

Ameba Mptool Userguide

He, Zhao

E-mail: <u>he_zhao@realsil.com.cn</u>

For the convenience of customers to test and debug ameba, we offer our customers a windows-based system UI_mptool; The tool contains four sub-interface Main, PSD, Efuse, Reg.

Operation steps:

1.Open"Setup\Realtek_DUT_Selection.exe",and set every item according to the picture below,Module

RF Mode

Software Control Interface setup Items are particularly important.

😾 DUT Selection	n	
WiFi		
Module	RTL81XXE Series	ViFi is Dual MAC
RF Mode	1T1R	•
🗖 Have 5G	UH Band	
🗖 Limit 2T	Power in 2G Band	Limit 2T Power in 5G Band
Bluetooth		
Module	None	•
Controlle	d via WiFi	
Ant. Ma Software Con	apping trol Interface	
UART		•
Detail	Setup	
	ок	Cancel

2.Open"Setup\Realtek_DUT_Selection.ini", and set the UART parameters

Device1_PortNo =12(Vary by PC, you can check the value by the following





3.Open" UI_mptool.exe". Firstly, you must initialize the DUT, and then the four sub interface: Main, PSD, Efuse, Reg can be operated.

4.Main:

Note: When you select "Initialize with Pidx in EEPROM",

- a) It means that TX Power Index Column A will show the Efuse Index Value, which also have been limited by "Power by rate table" (limit power by rate in each mode) and "Power limit table" (limit power by channel plan value) before shown.
- b) If you want to load power index only from Efuse, not count in the "Power by rate table" and "Power limit table", you can modify the "\WiFiChip\Realtek_WiFi_Device_Setup" to "CalculateIndexByDriver=0".If TX Power Index show "0", It's probably that the MAC address have not been programmed in Efuse, thus you should PG Efuse entirely in Another Page.

🎇 UI_mptool	TX Se	
Main PSD Efuse Reg		Read TRx counter
Control Initialize Initialize with Pidx in EEPROM TX Power Tracking Start MAC Address	TX Setting RX Setting RX Setting Ant TX Ant TX Ant RX A A Data Channel 1	TX Packet Setup Packet Counter default : Random TX OK Random RX OK Count RX ERR 0 Reset Length thurned count in Tage
Wlan Mode Set TRX mode Testing Item Packet Tx	A 42	1528 Interval Interval Interval View Window
Start Stop	Freamble Long_GI	show DUT info message



5.PSD:

🕱 UI_mptool	
Main PSD Efuse Reg	start/stop_notice:stop PSD before change to main efuse reg
IQ Path 🛛 IQ All On 👻	
FFT Pts. 1024 👻	
FFT Avg. 32 👻	marker seting PSD Coordinate seting
●A ○B ○C ○D	80
Channel 1 👻	
Bandwidth 20MHz 👻	70
Comer High Low	
Disable CCA	40 — 40 —
Rx Gain(0-0x7F) 0X20	30
Max	20
RF By Gain Mid	10 -
0xED	
- Mm	-20 -10 0 10 20 MHz

6.Efuse:

The picture below is the description of Efuse. To be attention:Writing data to Ameba is base on the mapfile, so you must update your calibration data to map. If you are familiar with the Efuse contents, you can modify the calibration data on the map directly.

🤹 U	🗱 UI_mptool																												
Main	P	SD	Ef	use	Reg Mapfile You must u													update the right data to the left											
	1	0	3	2	5	4	7	6	9	8	В	A	D	С	F	E	map	file be	fore "Update" and "Program"!!										
00	81	95	16	C2	FF	FP	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF		1	ID 8195										
01	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			MAC Address FFFFFFFFFFFF										
02	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	02	2D	FF	FF	FF	FF	Ξ		ThermalMeter 1A										
03	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF		1	Channel plan 20										
04	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF		1	XtalCanacity 20										
05	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF		<u> </u>											
06	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF		<<<<	TX Power Index										
07	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			CCK BW40										
08	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			Ch 1.2 45 🚔 45 🚔										
09	FF	FF	FF	FF	FF	FF	FF	FF ate	FF	FF	FF	FF	FF ma	FF	FF e d	FF			Ch 3.4.5 45 🚔 45 🚔										
OA	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF			Ch 6.7.8 45 🚔 45 🚔										
0B	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF		0v0~0	Ch 9.10.11 45 🚔 45 🚔										
0C	FF Rea	FF ad I	FF C E	FF	FF	FF	FF	FF	20	20	05	1A	00	00	FF	00	-		Ch 12.13 45 🚔 45 🚔										
	1	_]	ſ		Lin	lata			. [D					0×6×0	Ch 14 011 450 1										
		Re	ead) >	>>		Up	Jale				PI	ogra	am				Difference BW20 and BW40 0 📄										
	Re	adı	map	ofile			Sa	ve r	map	file	Re	ad	fro	m/	Sav	e to	o loc	al	Difference OFDM and BW40 2										



			1	0	з	2	5	4	7	6	9	8	в	A	D	С	F	E
offset	name	00	81	95	16	C2	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
20~25	CCK Index	01	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
26.24	BW40 Index	02	2D FF	2D FF	2D FF	2D FF	2D FF	2D FF	2D FF	2D FF	2D FF	2D FF	02 FF	2D FF		FF FF	FF FF	FF
20~2A	BWHO MICK	04	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FI
2B	Difference BW20-1S and BW40-1S.	05	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
C8	channel plan	06	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF
		08	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
C9	Crystal Calibration	09	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
CA	Thermal meter	OA	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
OD		0C	44 77	FF	TT TT	4 4 7 7	44 77	FF	FF	44 77	20	20	05	1.4	00	00	FF	00
CB	IQK/LCK	OD	00	ЗE	02	01	00	23	FC	00	04	20	02	4C	87	11	02	21
CC	2G/5G PA type	OE	00	0C	04	22	08	00	32	00	21	FF	0C	02	22	00	01	24
CD CE	2C noth A R I NA type	10	00	00	00	00	00	00	00	00	00	00	00	00	00	02	PP 00	F F
CD~CE	20 paul A,D LINA type	11	EB	00	6E	00	00	01	00	00	FF	00	FF	FF	FF	FF	FF	FF
11A~11F	MAC	12	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
121	Roard option	13	01	FF	10	00	FF	00	FF	00	00	00	FF	FF	FF	FF	FF	FF
151		14	मम	44	44	मम	44	44	मम सम	मम मम	44	44	H H H	44	44 77	मम	44	44
132	feature options	16	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
133	BT Setting	17	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
155		18	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
134	Version	19 1A		· 귀귀	ㅋㅋ ㅋㅋ	· 귀귀	ㅋㅋ ㅋㅋ	제 제 제 제	제 제 제 제	ㅋㅋ ㅋㅋ	FF FF	ㅋㅋ ㅋㅋ	ㅋㅋ ㅋㅋ	귀귀 귀귀	ㅋㅋ ㅋㅋ	ㅋㅋ ㅋㅋ	FF FF	FF
136	2G Tx BB Swing Setting	18	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FI
150		1C	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FI
138	Tx Power Calibratior rate	1D	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FI
130	TRx antenna Options	1E	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FI
138 139	Tx Power Calibratior rate TRx antenna Options	1D 1E	FF FF	FF FF	FF FF	FF FF	FF FF	नन नन मन	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	FF FF	F F

7.Reg:

