

Prüfbericht-Nr.: <i>Test Report No.:</i>	50148699 001	Auftrags-Nr.: <i>Order No.:</i>	114077828	Seite 1 von 30 Page 1 of 30
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date.:</i>	22 May 2018	
Auftraggeber: <i>Client:</i>	Microchip Technology Inc. 2355 West Chandler Blvd. Chandler, Arizona 85224-6199, United States			
Prüfgegenstand: <i>Test item:</i>	SAM R34 Xplained Pro Evaluation Kit			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	A09-3167			
Auftrags-Inhalt: <i>Order content:</i>	TUV Rheinland - EMC service			
Prüfgrundlage: <i>Test specification:</i>	EN 55032: 2012, EN 55032: 2015 EN 55024: 2010+ A1: 2015			
Wareneingangsdatum: <i>Date of receipt:</i>	10 Aug. 2018			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000769530-001 & 002			
Prüfzeitraum: <i>Testing period:</i>	Refer to test report			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland Taiwan Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland Taiwan Ltd. Taichung Branch Office			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
				
21 Sep. 2018	Neil J. N. Tsai/ Project Manager	21 Sep. 2018	Max Y. C. Yao/ Technical Certifier	
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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1 Test Site

Laboratory:

TUV Rheinland Taiwan Ltd. Taichung Branch Office
No.9, Lane 36, Minsheng Rd., Sec. 3, Daya District, Taichung City 428, Taiwan, R.O.C.

Test Facility:

TÜV Rheinland Taiwan Ltd.
11F., No.758, Sec. 4, Bade Rd., Songshan Dist., Taipei City 105, Taiwan, R.O.C.

The test facility is accredited by TAF (member of ILAC), under number 0759 according to ISO/IEC 17025:2005.

1.1 Measurement Uncertainty

Testing Item	Frequency Range	Uncertainty
Conducted Emission (LISN)	9kHz - 30MHz	2.69 dB
Conducted Emission (ISN)	150kHz - 30MHz	3.20 dB
Radiated Emission (966 Chamber: 3m)	30MHz - 1000MHz	2.82 dB
Radiated Emission (966 Chamber: 3m)	Above 1GHz	2.42 dB
Radiated Emission (10m OATS: 10m)	30MHz - 1000MHz	2.82 dB

Note:

The uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

2 Description of the Test Sample

2.1 General Description of Equipment

The tested sample is a "SAM R34 Xplained Pro Evaluation Kit" with model number "A09-3167" for new approval, which has LoRa function.

2.2 Rating and Physical Characteristics

Type Designation:	A09-3167
EUT Rating:	5Vdc via USB port
Host Notebook Rating:	230Vac, 50Hz
Protection Class:	III
Wireless Frequency:	863 - 870 MHz (LoRa function)

2.3 Sources of Interference

- 1) IC circuits

2.4 Noise Suppression Parts

Please refer to attachment documentation for details.

2.5 Submitted Documents

- 1) Product Specification

3 Measurement Conditions

3.1 Modes of Operation

A. The notebook was connected to sample1 and sample2 for TX and RX mode, and key-in command in “cmd.exe (MS-DOS command)” to control TX sample to transmit the data to RX sample.

The basic operation mode:

A. USB communication and LoRa link

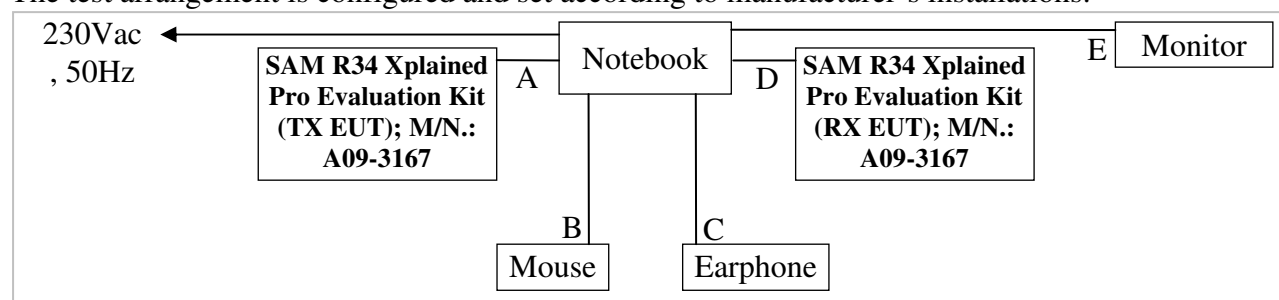
3.2 Additional Equipment

The subject sample was tested as an independent unit with the following equipment:

Description	Manufacturer	Model No.	Serial No.
Notebook	Lenovo	20150	CB21920765
Monitor	CHIMEI	TL-24LF60	24LF60K4362250
Mouse	Lenovo	MO28UOL	44E6889
Ear/Microphone	DENGEKI	SKM-X1	N/A

3.3 Test Setup

The test arrangement is configured and set according to manufacturer’s installations.



Signal Cable Type	Signal Cable Description	
A	USB cable	Shielding, 1m
B	USB cable	Shielding, 1.8m
C	Audio cable	Non Shielding, 1.2m
D	USB cable	Shielding, 1.8m
E	D-Sub cable	Shielding, 1.8m, 1 core

3.4 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment
For EMI/Radiation Measurement (Taipei: Semi-Anechoic Chamber B)

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESR 7	101549	2017/11/10	2018/11/10
2	Spectrum Analyzer	Rohde & Schwarz	FSV-40	101112	2017/09/22	2018/09/22
3	Pre-Amplifier	Hewlett Packard	8447D	2944A06641	2017/12/26	2018/12/26
4	Pre-Amplifier	EM Electronics	EM01G18G	060558	2017/11/21	2018/11/21
5	Pre-Amplifier	EMC Instruments	EMC184045SE	980408	2018/06/08	2019/06/08
6	Bilog Antenna	TESEQ	CBL6111D	40101	2017/09/18	2018/09/18
7	Horn Antenna	ETS-Lindgren	3117	00138160	2018/06/01	2019/06/01
8	Horn Antenna	Com-Power	AH-840	101029	2017/11/28	2018/11/28
9	Loop Antenna	Schwarzbeck	FMZB 1513	1513-076	2018/06/21	2019/06/21
10	Test Software	Audix	e3	Ver. 9	N/A	N/A

