



TEST REPORT

APPLICANT : ShenZhen Elink Technology Co. ,LTD

PRODUCT NAME : BM16

MODEL NAME : BM16

BRAND NAME : Elink

**BLUETOOTH
VERSION** : 4.2

STANDARD(S) : Bluetooth Low Energy RF PHY Test Specification
RF-PHY.TS.5.0.3

RECEIPT DATE : 2018-11-22

TEST DATE : 2018-11-27 to 2018-12-04

ISSUE DATE : 2018-12-05

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Change History		
Version	Date	Reason for change
1.0	2018-12-05	First edition



1. IDENTIFICATION SUMMARY

1.1. Test Laboratory

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL 1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
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URL:	www.morlab.cn

Competences and guarantees:

Morlab is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, Morlab has a calibration and maintenance programme for its measuring equipment.

Morlab guarantees the reliability of the data presented in this report, which is the result of measurements and tests performed to the item under test on the date and under the conditions stated on the report and is based on the knowledge and technical facilities available at Morlab at the time of execution of the test.

Morlab is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the item under test and the results of the test.



1.2. Client

Name:	ShenZhen Elink Technology Co. ,LTD
Address:	F4, Block A, Qiaohongshen CCI Garden, Yintian Industrial Park, Xixiang Bao'an District, Shenzhen City, Guangdong, China

1.3. Manufacturer

Name:	ShenZhen Elink Technology Co. ,LTD
Address:	F4, Block A, Qiaohongshen CCI Garden, Yintian Industrial Park, Xixiang Bao'an District, Shenzhen City, Guangdong, China

1.4. Implementation Under Test (IUT)

Hw version:	REV01
Sw version:	V1.0
Description of IUT:	BM16 is a Bluetooth module that Shenzhen Elink technology especially designed for smart wireless transmission, by using BK Chipset, following Bluetooth V4.2 standard
Sampling method:	Samples undergoing test have been selected by: the client

Internal Control No.:	Element:	BT_ADD:
A01	1PCS	000000000000

1.5. Testing Environment

PICS:	See annex A
Test Results reference:	See item 6
Retention date for log reference:	2 years
Test Requested	Bluetooth RF conformance testing



1.6. Test conditions:

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



2. IUT CONFORMANCE STATUS

This IUT has the following conformance status according to the referenced ATS specification(s).

Static Conformance errors?	NO
Dynamic Conformance errors?	NO

Number of test cases run

PASSED:	10
Failed:	0
Total:	10

3. STATIC CONFORMANCE SUMMARY

The PICS(s) for this IUT is consistent with the static conformance requirements in the referenced base specification(s).

The qualified PICS/PIXIT menu of the test system was defined in accordance with the client.

4. DYNAMIC CONFORMANCE SUMMARY

The test campaign did NOT reveal errors in the IUT.



5. TEST RESULT LIST

Transmitter Tests (TRM-LE)					
Test Case ID	Temperat	Voltage	Verdict	Test Ececution Date	Test Equipment Platform
TRM-LE/CA/BV-01-C Output power	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-03-C In-band emissions, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-05-C Modulation Characteristics, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-06-C Carrier frequency offset and drift, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-08-C In-band emissions at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-09-C Stable Modulation Characteristics, uncoded data at 1 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-10-C Modulation Characteristics at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-11-C Stable Modulation Characteristics at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-12-C Carrier frequency offset and drift at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System



TRM-LE/CA/BV-13-C Modulation Characteristics, LE Coded (S=8)	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
TRM-LE/CA/BV-14-C Carrier frequency offset and drift, LE Coded (S=8)	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
Receiver Tests (RCV-LE)					
Test Case ID	Temperat	Voltage	Verdict	Test Execution Date	Test Equipment Platform
RCV-LE/CA/BV-01-C Receiver sensitivity, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-03-C C/I and Receiver Selectivity Performance, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-04-C Blocking Performance, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-05-C Intermodulation Performance, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-06-C Maximum input signal level, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-07-C PER Report Integrity, uncoded data at 1 Ms/s	Nominal	Nominal	Pass	2018.11.27- 2018.12.04	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-08-C Receiver sensitivity at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-09-C C/I and Receiver Selectivity Performance at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-10-C	Nominal	Nominal	N/A	Not	CTTL-SYSTEMS -



