

Bluetooth® Qualification Test Report

Project No. : 2009C081
Design Name : BX2400-mRF04c-S1a
Brand Name : BlueX Micro
Design Model No. : mRF04c-S1a
Series Model No. : N/A
Applicant : BlueX Microelectronics Corp Ltd.
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Manufacturer : BlueX Microelectronics Corp Ltd.
Address : A4 building Suite 1107,800 West Wangjiang Road, HighTech District,Hefei City ,Anhui Province, P.R.China
Date of Receipt : September 11, 2020
Date of Test : September 11, 2020 to November 11, 2020
Issued Date : November 13, 2020
Report Version : R00
Test Sample : Engineering Sample No.: DG2020091152
Standard(s) : RF-PHY.TS.p15

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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Declaration

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	October 9, 2020

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1.General Information

1.1 Description of Device Under Test (DUT)

Product Feature & Specification	
Design Name	BX2400-mRF04c-S1a
Brand Name	BlueX Micro
Design Model No.	mRF04c-S1a
Series Model No.	N/A
Product Type:	End Product
BT_Address	N/A
Bluetooth Version	5.0
HW Version	V01
SW Version	V01
Design Description	mRF04c-S1a is a module for Bluetooth Low Energy specification Core 5.0 and is compatible with Bluetooth V4.2. mRF04c-S1a provides ultra-low power solution for BLE connections.
Type of modulation	GFSK
Test Case Reference List	Core.TCRL.2019-2
Test Standards	RF-PHY.TS. p15

1.2 Product Configuration Options

CORE PROTOCOLS			
Protocol / Profile			Reference
<input type="checkbox"/>	(RF)	Radio	Vol 2, Part A
<input type="checkbox"/>	(BB)	Baseband	Vol 2, Part B
<input type="checkbox"/>	(LMP)	Link Manager	Vol 2, Part C
<input type="checkbox"/>	(80211PAL)	802.11 Protocol Adaptation Layer	Vol 5, Part A
<input type="checkbox"/>	(80211 MAC-PHY)	802.11 MAC/PHY	IEEE802.11-2007
<input type="checkbox"/>	(HCI)	Host Controller Interface	Vol 2, Part E
<input type="checkbox"/>	(AMPHCI)	AMP Host Controller Interface	Vol 5, Part A
<input type="checkbox"/>	(L2CAP)	Logical Link Control and Adaptation Protocol	Vol 3, Part A
<input type="checkbox"/>	(A2MP)	AMP Manager Protocol	Vol 3, Part E
<input type="checkbox"/>	(SDP)	Service Discovery Protocol	Vol 3, Part B
<input type="checkbox"/>	(GAP)	Generic Access Profile	Vol 3, Part C
<input type="checkbox"/>	(LL)	Link Layer	Vol 6, Part B
<input checked="" type="checkbox"/>	(RFPHY)	RF PHY	Vol 6, Part A
<input type="checkbox"/>	(4.0HCI)	4.0 Host Controller Interface	Vol 3, Part E
<input type="checkbox"/>	(GATT)	Generic Attribute Profile	Vol 3, Part G
<input type="checkbox"/>	(ATT)	Attribute Protocol	Vol 3, Part H
<input type="checkbox"/>	(SM)	Security Manager Protocol	Vol 3, Part F
EXTERNAL TO CORE - PROTOCOLS AND PROFILES			
<input type="checkbox"/>	(A2DP)	Advanced Audio Distribution Profile	External to Core
<input type="checkbox"/>	(AVCTP)	Audio/Video Control Transport Protocol	External to Core
<input type="checkbox"/>	(AVDTP)	Audio/Video Distribution Transport Protocol	External to Core
<input type="checkbox"/>	(3DSP)	3D Synchronization Profile	External to Core
<input type="checkbox"/>	(AVRCP)	Audio/Video Remote Control Profile	External to Core
<input type="checkbox"/>	(BIP)	Basic Imaging Profile	External to Core
<input type="checkbox"/>	(BAS)	Battery Service	External to Core
<input type="checkbox"/>	(BNEP)	Bluetooth Network Encapsulation Protocol	External to Core
<input type="checkbox"/>	(BPP 1.2)	Basic Printing Profile 1.2	External to Core
<input type="checkbox"/>	(BPP)	Basic Printing Profile	External to Core