For EMS/ESD Test (Taipei: Shield Room)

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
1	ESD Simulator	TESEQ	NSG437	1259	2018/05/23	2019/05/23

For EMS/RF Field Strength Susceptibility Test (Taipei: Fully-Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
1	Signal Generator	Rohde & Schwarz	SMB-100A	104167	2018/08/23	2019/08/23
2	Power Amplifier (20-1GHz)	FRANKONIA	FLH-200B	1088	N.C.R.	N.C.R.
3	Power Amplifier (1-6GHz)	Bonn	BLMA1060-50D	108052	N.C.R.	N.C.R.
4	Broadband Antenna (30M-3GHz)	FRANKONIA	BTA-M	08009	N.C.R.	N.C.R.
5	Horn Antenna (0.7-10.5GHz)	FRANKONIA	MAX-9	MAX-9-801	N.C.R.	N.C.R.
6	Power Meter	FRANKONIA	PMS_1084	108B1251	2018/05/16	2019/05/16
7	2 Directional Coupler	AR	DC6180A	334572	N.C.R.	N.C.R.
8	Test Software	FRANKONIA	RF-LAB	Ver. 4.97	N/A	N/A

For EMS/PFMF Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
1	Inductive Coil	EMC-PARTNER	MF-1000-1	191	2018/08/27	2019/08/27
2	ELF Magnetic Field Meter	F.W. BELL	4190	1526001	2018/03/26	2019/03/26
3	RMS Clamp Multimeter	Chauvin Amoux	F15	N100866JAV	2018/08/30	2019/08/30

3.5 Abbreviations

PASS : Complied with requirement	N/A : Not applicable
FAIL : Not complied	N.C.R. : No calibration required

4 Test Results EMISSION

Result:	PASS
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4.1 Continuous Interference

4.1.1 Conducted Emission (AC Mains)

Port: AC Mains
Basic Standard: EN 55032, Annex A
Frequency Range: 0.15 – 30 MHz
Limits: EN 55032, Table A.9, Class B

Result:	N/A
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The subject sample is not intended to be connected to AC mains supply. Therefore, this test is not applicable.

4.1.2 Conducted Emission (Telecommunication Ports)

Port: Telecommunication Ports
Basic Standard: EN 55032, Annex A
Frequency Range: 0.15 - 30 MHz
Limits: EN 55032, Table A.11, Class B

Result:	N/A
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The subject sample has not telecommunication port. Therefore, this test is not applicable.

4.1.3 Radiated Emission, 30 - 1000 MHz

Port: Enclosure
Basic Standard: EN 55032, Annex A
Frequency Range: 30 - 1000 MHz
Limits: EN 55032, Table A.4, Class B

Result:	PASS
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Test Setup

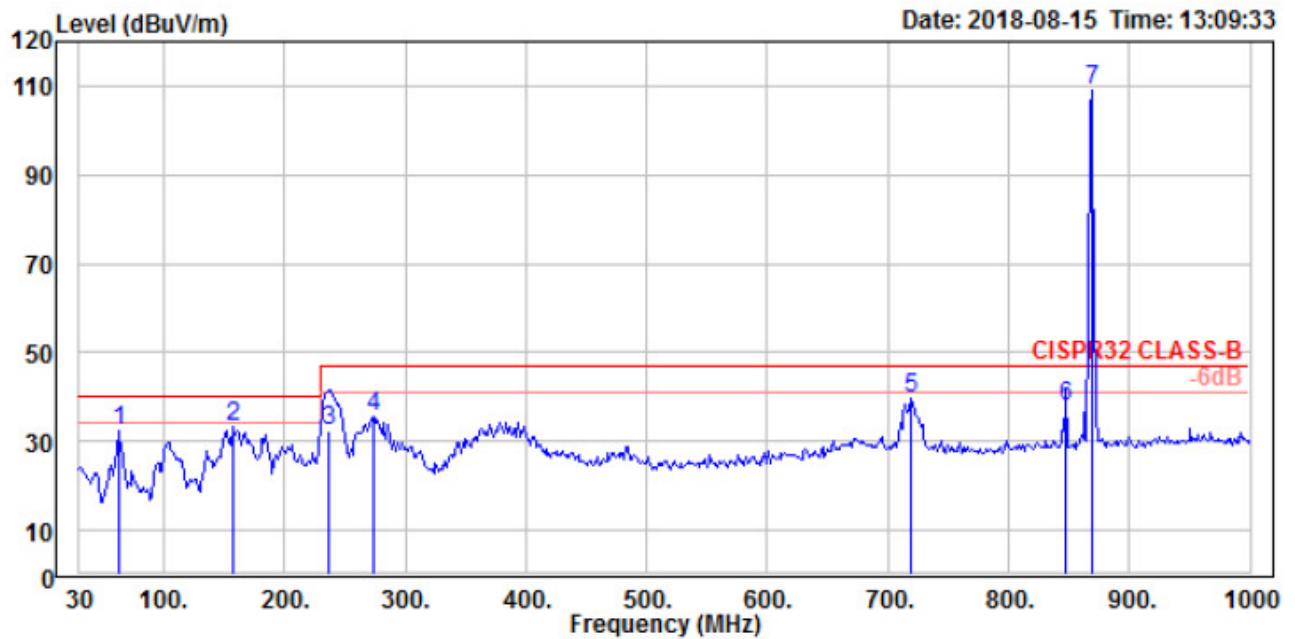
Date of Test: 15 Aug 2018
Input Voltage: See 2.2
Operational Mode: See 3.1
Temperature 24 °C
Relative Humidity 53 %

Table 2: Radiated Emission, 30 - 1000 MHz
Setting:

