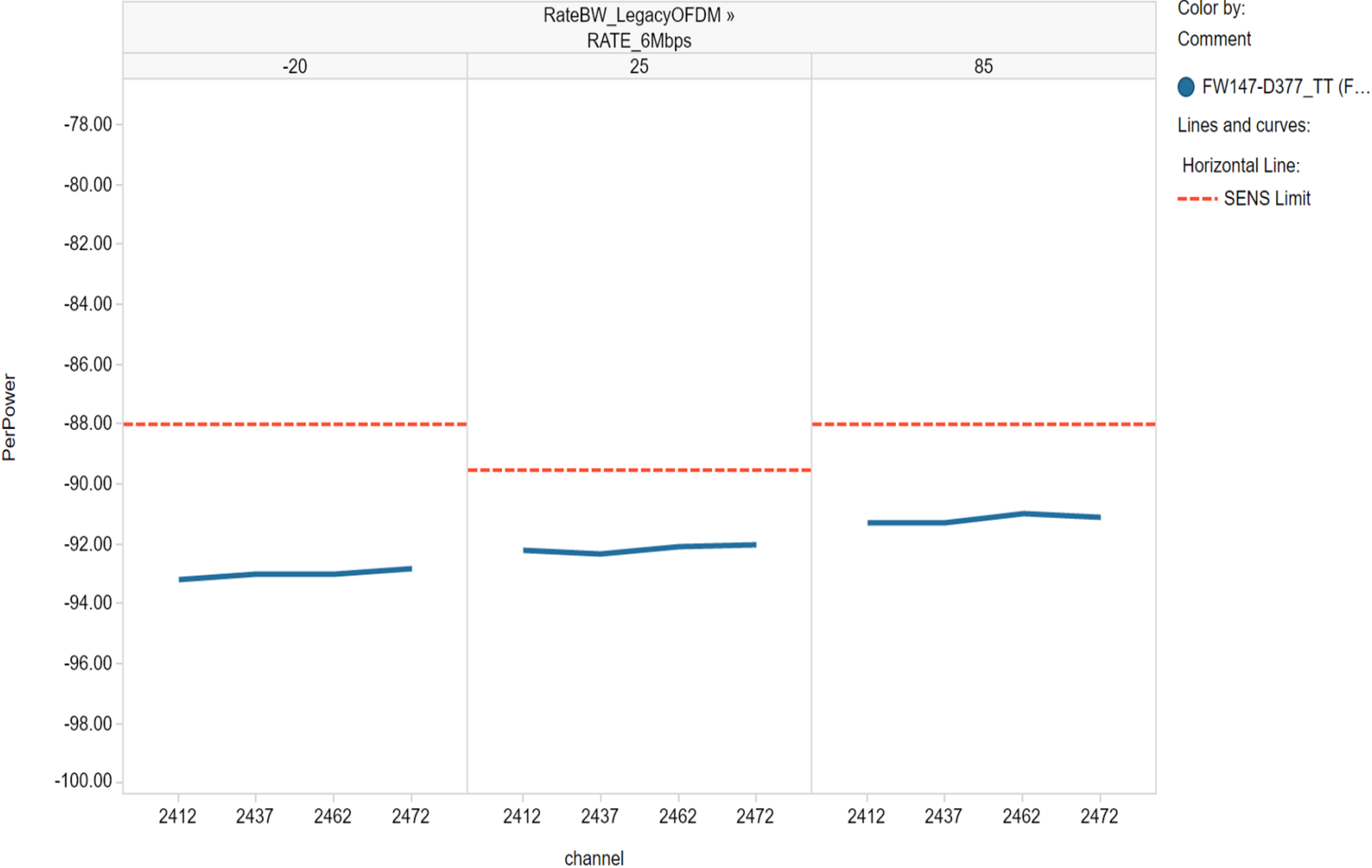
Rx Sensitivity 2.4 GHz



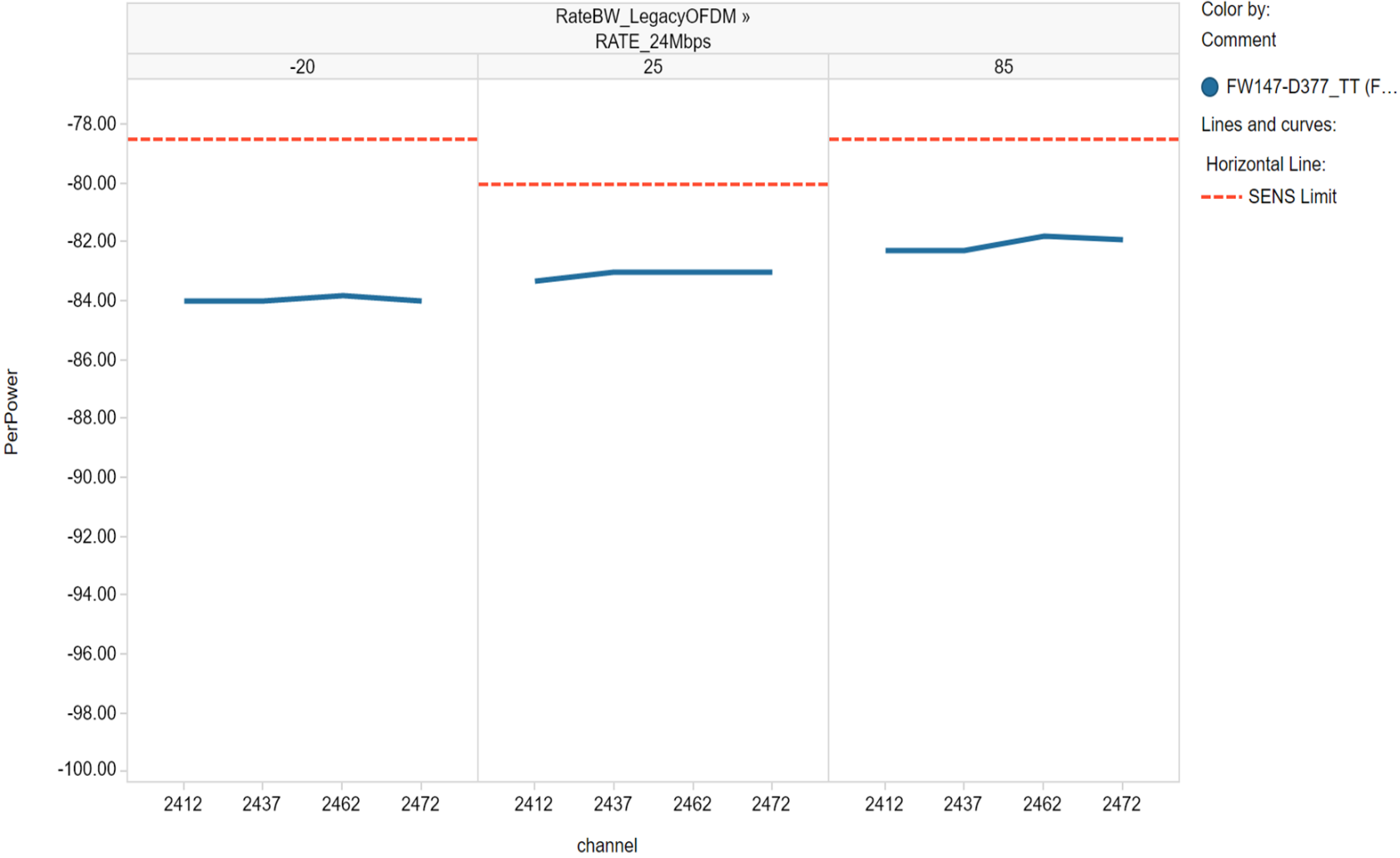
Rx Sensitivity 2.4 GHz (cont.)