<input type="checkbox"/>	(BLP)	Blood Pressure Profile	External to Core
<input type="checkbox"/>	(BLS)	Blood Pressure Service	External to Core
<input type="checkbox"/>	(CTS)	Current Time Service	External to Core
<input type="checkbox"/>	(DIS)	Device Information Service	External to Core
<input type="checkbox"/>	(DUN)	Dial-Up Networking Profile	External to Core
<input type="checkbox"/>	(DID)	Device ID Profile	External to Core
<input type="checkbox"/>	(CSCS)	Cycling Speed and Cadence Service	External to Core
<input type="checkbox"/>	(CSCP)	Cycling Speed and Cadence Profile	External to Core
<input type="checkbox"/>	(FMP)	Find Me Profile	External to Core
<input type="checkbox"/>	(FTP)	File Transfer Profile	External to Core
<input type="checkbox"/>	(GAVDP)	Generic Audio/Video Distribution Profile	External to Core
<input type="checkbox"/>	(ANP)	Alert Notification Profile	External to Core
<input type="checkbox"/>	(ANS)	Alert Notification Service	External to Core
<input type="checkbox"/>	(eIOP-beta)	Enhanced IOP Program - Beta	External to Core
<input type="checkbox"/>	(GLP)	Glucose Profile	External to Core
<input type="checkbox"/>	(GLS)	Glucose Service	External to Core
<input type="checkbox"/>	(CPP)	Cycling Power Profile	External to Core
<input type="checkbox"/>	(HCRP 1.2)	Hardcopy Cable Replacement Profile 1.2	External to Core
<input type="checkbox"/>	(HCRP)	Hardcopy Cable Replacement Profile	External to Core
<input type="checkbox"/>	(HFP)	Hands-Free Profile	External to Core
<input type="checkbox"/>	(HIDS)	HID Service	External to Core
<input type="checkbox"/>	(HDP)	Health Device Profile	External to Core
<input type="checkbox"/>	(CPS)	Cycling Power Service	External to Core
<input type="checkbox"/>	(HOGP)	HID over GATT Profile	External to Core
<input type="checkbox"/>	(HID 1.1)	Human Interface Device 1.1	External to Core
<input type="checkbox"/>	(GNSS)	Global Navigation Satellite Systems	External to Core
<input type="checkbox"/>	(LNP)	Location and Navigation Profile	External to Core
<input type="checkbox"/>	(HTP)	Health Thermometer Profile	External to Core
<input type="checkbox"/>	(HTS)	Health Thermometer Service	External to Core
<input type="checkbox"/>	(HRP)	Heart Rate Profile	External to Core
<input type="checkbox"/>	(HRS)	Heart Rate Service	External to Core
<input type="checkbox"/>	(HID)	Human Interface Device	External to Core
<input type="checkbox"/>	(HSP)	Headset Profile	External to Core
<input type="checkbox"/>	(LNS)	Location and Navigation Service	External to Core
<input type="checkbox"/>	(IOP)	Interoperability Test Specification	External to Core
<input type="checkbox"/>	(IAS)	Immediate Alert Service	External to Core
<input type="checkbox"/>	(LLS)	Link Loss Service	External to Core

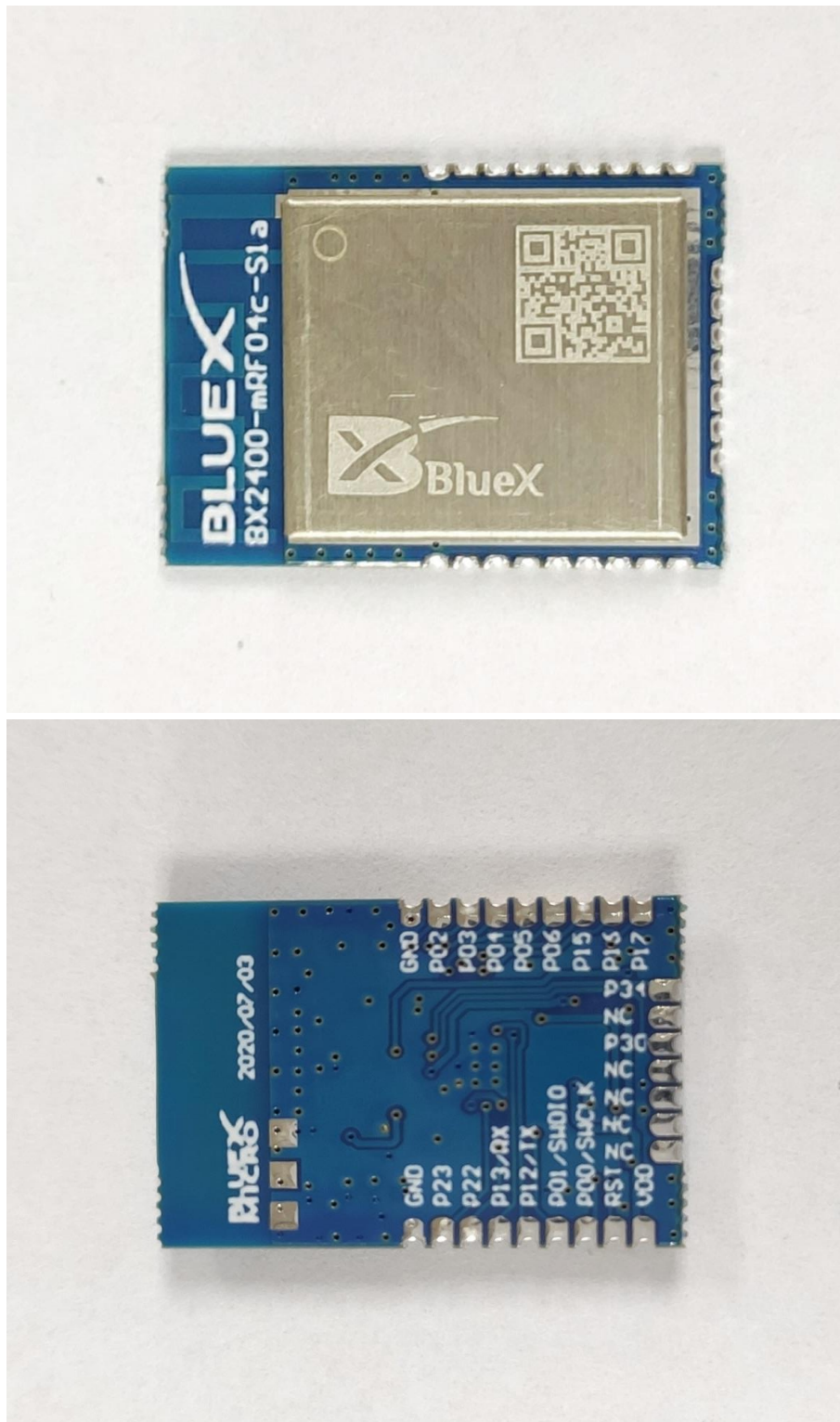
<input type="checkbox"/>	(MAP)	Message Access Profile	External to Core
<input type="checkbox"/>	(MCAP)	Multi-Channel Adaptation Protocol	External to Core
<input type="checkbox"/>	(OPP)	Object Push Profile	External to Core
<input type="checkbox"/>	(PAN)	Personal Area Networking Profile	External to Core
<input type="checkbox"/>	(MD)	Multi-Device Test Cases	External to Core
<input type="checkbox"/>	(MP)	Multi-Profile Test Cases	External to Core
<input type="checkbox"/>	(NDCS)	Next DST Change Service	External to Core
<input type="checkbox"/>	(SCPS)	Scan Parameters Service	External to Core
<input type="checkbox"/>	(PASP)	Phone Alert Status Profile	External to Core
<input type="checkbox"/>	(PASS)	Phone Alert Status Service	External to Core
<input type="checkbox"/>	(PXP)	Proximity Profile	External to Core
<input type="checkbox"/>	(PBAP)	Phone Book Access Profile	External to Core
<input type="checkbox"/>	(SCPP)	Scan Parameters Profile	External to Core
<input type="checkbox"/>	(RSCP)	Running Speed and Cadence Profile	External to Core
<input type="checkbox"/>	(RSCS)	Running Speed and Cadence Service	External to Core
<input type="checkbox"/>	(RFCOMM)	RFCOMM with TS 07.10	External to Core
<input type="checkbox"/>	(RTUS)	Reference Time Update Service	External to Core
<input type="checkbox"/>	(SPP)	Serial Port Profile	External to Core
<input type="checkbox"/>	(SDAP)	Service Discovery Application Profile	External to Core
<input type="checkbox"/>	(SAP)	SIM Access Profile	External to Core
<input type="checkbox"/>	(SYNC)	Synchronization Profile	External to Core
<input type="checkbox"/>	(TIP)	Time Profile	External to Core
<input type="checkbox"/>	(TPS)	Tx Power Service	External to Core
<input type="checkbox"/>	(VDP)	Video Distribution Profile	External to Core
<input type="checkbox"/>	(MPS)	Multi-Profile Specification	External to Core
<input type="checkbox"/>	(UDS)	User Data Service	External to Core
<input type="checkbox"/>	(CTN)	Calendar, Tasks, and Notes Profile	External to Core
<input type="checkbox"/>	(BCS)	Body Composition Service	External to Core
<input type="checkbox"/>	(WSS)	Weight Scale Service	External to Core
<input type="checkbox"/>	(WSP)	Weight Scale Profile	External to Core
<input type="checkbox"/>	(BMS)	Bond Management Service	External to Core
<input type="checkbox"/>	(CGMP)	Continuous Glucose Monitoring Profile	External to Core
<input type="checkbox"/>	(CGMS)	Continuous Glucose Monitoring Service	External to Core
<input type="checkbox"/>	(ESP)	Environmental Sensing Profile	External to Core
<input type="checkbox"/>	(ESS)	Environmental Sensing Service	External to Core
<input type="checkbox"/>	(IPSP)	Internet Protocol Support Profile	External to Core
<input type="checkbox"/>	(IPS)	Indoor Positioning Service	External to Core

<input type="checkbox"/>	(AIOP)	Automation IO Profile	External to Core
<input type="checkbox"/>	(AIOS)	Automation IO Service	External to Core
<input type="checkbox"/>	(PLXP)	Pulse Oximeter Profile	External to Core
<input type="checkbox"/>	(PLXS)	Pulse Oximeter Service	External to Core
<input type="checkbox"/>	(HPS)	HTTP Proxy Service	External to Core
<input type="checkbox"/>	(TDS)	Transport Discovery Service	External to Core
<input type="checkbox"/>	(OTS)	Object Transfer Service	External to Core
<input type="checkbox"/>	(OTP)	Object Transfer Profile	External to Core
<input type="checkbox"/>	(FTMP)	Fitness Machine Profile	External to Core
<input type="checkbox"/>	(FTMS)	Fitness Machine Service	External to Core
<input type="checkbox"/>	(MESH)	Mesh Profile	External to Core
<input type="checkbox"/>	(MMDL)	Mesh Model	External to Core

1.3 Equipment List

InterLab Bluetooth RF Test Solution				
Equipment Name	Brand Name	Model No.	Serial No.	Cal. Due date
Switching Unit	7Layers	TOCT	010010	–
Power Supply	Rohde & Schwarz	HMP2020	100414	2021. 02. 28
Power Sensor	Rohde & Schwarz	NRP18S	101333	2021. 03. 01
Spectrum Analyzer	Rohde & Schwarz	FSL3	105414	2021. 03. 01
Vector Signal Generator	Rohde & Schwarz	SMBV100A	263321	2021. 03. 01
Signal Generator	Rohde & Schwarz	SMF100A	105586	2021. 03. 01
Wireless Connect Tester	Rohde & Schwarz	CMW270	101379	2021. 03. 01
Bluetooth RF Test System	7Layers	Inter Lab Bluetooth RF Test Solution	V5. 1. 8	–

1.4 Product Photo



1.5 Applicant Information

Company Name	BlueX Microelectronics Corp Ltd.
Address	A4 building Suite 1107,800 West Wangjiang Road, HighTech District,Hefei City ,Anhui Province, P.R.China
Contact Person	Hongyu Li/CEO
Telephone Number	0118615510920890
Fax Number	N/A
E-mail Address	hongyu.li@bluexmicro.com

1.6 Manufacturer Information

Company Name	BlueX Microelectronics Corp Ltd.
Address	A4 building Suite 1107,800 West Wangjiang Road, HighTech District,Hefei City ,Anhui Province, P.R.China
Contact Person	Hongyu Li/CEO
Telephone Number	0118615510920890
Fax Number	N/A
E-mail Address	hongyu.li@bluexmicro.com

1.7 Testing Laboratory Information

Test Site	BTL Inc.
Address	No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
Telephone Number	0769-8318-3000
Fax Number	N/A
Internet	http://www.newbtl.com

2. Test Summary

Test Item	Test Requirement	Test Method	Limit	Result
Output power	RF-PHY.TS.p15 Clause 4.4.1	RF-PHY.TS.p15 Clause 4.4.1	Refer clause 4.4.1	PASS
In-band emissions, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.4.2	RF-PHY.TS.p15 Clause 4.4.2	Refer clause 4.4.2	PASS
Modulation Characteristics, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.4.3	RF-PHY.TS.p15 Clause 4.4.3	Refer clause 4.4.3	PASS
Carrier frequency offset and drift, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.4.4	RF-PHY.TS.p15 Clause 4.4.4	Refer clause 4.4.4	PASS
In-band emissions at 2 Ms/s	RF-PHY.TS.p15 Clause 4.4.5	RF-PHY.TS.p15 Clause 4.4.5	Refer clause 4.4.5	PASS
Modulation Characteristics at 2 Ms/s	RF-PHY.TS.p15 Clause 4.4.7	RF-PHY.TS.p15 Clause 4.4.7	Refer clause 4.4.7	PASS
Carrier frequency offset and drift at 2 Ms/s	RF-PHY.TS.p15 Clause 4.4.9	RF-PHY.TS.p15 Clause 4.4.9	Refer clause 4.4.9	PASS
Receiver sensitivity, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.5.1	RF-PHY.TS.p15 Clause 4.5.1	Refer clause 4.5.1	PASS
C/I and Receiver Selectivity Performance, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.5.2	RF-PHY.TS.p15 Clause 4.5.2	Refer clause 4.5.2	PASS
Blocking Performance, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.5.3	RF-PHY.TS.p15 Clause 4.5.3	Refer clause 4.5.3	PASS

Intermodulation Performance, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.5.4	RF-PHY.TS.p15 Clause 4.5.4	Refer clause 4.5.4	PASS
Maximum input signal level, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.5.5	RF-PHY.TS.p15 Clause 4.5.5	Refer clause 4.5.5	PASS
PER Report Integrity, uncoded data at 1 Ms/s	RF-PHY.TS.p15 Clause 4.5.6	RF-PHY.TS.p15 Clause 4.5.6	Refer clause 4.5.6	PASS
Receiver sensitivity at 2 Ms/s	RF-PHY.TS.p15 Clause 4.5.7	RF-PHY.TS.p15 Clause 4.5.7	Refer clause 4.5.7	PASS
C/I and Receiver Selectivity Performance at 2 Ms/s	RF-PHY.TS.p15 Clause 4.5.8	RF-PHY.TS.p15 Clause 4.5.8	Refer clause 4.5.8	PASS
Blocking performance at 2 Ms/s	RF-PHY.TS.p15 Clause 4.5.9	RF-PHY.TS.p15 Clause 4.5.9	Refer clause 4.5.9	PASS
[Intermodulation performance at 2 Ms/s	RF-PHY.TS.p15 Clause 4.5.10	RF-PHY.TS.p15 Clause 4.5.10	Refer clause 4.5.10	PASS
Maximum input signal level at 2 Ms/s	RF-PHY.TS.p15 Clause 4.5.11	RF-PHY.TS.p15 Clause 4.5.11	Refer clause 4.5.11	PASS
PER Report Integrity at 2 Ms/s	RF-PHY.TS.p15 Clause 4.5.12	RF-PHY.TS.p15 Clause 4.5.12	Refer clause 4.5.12	PASS

Remark:

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

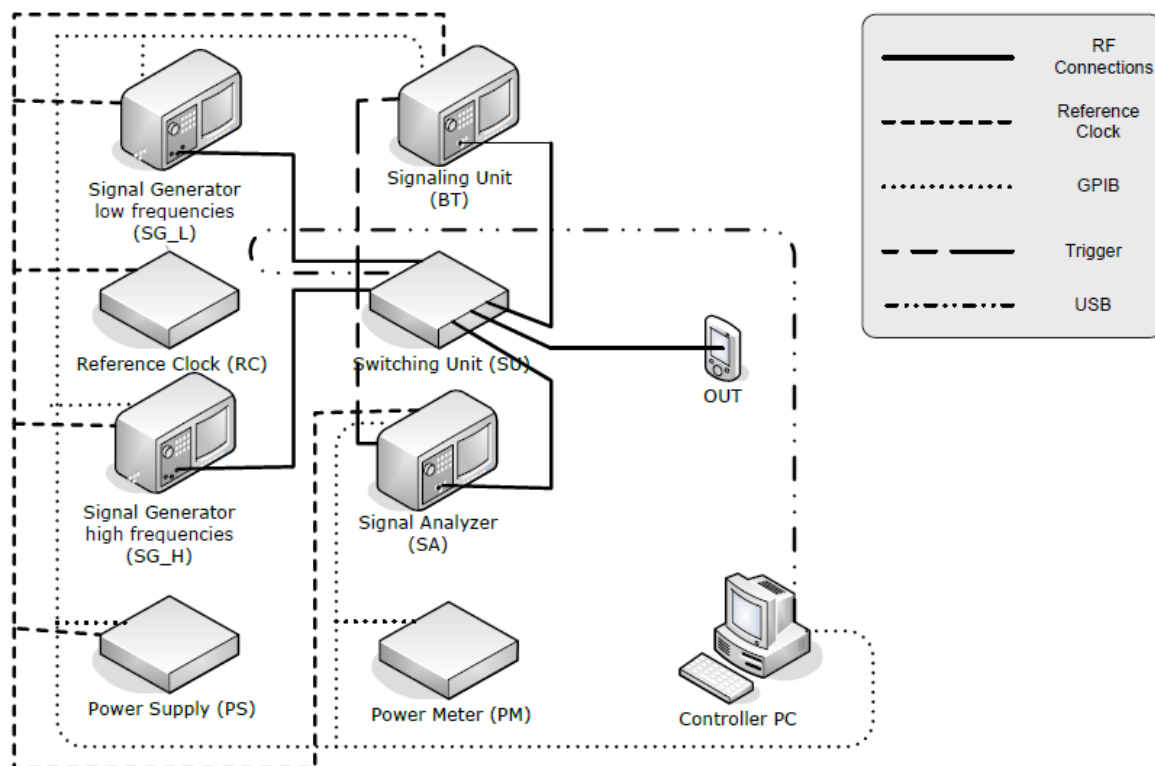
Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

3. Test Requirement

3.1 Description of Test Set-up



Test system schematic

3.2 Test Environment

NOMINAL		
TEMPERATURE IN THE RANGE 15°C TO 35 °C		YES
RELATIVE HUMIDITY IN THE RANGE 20% TO 75 %		YES
AIR PRESSURE IN THE RANGE 86 KPA TO 106 KPA		YES
EXTREME		
	MIN - MAX	NOMINAL
TEMPERATURE	-20-105 °C	24°C
VOLTAGE	2.5-5.0V	4.2V

3.3 Test Results List

Test Condition	Test Case	Description	Verdict
Classic Bluetooth			
NTC	TRM/CA/BV-01-C	Output Power	N/A
NTC	TRM/CA/BV-02-C	Power Density	N/A
NTC	TRM/CA/BV-03-C	Power Control	N/A
NTC	TRM/CA/BV-04-C	TX Output Spectrum - Frequency range	N/A
NTC	TRM/CA/BV-05-C	TX Output Spectrum - 20 dB Bandwidth	N/A
NTC	TRM/CA/BV-06-C	TX Output Spectrum - Adjacent channel power	N/A
NTC	TRM/CA/BV-07-C	Modulation Characteristics	N/A
NTC	TRM/CA/BV-08-C	Initial Carrier Frequency Tolerance	N/A
NTC	TRM/CA/BV-09-C	Carrier Frequency Drift	N/A
NTC	TRM/CA/BV-10-C	EDR Relative Transmit Power	N/A
NTC	TRM/CA/BV-11-C	EDR Carrier Frequency Stability and Modulation Accuracy	N/A
NTC	TRM/CA/BV-12-C	EDR Differential Phase Encoding	N/A
NTC	TRM/CA/BV-13-C	EDR In-band Spurious Emissions	N/A
NTC	TRM/CA/BV-14-C	Enhanced Power Control	N/A
NTC	TRM/CA/BV-15-C	EDR Guard Time	N/A
NTC	TRM/CA/BV-16-C	EDR Synchronization Sequence and Trailer	N/A
NTC	RCV/CA/BV-01-C	Sensitivity - single slot packets	N/A
NTC	RCV/CA/BV-02-C	Sensitivity - multi-slot packets	N/A
NTC	RCV/CA/BV-03-C	C/I performance	N/A
NTC	RCV/CA/BV-04-C	Blocking performance	N/A
NTC	RCV/CA/BV-05-C	Intermodulation Performance	N/A
NTC	RCV/CA/BV-06-C	Maximum Input Level	N/A
NTC	RCV/CA/BV-07-C	EDR Sensitivity	N/A
NTC	RCV/CA/BV-08-C	EDR BER Floor Performance	N/A
NTC	RCV/CA/BV-09-C	EDR C/I Performance	N/A
NTC	RCV/CA/BV-10-C	EDR Maximum Input Level	N/A
Bluetooth low energy			
NTC	TRM-LE/CA/BV-01-C	Output power	PASS