Blocking performance at 2 Ms/s				Required	RTSB-A Test System
RCV-LE/CA/BV-11-C Intermodulation performance at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-12-C Maximum input signal level at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-13-C PER Report Integrity at 2 Ms/s	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-14-C Receiver Sensitivity, uncoded data at 1 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-15-C C/I and Receiver Selectivity Performance, uncoded data at 1 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-16-C Blocking Performance, uncoded data at 1 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-17-C Intermodulation Performance, uncoded data at 1 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-18-C Maximum input signal level, uncoded data at 1 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-19-C PER Report Integrity, uncoded data at 1 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-20-C Receiver sensitivity at 2 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System



RCV-LE/CA/BV-21-C C/I and Receiver Selectivity Performance at 2 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-22-C Blocking performance at 2 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-23-C Intermodulation performance at 2 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-24-C Maximum input signal level at 2 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-25-C PER Report Integrity at 2 Ms/s, Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-26-C Receiver sensitivity, LE Coded (S=2)	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-27-C Receiver sensitivity, LE Coded (S=8)	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-28-C C/I and Receiver Selectivity Performance, LE Coded (S=2)	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-29-C C/I and Receiver Selectivity Performance, LE Coded (S=8)	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-30-C PER Report Integrity, LE Coded (S=2)	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-31-C PER Report Integrity, LE Coded (S=8)	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-32-C Receiver sensitivity, LE Coded (S=2), Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System



RCV-LE/CA/BV-33-C Receiver sensitivity, LE Coded (S=8), Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-34-C C/I and Receiver Selectivity Performance, LE Coded (S=2), Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-35-C C/I and Receiver Selectivity Performance, LE Coded (S=8), Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-36-C PER Report Integrity, LE Coded (S=2), Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System
RCV-LE/CA/BV-37-C PER Report Integrity, LE Coded (S=8), Stable Modulation Index	Nominal	Nominal	N/A	Not Required	CTTL-SYSTEMS - RTSB-A Test System

Annex A. PICS & IXIT

Table 1: Bluetooth LE RF Capabilities

Item	Capability	Reference	Status	Support: YES or NO
1/1	LE Transmitter (Non-connectable, Broadcaster)	[2],3	C.1	NO
1/2	LE Receiver (Non-connectable, Observer)	[2],4	C.1	NO
1/3	LE Transceiver (Connectable,Peripheral/Central)	[2],3,4	C.1	YES
1/4	LE 2M PHY	3,4	C.2	NO
1/5	Stable Modulation Index-Transmitter	3.1.1	C.3	NO
1/6	Stable Modulation Index-Receiver	3.1.1	C.4	NO
1/7	LE Coded PHY	3,4	C.2	NO
2/1	HCI Test Interface	[3],2	C.2	YES
2/2	UART Test Interface	[3],3	C.2	YES

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

C.2:Optional if SUM ICS 21/16 “Core 5.0” and RF PHY 1/3“ LETransceiver” are supported,otherwise Excluded.

C.3:Optional if SUM ICS 21/16 “Core 5.0” and (RF PHY 1/1 “LE Transmitter” or RF PHY 1/3 “Trans ceiver”) are supported,otherwise Excluded.

C.4:Optional if SUM ICS 21/16 “Core 5.0” and (RF PHY 1/2 “LE Receiver” or RF PHY 1/3 “LE Receiver”) are supported,otherwise Excluded.

**Table 2: Bluetooth LE RF PIXIT**

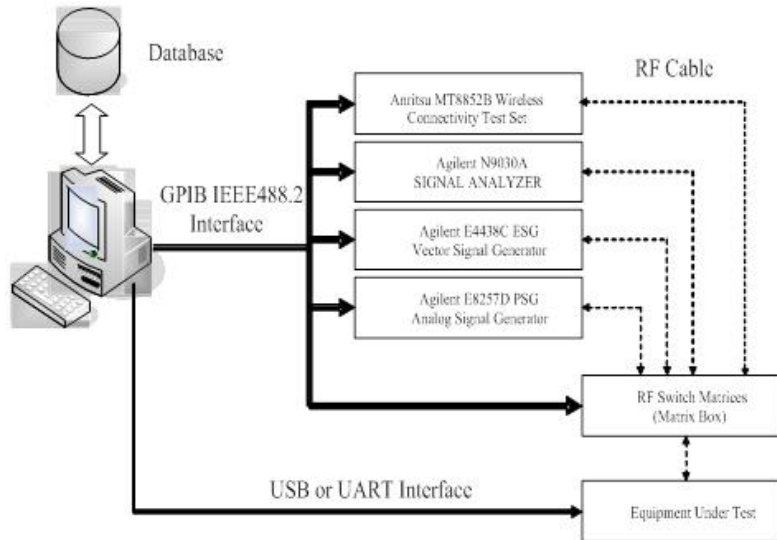
Parameter Name	Value
PIN Code	0000
Additional RF Loss	0.0
Max Antenna Gain	0.0
BD-ADDR	2222B8F15263
Host Connection Request	True
OUT RX Image Freq	0
Power Control Delay	0
Intermod Interferer Pair Below	False
Inquiry Before Connect	True
Preferred Test Mode	TxMode
Delayed Loopback	False
Test Mode Delay	0
Unmodulated Part Before LE	0
Intermod Test Number	5