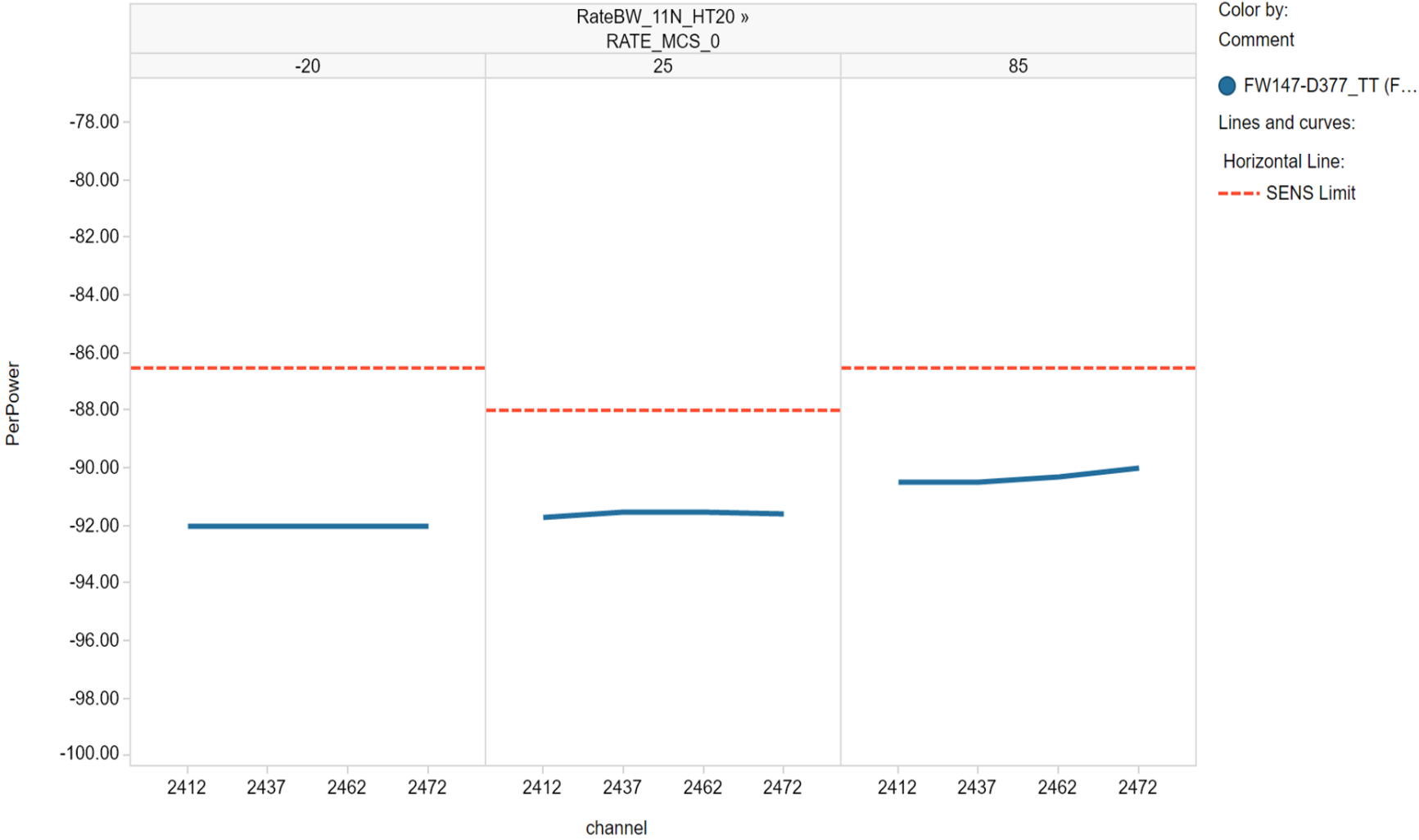
Rx Sensitivity 2.4 GHz (cont.)