Frequency		Settings	
Start	Stop	IF Bandwidth	Detector
30 MHz	1000 MHz	120 kHz	QP

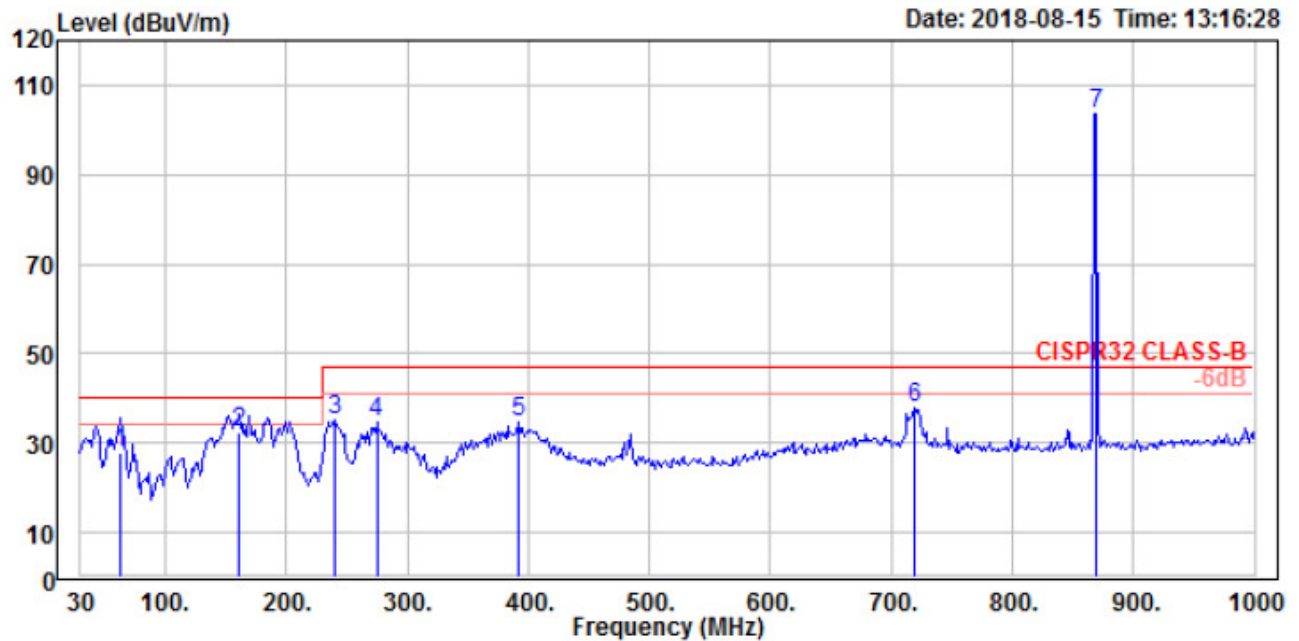
Note 1: Level = Reading(Read Level) + Factor
Margin(Over Limit) = Level – Limit(Limit Line)

Note 2: Factor = Antenna factor + Cable loss + (- Amplifier gain)

Figure 1: Radiated Emission, 30 - 1000 MHz
Horizontal


	Freq	Level	Read		Limit	Over	APos	TPos	Remark	Note
	MHz	dBuV/m	Level	Factor	Line	Limit	cm	deg		
			dBuV	dB/m	dBuV/m	dB				
1	62.333	32.60	49.63	-17.03	40.00	-7.40	300	170	QP	
2	157.928	33.29	44.54	-11.25	40.00	-6.71	200	336	QP	
3	236.652	32.25	42.60	-10.35	47.00	-14.75	100	1	QP	
4	273.203	35.47	43.85	-8.38	47.00	-11.53	100	90	QP	
5	718.841	39.51	40.92	-1.41	47.00	-7.49	300	320	QP	
6	848.174	37.80	36.90	0.90	47.00	-9.20	200	198	QP	
7 *	869.261	109.21	108.11	1.10	47.00	62.21	300	246		TX

Note: The frequency 869MHz is coming from LoRa signal, so it's not requested by this standard.

Vertical


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	63.739	27.66	44.60	-16.94	40.00	-12.34	100	360	QP	
2	160.739	32.19	43.59	-11.40	40.00	-7.81	100	12	QP	
3	239.464	35.13	45.22	-10.09	47.00	-11.87	100	1	QP	
4	274.609	34.81	43.21	-8.40	47.00	-12.19	200	352	QP	
5	391.290	34.50	40.30	-5.80	47.00	-12.50	100	1	QP	
6	718.841	37.95	39.36	-1.41	47.00	-9.05	100	95	QP	
7 *	869.261	103.47	102.37	1.10	47.00	56.47	100	9		TX

Note: The frequency 869MHz is coming from LoRa signal, so it's not requested by this standard.

4.1.4 Radiated Emission, Above 1 GHz

Port: Enclosure
 Basic Standard: EN 55032, Annex A
 Frequency Range: 1 - 6 GHz
 Limits: EN 55032, Table A.5, Class B

Result:	PASS
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The highest internal source of the EUT is defined as the highest frequency generated or used within the EUT or on which the EUT operates or tunes.

- ☐ highest frequency is less than 108MHz, measurement shall only be made up to 1GHz
☐ highest frequency is between 108 & 500MHz, measurement shall only be made up to 2GHz
☒ highest frequency is between 500 & 1GHz, measurement shall only be made up to 5GHz
☐ highest frequency is above 1GHz, measurement shall be made up to 5 times the highest frequency or 6GHz, whichever is less.

Test Setup

Date of Test: 15 Aug. 2018
 Input Voltage: See 2.2
 Operational Mode: See 3.1
 Temperature: 24 °C
 Relative Humidity: 53 %