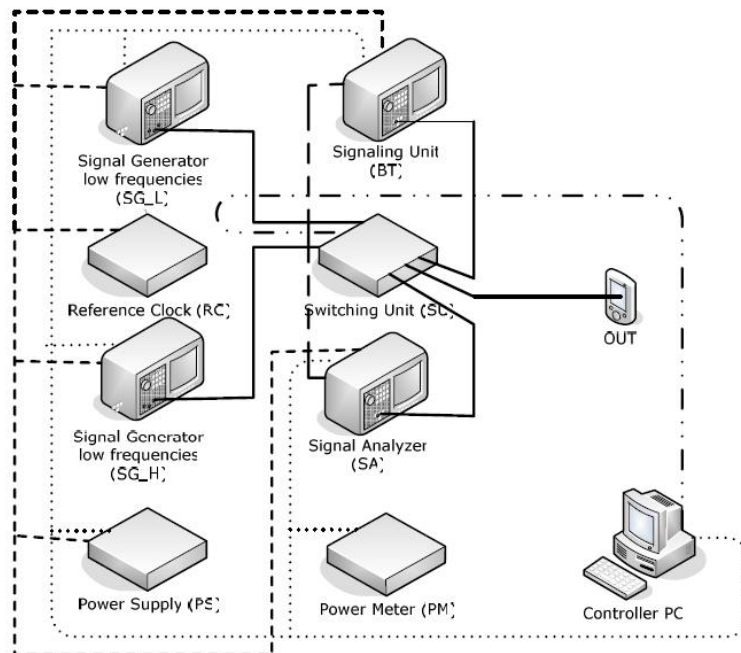
Annex B. TEST SYSTEM

Equipment Name	Serial No.	Type	Manufacturer	Calibrate Date
InterLab Bluetooth RF Test Solution				
Power Sensor	103755	NRP-Z21	Rohde& Schwarz	2018.04
Bluetooth Signalling Unit	100948	CBT	Rohde& Schwarz	2018.04
Power Supply	016551312	HMP2020	Rohde& Schwarz	2018.04
Frequency Signal Analyzer	102467	FSL3	Rohde& Schwarz	2018.04
Vector Signal Generator	101829	SMJ100A	Rohde& Schwarz	2018.04
Signal Generator	104105	SMF100A	Rohde& Schwarz	2018.04
Power Meter	102491	NRP2	Rohde& Schwarz	2018.04
Switching Unit	040117	TCOT	7Layers	--
Test Engine Software	--	SW ver. 3.0.1p1	7Layers	--
CTTL-SYSTEMS - RTSB-A Test System				
Spectrum Analyser	MY53120346	N9030A	Keysight	2018.04
RF Signal Generator	MY45095851	E4438C	Agilent	2018.04
Wideband Generator	MY47461226	E8257D	Agilent	2018.04
DC Power supply	MY43005311	66311B	Agilent	2018.04
Signalling Unit	803003	MT8852B	Anritsu	2018.04
Industrial PC	--	TEMPEL	Advantech	--
RTSB-A Switch Unit	--	RTSB-A	CTTL	--
RF Tester Software	--	SW ver. 2.0.0	CTTL	--

