

MT7986 Power Boost Application Note

2021/9/1 Leo Kuo

Version History

Version	Date	Author (Optional)	Description
0.1	2021-9-1	Leo Kuo	Initial draft
1.0	2022-2-2	Micheal Su	Official release
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Outline

- ☐ Command Method
- Show Information Command Method



Command Method



Command Method

- iwpriv ra0 set TxPowerBoostCtrl =[1]:[2]:[3]:[4]:[5]:[6]:[7]:[8]:[9]:[10]:[11]:[12]:[13]
 - Explanation: this iwpriv command is used to boost power on each mode and rate.
 - Parameters:
 - Param[1]: band_idx, (1-symbol format) band index (0: band0, 1: band1)
 - Param[2]: phy_mode (1-symbol format) power category (0: CCK, 1: OFDM, 2: HT, 3: VHT, 4: HE)
 - Param[3]: bw (1-symbol format) bandwidth
 - for CCK/OFDM mode, 0: BW20
 - for HT/VHT mode, 0: BW20, 1: BW40, 2: BW80, 3: BW160
 - for HE mode, 0: RU26, 1: RU52, 2: RU106, 3: RU242. 4: RU484, 5: RU996, 6: RU996x2
 - Param[4]: pwr_boost_value_num (1-symbol format) number of power boost value to indicate variable-length parameters append afterward.
 - Param4 1 ~ Param 4 N: pwr boost values (1-symbol format) power boost values, which N is defined by parameter "pwr boost value"

Example:

- Band0 CCK boost 0.5dB power on each of rate
 - iwpriv ra0 set TxPowerBoostCtrl=0:0:0:4:1:1:1:1
- Band1 OFDM boost 0.5db power on each of rate
 - iwpriv rax0 set TxPowerBoostCtrl=1:1:0:8:1:1:1:1:1:1



Show Information Command Method



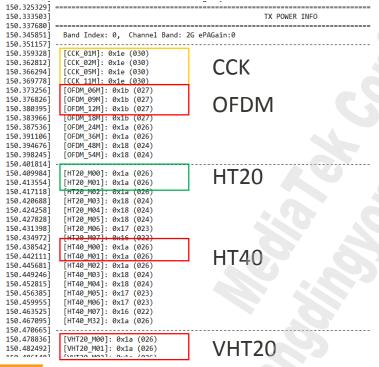
Show Information Command Method (1)

- 2.4G: iwpriv ra0 set TxPowerInfo=2
- 5G: iwpriv rax0 set TxPowerInfo=2
- Example:
 - 2.4GHz command:
 - iwpriv ra0 set TxPowerBoostCtrl=0:0:0:4:1:1:1:1 //CCK
 - iwpriv ra0 set TxPowerBoostCtrl=0:1:0:8:1:1:1:0:0:0:0 //OFDM
 - iwpriv ra0 set TxPowerBoostCtrl=0:2:0:8:2:2:0:0:0:0:0:0 //HT20
 - iwpriv ra0 set TxPowerBoostCtrl=0:2:1:8:3:3:0:0:0:0:0:0 //HT40
 - iwpriv ra0 set TxPowerBoostCtrl=0:3:0:8:3:2:0:0:0:0:0 //VHT20
 - iwpriv ra0 set TxPowerBoostCtrl=0:3:1:8:3:2:0:0:0:0:0 //VHT40
 - iwpriv ra0 set TxPowerInfo=2



Show Information Command Method (2)

Original



Boost

[226.151853]					
226.160025]	Band Index: 0, Channel Band: 2G ePAGain:0				
[226.165330]					
[226.173502]	[CCK 01M]: 0x1f (031)				
[226.176980]	[CCK_02M]: 0x1f (031)	CCK			
[226.180463]	[CCK_05M]: 0x1f (031)	CCIN			
[226.183946]	[CCK 11M]: 0x1f (031)				
[226.187429]	[OFDM_06M]: 0x1c (028)				
[226.190999]	[OFDM_09M]: 0x1c (028)	OFDM			
[226.194569]	[OFDM_12M]: 0x1c (028)	OLDIVI			
[226.198139]	[OFDM_18M]: 0x1c (028)				
[226.201709]	[OFDM_24M]: 0x1a (026)				
[226.205273]	[OFDM_36M]: 0x1a (026)				
[226.208843]	[OFDM_48M]: 0x18 (024)				
[226.212413]	[OFDM_54M]: 0x18 (024)				
[226.215982]					
[226.224152]	[HT20_M00]: 0x1c (028)	HT20			
[226.227723]	[HT20_M01]: 0x1c (028)	ПІΖО			
[226.231293]	[HT20_M02]. 0x1a (026)				
[226.234863]	[HT20_M03]: 0x18 (024)				
[226.238433]	[HT20_M04]: 0x18 (024)				
[226.242003]	[HT20_M05]: 0x18 (024)				
[226.245573]	[HT20_M06]: 0x17 (023)				
[226.249137]	[HT20_M07]: 0×16 (022)	1			
[226.252707]	[HT40_M00]: 0x1d (029)				
[226.256277]	[HT40_M01]: 0x1d (029)	HT40			
[226.259847]	[HT40_M02]: 0x1a (026)				
[226.263417]	[HT40_M03]: 0x18 (024)				
[226.266987]	[HT40_M04]: 0x18 (024)				
[226.270558]	[HT40_M05]: 0x17 (023)				
[226.274127]	[HT40_M06]: 0x17 (023)				
[226.277697]	[HT40_M07]: 0x16 (022)				
[226.281262]	[HT40_M32]: 0x1a (026)				
[226.284831]					
[226.293002]	[VHT20_M00]: 0x1d (029)	VHT20			
[226.296659]	[VHT20_M01]: 0x1c (028)	VITIZU			
[226.300315]	[VIIT20_M02]. 0x1a (026)				
[226.303972]	[VHT20_M03]: 0x18 (024)				
[226.307629]	[VHT20_M04]: 0x18 (024)				
[226.311286]	[VHT20_M05]: 0x18 (024)				