NTC	TRM-LE/CA/BV-03-C	In-band emissions, uncoded data at 1 Ms/s	PASS
NTC	TRM-LE/CA/BV-05-C	Modulation Characteristics, uncoded data at 1 Ms/s	PASS
NTC	TRM-LE/CA/BV-06-C	Carrier frequency offset and drift, uncoded data at 1 Ms/s	PASS
NTC	TRM-LE/CA/BV-08-C	In-band emissions at 2 Ms/s	PASS
NTC	TRM-LE/CA/BV-09-C	Stable Modulation Characteristics, uncoded data at 1 Ms/s	N/A
NTC	TRM-LE/CA/BV-10-C	Modulation Characteristics at 2 Ms/s	PASS
NTC	TRM-LE/CA/BV-11-C	Stable Modulation Characteristics at 2 Ms/s	N/A
NTC	TRM-LE/CA/BV-12-C	Carrier frequency offset and drift at 2 Ms/s	PASS
NTC	TRM-LE/CA/BV-13-C	Modulation Characteristics, LE Coded (S=8)	N/A
NTC	TRM-LE/CA/BV-14-C	Carrier frequency offset and drift, LE Coded (S=8)	N/A
NTC	RCV-LE/CA/BV-01-C	Receiver sensitivity, uncoded data at 1 Ms/s	PASS
NTC	RCV-LE/CA/BV-03-C	C/I and Receiver Selectivity Performance, uncoded data at 1 Ms/s	PASS
NTC	RCV-LE/CA/BV-04-C	Blocking Performance, uncoded data at 1 Ms/s	PASS
NTC	RCV-LE/CA/BV-05-C	Intermodulation Performance, uncoded data at 1 Ms/s	PASS
NTC	RCV-LE/CA/BV-06-C	Maximum input signal level, uncoded data at 1 Ms/s	PASS
NTC	RCV-LE/CA/BV-07-C	PER Report Integrity, uncoded data at 1 Ms/s	PASS
NTC	RCV-LE/CA/BV-08-C	Receiver sensitivity at 2 Ms/s	PASS
NTC	RCV-LE/CA/BV-09-C	C/I and Receiver Selectivity Performance at 2 Ms/s	PASS
NTC	RCV-LE/CA/BV-10-C	Blocking performance at 2 Ms/s	PASS
NTC	RCV-LE/CA/BV-11-C	[Intermodulation performance at 2 Ms/s	PASS
NTC	RCV-LE/CA/BV-12-C	Maximum input signal level at 2 Ms/s	PASS
NTC	RCV-LE/CA/BV-13-C	PER Report Integrity at 2 Ms/s	PASS

NTC	RCV-LE/CA/BV-14-C	Receiver Sensitivity, uncoded data at 1 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-15-C	C/I and Receiver Selectivity Performance, uncoded data at 1 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-16-C	Blocking Performance, uncoded data at 1 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-17-C	Intermodulation Performance, uncoded data at 1 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-18-C	Maximum input signal level, uncoded data at 1 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-19-C	PER Report Integrity, uncoded data at 1 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-20-C	Receiver sensitivity at 2 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-21-C	C/I and Receiver Selectivity Performance at 2 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-22-C	Blocking performance at 2 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-23-C	Intermodulation performance at 2 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-24-C	Maximum input signal level at 2 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-25-C	PER Report Integrity at 2 Ms/s, Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-26-C	Receiver sensitivity, LE Coded (S=2)	N/A
NTC	RCV-LE/CA/BV-27-C	Receiver sensitivity, LE Coded (S=8)	N/A
NTC	RCV-LE/CA/BV-28-C	C/I and Receiver Selectivity Performance, LE Coded (S=2)	N/A
NTC	RCV-LE/CA/BV-29-C	C/I and Receiver Selectivity Performance, LE Coded (S=8)	N/A
NTC	RCV-LE/CA/BV-30-C	PER Report Integrity, LE Coded (S=2)	N/A
NTC	RCV-LE/CA/BV-31-C	PER Report Integrity, LE Coded (S=8)	N/A
NTC	RCV-LE/CA/BV-32-C	Receiver sensitivity, LE Coded (S=2), Stable Modulation Index	N/A

NTC	RCV-LE/CA/BV-33-C	Receiver sensitivity, LE Coded (S=8), Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-34-C	C/I and Receiver Selectivity Performance, LE Coded (S=2), Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-35-C	C/I and Receiver Selectivity Performance, LE Coded (S=8), Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-36-C	PER Report Integrity, LE Coded (S=2), Stable Modulation Index	N/A
NTC	RCV-LE/CA/BV-37-C	PER Report Integrity, LE Coded (S=8), Stable Modulation Index	N/A

Note: NTC is Normal test Conditions; ETC is Extreme test conditions

4.Capability Statement

4.1 Radio (RF) Bluetooth ICS Proforma

Item	Capability	Reference	Status	Support: [YES] or[NO]
1	Power Class = 1	RF, 3	C.5	N/A
2	Power Class = 2	RF, 3	C.5	N/A
3	Power Class = 3	RF, 3	C.5	N/A
4	Power Control	RF, 3	C.1	N/A
5	1-slot packets supported	BB,6.5	M	N/A
6	3-slot packets supported	BB,6.5	O	N/A
7	5-slot packets supported	BB,6.5	O	N/A
8	79 Channels	RF, 2	M	N/A
9	Support for GFSK modulation	RF, 3.1	M	N/A
10	Support for pi/4-DQPSK modulation	RF, 3.2	C.2	N/A
11	Support for 8DPSK modulation	RF, 3.2	C.3	N/A
12	Enhanced Power Control	RF, 3	C.4	N/A

C.1: Mandatory IF 1/1 (Power Class 1) is supported; Optional IF 1/2 (Power Class 2) OR 1/3 (Power Class 3) is supported, otherwise Excluded.