Annex C. TEST SETUP

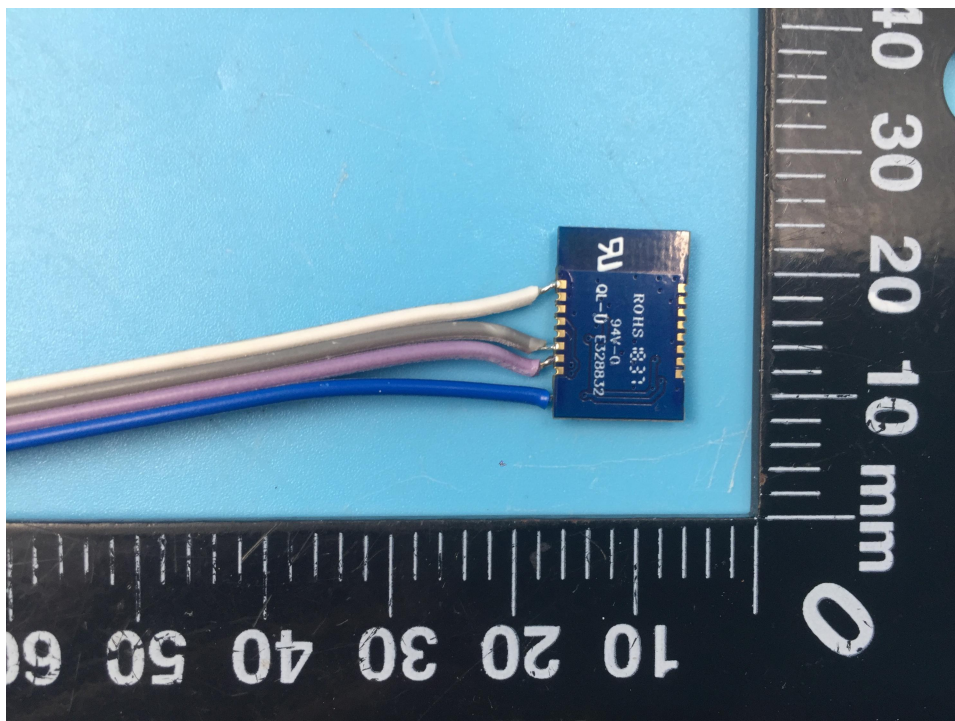
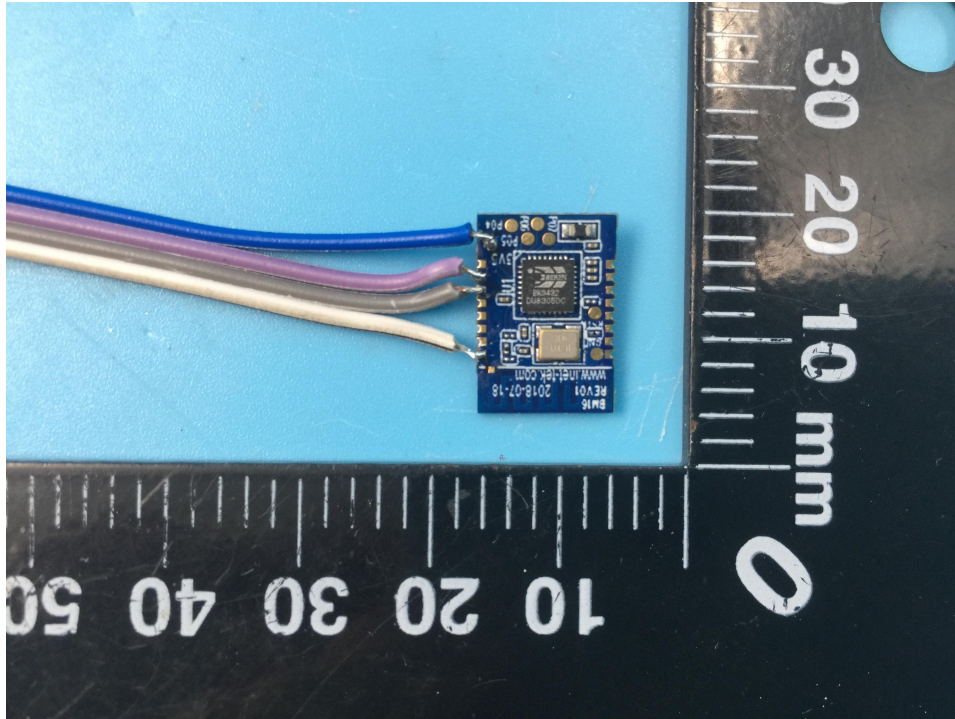


