无屏幕的 CMW500 简单操作手册及快捷键手册

第一步:使用 DVI 连接线连接 CMW500 和带有 DVI 接口的显示器。



第二步:将CMW500 开机,开机完成之后,请利用键盘按"CTRL+G", 然后选择 LTE Signalling 功能。

🕸 LTE Signaling				LTE
Connection Status	Cell Setup			1
Cell	Operating Band	Band 7 🔹 🔻	FDD 👻	Go to
		Downlink	Uplink	
Packet Switched A Cell On	Channel	3100 Ch	21100 Ch	
UE IPv4 Address	Frequency	2655.0 MHz	2535.0 MHz	
	Cell Bandwidth	20.0 MHz 🔹	20.0 MHz 🕜	
Event Log	RS EPRE	-80.0 dBm/15kHz		
	Full Cell BW Pow.	-49.2 dBm		
	PUSCH Open Loo	p Nom.Power	-20 dBm	
	PUSCH Closed Lo	op Target Power	-20.0 dBm	
	Connection Setu	ір		<u> </u>
	Scheduling Type	RMC		
UP 1. C		Downlink	Uplink	
	MIMO Streams	● 1 ● 2		<u> </u>
IMSI	All Streams identi	cal settings 🔽		
	#RB	100 -	100 -	
	RB Pos./Start RB	low 🔻 0	low 🔻 0	
UE Measurement Report	Modulation	16-QAM 🔻	QPSK 🔻	
RSRP	TBS Idx / Value	13 25456	2 4584	<u>}</u>
RSRQ	Throughput	22.910 MBit/s	4.584 MBit/s	LTE Signaling
	Throughput overall	45,820 MBit/s		ON
	Ĩ			Config

CMW500 w/o DISPLAY QUICK START

第三步:可设定您要连线的 Operating Band 以及 Channel。

第四步: 在 Signalling 画面选择 LTE Signalling, 按下 "CRTL+Enter" 将 LTE 信号打开。

第五步:此时 CMW500 已经开始模拟 LTE 基站发射 LTE 信号。

第六步:请把LTE DUT 打开,基本上 DUT 即可注册 CMW500。

🎨 LTE Signaling				LTE
Connection Status	Cell Setup			
Cell	Operating Band	Band 7 🔗	FDD 😽	Go to
		Downlink	Uplink	
Packet Switched Attached	Channel	3100 Ch	21100 Ch	
UE IPv4 Address 192.168.48.129	Frequency	2655.0 MHz	2535.0 MHz	
	Cell Bandwidth	20.0 MHz	20.0 MHz 📝	<u> </u>
Event Log	RS EPRE	-80.0 dBm/15kHz		
	Full Cell BW Pow.	-49.2 dBm		
	PUSCH Open Loo	p Nom.Power	–20 dBm	
	PUSCH Closed Lo	op Target Power	–20.0 dBm	
	Connection Setu	ip		\vdash
	Scheduling Type	RMC		T
IIE Infa		Downlink	Uplink	
IMEL 1234567982131400	MIMO Streams	©1 ©2		
IMSI	All Streams identi	cal settings 🔽		
	#RB	100 -	100 -	
	RB Pos./Start RB	low 🔻 0	low 🔻 0	
UE Measurement Report	Modulation	16-QAM 🔻	QPSK 🕶	
RSRP	TBS ldx / Value	13 25456	2 4584	<u>}</u>
RSRQ	Throughput	22.910 MBit/s	4.584 MBit/s	LTE Signaling
	Throughput overall	45,820 MBit/s		
Connect				Config

选择 Connect 即可连线。

> LTE Signaling				LTE
Connection Status	Cell Setup			
Cell	Operating Band	Band 7	FDD 🔛	Go to
Packet Switched Connection Established UE IPv4 Address 192.168.48.129	Channel Frequency Cell Bandwidth	3100 Ch 2655.0 MHz 20.0 MHz	21100 Ch 2535.0 MHz 20.0 MHz	
Event Log	RS EPRE Full Cell BW Pow.	-80.0 dBm/15kHz -49.2 dBm		
	PUSCH Open Loo PUSCH Closed Lo	p Nom.Power op Target Power	–20 dBm –20.0 dBm	
	Connection Setu	ıp		<u> </u>
	Scheduling Type	RMC		
UE Info IMEI 1234567982131400	MIMO Streams All Streams identi	Cownlink Cal Cal cal settings	Uplink	<u> </u>
	#RB	100 -	100 -	
	RB Pos./Start RB	low 🛨 0	low 🔻 0	<u>}</u>
	Modulation	16-QAM 🔫	QPSK -	
RSRP RSRQ	TBS ldx / ∨alue Throughput Throughput overall	13 25456 22.910 MBit/s 45.820 MBit/s	2 4584 4.584 MBit/s	LTE Signaling
Disconnect	Ţ			Config

第七步: 连上线后可以在 CMW500 看到 Connection Established, 此时在画面右边可看到"Go to " or "LTE Multi Eval",如出现"Go to" 按下后可看到 Go to Measurement Menu,即可选择测试项目

🚯 Go to measurement menu					
Select Menu	LTE Extended BLER 1	•			
🗖 Don't show popup again					
Go to	Cancel				

若出现"LTE Multi Eval",按下后即可直接进入测试

第八步:如选择 LTE Multi Evaluation,可看到 LTE Tx measurement

CMW500 w/o DISPLAY QUICK START

😵 LTE Measuren	nent 1 - Multi Evalua	ation			_	LTE
lode: FDD Fred	1.:2535.0 MHz Ref	f. Level: 7.00 dl	3m Bandwidth: 2	0.0 MHz Cyclic Prefix : No	ormal Meas Subfr.:	⁰ Multi
EVM x			EVM vs Subo	carrier		Evaluation RUN
	and and and a	SC-FDMA Symbol	- www.winawana.	and a second and a second s	Subcarri	RF
Magnitude Err	or		Inband Emis	sions		Settings
1		SC-FDMA Symbol	đĐ		Resource Bloc	rigger
Phase Error		101_010_010_001_001_001_000_000	Equalizer Sp	ectrum Flatness		
		SC-FDMA Symbol	dB		Subcarri	ier
Power Dynam	ics	THE OFFICE AND AND AND AND AND	1	IQ		
dBm process control of the second		ha ha		• 0 • al		Display
Power Monito	r		Spectrum A	CLR		···· }
dBm		Subframes (TTI)	dBm			
RB Allocation	Table		Spectrum Er	nission Mask		
			d8m		¬¦=====	Signaling Parameter
TX Measurem	ent Current:					
TX Power	-19.13 dBr	nn EVM RMS⊺	2.41 % IQ (Offset −40.42 dBc Fre	q. Error – 9.81 Hz	Signaling
Repetition	Stop Condition	Statistic Count	Channel Bandwidth	Measurement Subframes	Assign Views	Config

第九步:选择 LTE Extended BLER,可看到 LTE Rx measurement



可按下 Signaling parameter 来调整 Modulation 方式,下方的 Throughput 会动态改变,若要测量最大的 Throughput,需要把 RMC 改成 User define mode。

🚯 LTE B	LER										LTE
Throug	ghput										Extended
♦ ₿ x: MBit/s	Off y	r .e	intel a	\	b	Off y:		◆ ₿ ×:	Off y:	300 3	BLER
100 80	◆ Overall ◆ Stream * ◆ Stream \$										
60											
40											
🚯 Cor	nnection Se	tup		ł	4		<u>]</u>				
Schee	duling Type	RMC		1024	211.224/21	<u> </u>	-12	000 -8000	-4000	Subtrames	
MIMO	Stroome	Downlin	k co	L	Jplink		rean	n 1	Strear	n 2	
All St	reams iden	tical settin	us 🔽				ive	Absolute	Relative	Absolute	Display
#RB				00 -		100 🔻	%	19800	99.98 %	19797	<u>}</u>
RB Po	os./Start RE	8 low	<u> </u>	0	low -	0	% 0/	0	0.02 %	0	Marker
Modul	lation		16-Q/	AM 🕶		QPSK 🔻	ve	kBit/s	Relative	kBit/s	<u>}</u>
TBS Id	dx / Value	13	910 MBit	25456	2	4584 MBit/s	%	22910.00	99.98 %	22906.53	Signaling Parameter
Throug	ghput overa	II 45.	820 MBit	/s	4,004	mores					
DL Er	ror Insertior	1	0 %								Signaling
Cell Setup .	C	onnectio etup	n				Ì	Í	Ť		Config

