

BTERun 用户操作手册

版本 V2.1.2

目

=	
ン	K

第−	−部分	· 软件介绍	2
	<i>—</i> `,	使用说明	2
	<u> </u>	测试项展示	2
	(1)) 经典蓝牙 (BR)	2
	(2)) 经典蓝牙(EDR)	2
	(3)) 低功耗蓝牙(BLE4.2/5.0/5.1/5.2)	3
第二	二部分	运行环境	4
	<u> </u>	硬件运行环境	4
	二,	软件运行环境	4
	三、	测试环境搭建	4
	(1)	0 仪表热机	4
	(2))通讯方式	5
	(3)) 以太网通讯	5
	(4))USB(串口)通讯	5
第三	E部分	用户交互界面	6
	→,	连接仪表	6
	(1)) 启动软件	6
	(2))选择连接方式	6
	(3)) 修改 IP 地址	7
	(4)) 连接仪表	7
	(5)) 进度显示	7
	<u> </u>	配置参数	8
	(1)) 配置测试模式	8
	(2))选择模式	9
	(3)) 配置链路模式	9
	(4))选择测试项目	10
	(5))参数配置	10
	(6)) 灵敏度测试-注意事项	11
	三、	开始测试	11
	四、	结果查看	12
	五、	CW 测试	12
	(1)) CW 测试参数配置	12
	(2)) CW 测试结果查看	13
	六、	Full Channel Power Analysis 测试	13
	(1)) Full Channel Power Analysis 测试参数配置	13
	(2))Full Channel Power Analysis 测试结果查看	14
	七、	RX Research 测试	15
	(1))RX Research 测试参数配置	15
	(2)) RX Research 测试结果查看	15
	八、	Power Control 测试	16
	(1))Power Control 测试参数配置	16
	(2))Power Control 测试结果查看	16
	九、	RSSI 测试	17
	(1)) RSSI 测试参数配置	17
	(2)) RSSI 测试结果查看	18

第一部分 软件介绍

一、使用说明

欢迎您使用中承 BTE Run 客户端软件,该软件须搭配 BTE 系列蓝牙综合测试仪(以下简称"蓝 牙综测仪")使用。

本手册介绍了 BTE Run 客户端软件的各种功能、使用方法和注意事项,使用该软件前,请先仔 细阅读本手册。

BTE Run 客户端软件支持经典蓝牙(BR / EDR)协议测试,支持低功耗蓝牙(BLE 4.2 / 5.0 / 5.1 / 5.2)协议测试,测试项如下所示:

二、测试项展示

(1) 经典蓝牙 (BR)

编号	项目名称
RF/TRM/CA/BV-01-C	Output Power
RF/TRM/CA/BV-03-C	Power Control
RF/TRM/CA/BV-07-C	Modulation Characteristics
RF/TRM/CA/BV-08-C	Initial Carrier Frequency Tolerance
RF/TRM/CA/BV-09-C	Carrier Frequency Drift
RF/RCV/CA/BV-01-C	Single Sensitivity
RF/RCV/CA/BV-02-C	Multi Sensitivity
RF/RCV/CA/BV-06-C	Maximum Input Level
	Throughput

(2) 经典蓝牙(EDR)

编号	项目名称
RF/TRM/CA/BV-10-C	EDR relative transmit power
RF/TRM/CA/BV-11-C	EDR carrier frequency stability and modulation accuracy
RF/TRM/CA/BV-12-C	EDR differential phase encoding
RF/RCV/CA/BV-07-C	EDR sensitivity
RF/RCV/CA/BV-10-C	EDR maximum input level
	Throughput

(3) 低功耗蓝牙(BLE4.2/5.0/5.1/5.2)

编号	项目名称
TRM-LE/CA/01/C	Output Power
TRM-LE/CA/05/C	Modulation characteristics
TRM-LE/CA/06/C	Carrier frequency offset & drift
RCV-LE/CA/01/C	Receiver sensitivity
RCV-LE/CA/06/C	Maximum input signal level
	Throughput

第二部分 运行环境

一、硬件运行环境

软件控制平台,包括 PC 机或笔记本电脑:需要满足以下要求的计算机:具有 Pentium(奔腾) II 及以上的处 理器,内存最低 256MB,硬盘最小 20GB,显示器最小分辨率 1024*768,鼠标,键盘。