C.2: Mandatory IF (SUM ICS 22/1 (EDR for asynchronous transports (single slot)) OR SUM ICS 22/2 (EDR for asynchronous transports (multi-slot)) OR SUM ICS 22/3 (EDR for synchronous transports) OR SUM ICS 22/4 (EDR for synchronous transports)) is supported, otherwise Excluded.

C.3: Mandatory IF (SUM ICS 22/1 (EDR for asynchronous transports (single slot)) OR 22/2 (EDR for asynchronous transports (multi-slot)) OR 22/3 (EDR for synchronous transports)) is supported; Optional if (SUM ICS 22/4 (EDR for synchronous transports)) is supported, otherwise Excluded.

C.4: Optional IF SUM_ICS, 21/8 (Core Specification 3.0) or later AND 1/4 (Power Control) is supported, otherwise Excluded.

C.5: At least one of 1/1 (Power Class 1) OR 1/2 (Power Class 2) OR 1/3 (Power Class 3) shall be supported.

4.2 Radio (RF) Bluetooth IXIT Proforma

Identifier	Test case Reference	Value	Units
Timer for TX power control	TRM/CA/03 Power Control	N/A	ms
Inband Image frequency	RCV/CA/03 C/I Performance RCV/CA/09 EDR C/I Performance	N/A	MHz
Value n for Intermodulation test	RCV/CA/05 Intermodulation Performance	N/A	Integer
Type of power source	Chapter 6.4, RF Test Specification	N/A	-
Nominal power source voltage	Chapter 6.4, RF Test Specification	N/A	V
Operating temperature range	Chapter 6.5, RF Test Specification	N/A	°C
Extreme power source voltage	Chapter 6.5, RF Test Specification	N/A	V
Antenna gain	Chapter 6.9, RF Test Specification	N/A	dB

4.3 Bluetooth LE RF-PHY Capabilities

Item	Capability	Reference	Status	Support: [YES] or [NO]
1	LE Transmitter (Non-connectable, Broadcaster)	[1], 3	C.1	YES
2	LE Receiver (Non-connectable, Observer)	[1], 4	C.1	YES
3	LE Transceiver (Connectable, Peripheral/Central)	[1], 3, 4	C.1	YES
4	LE 2M PHY	[3] 3, 4	C.2	YES
5	Stable Modulation Index - Transmitter	[3] 3.1.1	C.3	N/A
6	Stable Modulation Index - Receiver	[3] 3.1.1	C.4	N/A
7	LE Coded PHY	[3] 3, 4	C.2	N/A
8	Transmitting Constant Tone Extensions	[4] 5	C.3	N/A
9	2 μ s Antenna Switching During Constant Tone Extension Transmission (AoD)	[4] 5	C.5	N/A
10	1 μ s Antenna Switching During Constant Tone Extension Transmission (AoD)	[4] 5	C.6	N/A
11	2 μ s Antenna Sampling During Constant Tone Extension Reception (AoD)	[4] 5	C.4	N/A
12	2 μ s Antenna Switching and Sampling During Constant Tone Extension Reception (AoA)	[4] 5	C.7	N/A
13	1 μ s Antenna Sampling During Constant Tone Extension Reception (AoD)	[4] 5	C.7	N/A

14	1 μ s Antenna Switching and Sampling During Constant Tone Extension Reception (AoA)	[4] 5	C.8	N/A
15	HCI Test Interface	[2], 2	C.1	YES
16	UART Test Interface	[2], 3	C.1	N/A

C.1: Mandatory to support at least one of these capabilities.

C.2: Optional IF (SUM ICS 21/16 “Core 5.0” OR SUM ICS 21/18 “Core 5.1”) AND RF PHY 1/3 “LE Transceiver” are supported, otherwise Excluded.

C.3: Optional IF (SUM ICS 21/16 “Core 5.0” OR SUM ICS 21/18 “Core 5.1”) AND (RF PHY 1/1 “LE Transmitter” OR RF PHY 1/3 “LE Transceiver”) are supported, otherwise Excluded.

C.4: Optional IF (SUM ICS 21/16 “Core 5.0” OR SUM ICS 21/18 “Core 5.1”) AND (RF PHY 1/2 “LE Receiver” OR RF PHY 1/3 “LE Transceiver”) are supported, otherwise Excluded.

C.5: Optional IF RF PHY 1/8 “Transmitting Constant Tone Extensions” is supported, otherwise Excluded.

C.6: Optional IF 1/9 “2 μ s Antenna Switching During Constant Tone Extension Transmission (AoD)” is supported, otherwise Excluded.