LTE B	LER										LTE
Throug	ghput										Extended
♦₿ x: MBit/s	Off y:	3 3		\ \ \	b 	Off y:		◆ ₿ x:	Off y:	2010 3	BLER
100 80	◆ Overall ◆ Stream 1 ◆ Stream 2										
60		++				+					
40						-					ļ
🚯 Cor	nnection Setu	ip 		4		×	1			Subframes	
Scheo	duling Type	User def	ined Ch	annels		1	-12		1 -4000	Cabinanites	Į
		Downlink		L	Jplink		rean	1	Strear	n 2	[
	Stream	① 1 ① 1 ① ① ① ① ① ① ① ① ① ① ① ① ① ① ① ①	02				ive	Absolute	Relative	Absolute	Display
All St	reams identi	cal setting:	s IV				%	9000	100.00 %	9000	<u>}</u>
#RB				100		100	%	0	0.00 %	0	
Start F	RB			0		0	%	0	0.00 %	0	Marker
Modul	lation		64-QA	M 🔻		QPSK -	%	kPit/o	0.00 %	LD:+/o	<u> </u>
TBS lo	dx / Value	2	1 E	51024	2	4584	%	51024.00	100.00 %	51024.00	Signaling
Throug	ghput	51.02	24 MBit/	s	4.584	MBit/s					Parameter
Throug	ghput overall	102.04	48 MBit	s							[
DL Er	ror Insertion		0 %								Signaling
Cell Setur	Co	nnection	Ť		Ì		Ì	Ť	Ϋ́		Config

即可直接测试 LTE Max throughput.(附图为 MIMO,OL spatial

multiplexing)

S LTE B	LER							LTE
Throu	ghput							Extended
♦₿ x: MBit/s	Off	/ >	◆ Ũ ×:	Off y: -	• 🛛 x:	Off y:		BLER
100 80	♦ Overall ♦ Stream ♦ Stream :	1						
60								
40								<u> </u>
20	in an lan						Subframes	
4	-28000	-24000	-20000	-16000 -	12000 -8000	0 -4000		<u> </u>
		Ove	r All	Stre	am 1	Stream		
		Relative	Absolute	Relative	Absolute	Relative	Absolute	Display
ACK	2	100.00 %	60000	100.00 %	30000	100.00 %	30000	<u></u>
NACK	-	0.00 %	0	0.00 %	0	0.00 %	0	
DTX		0.00 %	0	0.00 %	0	0.00 %	0	Marker
BLER		0.00 %		0.00 %		0.00 %	No. of Concession	L
Throug	ghput	Relative	kBit/s	Relative	kBit/s	Relative	kBit/s	Olever Bare
- Ave Mir	erage nimum	100.00 %	102048.00	100.00 %	51024.00	100.00 %	51024.00	Parameter
Ma	ximum		102048.00					<u>}</u>
Subfran 30	nes) 000 / 300(Scheduled: 00 30000						LTE 1 Signaling
Cell Setup .	c	onnection etup	ſ	Ĩ	Ť	Ť		Config

RESET	Key	Dialog Opened	Shortcut
	RESET	Reset	Ctrl + R
	INFO	Info	Ctrl + I
SAVE	SAVE	Save/Recall	Ctrl + S
SETUP	SETUP	Setup	Ctrl + E
PRINT	PRINT	Print	Ctrl + P
HELP	HELP	Help	F1
	DEVICE	Instrument Setup	Ctrl + D
	FAVORITE	Favorites (for future extension)	Ctrl + F
FAVURITE	BLOCK VIEW	Block View (for future extension)	Ctrl + B
	MEASURE	Measurement Controller	Ctrl + M
MEASURE	SIGNAL GEN	Generator/Signaling Controller	Ctrl + G
	TASKS	Task Bar	Ctrl + Tab
	ON OFF	Switch generator or signaling	Ctrl + Enter,
		generator on or off	Ctrl +
			Return
STOP	ON OFF or	Switch measurement on or off	Ctrl + Enter,
TASKS	RESTART		Ctrl +
TASKS	STOP		Return

CMW500 快捷方式