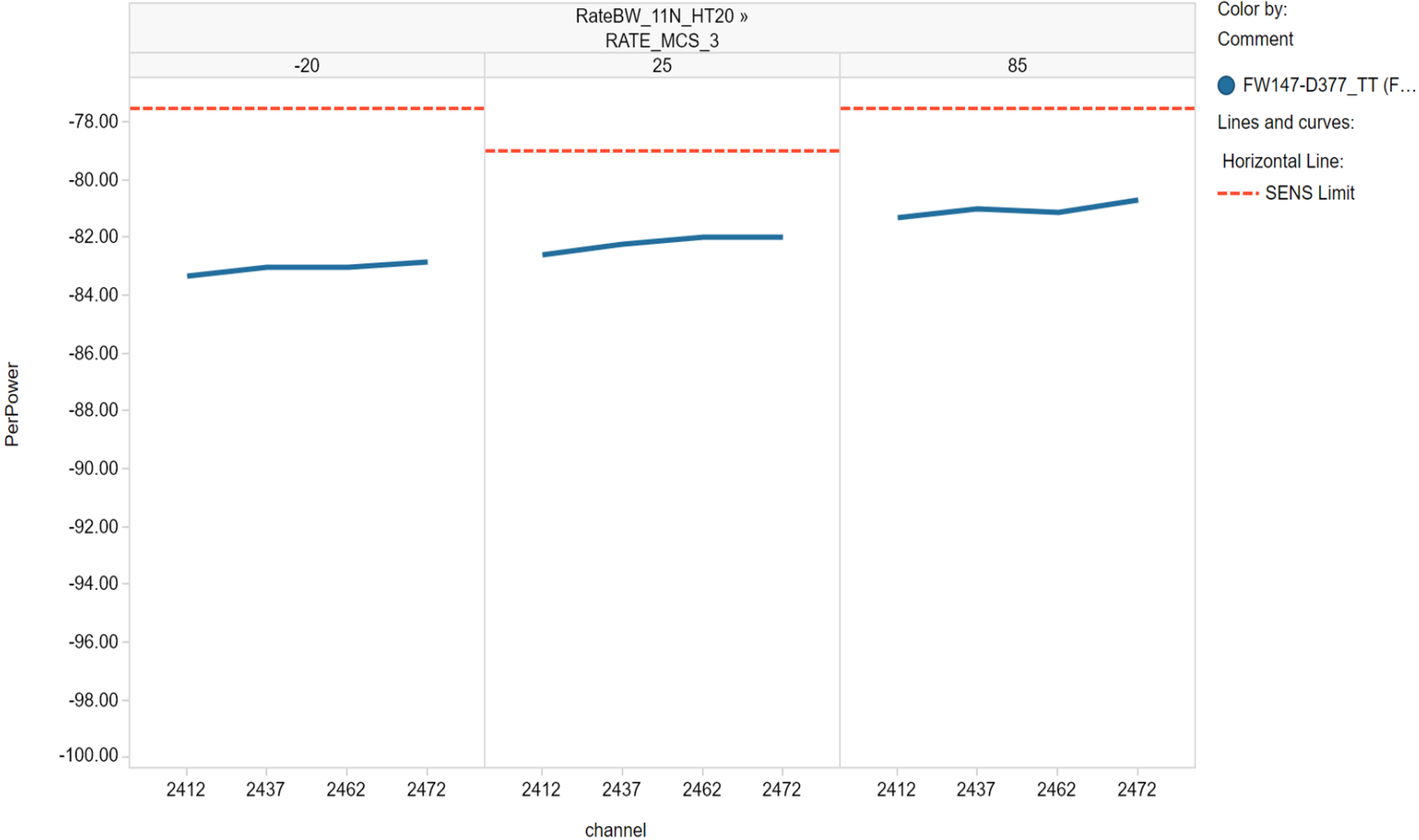
Rx Sensitivity 2.4 GHz (cont.)

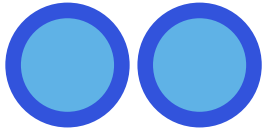


Rx Sensitivity 2.4 GHz (cont.)



Rx Sensitivity 2.4 GHz (cont.)