Table 3: Radiated Emission, Above 1 GHz

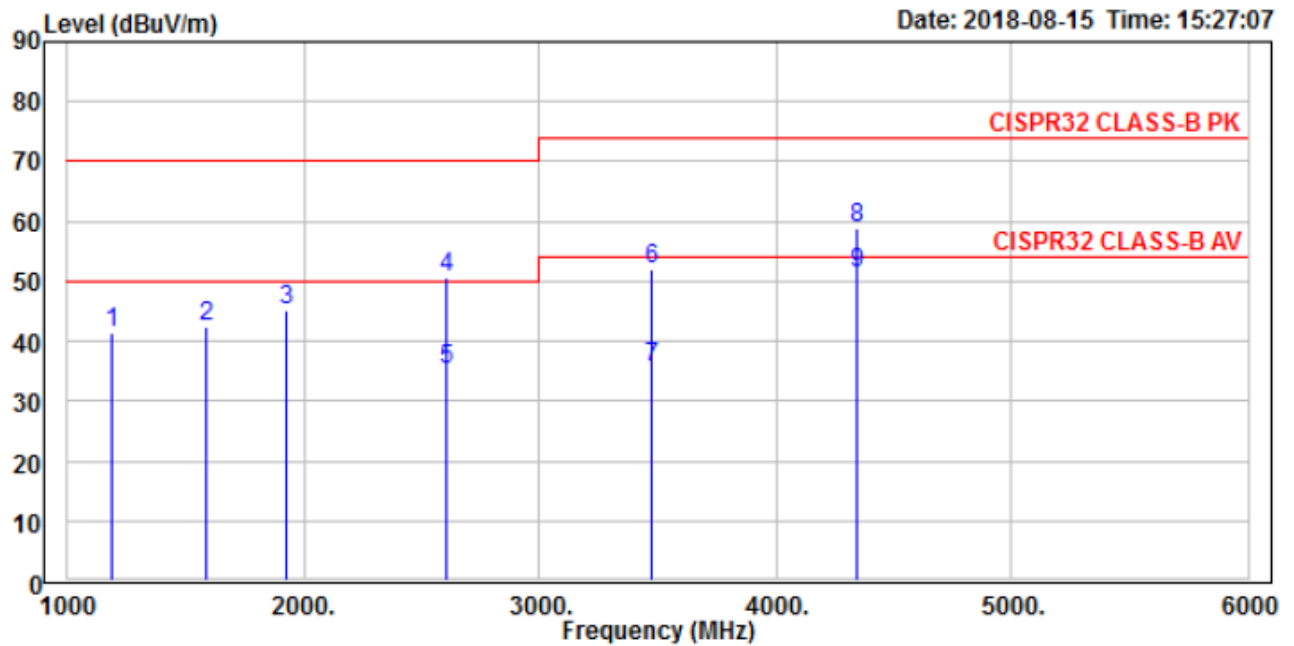
Setting:

Frequency		Settings	
Start	Stop	IF Bandwidth	Detector
1000 MHz	6000 MHz	1 MHz	Peak / Avg

Note 1: The highest frequency is 870MHz for LoRa function, measurement shall only be made up to 5GHz, the test result was measured up to 6GHz as described in this report.

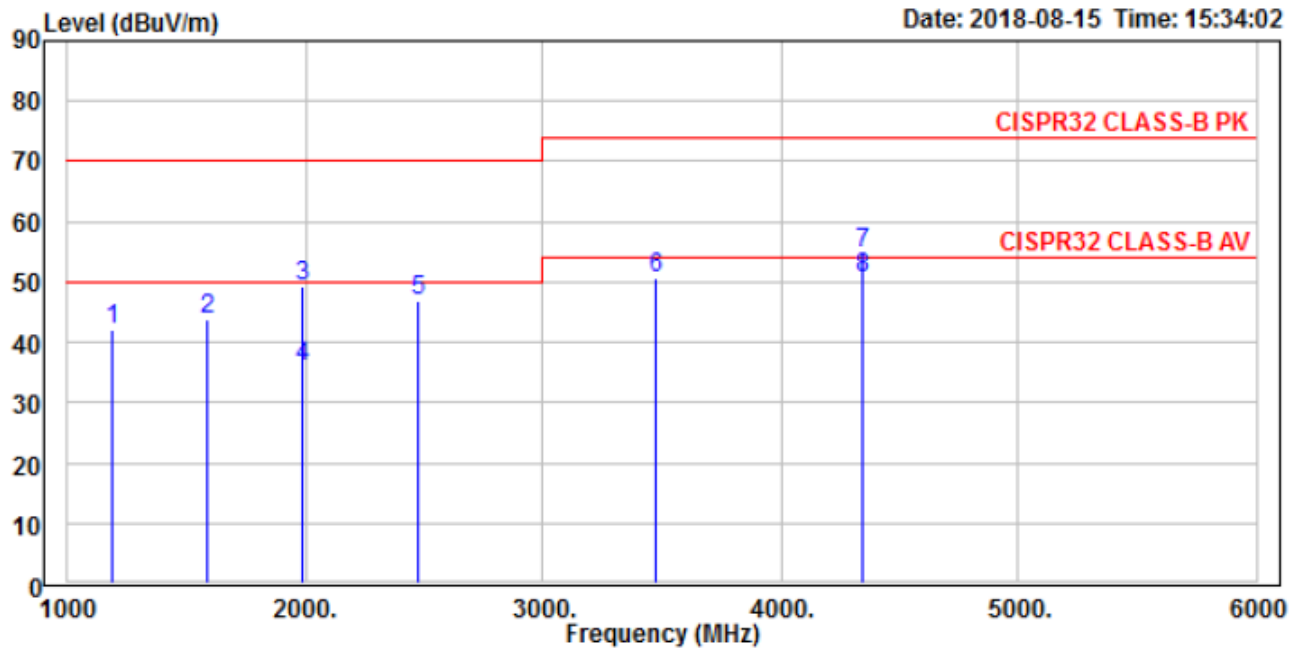
Note 2: Level = Reading(Read Level) + Factor
 Margin(Over Limit) = Level – Limit(Limit Line)

Note 3: Factor = Antenna factor + Cable loss + (- Amplifier gain)

Figure 2: Radiated Emission, Above 1 GHz
Horizontal


	Freq	Level	Read		Limit	Over	APos	TPos	Remark	Note
	MHz	dBuV/m	Level	Factor	Line	Limit				
			dBuV	dB/m	dBuV/m	dB	cm	deg		
1	1188.406	41.34	50.41	-9.07	70.00	-28.66	100	350	Peak	
2	1586.957	42.47	51.57	-9.10	70.00	-27.53	100	357	Peak	
3	1927.536	45.28	52.38	-7.10	70.00	-24.72	100	322	Peak	
4	2601.449	50.79	56.29	-5.50	70.00	-19.21	100	326	Peak	
5	2601.449	35.14	40.64	-5.50	50.00	-14.86	100	326	Average	
6	3471.014	52.11	56.14	-4.03	74.00	-21.89	100	0	Peak	
7	3471.014	35.62	39.65	-4.03	54.00	-18.38	100	0	Average	
8	4340.580	58.91	60.37	-1.46	74.00	-15.09	100	241	Peak	
9	4340.580	51.42	52.88	-1.46	54.00	-2.58	100	241	Average	

Note: The other peak readings were below average limit, thus no average measuring required for those.