该软件须搭配深圳市中承科技有限公司的 BTE 系列蓝牙综测仪同装有测试软件的上位机使用以太网通讯 使用。





二、软件运行环境

支持 Windows 7/8/10,64bit。



三、测试环境搭建

(1) 仪表热机

仪表上电,需要热机 5 分钟,如图 3.1-1 所示。



图 3.1-1

(2) 通讯方式

目前开放网线 和 USB(串口)连接方式。

(3) 以太网通讯

连接仪表网口和电脑网口(图 3.2-1)。



图 3.2-1

(4) USB(串口)通讯

连接仪表 USB 串口和电脑 USB 串口(图 3.2-2)。



图 3.2-2

一、连接仪表

(1) 启动软件

双击 BTE Run.exe 启动 BTE Run 软件, 启动大概需要 5 秒会显示测试界面(图 4.1-1)。

BT Measurement V2	.3.4 beta									- 6	×		
System Configuration	Test Configuration	Run Test	CW	Full Chan	nel Power Ana	alysis	RX Research	Power Control	RSSI				
Communication Mode	Dison	nected		Burst type	Burst type BR 👻				BLE DUT	Control			
Ethernet	•	Connect			AA:AA:AA:AA:AA:AA			HW Interface	USB Adapto	r R\$232	•		
]							BB:BB:BB:B	B:BB:BB		Baud Rate	115200		•
	Di	sonnected		Inquiry	Fast	•	1	Stop Bits	1		•		
								Parity	NONE		-		
								Port Number	COM1		•		
							Pa	th 1		Path 2			
				Test Switch ON			-	OFF		~			
				Operate M	ode		RF Test	-	RF Test		•		
				Link Mode			Test Mode	-	Test Mod	e	•		
				DUT Expec	ted Power		15	•	12		•		
				low_chanr	nel VS pathlos	s	0 .	17	0	• 5			
				mid_chan	nel VS pathlos	s	39 *	17	39	<u>•</u> 5			
				high_chan	nel VS pathlo	ss	78 •	17	78	<u>↑</u> ▼ 5			

图 4.1-1

(2) 选择连接方式

初始连接状态为 Disconnected,进度条为红色。选择连接方式,目前支持以太网口连接方式(图 4.1-2)

II BT Measurement V2.	.3.4 beta										-	-	×
System Configuration	Test Co	onfiguration	Run Test	CW	Full Chan	nel Power Analysis	RX Research	1	Power Control	RSS			
Communication Mode		Dison	nected		Burst type	Burst type BR 👻				BLE	DUT Contro	I	
Ethernet	-		Connect		O Manual	AA:AA:AA:AA:AA				USB A	daptor R\$232	2	·
Ethernet						BB:BB:BB:BB:BB:BB	В		Baud Rate	11520)		•
Visa USB to Serial	a B to Serial Disonnected (Inquiry	Fast 🗸	1	* •	Stop Bits	1			 •
									Parity	NONE			-
									Port Number	COM1			•
								Pat	h 1		Path	12	
					Test Switc	ch	ON			OFF			 Ŧ
					Operate M	lode	RF Test		_	RFT	est		•
					Link Mode		Test Mode		_	Test	Mode		•
					DUT Expec	cted Power	15		•	12			•
					low_chanr	nel VS pathloss	0	•	17	0	*	5	
					mid_chan	nel VS pathloss	39	* *	17	39	*	5	
					high_chan	nel VS pathloss	78	•	17	78	* *	5	

图 4.1-2

(3) 修改 IP 地址

连接网线后,需要修改连接仪表的上位机(电脑)IP 地址,改为: 192.168.10.xxx ,仪表默认 IP 地址 为: 192.168.10.200,端口号为: 52889 ,上位机 IP 必须改为 10 网段,且地址不能和仪表相同。 当前文件夹下 config.ini 文件用于配置仪表 IP 地址/端口号 (图 4.1-3)。



图 4.1-3

(4) 连接仪表

点击 Connect 按钮开始连接仪表(图 4.1-4)。

II BT Measurement V2	.3.4 beta							_	
System Configuration	Test Configuration	Run Test	CW Full Cha	nnel Power Analysis	RX Research	Power Control	RSSI		
Communication Mode	Diso	nnected	Burst type	e BR		•	BLE	DUT Control	
Ethernet	-	Connect	O Manua	AA:AA:AA:AA:AA:AA:	HW Interface	USB Ada	aptor R\$232	•	
1				BB:BB:BB:BB:BB:BB:	Baud Rate	115200		•	
	D	isonnected	Inquiry	Fast	Stop Bits	1		•	
						Parity	NONE		-
						Port Number	COM1		•
						Path 1		Path 2	
			Test Swit	tch	ON		▼ OFF		Ŧ
			Operate	Mode	RF Test		▼ RF Te	st	•
			Link Mod	e	Test Mode		Test I	Mode	•
			DUT Expe	ected Power	15	_	12		•
			low_char	nnel VS pathloss	0	1 7	0	÷ 5	
			mid_cha	nnel VS pathloss	39	17	39	÷ 5	
			high_cha	nnel VS pathloss	78	17	78	• • 5	

图 4.1-4

(5) 进度显示

待显示 Connected(进度条呈绿色)表示连接仪表成功。下面 log 窗口会显示获取到到仪表信息(信息 1 表示版本号,信息 2 表示许可证),若没有显示仪表相关信息则表示仪表还在自检中(图 4.1-5),待 1 分钟左右 再次点击 Connected 即可获取到仪表信息。