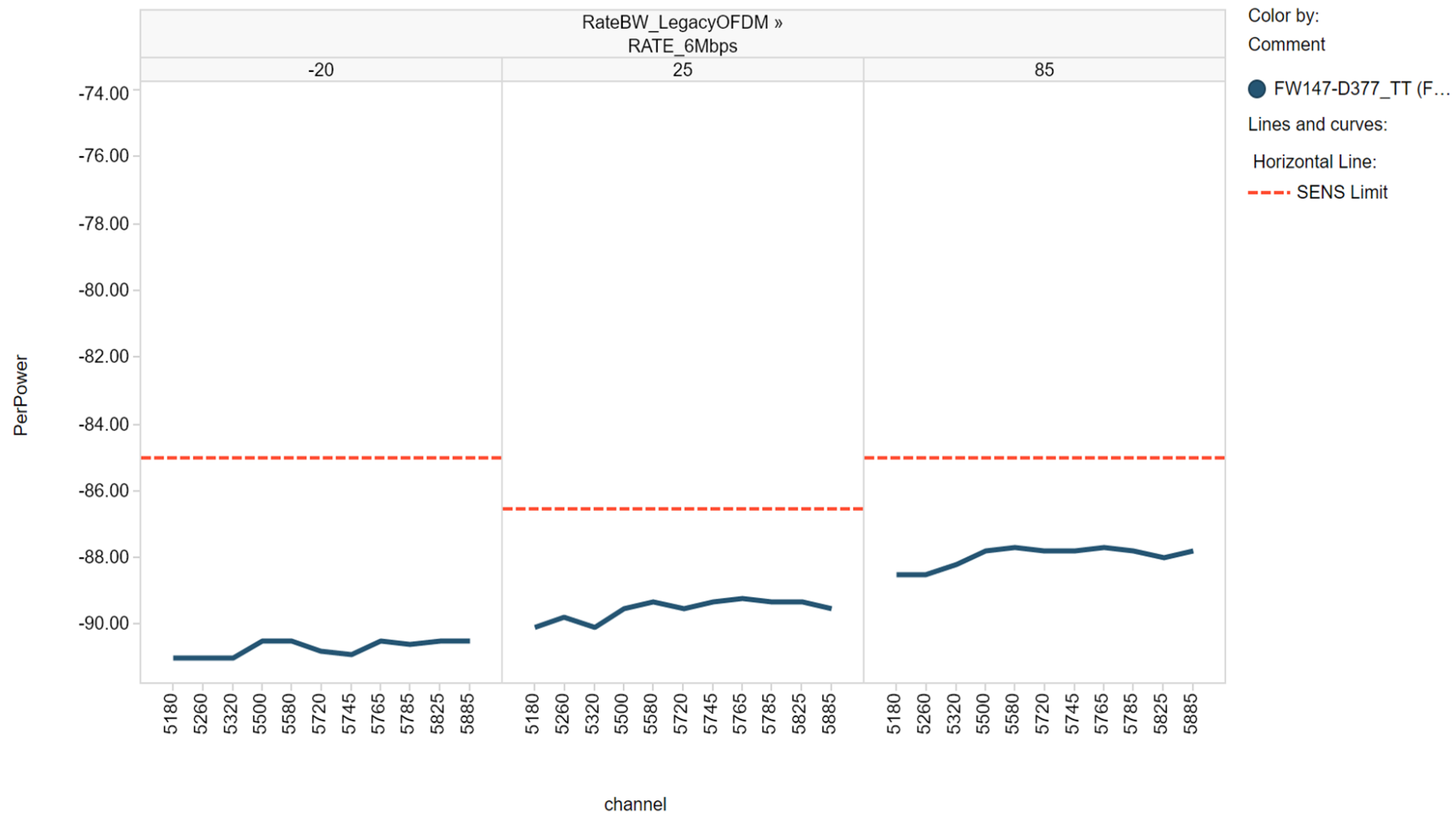




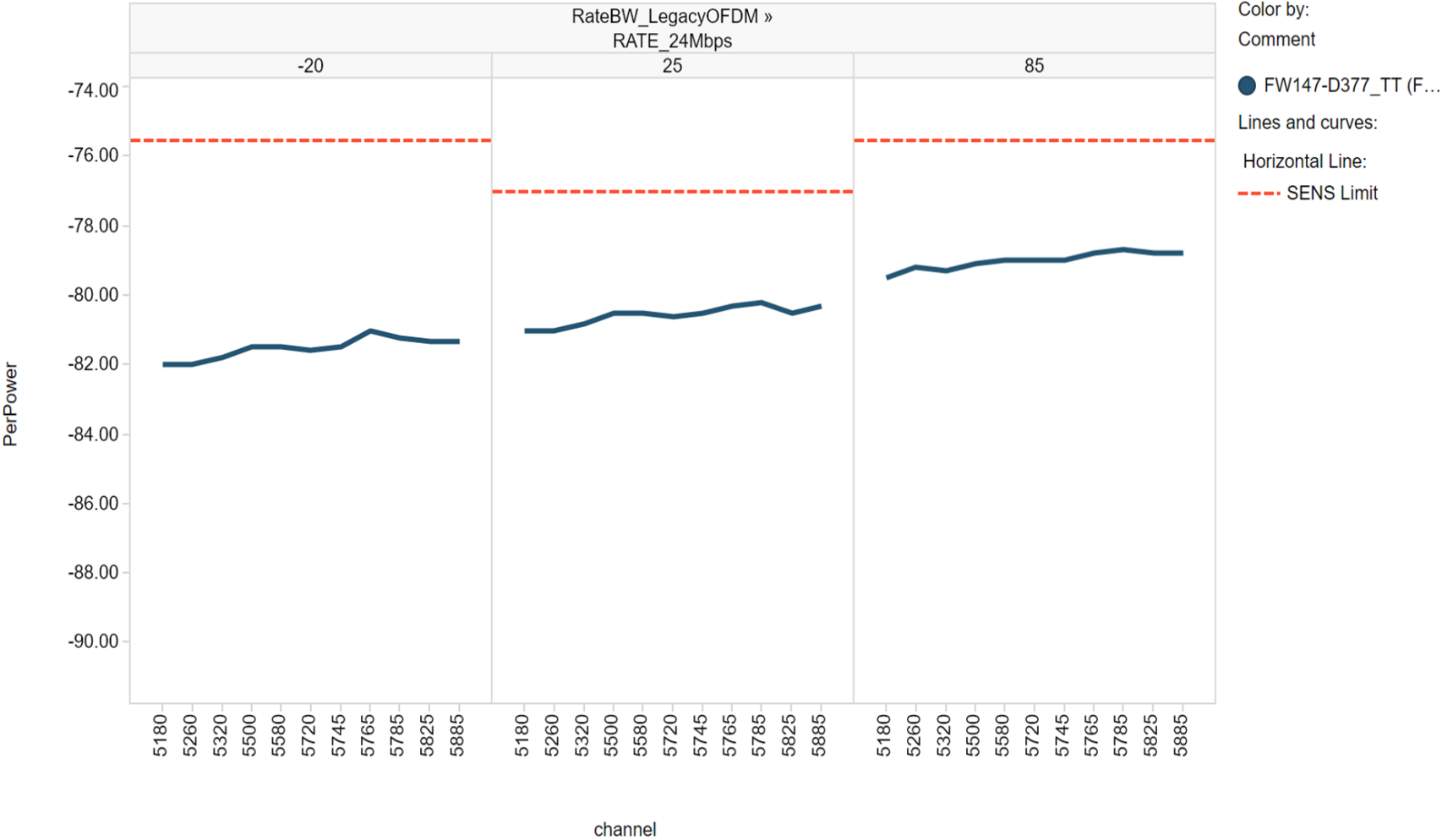
Section 5.2

Rx Sensitivity 5 GHz

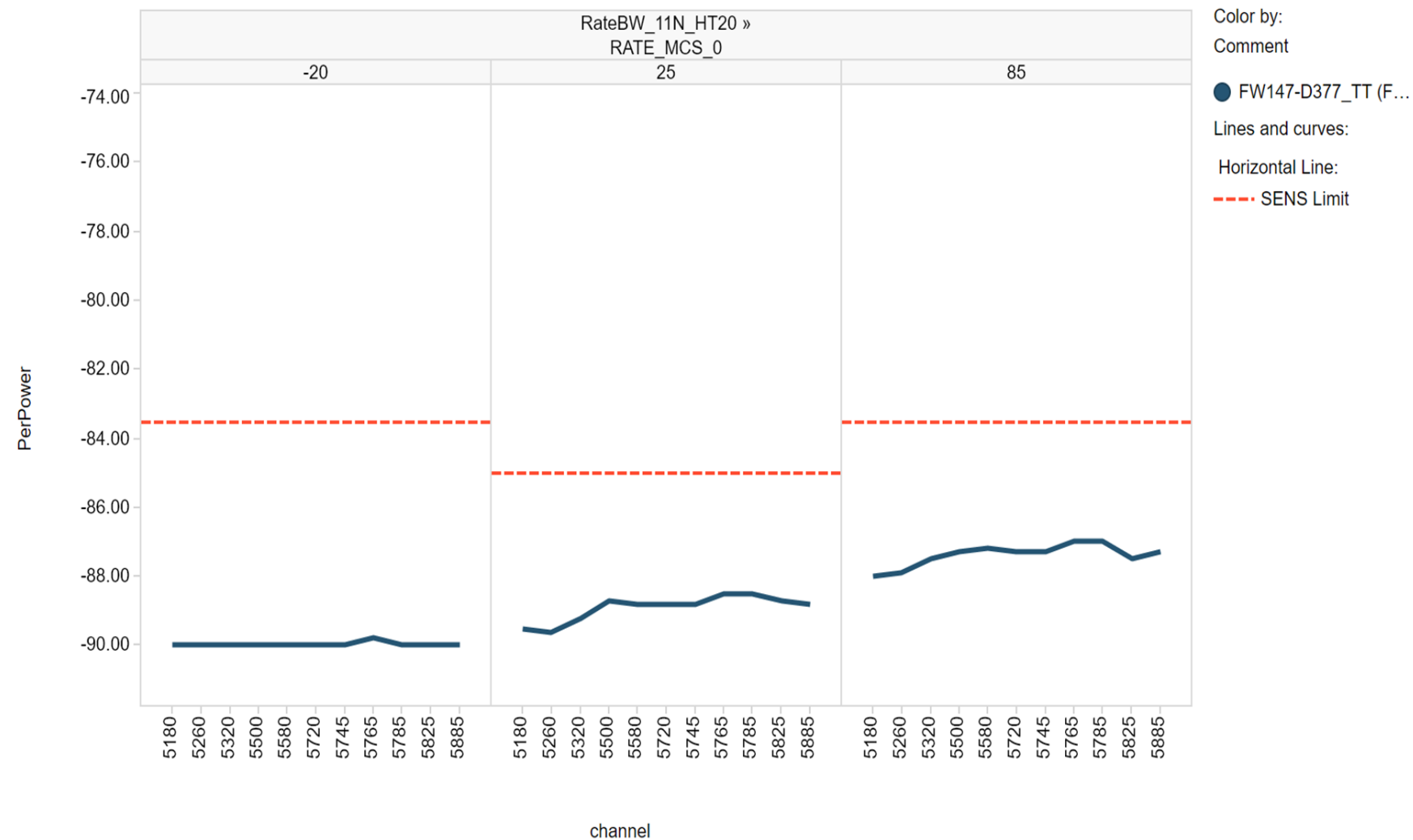
Rx Sensitivity 5 GHz