Vertical


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	1188.406	42.05	51.12	-9.07	70.00	-27.95	100	264	Peak	
2	1586.957	43.81	52.91	-9.10	70.00	-26.19	100	321	Peak	
3	1985.507	49.36	56.12	-6.76	70.00	-20.64	100	95	Peak	
4	1985.507	35.80	42.56	-6.76	50.00	-14.20	100	95	Average	
5	2471.014	46.88	52.66	-5.78	70.00	-23.12	100	16	Peak	
6	3471.014	50.68	54.71	-4.03	74.00	-23.32	100	355	Peak	
7	4340.580	54.79	56.25	-1.46	74.00	-19.21	100	350	Peak	
8	4340.580	50.55	52.01	-1.46	54.00	-3.45	100	350	Average	

Note: The other peak readings were below average limit, thus no average measuring required for those.

4.2 Disturbances in Supply Systems

4.2.1 Harmonics

Port: AC Mains
Basic Standard: IEC 61000-3-2
Limits: EN 61000-3-2, clause 7

Result:	N/A
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The subject sample is not intended to be connected to AC mains supply. Therefore, this test is not applicable.

4.2.2 Voltage Fluctuations

Port: AC Mains
Basic Standard: IEC 61000-3-3
Limits: EN 61000-3-3, clause 5

Result:	N/A
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The subject sample is not intended to be connected to AC mains supply. Therefore, this test is not applicable.

5 Test Results I M M U N I T Y

Result:	PASS
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5.1 Enclosure Port

5.1.1 Radiated Susceptibility

Port:	Enclosure
Basic Standard:	IEC/EN 61000-4-3
Performance Criteria:	A
Test Specification:	EN 55024
	Frequency Range: 80 - 1000 MHz
	Field Strength 3 V/m (unmodulated)
	Modulation: 1kHz AM 80%

Result:	PASS
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Test Setup

Date of Test:	15 Aug. 2018
Input Voltage:	See 2.2
Operational Mode:	See 3.1
Temperature	21 °C
Relative Humidity	50 %

Table 4: Radiated Susceptibility Setting:

Freq.	Freq. Step	Field Strength	Sweep mode	Meas. Time	Modulation	Observation	Result
80 – 1000 MHz	1% of the Preceding freq.	3 V/m	auto	3000 ms	1 kHz, AM 80%	Normal function	PASS

No abnormalities were observed during and after the tests.

5.1.2 Electrostatic Discharge

Port: Enclosure
Basic Standard: IEC/EN 61000-4-2
Performance Criteria: B
Test Specification: EN 55024
Voltage: 8 kV (Air Discharge)
4 kV (Contact Discharge)
H.C.P. and V.C.P.

Result:	PASS
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Test Setup

Date of Test: 30 Aug. 2018
Input Voltage: See 2.2
Operational Mode: See 3.1
Temperature 23 °C
Relative Humidity 51 %

**Table 5: Electrostatic Discharge
Setting:**

Test point	Polarity	Number of Discharges	Observation	Result
H.C.P.	+/- 4 kV	50	normal function	PASS
V.C.P.	+/- 4 kV	50	normal function	PASS

No abnormalities were observed during and after the tests.

Note1: For EN 55024, the total contact discharges were 200 times.

Note2: There is no enclosure case on the subject sample, only H.C.P. and V.C.P. discharge method was performed during this test.

5.1.3 Power Frequency Magnetic Field

Port: Enclosure
Basic Standard: IEC/EN 61000-4-8
Performance Criteria: A
Test Specification: EN 55024
Frequency: 50Hz
Magnetic Field Strength 1 A/m

Result:	PASS
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Test Setup

Date of Test: 15 Aug. 2018
Input Voltage: See 2.2
Operational Mode: See 3.1
Temperature 21 °C
Relative Humidity 52 %

Table 6: Power Frequency Magnetic Field Setting:

Directions	Magnetic field strength	Test Frequency	Observation	Results
X axis	1 A/m	50 Hz	normal function	PASS
Y axis	1 A/m	50 Hz	normal function	PASS
Z axis	1 A/m	50 Hz	normal function	PASS

No abnormalities were observed during and after the tests.

5.2 Input and Output AC Power Ports

5.2.1 Conducted Disturbances

Port:	AC Mains	
Basic Standard:	IEC/EN 61000-4-6	
Performance Criteria:	A	
Test Specification:	EN 55024	
	Frequency Range:	0.15 - 80 MHz
	Voltage Level:	3 Vrms (unmodulated)
	Modulation:	AM 80%, 1kHz sine wave

Result:**N/A**

The subject sample is not intended to be connected to AC mains supply. Therefore, this test is not applicable.

5.2.2 Electrical Fast Transients

Port:	AC Mains	
Basic Standard:	IEC/EN 61000-4-4	
Performance Criteria:	B	
Test Specification:	EN 55024	
	Peak Voltage:	1.0 kV
	T _r /T _n	5/50 ns
	Rep. Frequency	5 kHz

Result:**N/A**

The subject sample is not intended to be connected to AC mains supply. Therefore, this test is not applicable.

5.2.3 Surges

Port:	AC Mains	
Basic Standard:	IEC/EN 61000-4-5	
Performance Criteria:	B	
Test Specification:	EN 55024	
	Peak Voltage:	1.0 kV (line to line) 2.0 kV (line to ground)
	T_r/T_h	1,2/50 μ s

Result:	N/A
----------------	------------

The subject sample is not intended to be connected to AC mains supply. Therefore, this test is not applicable.