D BT Measurement V2	2.3.4 beta							- 🗆 X
System Configuration	Test Configuration	Run Test CV	/ Full Chan	nel Power Analysis	RX Research	Power Control	RSSI	
Communication Mode	Con	nected	Burst type	BR	•		BLE DUT Co	ntrol
Ethernet	Ethernet - Connect					HW Interface	USB Adaptor RS	232
1			BB:BB:BB:BB:BB:BB		Baud Rate	115200	<u>-</u>	
	Di	sonnected	Inquiry	Fast 👻	1	Stop Bits	1	•
				,		Parity	NONE	<u>-</u>
		1				Port Number	COM1	-
ERROR_OK>>ZhonCent, BTE 220185, S18852, 1, 13_RC_	100, ZT001 220421_1900&202203007]		Pa	th 1	I	Path 2
ERROR_OK>>Lic_SN=valid S01101-000185, 2022-01-4	, basic, ZT001 220185, B 04; Lic_BTE100-	11-	Test Swite	Test Switch ON			OFF	-
M=valid, basic, 300, 1001 BT=valid, optional, 300. BTA=valid, optional, 300	. 01. 01, 2022-12-31; Li e 1001. 02. 01, 2022-12-31 . 1001. 03. 01, 2022-12-3	_BTE100- ;Lic_BTE100- 1;Lic_BTE100-	Operate M	lode	RF Test	-	RF Test	•
BTT=valid, optional, 300 DM=valid, optional, 300. BLES=valid, optional, 30	. 1001. 04. 01, 2022-12-3 1001. 05. 01, 2022-12-31 0. 1001. 06. 01, 2022-12-	1;Lio_BTE100- ;Lio_BTE100- 31;Lio_BTE100-	Link Mode		Test Mode	-	Test Mode	•
PMMP=valid, optional, 30 BLET=valid, optional, 30 PDF=valid, optional, 300	0. 1001. 07. 01, 2022-12- 0. 1001. 08. 01, 2022-12- . 1001. 09. 01, 2022-12-3	31:Lic_BTE100- 31:Lic_BTE100- 1:Lic_BTE100-	DUT Expe	cted Power	15	•	12	•
LTD=valid, optional, 300 OTD=valid, optional, 300 RSSI=valid, optional, 30	. 1001. 10. 01, 2022-12-3 . 1001. 11. 01, 2022-12-3 0. 1001. 13. 01. 2022-12-	low_chan	nel VS pathloss	0 .	17	0	5	
SPL=valid, optional, 300	. 1001. 12. 01, 2022-12-3	1;	mid_chan	nel VS pathloss	39 *	17	39	5
		2	high_chan	nel VS pathloss	78	17	78	5

图 4.1-5

二、配置参数

(1) 配置测试模式

本软件支持经典蓝牙(BR / EDR)协议测试,支持低功耗蓝牙(BLE 4.2 / 5.0 / 5.1 / 5.2)协议测试。根据实 际测试环境配置相应路损和被测件期望功率(图 4.2-1)。

BT Measurement V2	.3.4 beta														
System Configuration	Test Configuration	Run Test	CW	Full Chan	iel Power Analysis		RX Research	P	ower Control		RSSI				
Communication Mode	Cor	inected		Burst type	BR			-		BLE DUT Control					
Ethernet	,		BR EDR Low Energy				HW Interface	U	SB Adaptor R S23	2		•			
1					BB:BB:BB:BB:BB:BB:	BB			Baud Rate	11	15200			•	
		Inquiry	Fast	· 1	1	.	Stop Bits	1				•			
									Parity	N	DNE			•	
									Port Number	co	DM1			Ŧ	
ERROR_OK>>ZhonCent, BTE1 220185, S18852, 1, 13_RC_2	00, ZT001 20421_1900&20220300	7						Path	11		Pat	th 2			
ERROR_OK>>Lic_SN=valid, S01I01-000185, 2022-01-0	basic, ZT001 220185, 1 14; Lic_BTE100-	811-		Test Switch			ON		-	·	OFF			Ŧ	
M=valid, basic, 300, 1001. BT=valid, optional, 300, 1 BTA=valid, optional, 300.	01.01,2022-12-31;Li 001.02.01,2022-12-3: 1001.03.01,2022-12-3	e_BTE100- 1;Lio_BTE100- 31;Lio_BTE100-		Operate M	ode		RF Test		-	·	RF Test			•	
BTT=valid, optional, 300. DM=valid, optional, 300.1 BLES=valid, optional, 300	1001.04.01,2022-12-3 001.05.01,2022-12-3 0.1001.06.01,2022-12-	31;Lic_BTE100- l;Lic_BTE100- -31;Lic_BTE100-		Link Mode			Test Mode		-	·	Test Mode			•	
PMMP=valid, optional, 300 BLET=valid, optional, 300 PDF=valid, optional, 300.), 1001, 07, 01, 2022-12-), 1001, 08, 01, 2022-12- 1001, 09, 01, 2022-12-3	-31:Lic_BTE100- -31:Lic_BTE100- 31:Lic_BTE100-	-	DUT Expec	ted Power		15		•]	12			•	
LTD=valid, optional, 300. OTD=valid, optional, 300. RSSI=valid, optional, 300.	DD=valid, optional, 300, 1001, 00, 01, 2022-12-31; Lic_BTE100- LTD=valid, optional, 300, 1001, 10, 01, 2022-12-31; Lic_BTE100- TD=valid, optional, 300, 1001, 11, 01, 2022-12-31; Lic_BTE100- RSSI=valid, optional, 300, 1001, 13, 01, 2022-12-31; Lic_BTE100-						0	•	17		0 •	5			
SPL=valid, optional, 300, 1001, 12, 01, 2022-12-31;				mid_chanr	el VS pathloss		39	•	17		39	5			
			high_chan	nel VS pathloss		78	•	17		78	5				

图 4.2-1

(2) 选择模式

如果选择: BLE 低功耗蓝牙测试,配置串口信息需要与被测件通讯参数对应上,在右侧 BLE DUT Control 界面如图 4.2-2:

🚺 BT Measurement V2	2.3.4 beta							-		
System Configuration	Test Co	onfiguration Run Test CW	Full Chan	nel Power Analysis	RX Research	Power Control	RS	SI		
Communication Mode		Connected	Burst type	BR	-		Bl	E DUT Control		
Ethernet	-	Connect	O Manual	Manual AA:AA:AA:AA:AA			USB Adaptor RS232			
1			-1	BB:BB:BB:BB:BB:BB		Baud Rate	1152	00	-	
		Disonnected	Inquiry	Fast 🔹	1 .	Stop Bits	1	•		
						Parity	NONE			
						Port Number	COM	1	Ŧ	
ERROR_OK>>ZhonCent, BTE1 220185, S18852. 1. 13_RC_2	100, ZT001 220421_19	004202203007		Path				Path 2		
ERROR_OK>>Lic_SN=valid, S01101-000185, 2022-01-0	, basic, ZT 04 ; Lic_BT	001 220185, B11- E100-	Test Swite	Test Switch ON			OF	F	~	
M=valid, basic, 300, 1001. BT=valid, optional, 300.1 BTA=valid, optional, 300.	. 01 . 01, 20 1001 . 02 . 0 . 1001 . 03 . (22-12-31;Lic_BTE100- 1,2022-12-31;Lic_BTE100- 01,2022-12-31;Lic_BTE100-	Operate M	Operate Mode RF Test			▼ RF Test		•	
BTT=valid, optional, 300. DM=valid, optional, 300.1 BLES=valid, optional, 300	. 1001. 04. (1001. 05. 0 0. 1001. 06	01, 2022-12-31;Lio_BTE100- 1, 2022-12-31;Lio_BTE100- . 01, 2022-12-31;Lio_BTE100-	Link Mode		Test Mode	•		st Mode	•	
PMMP=valid, optional, 300 BLET=valid, optional, 300 PDF=valid, optional, 300.	0. 1001. 07 0. 1001. 08 . 1001. 09. (. 01, 2022-12-31;Lis_BTE100- . 01, 2022-12-31;Lis_BTE100- 01, 2022-12-31;Lis_BTE100-	DUT Expec	ted Power	15	•	12		•	
LTD=valid, optional, 300. OTD=valid, optional, 300. RSSI=valid, optional, 300	. 1001. 10.) . 1001. 11.) 0. 1001. 13	01, 2022-12-31;Lic_BTE100- 01, 2022-12-31;Lic_BTE100- .01, 2022-12-31;Lic_BTE100-	low_chan	nel VS pathloss	0 .	17	0	<u>↑</u> 5		
SPL=valid, optional, 300.	. 1001. 12. (01, 2022-12-31;	mid_chan	nel VS pathloss	39 -	17	39	<u>•</u> 5		
			high_chan	nel VS pathloss	78	17	78	÷ 5		

图 4.2-2

(3) 配置链路模式

支持两种链路模式选择(图 4.2-3):

1.Pairing Mode: 需要设置被测件进入配对模式可进行测试。

2.Test Mode: 需要设置被测件进入 DUT 模式可进行测试。

BT Measurement V2	2.3.4 beta										-		×
System Configuration	Test Config	juration	Run Test	CW	Full Chan	nel Power An	alysis F	X Research	Power Control	RSSI			
Communication Mode		Conn	ected		Burst type	BR		-		BLE DUT	Control		
Ethernet	-	C	Connect		O Manual	AA:AA:AA:A	A:AA:AA:AA:AA:AA			USB Adaptor	R\$232		•
1						BB:BB:BB:BB:BB:BB			Baud Rate	115200		•	
Disonnected					Inquiry	Fast	• 1	•	Stop Bits	1			•
	_]				Parity	NONE			•
									Port Number	COM1			Ŧ
ERROR_OK>>ZhonCent, BTE 220185, S18852, 1, 13_RC_3	100, ZT001 220421_190082	202203007						Pat	th 1		Path 2		
ERROR_OK>>Lic_SN=valid, S01I01-000185, 2022-01-0	, basic, ZTOO1 04 ; Lic_BTE100	220185, B1)-	1-		Test Switch			ON	-	OFF		_	Ŧ
M=valid, basic, 300, 1001. BT=valid, optional, 300.1 BTA=valid, optional, 300.	. 01. 01, 2022-1 1001. 02. 01, 20 . 1001. 03. 01, 2	2=31;Lic_)22=12=31; 2022=12=31	BIE100- Lic_BTE100- ;Lic_BTE100-		Operate Mode			RF Test	-	RF Test			•
BTT=valid, optional, 300. DM=valid, optional, 300.1 BLES=valid, optional, 300	. 1001. 04. 01, 2 1001. 05. 01, 20 0. 1001. 06. 01,	2022-12-31 22-12-31 ; 2022-12-3	:Lic_BTE100- Lic_BTE100- 1:Lic_BTE100	-	Link Mode			Test Mode	Ŀ	Fest Mode		_	•
PMMP=valid, optional, 300 BLET=valid, optional, 300 PDF=valid, optional, 300.	0. 1001. 07. 01, 0. 1001. 08. 01, . 1001. 09. 01, 2	2022-12-3 2022-12-3 2022-12-31	1:Lic_BTE100 1:Lic_BTE100 :Lic_BTE100-	-	DUT Expec	ted Power	Ļ	Pairing Mode		12		-	•
LTD=valid, optional, 300. OTD=valid, optional, 300. RSSI=valid, optional, 300	Dr=valid, optional, 300, 1001, 09, 01, 2022-12-31, 115_015100- TD=valid, optional, 300, 1001, 10, 01, 2022-12-31, Lio_BTE100- TD=valid, optional, 300, 1001, 11, 01, 2022-12-31, Lio_BTE100- SSI=valid, optional, 300, 1001, 13, 01, 2022-12-31, Lio_BTE100-					nel VS pathlos	ss	0 .	17	0	* 5		
SPL=valid, optional, 300.		mid_chan	nel VS pathlo	ss	39 •	17	39	▲ ▼ 5					
					high_chan	nel VS pathlo	ss	78 •	17	78	▲ ▼ 5		