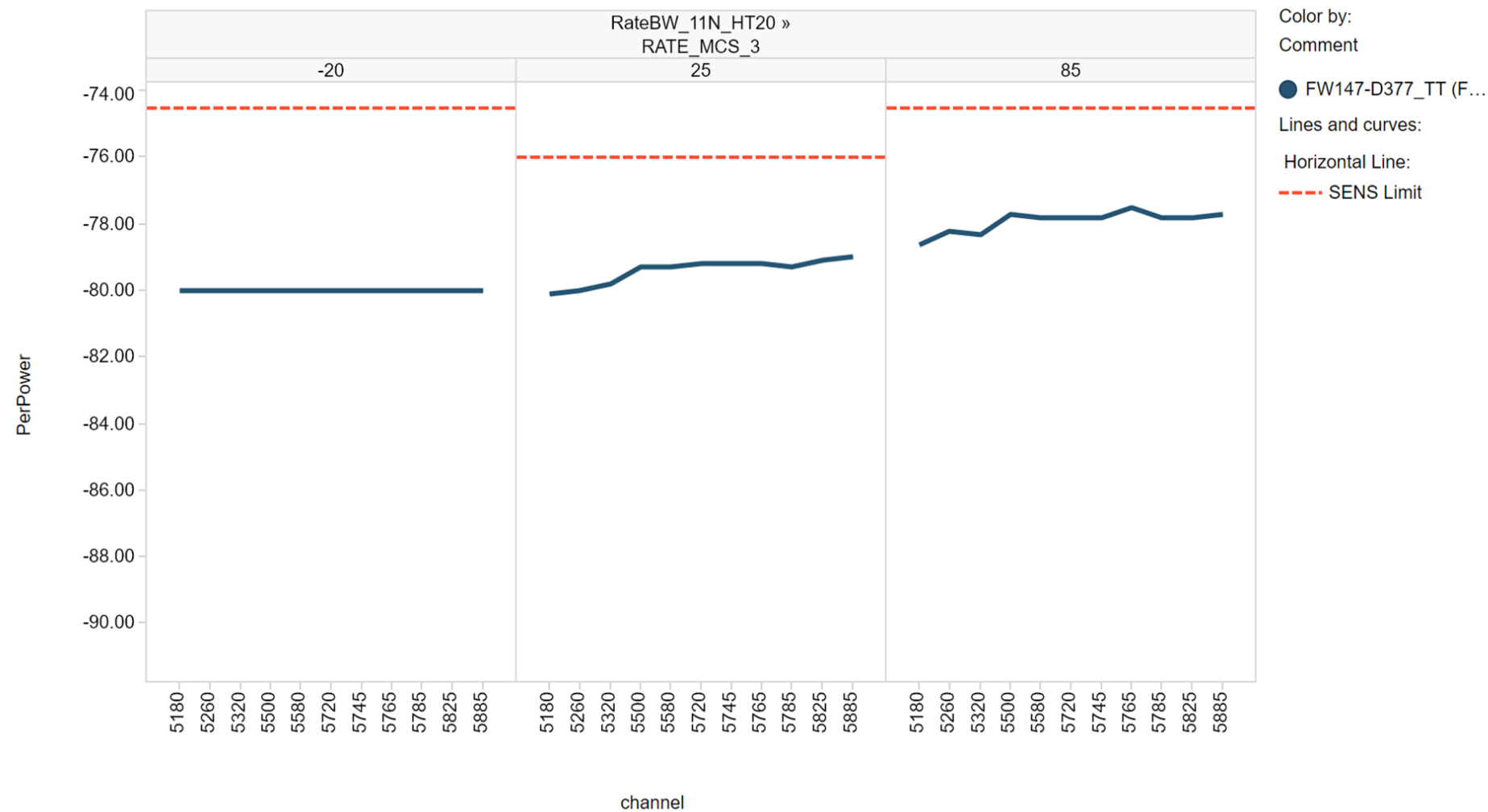
Rx Sensitivity 5 GHz (cont.)

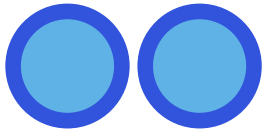


Rx Sensitivity 5 GHz (cont.)



Rx Sensitivity 5 GHz (cont.)