Show Information Command Method (3)

• Example:

5GHz command:

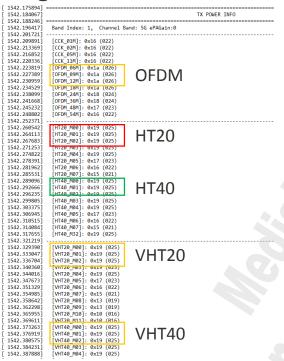
```
iwpriv rax0 set TxPowerBoostCtrl=1:1:0:8:1:1:1:0:0:0:0 //OFDM
iwpriv rax0 set TxPowerBoostCtrl=1:2:0:8:2:2:0:0:0:0:0:0 //HT20
```

- iwpriv rax0 set TxPowerBoostCtrl=1:2:1:8:3:3:0:0:0:0:0:0 //HT40
- iwpriv rax0 set TxPowerBoostCtrl=1:3:0:8:3:2:0:0:0:0:0:0 //VHT20
- iwpriv rax0 set TxPowerBoostCtrl=1:3:1:8:3:2:0:0:0:0:0:0 //VHT4
- iwpriv rax0 set TxPowerInfo=2



Show Information Command Method (4)

Original



Boost

[2141.067512]			
2141.075686]			TX POWER INFO
2141.079865			
[2141.088037]	Band Index: 1. Channel B	and: 5G ePAGain:0	
[2141.093343]			
[2141.101515]	FCCK 01M1: 0x16 (022)		
[2141.104993]	[CCK 02M]: 0x16 (022)		
[2141.108475]	[CCK 05M]: 0x16 (022)		
[2141.111959]	[CCK 11M]: 0x16 (022)		
[2141.111939]	[OFDM_06M]: 0x1b (027)		
[2141.119012] [2141.122582]	[OFDM_09M]: 0x1b (027) [OFDM 12M]: 0x1b (027)	OFDM	
		_	
[2141.126151]	[OFDM_18M]: 0x1b (027)		
[2141.129722]	[OFDM_24M]: 0x18 (024)		
[2141.133286]	[OFDM_36M]: 0x18 (024)		
[2141.136856]	[OFDM_48M]: 0x17 (023)		
[2141.140426]	[OFDM_54M]: 0x16 (022)		
[2141.143995]			
[2141.152165]	[HT20_M00]: 0x1b (027)	LITAG	
[2141.155735]	[HT20_M01]: 0x1b (027)	HT20	
[2141.159304]	[HT20_M02]: 0x19 (025)	0	
[2141.162875]	[HT20_M03]: 0x19 (025)		
[2141.166444]	[HT20_M04]: 0x19 (025)		
[2141.170015]	[HT20_M05]: 0x17 (023)		
[2141.173585]	[HT20_M06]: 0x16 (022)		
[2141.177150]	[HT20 M07]: 0x15 (021)		
[2141.180720]	[HT40_M00]: 0x1c (028)	LITAO	
[2141.184290]	[HT40_M01]: 0x1c (028)	HT40	
[2141.187860]	[HT40_M02]: 0X19 (025)	_	
[2141.191434]	[HT40_M03]: 0x19 (025)		
[2141.195004]	[HT40_M04]: 0x19 (025)		
[2141.198577]	[HT40 M05]: 0x17 (023)		
[2141.202146]	[HT40_M06]: 0x16 (022)		
[2141.205716]	[HT40 M07]: 0x15 (021)		
[2141.209281]	[HT40 M32]: 0x19 (025)		
[2141.212849]			
[2141.221020]	[VHT20 M00]: 0x1c (028)	\	
[2141.224677]	[VHT20 M01]: 0x1b (027)	VHT20	
[2141.228333]	[VHT20 M02]: 0x19 (025)	VIII 20	
[2141.231991]	[VHT20_M03]: 0x19 (025)		
[2141.235647]	[VHT20 M04]: 0x19 (025)		
[2141.239304]	[VHT20 M05]: 0x17 (023)		
[2141.242961]	[VHT20 M06]: 0x16 (022)		
[2141.246618]	[VHT20 M07]: 0x15 (021)		
[2141.250274]	[VHT20_M08]: 0x13 (019)		
2141.253931	[VHT20 M09]: 0x13 (019)		
2141.257588	[VHT20 M10]: 0x10 (016)		
2141.261239	[VHT20 M11]: 0x10 (016)		
2141.264895]	[VHT40 M00]: 0x1c (028)		
[2141.268552]	[VHT40 M01]: 0x1b (027)	VHT40	
[2141.272209]	[VHT40 M02]: 0x19 (025)	V 1 1 1 4 U	
[2141.275865]	[VHT40 M03]: 0x19 (025)		
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