C.7: Optional IF RF PHY 1/11 “2 μ s Antenna Sampling During Constant Tone Extension Reception (AoD)” is supported, otherwise Excluded.

C.8: Mandatory IF RF PHY 1/12 “2 μ s Antenna Switching and Sampling During Constant Tone Extension Reception (AoA)” and RF/PHY 1/13 “1 μ s Antenna Sampling During Constant Tone Extension Reception (AoD)” are supported, otherwise Excluded.

[1] Specification of the Bluetooth System, Physical Layer Specification (PHY) Volume 6, Part A, Version 4.0 or later

[2] Specification of the Bluetooth System, Direct Test Mode, Volume 6, Part F, Version 4.0 or later

[3] Specification of the Bluetooth System, Physical Layer Specification (PHY) Volume 6, Part A, Version 5.0 or later

[4] Specification of the Bluetooth System, Physical Layer Specification (PHY) Volume 6, Part A, Version 5.1 or later

4.4 Bluetooth LE RF-PHY IXIT Proforma

IXIT Reference	Identifier	Sub-Identifier (Optional)	Value	Units
RF-PHY:P1:1	Inband Image frequency	Low frequency	0	MHz
RF-PHY:P1:2		Middle frequency	0	MHz
RF-PHY:P1:3		High frequency	0	MHz
RF-PHY:P2:1	Value n for Intermodulation test	Low frequency	5	Integer
RF-PHY:P2:2		Middle frequency	5	Integer
RF-PHY:P2:3		High frequency	5	Integer
RF-PHY:P4	Type of power source	Nominal (NOC)	4.2	V
RF-PHY:P5	Operating temperature	Nominal (NOC)	24	°C
RF-PHY:P6:1	Air humidity range (relative)	Maximum	75	%
RF-PHY:P6:2		Minimum	20	%
RF-PHY:P6:3		Air humidity level for NOC tests	50	%
RF-PHY:P7:1	Test interface implementation	HCI or 2-wire UART	HCI	
RF-PHY:P7:2		Datarate	115200	bps
RF-PHY:P9:1	Maximum TX packet length (MAX_TX_LENGTH)	37 to 255	37	Bytes
RF-PHY:P9:2	Maximum RX packet length (MAX_RX_LENGTH)	37 to 255	37	Bytes
RF-PHY:P9:3	Maximum TX packet length (MAX_TX_LENGTH) 2M	37 to 255	37	Bytes
RF-PHY:P9:4	Maximum TX packet length (MAX_TX_LENGTH) S=2	37 to 255	N/A	Bytes
RF-PHY:P9:5	Maximum TX packet length (MAX_TX_LENGTH) S=8	37 to 255	N/A	Bytes
RF-PHY:P9:6	Maximum RX packet length (MAX_RX_LENGTH) 2M	37 to 255	37	Bytes
RF-PHY:P9:7	Maximum RX packet length (MAX_RX_LENGTH) S=2	37 to 255	N/A	Bytes

RF-PHY:P9:8	Maximum RX packet length (MAX_RX_LENGTH) S=8	37 to 255	N/A	Bytes
RF-PHY:P10:1	Maximum TX mode output power	-20 to 20	2.49	dBm
RF-PHY:P11:1	Inband Image Frequency (2Ms/s)	Low frequency	N/A	MHz
RF-PHY:P11:2		Middle frequency	N/A	MHz
RF-PHY:P11:3		High frequency	N/A	MHz
RF-PHY:P12:1	Value n for Intermodulation test (2Ms/s)	Low frequency	N/A	Integer
RF-PHY:P12:2		Middle frequency	N/A	Integer
RF-PHY:P12:3		High frequency	N/A	Integer
RF-PHY:P13:1	Inband Image Frequency (Stable Modulation Receiver)	Low frequency	N/A	MHz
RF-PHY:P13:2		Middle frequency	N/A	MHz
RF-PHY:P13:3		High frequency	N/A	MHz
RF-PHY:P14:1	Value n for Intermodulation test (Stable Modulation Receiver)	Low frequency	N/A	Integer
RF-PHY:P14:2		Middle frequency	N/A	Integer
RF-PHY:P14:3		High frequency	N/A	Integer
RF-PHY:P15:1	Inband Image Frequency (Stable Modulation Receiver, 2Ms/s)	Low frequency	N/A	MHz
RF-PHY:P15:2		Middle frequency	N/A	MHz
RF-PHY:P15:3		High frequency	N/A	MHz
RF-PHY:P16:1	Value n for Intermodulation test (Stable Modulation Receiver, 2Ms/s)	Low frequency	N/A	Integer
RF-PHY:P16:2		Middle frequency	N/A	Integer
RF-PHY:P16:3		High frequency	N/A	Integer
RF-PHY:17	IQ Report Rate	0x0006 to 0xFFFF	N/A	
RF-PHY:18	The length of the Constant Tone Extension(1Ms/s)	16 to 160	N/A	bits
RF-PHY:19	The length of the Constant Tone Extension(2Ms/s)	32 to 320	N/A	bits
RF-PHY:20	The number of antennae	≥ 1	N/A	

5. Test Data

Test Data are packetd at:

C:\Program Files\InterLab\Results

in the host computer of Interlab Bluetooth RF Test Solution

*** End of Report ***