5.2.4 Voltage Dips and Interruptions

Port:	AC Mains	
Basic Standard:	IEC/EN 61000-4-11	
Performance Criteria:	EN 55024	
	B (for >95%, 0.5 period)	
	C (for 30 %, 25 periods)	
	C (for >95%, 250 periods)	
Test Specification:	EN 55024	
	Test Level:	>95% UT for Voltage Reductions, no. of 0.5 period 30% UT for Voltage Reductions, no. of 25 period >95% UT for Voltage Reductions, no. of 250 period

The subject sample is not intended to be connected to AC mains supply. Therefore, this test is not applicable.

5.3 Signal and Telecommunication Port

5.3.1 Conducted Disturbances

Port:	Signal / Telecommunication Port		
Basic Standard:	IEC/EN 61000-4-6		
Performance Criteria:	A		
Test Specification:	EN 55024		
	Frequency Range:	0.15 - 80 MHz	
	Voltage Level	3 Vrms (unmodulated)	
		AM 80%, 1kHz sine wave	

Result:	N/A
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All signal lines of the sample are not exceeding 3m during normal operation. Therefore this test item is not applicable.

5.3.2 Electrical Fast Transients

Port:	Signal / Telecommunication Port		
Basic Standard:	IEC/EN 61000-4-4		
Performance Criteria:	B		
Test Specification:	EN 55024		
	Peak Voltage:	0.5 kV	
	T _r /T _n	5/50 ns	
	Rep. Frequency	5 kHz	

Result:	N/A
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All signal lines of the sample are not exceeding 3m during normal operation. Therefore this test item is not applicable.

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5.3.3 Surges

Port: Signal / Telecommunication port
Basic Standard: IEC/EN 61000-4-5
Performance Criteria: B
Test Specification: EN 55024
Peak Voltage: 1.0 kV
 T_r/T_h 1,2/50 μ s

Result:**N/A**

The subject sample is not connected directly to outdoor cable. Therefore, this test is not applicable.

5.4 Input DC Power Ports

5.4.1 Conducted Disturbances

Port:	Input DC ports		
Basic Standard:	IEC/EN 61000-4-6		
Performance Criteria:	A		
Test Specification:	EN 55024		
	Frequency Range:	0.15 - 80 MHz	
	Voltage Level	3 Vrms (unmodulated)	
		AM 80%, 1kHz sine wave	

Result:	N/A
----------------	------------

This test is applicable only to ports interfacing with cables whose total length according to the manufacturer's functional specification exceeds 3m. All signal lines of the sample are not exceeding 3m during normal operation. Therefore this test item is not applicable.

5.4.2 Fast Transients Common Mode

Port:	Input DC Ports		
Basic Standard:	IEC/EN 61000-4-4		
Performance Criteria:	B		
Test Specification:	EN 55024		
	Peak Voltage:	0.5kV	
	Tr/Th:	5/ 50ns	
	Rep. Frequency:	5 kHz	

Result:	N/A
----------------	------------

This test is applicable only to ports interfacing with cables whose total length according to the manufacturer's functional specification exceeds 3m. All signal lines of the sample are not exceeding 3m during normal operation. Therefore this test item is not applicable.

5.4.3 Surges

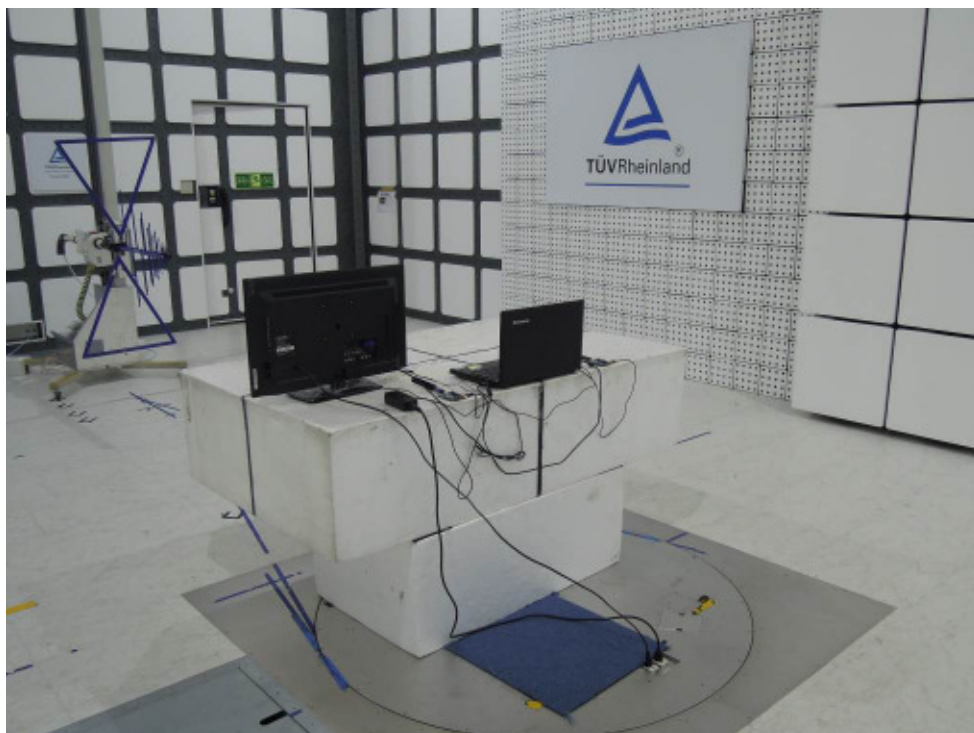
Port:	Input DC Ports
Basic Standard:	IEC/EN 61000-4-5
Performance Criteria:	B
Test Specification:	EN 55024
	Peak Voltage: 0.5 kV (lines to ground)
	Tr/Th: 1,2/ 50µs

Result:**N/A**

The subject sample is not connected directly to outdoor cable. Therefore, this test is not applicable.