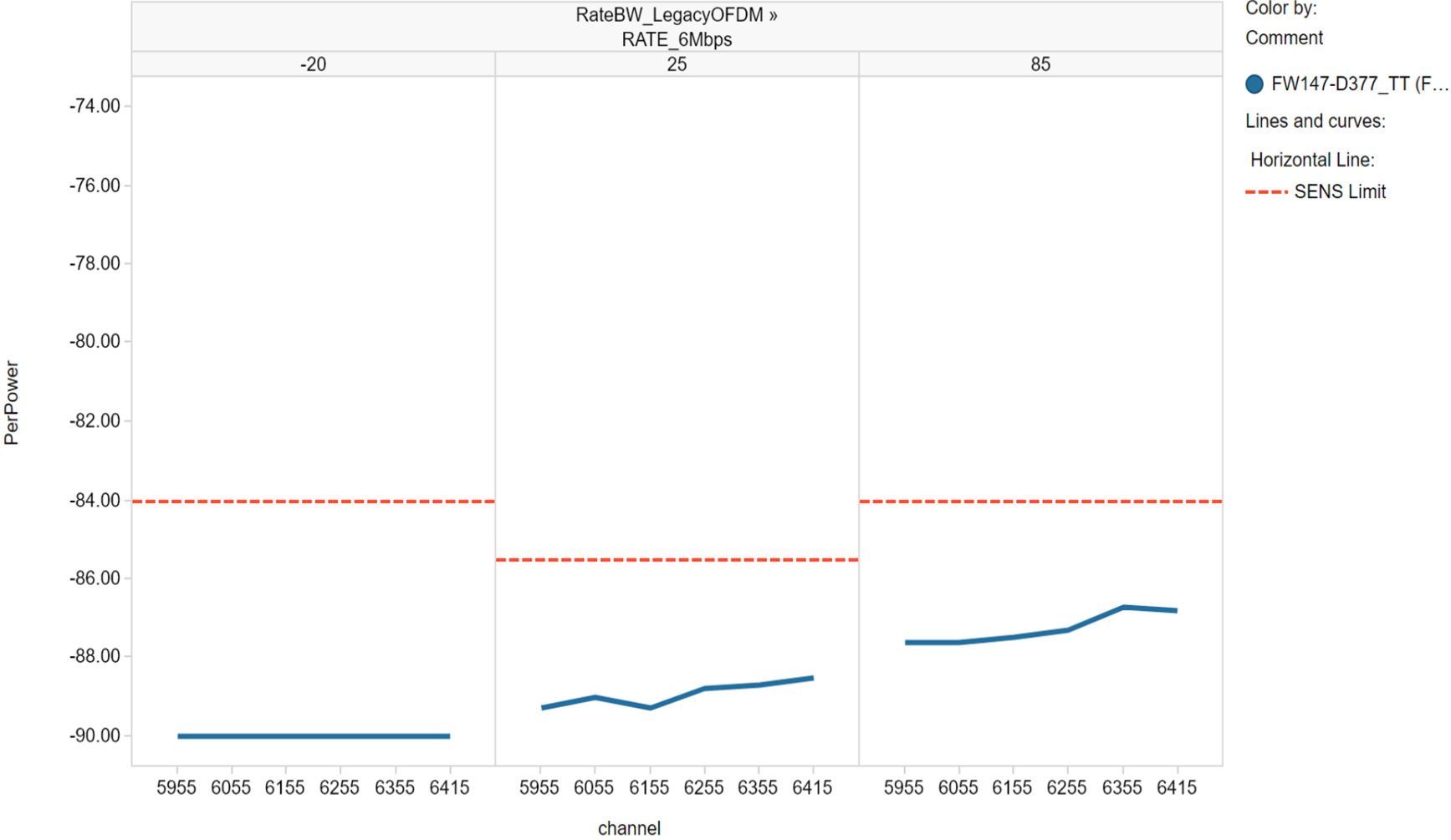




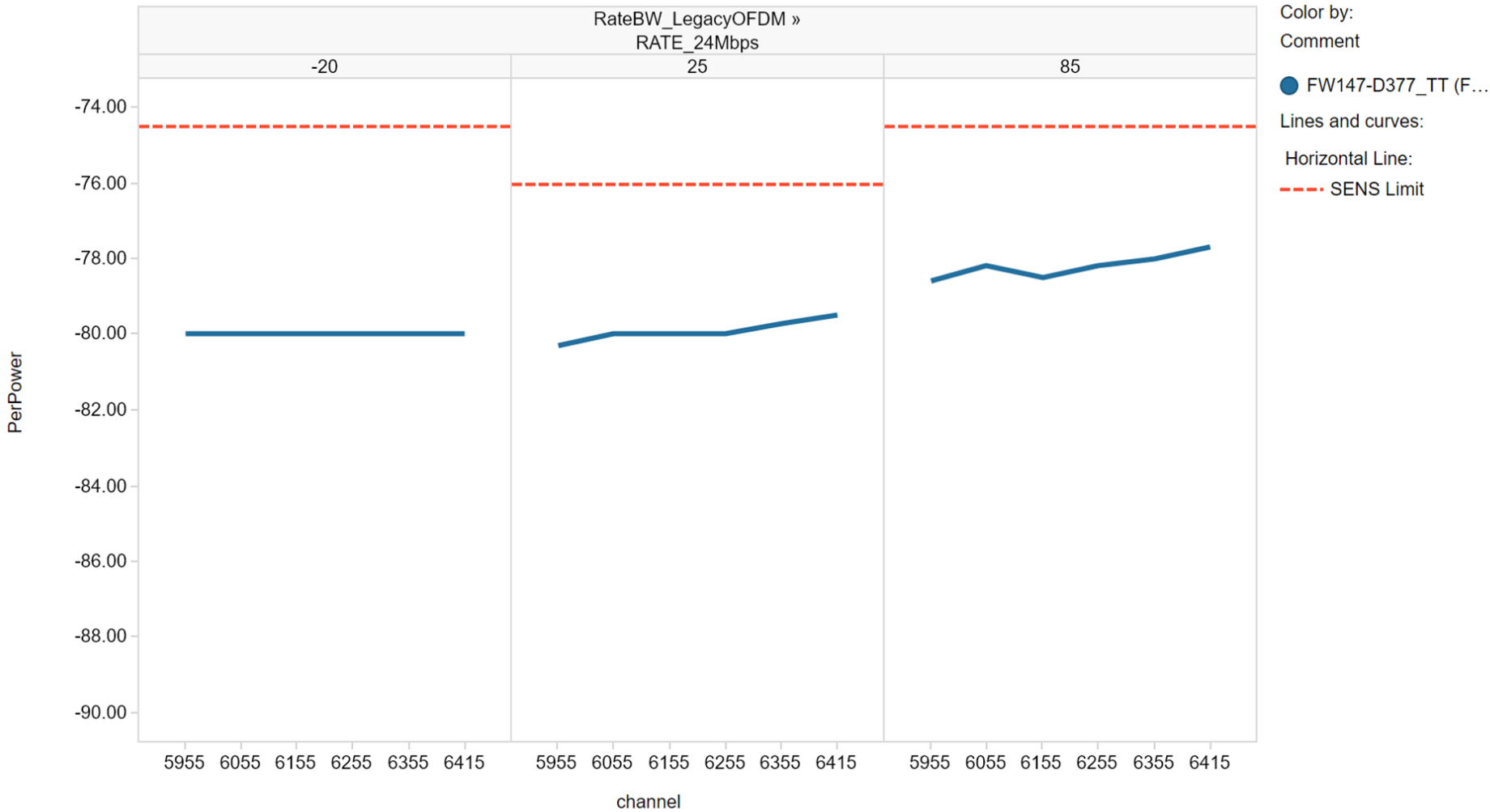
Section 5.3

Rx Sensitivity 6 GHz

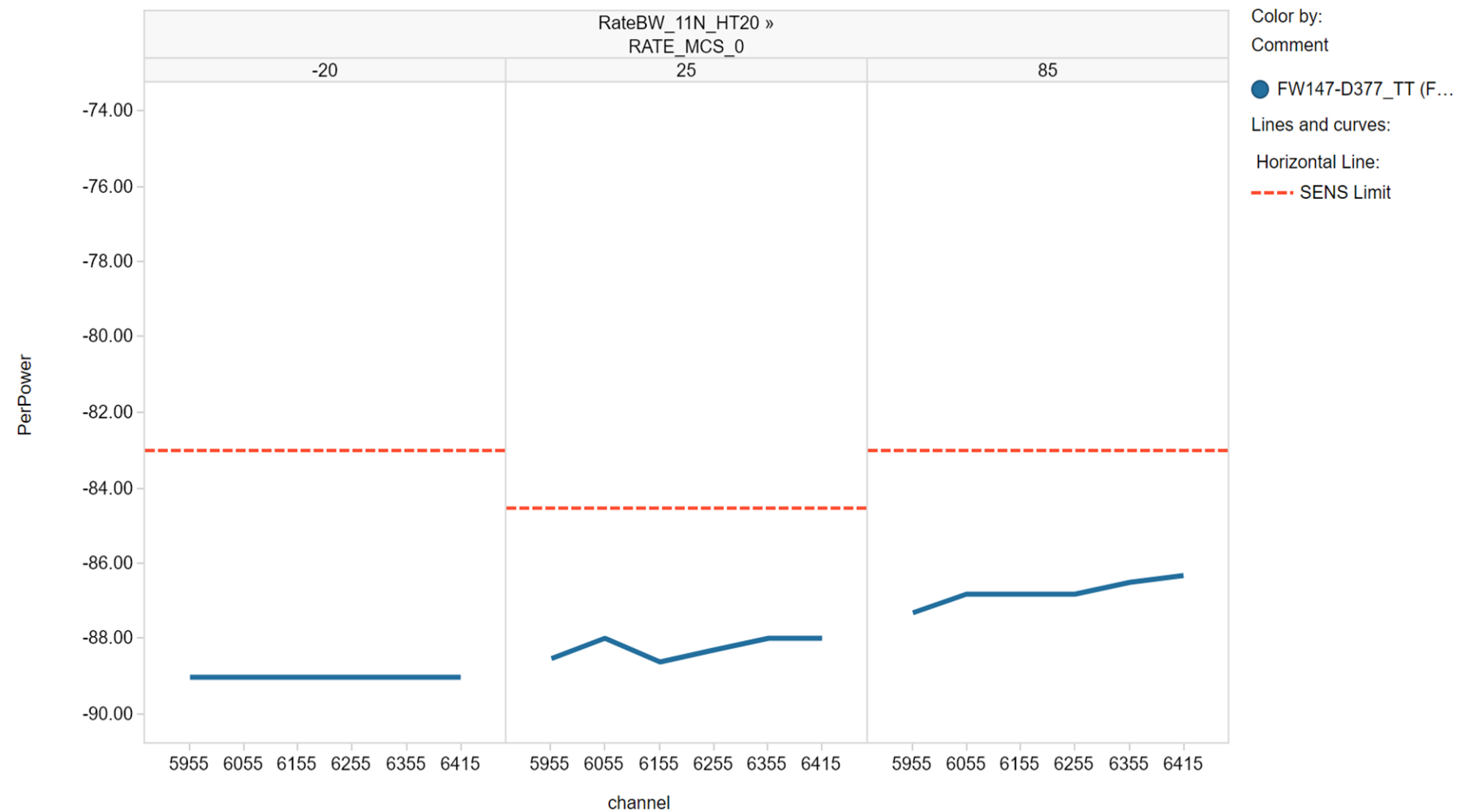
Rx Sensitivity 6 GHz



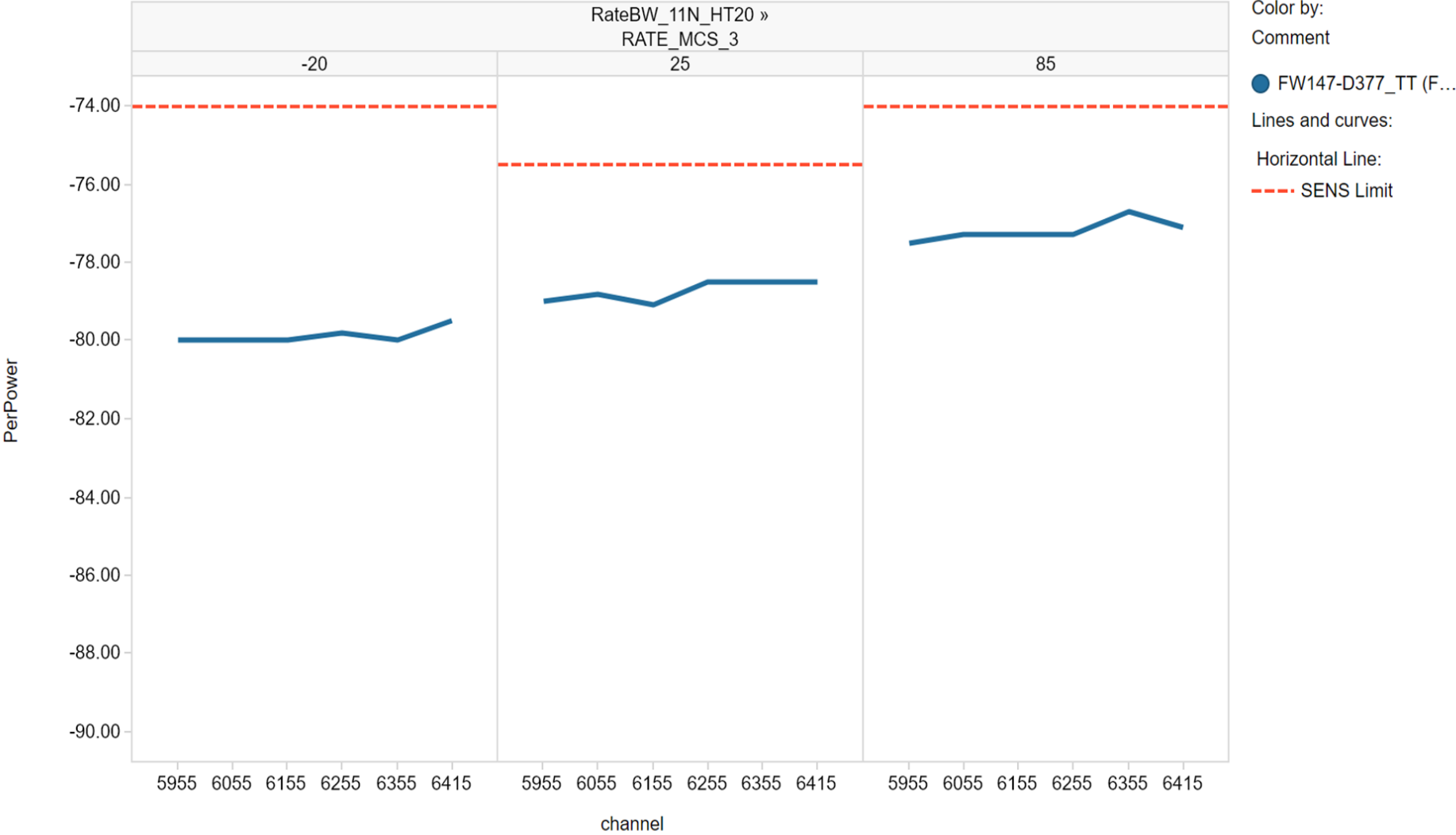
Rx Sensitivity 6 GHz (cont.)



Rx Sensitivity 6 GHz (cont.)



Rx Sensitivity 6 GHz (cont.)





Section 6

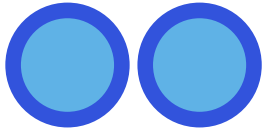
FTM Power Consumption

6.1 Tx Power Consumption

[79](#)

6.2 Rx Power Consumption

[81](#)

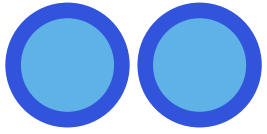


Section 6.1

Tx Power Consumption

Tx Power Consumption

Active Tx	Rate	Target power	Measure power	V _{BATT} 3.3 V Average (mA)	V _{DD} 1.8 V Average (mA)	V _{DDIO} 1.8 V Average (mA)	Total power (mW)
2.4 GHz	CCK 1 M	18.5	18.17	202.98	25.90	0.06	716.6
	CCK 11 M		18.07	201.49	25.83	0.06	711.5
	OFDM 6 M		17.49	198.57	25.96	0.06	702.1