图 4.2-3

(4) 选择测试项目

选择 Test Configuration 下的 Test Item List,如需全选则勾选 BR Measurement 项,也可以单选或多选测

试项(图 4.2-4)。

stem Configuration	Test Configuration	Run Test CW Full Channel Powe	r Analysis RX Research	Power Control R\$SI	
st Item List BR	EDR BLE Throug	hput			
BR Measurement]	EDR Measurement		BLE Measurement	
Output Power	Single Sensitivity	Relative Transmit Power	Sensitivity	Output Power	Recv Sensitivity
Power Control	Multi Sensitivity	Carrier Freq and Modulation	Max Input Level	Modulation Index	Max Input Signal Leve
Modulation Index	Max input Power	Differential Phase Encoding		Carrier and Drift	
] Initial Carrier Freq					
] Carrier Freq Drift					

图 4.2-4

(5) 参数配置

对具体的测试项目进行参数配置。请选择 Test Configuration 下的 BR/EDR/BLE,在需要配置的测试项下选择具体的配置参数(目前只支持 Path1),可默认参数,不进行修改。默认参数符合蓝牙测试规范(图 4.2-5)。

I BT Measurement V2.3.4	beta				
System Configuration	est Configuration Run Test CV	Full Channel Power Analysis	RX Research Power	Control RSSI	
Test Item List BR ED	R BLE Throughput				
Output Power Co	ontrol modulation Initial Carrie	er Carrier Drift Single Sens	sitivity Multi Sensitivity	Max Input Power	
	Path 1	Path 2		Test Channel	s
				DUT Tx Channel	DUT Rx Channel
Test Mode	Loopback -	Loopback -	Low Channel	0	78 +
Hopping	ON OFF	ON OFF	Mid Channel	39 *	0 .
Hopping Mode	Default -	Default 👻	high Channel	78	0 *
Packet Type	🗹 DH1 🗌 DH3 🗌 DH5	DH1 DH3 DH5			
Pattern Type	PRBS9 -	PRB \$9		Test Limit	
			Max Power	20	dBm
Number of test packets	10 -	10 -	Min Power	-6.0	dBm
Dirty Tx	Off 🗸	Off 🗸	Setup Peak Power	23.0	dBm
Tester Output Power	-15	-15			

图 4.2-5

(6) 灵敏度测试-注意事项

在测试灵敏度时需要注意 DUT 的接收功率的参数设置,设置该参数会自动同步修改仪表的发射功率(图

4.2-6)。

stem Configuration	1 Test (Configuration	Run Test	CW	Full Channel Pe	ower Analysis	RX Re	esearch	Power (Control	RSSI		
est Item List BR	EDR	BLE Throu	ghput										
utput Power Po	wer Contr	ol modulatio	n Initial Ca	arrier	Carrier Drift	Single Sens	sitivity	Multi Sens	itivity	Max Inpu	it Power		
		Pi	ath 1		Path 2					Te	st Channel	s	
									ι	OUT Tx C	hannel	DUT Rx C	hannel
Test Mode		Loopback		- Lo	opback	•		Low	Channel	78	* *	0	•
Hopping			✓ OFF		ON	OFF		Mid C	hannel	0	•	39	•
Hopping Mode		Default		- De	fault	•		high (Channel	0	•	78	* •
Packet Type		DH1			DH1								
Pattern Type		PRB S9		- PR	RBS9	•				Т	est Limit		
								Bit Er	ror Rate	0.1)	%	
Number of test pa	ickets	500	-	50	0	•		Pack	et Error R	ate 100		%	
Dirty Tx		Table		• Of	f	•	Setup	Pairin	ıg Mode P	ER 30.	3	%	
DUT receive powe	r	-70		-1	0								

图 4.2-6

三、开始测试

切换到运行测试界面,单击 Run 一键运行测试(图 4.3-1)。点击 Run 之后,配置的参数自动生效。

注: 要在 Run 之前配置好参数。

BT Measurement	t V2.3.4 beta						- 🗆 X
System Configurati	on Test Config	uration Run Te	est CW Full Channel Pov	ver Analysis	RX Research	Power Control RSSI	
Test Times:	0	s	Loop Count:	1	* •	RSSI Switch OFF -	Test Report
DUT Addr :							
	BR:		EDR:			BLE:	
Output Power	-		EDR Relative Power			BLE Output Power	· ·
Power Control	-		EDR Carrier & Modulation			BLE Modulation	
Modulation	-		EDR Differential Phase			BLE Carrier Offset & drift	
Initial Carrier	-		EDR Sensitivity			BLE Receiver Sensitivity	
Carrier Drift			EDR Max Input Level		-	BLE Max Input Signal Level	
Single Sensitivity	-	-					
Multi Sensitivity	-	-					
Max Input Power	-	-					
	Run		SI	ор		Clear	