6 Photographs of the Test Set-up

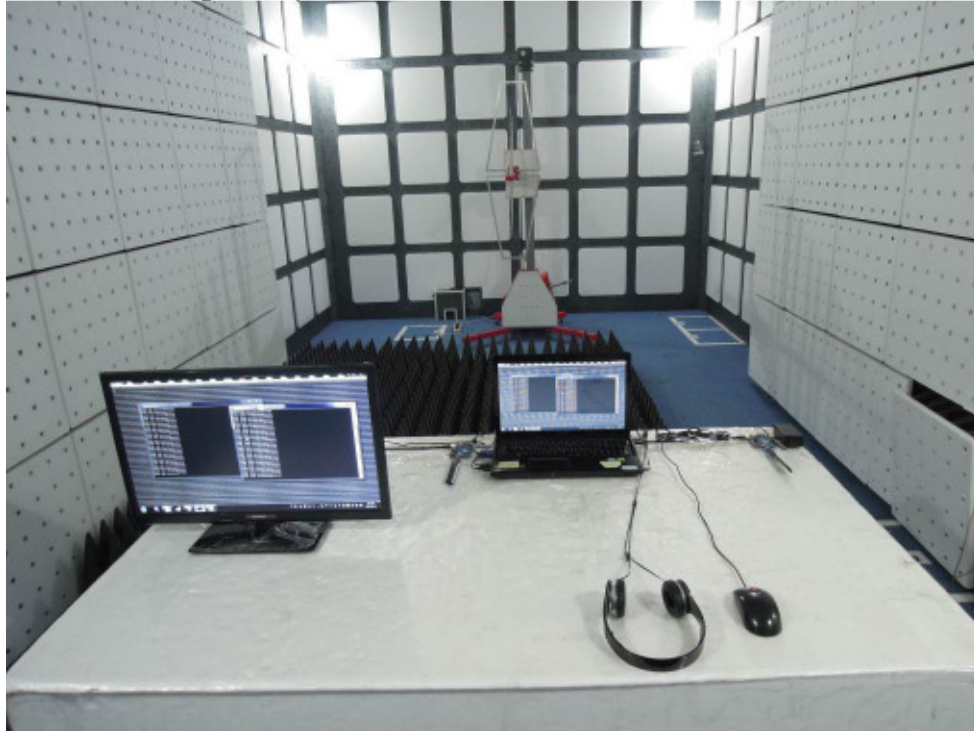
Picture 1: Radiated Emission, 30 - 1000 MHz