	OFDM 24 M		17.81	199.00	26.07	0.06	703.7
	11n MCS0		17.92	201.97	26.24	0.06	713.8
	11n MCS3		17.89	200.12	26.24	0.06	707.7
5 GHz	OFDM 6 M	17	17.33	253.83	20.83	0.07	875.3
	OFDM 24 M		17.03	249.81	20.63	0.07	861.6
	11n MCS0		17.29	253.68	20.82	0.06	874.7
	11n MCS3		17.23	251.57	20.71	0.06	867.6
6 GHz	OFDM 6 M	16.5	16.35	233.05	26.51	0.05	816.9
	OFDM 24 M		16.61	234.03	26.48	0.05	820.1
	11n MCS0		16.42	233.56	26.50	0.05	818.5
	11n MCS3		16.84	236.03	26.55	0.05	826.8



Section 6.2

Rx Power Consumption

Rx Power Consumption

Active Rx	Rate	V _{BATT} 3.3V Average (mA)	V _{DD} 1.8 V Average (mA)	V _{DDIO} 1.8 V Average (mA)	Total power mW
2.4 GHz	CCK 1 M	3.24	0.16	0.09	11.1
	CCK 11 M	3.23	0.16	0.09	11.1
	OFDM 6 M	3.24	0.16	0.09	11.1
	OFDM 24 M	3.23	0.16	0.09	11.1
	11n MCS0	3.24	0.16	0.09	11.1
	11n MCS3	3.23	0.16	0.09	11.1
5 GHz	OFDM 6 M	4.81	0.16	0.09	16.3
	OFDM 24 M	4.81	0.16	0.09	16.3
	11n MCS0	4.81	0.16	0.09	16.3
	11n MCS3	4.80	0.16	0.09	16.3
6 GHz	OFDM 6 M	4.98	0.16	0.09	16.9
	OFDM 24 M	4.98	0.16	0.09	16.9
	11n MCS0	4.98	0.16	0.09	16.9
	11n MCS3	4.98	0.16	0.09	16.9

Acronyms and Terms

Acronym or Term	Definition
DUT	Device under test
EVM	Error vector magnitude
FTM	Factory test mode
KPI	Key performance indicators
LAN	Local area network
MAD	Median absolute deviation
MIMO	Multiple inputs multiple outputs
MTP	Modem test platform
PER	Packet error rate
PSR	Packet success rate
Rx	Receiver
Tx	Transmitter
VSA	Vector signal analyzer
VSG	Vector signal generator
VST	Vector signal transceiver
WAN	Wide area network (also known as WWAN, wireless WAN)
WLAN	Wireless LAN

Questions?

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