图 4.3-1

四、结果查看

测试完成可以点击 Test Report 按钮,可查看测试结果, Clear 按钮只是清除测试界面的测试数据,数据都会以 csv 文件保存(图 4.4-1)。注意:在测试过程中不能同时打开 csv 文件,否则测试数据会保存失败。

System Configuration	Test Configu	uration Run Tes	t CW Full Channel Pov	wer Analysis	RX Research	Power Control RSSI				BR Output	Power (DH1)		
Test Times:	0	\$	Loop Count:	1	•	RSSI Switch OFF 👻	Test Report	avg power	Low	Medium	High	Limits	
DUT Addr :						· _ t		max power					
								min power					
в	IR:		EDR:			BLE:		peak powe	r				
								result					
utput Power		-	EDR Relative Power		-	BLE Output Power							
ower Control			EDR Carrier & Modulation		-	BLE Modulation				BR Modulation Ch	aracteristics (DH	1)	
odulation		-	EDR Differential Phase			BLE Carrier Offset & drift		F1 avo	Low	Medium	High	Limits	
								F1 max					
itial Carrier	-		EDR Sensitivity		-	BLE Receiver Sensitivity		F1 max F2 avg					
iitial Carrier arrier Drift			EDR Sensitivity EDR Max Input Level	-		BLE Receiver Sensitivity BLE Max Input Signal Level		F1 max F2 avg F2 max					
itial Carrier arrier Drift	-		EDR Sensitivity EDR Max Input Level			BLE Receiver Sensitivity BLE Max Input Signal Level		F1 max F2 avg F2 max F2 pass ta	/				
nitial Carrier `arrier Drift ingle Sensitivity		-	EDR Sensitivity EDR Max Input Level			BLE Receiver Sensitivity BLE Max Input Signal Level		F1 max F2 avg F2 max F2 pass to F2 F1 Ratio	_				
nitial Carrier Carrier Drift Lingle Sensitivity	-	•	EDR Sensitivity EDR Max Input Level			BLE Receiver Sensitivity BLE Max Input Signal Level		F1 max F2 avg F2 max F2 pass ra F2 F1 Ratio result	/				

图 4.4-1

五、CW 测试

(1) CW 测试参数配置

选择 CW 标签页,根据实际环境配置 Path1 的参数项(该测试项目前只能测试 CW 信号,暂未开放输出 CW

信号的功能)如图 4.5-1。

System Configuration	Test Configuration R	un Test CW	Full Chan	nel Po	ower Analysis RX Resear	rch Power Co	ntrol R\$SI	
	Path 1	Path	2			Path 1		
Test Switch	ON	OFF	Ŧ			1	2	3
Gate Width	10	10		ms	Frequency Offset (KHz)			
VS Mode	Input	Input	~		Rx CW Power (dBm)			
RF Output Mode	OFF	OFF	Ŧ					
Tester Output Power	-10	-10		dBm		Path 2		
DUT Except Power	5	5		dBm		1	2	3
Path Loss	5	5		dB	Frequency Offset (KHz)			
Frequency	2402	2402	÷	MHz	Rx CW Power (dBm)			
	Run			s	top		Clear	
				_				

图 4.5-1

(2) CW 测试结果查看

System Configuration	Test Configuration	Ru	n Test CW	Full Cha	innel P	ower Analysis RX Resear	ch Power Con	trol RSSI	
	Path 1		Pat	h 2			Path 1		
Fest Switch	ON	•	OFF	Ţ]		1	2	3
iate Width	10		10		ms	Frequency Offset (KHz)			
S Mode	Input	Ŧ	Input	Ŧ]	Rx CW Power (dBm)			
RF Output Mode	OFF	Ŧ	OFF	Ŧ]	1			
Fester Output Power	-10		-10		dBm		Path 2		
OUT Except Power	5		5		dBm		1	2	3
Path Loss	5		5	/	dB	Frequency Offset (KHz)			
Frequency	2402	•	2402	/:	MHz	Rx CW Power (dBm)			
	Run					Stop	1.00	Clear	
								cicui	

配置好参数后,单击 Run 按钮,在界面右侧的 Path1 栏可实时看到测试结果,如图 4.5-2 所示:

图 4.5

六、Full Channel Power Analysis 测试

(1) Full Channel Power Analysis 测试参数配置

在 System Configuration 界面将链路模式选择为 Pairing Mode,并将 BR Pairing Fixed 模式选择为 ON,

如图 4.6-1 所示,后跳转 Full Channel Power Analysis 界面,在界面左侧根据实际环境配置参数(目前仅开放 BR 全功率测试),注:当前测试项需在 BR Pairing Mode 模式下进行,且 DUT 需保持连接状态,如图 4.6-2 所示:

II BT Measurement V2	.3.4 beta									-		ł
System Configuration	Test Configuration	Run Test	CW	Full Chanr	nel Power Ana	alysis	RX Research	RSSI				
Communication Mode	Con	nected		Burst type	BR		•		BLE	DUT Control		
Ethernet	Ŧ	Connect		AA:AA:AA:AA:AA		HW Interface	ace USB Adaptor R\$232		•			
J	Augement V2.3.4 beta figuration Test Configuration Run Test figuration Test Configuration Run Test figuration Connected Connected p Connect Disonnected back_cat, BTE100, ZT001 Disonnected Disonnected science Disonnected Disonnected p Disonnected Disonnected Disonnected Disonnected Disonnected Disonnected D				BB:BB:BB:BB	B:BB:BE	l	Baud Rate 115200			-	
	Di	sonnected		Inquiry	Fast	•	1 .	Stop Bits	1			-
				DUT reconr	nect time	0	÷ s	Parity	NONE			•
			Γ	BR Pairing	Fixed	ON		Port Number	COM1			÷
ERROR_OK>>ZhonCent, BTE 220185, S18852. 1. 13_RC_2	100, ZT001 220421_1900&202203007						Pat	1 h 1		Path 2		
ERROR_OK>>Lic_SN=valid, S01101-000185, 2022-01-0	basic, ZT001 220185, B 04:Lic_BTE100-	11-		Test Switc	h		ON	-	OFF		~	
M=valid, basic, 300, 1001. BT=valid, optional, 300.1 BTA=valid, optional, 300.	Disonnected Dison			Operate M	ode		RF Test	<u>-</u>	RF Te	st	•	
BTT=valid, optional, 300. DM=valid, optional, 300.1 BLES=valid, optional, 300	. 1001. 04. 01, 2022-12-3 1001. 05. 01, 2022-12-31 3. 1001. 06. 01, 2022-12∹	1;Lic_BTE100- ;Lic_BTE100- 31;Lic_BTE100-		Link Mode			Pairing Mode	-	Test	Mode	•	
PMMP=valid, optional, 300 BLET=valid, optional, 300 PDF=valid, optional, 300	0. 1001. 07. 01, 2022-12- 0. 1001. 08. 01, 2022-12- 1001. 09. 01, 2022-12-3	31:Lic_BTE100- 31:Lic_BTE100- 1:Lic_BTE100-		DUT Expec	ted Power		Test Mode Pairing Mode		12		•	
LTD=valid, optional, 300. OTD=valid, optional, 300. RSSI=valid, optional, 300	1001. 10. 01, 2022-12-3 1001. 11. 01, 2022-12-3 0. 1001. 13. 01, 2022-12-3	1;Lio_BTE100- 1;Lio_BTE100- 31;Lio BTE100-		low_chann	el VS pathlos	s	0 .	17	0	• 5		
SPL=valid, optional, 300.	ZhonCant. DTE100, 71001 SE2. 1.13_UC_220421_1900&C02203007 SE2. 1.13_UC_220421_1900&C02203007 SE3. 1.13_UC_220421_1900&C02203007 SE3. 202-01-01.14_G_PTE100- ptional.300_1001_02_01_2022-12-31_Li_G_PTE100- ptional.300_1001_02_01_2022-12-31_Li_G_PTE100- ptional.300_1001_02_01_2022-12-31_Li_G_PTE100- ptional.300_1001_03_01_2022-12-31_Li_G_PTE100- ptional.300_1001_03_01_2022-12-31_Li_G_PTE100- ptional.300_1001_03_01_2022-12-31_Li_G_PTE100- ptional.300_1001_03_01_2022-12-31_Li_G_PTE100- ptional.300_1001_03_00_12022-12-31_Li_G_PTE100- ptional.300_1001_03_00_12022-12-31_Li_G_PTE100- ptional.300_1001_03_00_12022-12-31_Li_G_PTE100- ptional.300_1001_10_1_2022-12-31_Li_G_PTE100- ptional.300_1001_13_00_1_2022-12-31_Li_G_PTE100- ptional.300_1001_13_00_1_2022-12-31_Li_G_PTE100- ptional.300_1001_13_00_1_2022-12-31_Li_G_PTE100- ptional.300_1001_13_00_1_2022-12-31_Li_G_PTE100- ptional.300_1001_13_00_1_2022-12-31_Li_G_PTE100- ptional.300_1001_13_00_1_2022-12-31_Li_G_PTE100- ptional.300_1001_13_01_2022-12-31_Li_G_PTE100- ptional.300_1001_13_00_1_2022-12-31_Li_G_PTE10- ptional			mid_chann	el VS pathlos	s	39	17	39	÷ 5		
				high_chan	nel VS pathlos	55	78	17	78	<u>↑</u> ▼ 5		

图 4.6-1



图 4.6-2

(2) Full Channel Power Analysis 测试结果查看

配置好参数后,单击 Run 按钮,在界面右侧显示当前测试时间段下全信道功率跳频情况,如图 4.6-3 所示:

System Configuration	Test Configuration	Run Test	CW	Full Channel Po	wer Analysis	RX Researc	h Powe	r Control	RSSI		
Burst type	BR	•	Г								
lopping	ON	•		1.0	DUT tr	ansmit po	wer dis	tributic	n diagi	ram	
Hopping Mode	All 79 Channel	•									
Packet Type	DH1	•		0.8 - C							
Pattern Type	PRB \$9	•		er (dBn - 9.0							
lumber of test packets	11	* *		Mod ≚ 0.4 -							
athloss	17.00	*	dB	DUT							
ester Output Power	-15.00	•	dBm	0.2 -							
Run		Stop		0.0	10 2	20 30	40 Channel	50	60	70	80

图 4.6-3

七、RX Research 测试

(1) RX Research 测试参数配置

选择 RX Research 界面,在界面左侧根据实际环境配置参数,注:当前测试下需保证仪表与 DUT 进行连接,即需 RUN 当前测试协议下任意测试项即可。如图 4-7-1 所示:

System Configuration T	est Configuration Run Test CW	Full Ch	annel Power Analysis	RX Research	Power Control	RSSI		
-)]					
Test Item	Research Sensitivity	•	DUT Address					
Burst type	BR	~	DUT Recv Power	BER	PER	Result	Limit	
Hopping	OFF	•	1					_
Hopping Mode	All 79 Channel	•	2					
Packet Type	DH1	•	4					
Pattern Type	PRBS9	•	5					
Number of test packets	500	÷	6					
Pathloss	17.00	÷ dB	7					
Step	0.5	▼ dB	9					
DUT Recv Power Range	-70.00 to -95.00	dBm	10					
Tx Channel 0	Rx Channel 78	-	11					
			12					
Run	Stop		13) •
							_	

图 4.7-1

(2) RX Research 测试结果查看

配置好参数后,单击 Run 按钮,在界面右侧显示当前测试根据路损衰减情况 BER 或 PER 的情况,如图 4.7-2

所示:

System Configuration	Test Configuration	Run Test	CW	Full Ch	annel I	Power Analysis	RX Research	Power Control	RSSI	
Test Item	Research	Sensitivity]	DUT	Address				
Burst type	BR		~]		DUT Recv Power	BER	PER	Result	Limit
Hopping	OFF		•]	1					
lopping Mode	All 79 Chan	nel	-]	3					
Packet Type	DH1		•]	4					
Pattern Type	PRBS9		-]	5					
lumber of test packets	500		÷	-	6					
Pathloss	17.00		Å *	dB	7					
Step	0.5		-	dB	9					
DUT Recv Power Range	-70.00	to -95.	00 🗘	dBr	10					
Tx Channel 0	Rx Chan	nel 78	•		11					
Run			Stop		12					
					•					•
				L						

图 4.7-2

八、Power Control 测试

(1) Power Control 测试参数配置

选择 Power Control 界面,在界面左侧根据实际环境配置参数,注:当前测试下需保证仪表与 DUT 进行连接,即需 RUN 当前测试协议下任意测试项即可。如图 4-8-1 所示:

D BT Measurement V2.3	3.4 beta								- 0	\times
System Configuration	Test Configuration	Run Test	CW F	ull Chan	nel Power Analysis	RX Research	Power Control	RSSI		
				(OUT Address					
	Power Control				avg power	max power	min power	peak power		-
Packet Type	DH1		•		2 3					
Pattern Type	PRB \$9		•		5					
Number of test packets	10		* •		7					-
Tester Output Power	-15.00		*	dBm	9					
Tx Channel 0	Rx Cha	nnel 78	* •		10					
Power Up Power	Down Power	Max CI	lear		12					
					14					•

图 4.8-1

(2) Power Control 测试结果查看

配置好参数后,通过点击 Power Up、Power Down、Power Max 按钮,在界面右侧显示相应 Power Level 下功率情况,如图 4.8-2 所示:

🚺 BT Measurement V2.3.4 beta						- 🗆 ×
System Configuration Test Co	nfiguration Run Test CW Full C	hannel Power Anal	sis RX Research	Power Control	RSSI	
		DUT Address				
Pov	avg pow	ar max power	min power	peak power	<u>^</u>	
Packet Type	DH1 💌	2				-
Pattern Type	PRBS9 •	5				
Number of test packets	10 *	6				
Tester Output Power	-15.00 • dBm	9				_
Tx Channel 0	Rx Channel 78	10				
Power Up Power Down	Power Max Clear	12				
		14				•

图 4.8-2

九、RSSI 测试

(1) RSSI 测试参数配置

选择 RSSI 界面,在界面右侧依次填入所需测试 RSSI 的功率等级,注:当前测试下需保证仪表与 DUT 进行 连接,即需 RUN 当前测试协议下任意测试项即可。如图 4-9-1 所示:

stem Configuration	Test Configuration	Run Test C	V Full Channel Power Analysis	RX Research Power Con	itrol RSSI
			Tester tx Powe	r (dBm) DUT Address	RSSI (dBm)
			1 -15.00	▲ ▼	
			2 -20.00	•	
			3 -25.00	*	
			4 -30.00	▲	
			5 -35.00	•	
Run	Stop	Clea	6 -40.00	•	
			7 -45.00	▲	
			8 -50.00	*	
			9 -55.00	•	
			10 -60.00	•	
			11 -65.00	÷	
			12 -70.00	×	

图 4.9-1

配置好参数后,单击 Run 按钮,在界面右侧显示当前功率等级下 RSSI 的情况,如图 4.7-2 所示:

stem Configuration	Test Configuration	Run Test CV	V Full Channel	Power Analysis	RX Resea	rch Power Control	RSSI
				Tester tx Power	(dBm)	DUT Address	RSSI (dBm)
			1	-15.00	* *		
			2	-20.00			
			3	-25.00	* *		
			4	-30.00	÷		
			5	-35.00	÷		
Run	Stop	Clear	6	-40.00	* *		
_			7	-45.00	÷		
			8	-50.00	÷		
			9	-55.00	÷		
			10	-60.00	÷		
			11	-65.00	÷		
			12	-70.00	<u>+</u>		

图 4.9-2

Connect us

深圳市中承科技有限公司

"There's only one corner of the universe you can be sure of improving, and that's your own self. "

联系电话: 0755-21018440 地址: 深圳市龙华区观澜街道广培社区高尔夫大道 8 号 13 栋 14 层 邮箱: info@zhoncent.com



扫码了解 更多资讯