Picture 2: Radiated Emission, Above 1 GHz



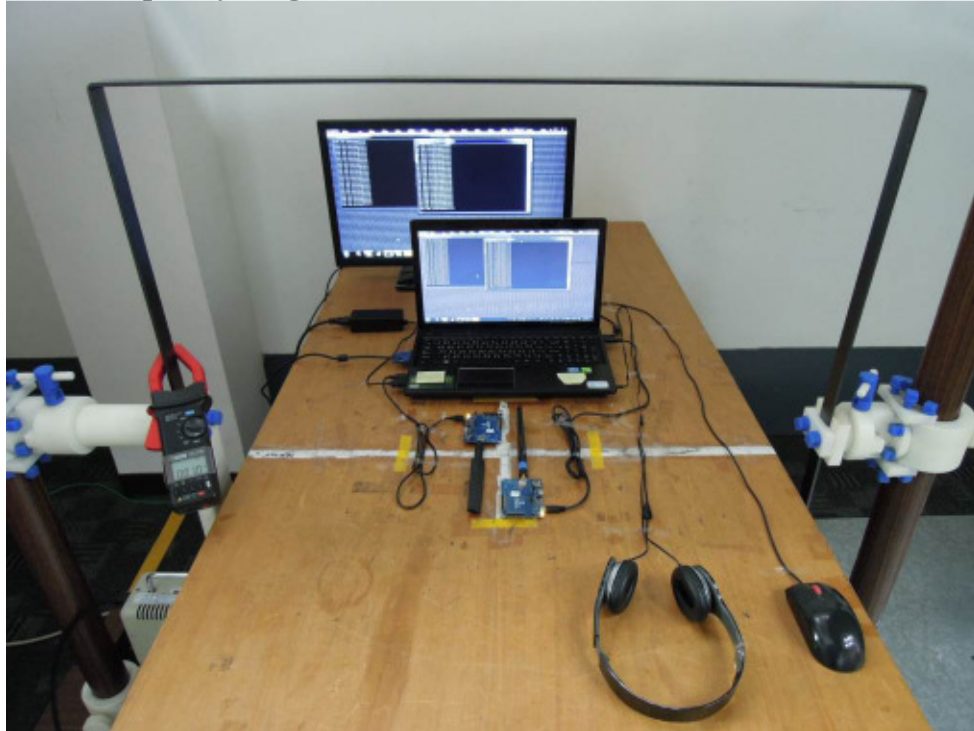
Picture 3: Radiated Susceptibility



Picture 4: Electrostatic Discharge



Picture 5: Power Frequency Magnetic Field



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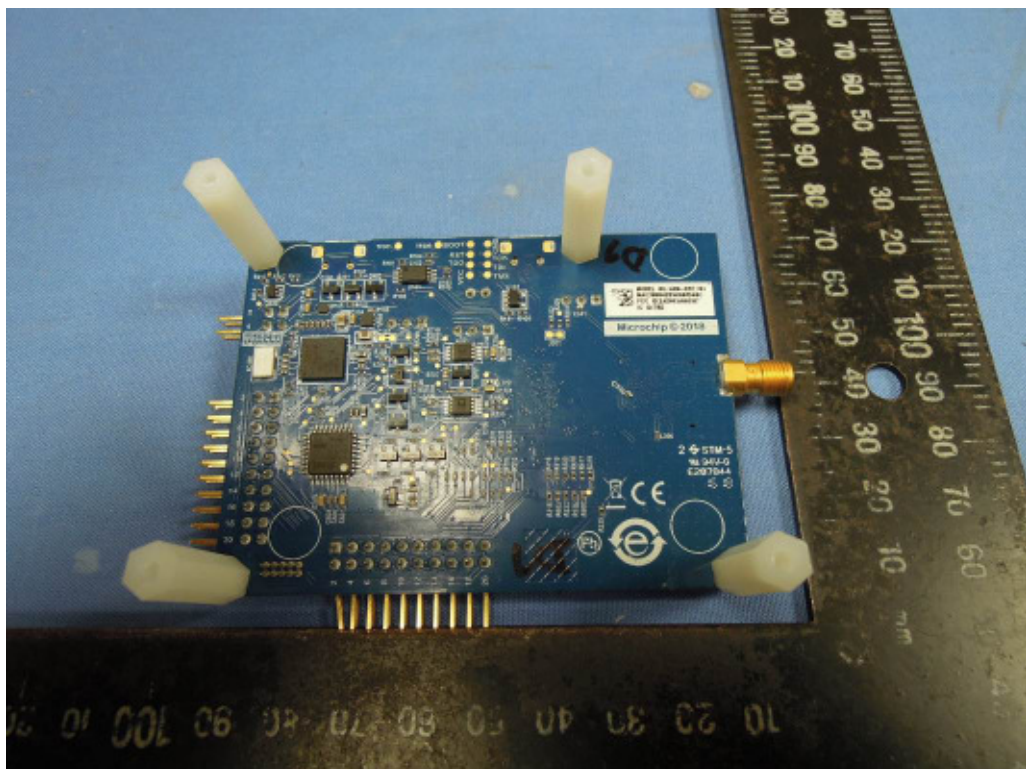
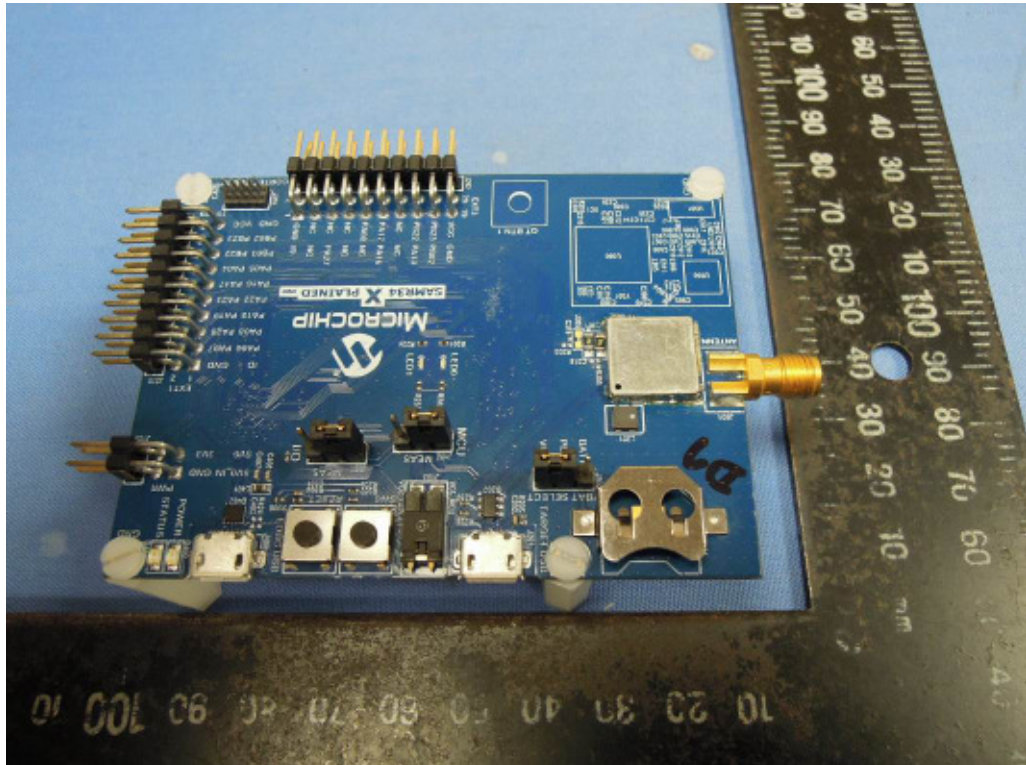
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Product: SAM R34 Xplained Pro Evaluation Kit

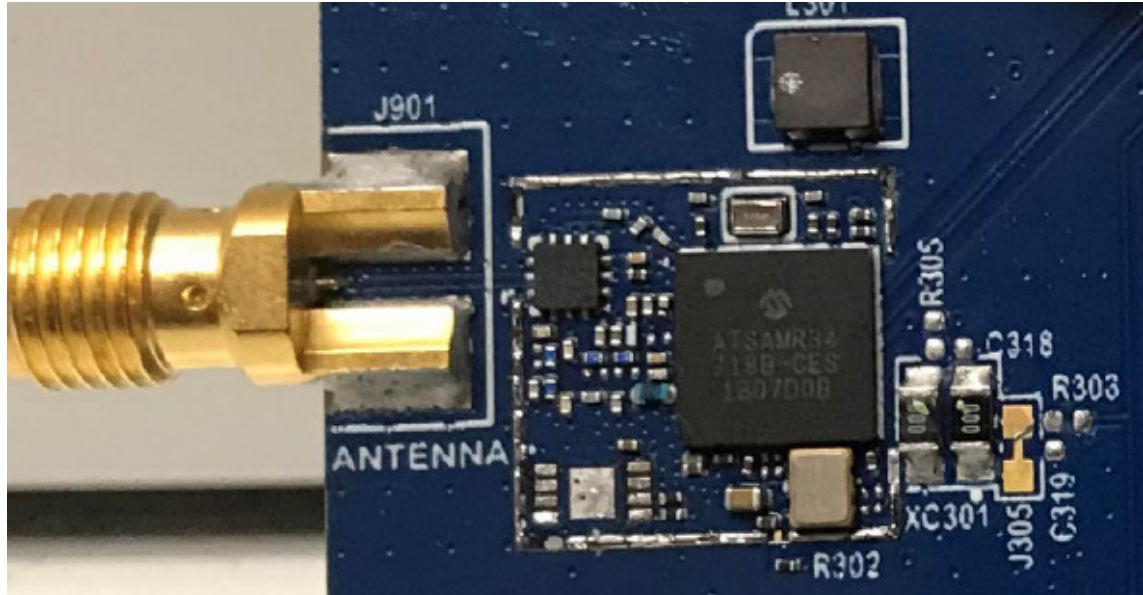
Type Designation: A09-3167



Product: SAM R34 Xplained Pro Evaluation Kit

Type Designation: A09-3167

RF Section without U301.



RF Section with U301.