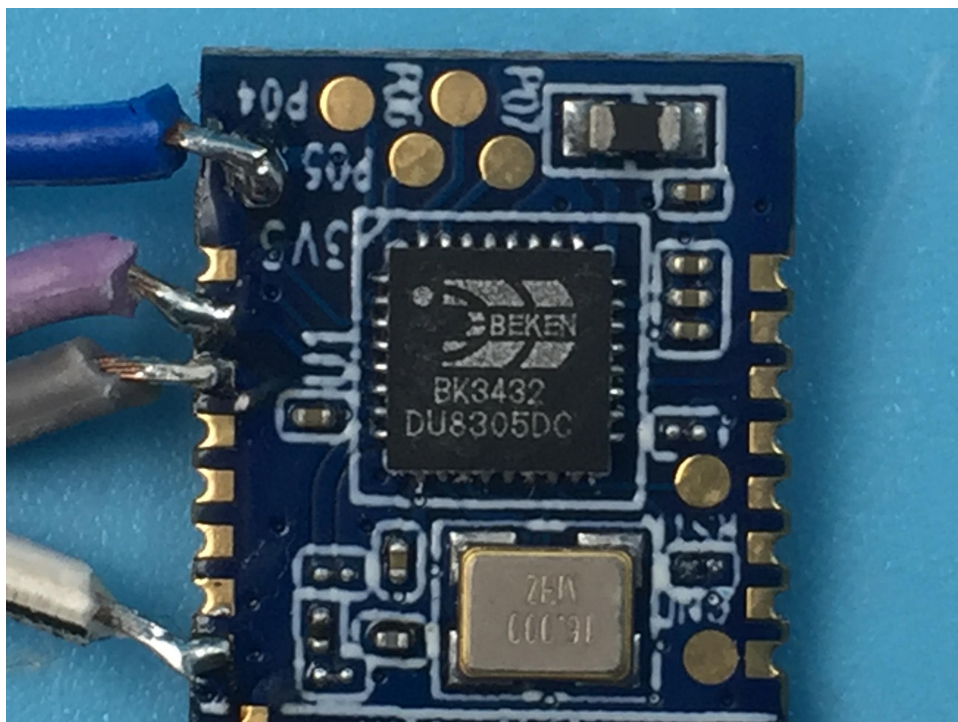
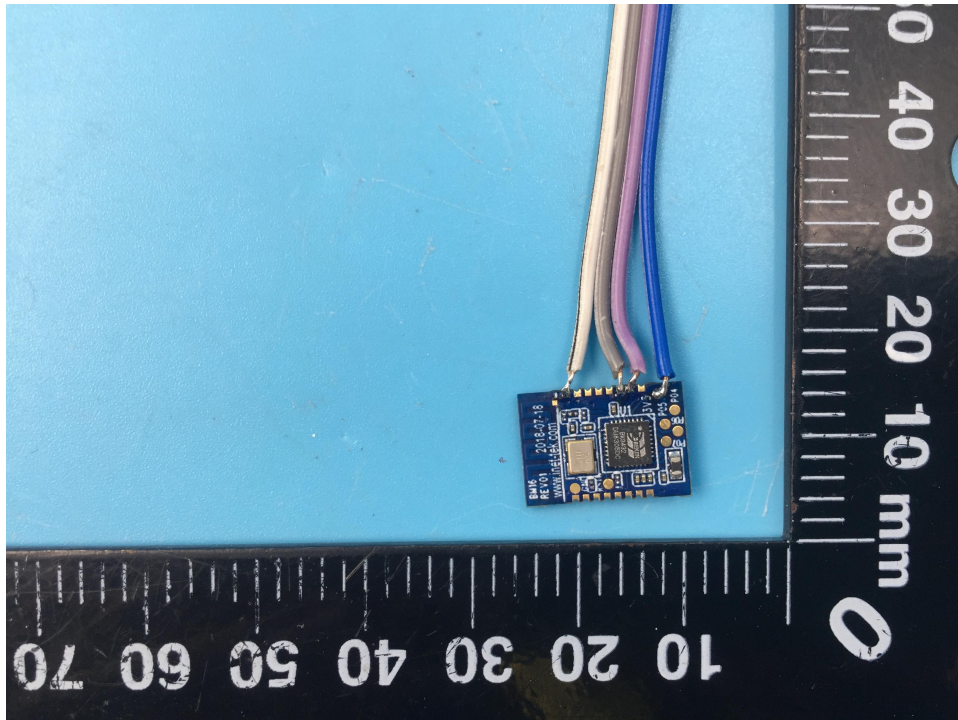
CCTL-SYSTEMS - RTSB-A Test System



(InterLab Bluetooth RF Test Solution)

Annex D. EUT PHOTO





***** END OF REPORT *****