



Test report No:

2260219R-A332251010-A

# Test Report

## LoRa Alliance End Device Certification Requirements

Identification of item tested.....:	Indoor Ambience Monitoring Sensor
Trademark .....	Milesight
Model and/or type reference tested .....	AM307-915M
Final HW version.....:	V1.1
Final FW version.....:	V01.03-a13
Final SW version.....:	AM307.0000.0110.0103
Features .....	LoRa Alliance End Device Certification Requirements for US/Canada 915MHz ISM Band Devices
Manufacturer .....	Xiamen Milesight IoT Co., Ltd. Building C09, Software Park Phase III, Xiamen 361024, Fujian, China
Test method requested.....:	LoRa Alliance Certification Program
Standard .....	LoRa Alliance End Device Certification Requirements for US/Canada 915MHz ISM Band Devices Ver.1.5.1
Test According LoRaWAN™ Spec .....	V1.0.2
Supported optional features.....:	YES
Test procedure(s) .....	TERD-WTS-TP-02 – LORA_TSSTP_PART_1_v1.0
Summary .....	IN COMPLIANCE
Approved by (name / position & signature) .....	Jimmy Chang Project Manager
Date of issue.....:	2022-08-29
Report Revision.....:	01

*Jimmy Chang*  
2022-08-29

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## Uncertainty

N/A

## Usage of samples

Samples undergoing test have been selected by: Xiamen Milesight IoT Co., Ltd.

DUT Label ID	PSR-2016917
Model or type reference	AM307-915M
Serial number	6707C14771910707
HW version	V1.1
FW version	V01.03-a13
SW version	AM307.0000.0110.0103
Description of test sample	AM300 series is a compact indoor ambience monitoring sensor including motion, humidity, temperature, light, TVOC, CO2, HCHO/O3 level, barometric pressure and PM2.5 & PM10 for wireless LoRa network. It is equipped with NFC (Near Field Communication) and can easily be configured via a smartphone or a PC software.
Date of reception	2022-06-28

## Identification of the client

Company name	Xiamen Milesight IoT Co., Ltd.
Address	Building C09, Software Park Phase III, Xiamen 361024, Fujian, China

## Testing period

Start Date	2022-07-08
Finish Date	2022-08-23

The tests have been performed at DEKRA Testing and Certification, Co., Ltd. (Taiwan)

## Environmental conditions

The testing has been performed within the following limits:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 80 %

## Remarks and comments

Test Report Creator	Gavin Yang <a href="mailto:gavin.yang@dekra.com">gavin.yang@dekra.com</a>
Test Engineer	Gavin Yang <a href="mailto:gavin.yang@dekra.com">gavin.yang@dekra.com</a>

## Revision History

Revision	Modification Date	Description
01	NA	Initial Report

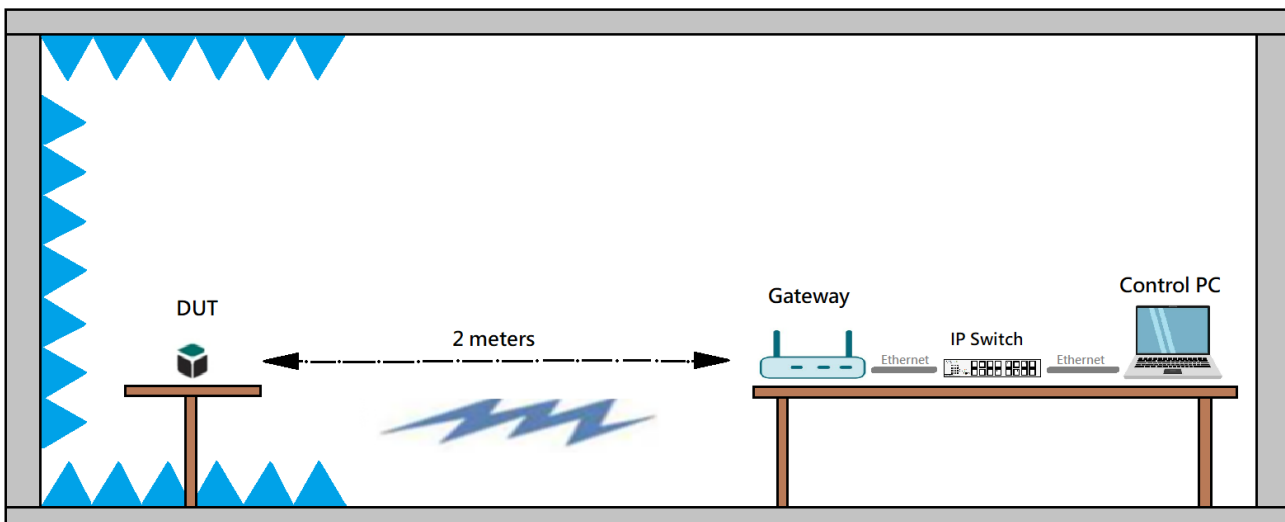
## Means of testing identification

Following equipment was used to perform the testing:

US915 SETUP			
Test System	LoRaWAN Certification Test System		
Hardware:	Control No.	Equipment	Serial No.
	0742	Control PC with LCTT installed	GANXCV193086433
	0734	CoreCell Gateway	-
	0735	CoreCell Gateway	-
	0736	CoreCell Gateway	-
	0737	CoreCell Gateway	-
	0738	CoreCell Gateway	-
	0739	CoreCell Gateway	-
	0740	CoreCell Gateway	-
	0741	CoreCell Gateway	-
Software:	0559	LoRaWAN LCTT - UI version: 2.2.0 - Reporting Module v1.5.0	
	0560	Technology Package: LCTT v3.7.0_R1	

## Test setup

The configuration used for Test Cases in nominal temperature conditions was the following one:



# Appendix A – Test result

The abbreviations used in the header row of the test campaign report tables are:

- Test Case ID: Test case identifier.
- Description: Test case description, as it can be found on the referred standard.
- Date: Date of the beginning of the execution.
- Verdict: Records the verdict assigned to each Test case run to completion. Following verdicts are possible:
  - Pass:** If the Test case passed.
  - Fail:** If the Test case failed.
  - NA:** Not applicable.
  - NM:** Not measured.
- Observations: Provides a reference to additional information relevant to the test presented in “Test Setup” section.
- Logs: See LoRaWAN Certification testing\_AM307-915M\_Log Report

Activation Mode: ABP

Test Case ID	Description	Verdict	Date	Observations
TP_A_US915_ED_MAC_BV_000	Test mode activation	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_002	Test application functionality	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_003	AES encryption and message integrity	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_004	Downlink Error Rate	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_005	Downlink window timing	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_006	Frame sequence number	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_007	DevStatusReq Mac command	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_008	Mac Commands	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_009	NewChannelReq Mac command	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_010	Confirm packets	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_011	RXParamSetupReq Mac command	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_012A	RX1 Receive window test (Part1)	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_012B	RX1 Receive window test (Part2)	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_013	RX2 Receive window test	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_014	RXTimingSetupReq Mac command	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_015A	LinkADRRReq Mac command (Part1)	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_015B	LinkADRRReq Mac command (Part2)	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_016	RX Oversized payload	Pass	2022-08-22	
TP_A_US915_ED_MAC_BV_017	Maximum allowed payload	Pass	2022-08-23	

Activation Mode: OTAA

Test Case ID	Description	Verdict	Date	Observations
TP_A_US915_ED_MAC_BV_000	Test mode activation	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_001	Over The Air activation	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_002	Test application functionality	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_003	AES encryption and message integrity	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_004	Downlink Error Rate	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_005	Downlink window timing	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_006	Frame sequence number	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_007	DevStatusReq Mac command	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_008	Mac Commands	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_009	NewChannelReq Mac command	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_010	Confirm packets	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_011	RXParamSetupReq Mac command	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_012A	RX1 Receive window test (Part1)	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_012B	RX1 Receive window test (Part2)	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_013	RX2 Receive window test	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_014	RXTimingSetupReq Mac command	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_015A	LinkADRReq Mac command (Part1)	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_015B	LinkADRReq Mac command (Part2)	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_016	RX Oversized payload	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_017	Maximum allowed payload	Pass	2022-08-23	
TP_A_US915_ED_MAC_BV_002	Test application functionality	Pass	2022-08-23	

## Appendix B – ICS

Item	Name	Value
1	DUT works in USA 915MHz ISM Band	TRUE
2	DUT implements LoRaWAN v1.0.2rB certification requirements	TRUE
3	DUT implements LoRaWAN v1.1 certification requirements	FALSE
4	DUT is a Class A Device (All End Device)	TRUE
5	DUT is a Class B Device (Beacon Mode)	FALSE
6	DUT is a Class C Device (Continuously Listening)	FALSE
7	DUT supports Adaptive Data Rate (ADR) feature	TRUE
8	DUT supports LinkADRReq block	TRUE
9	DUT implements Data Rate Decay	TRUE
10	DUT supports Over-The-Air Activation (OTAA) mechanism	TRUE
11	DUT needs a reset after deactivating Test Mode	FALSE
12	DUT supports Trigger Join Request command in Test Mode	TRUE



## Appendix C – IXIT

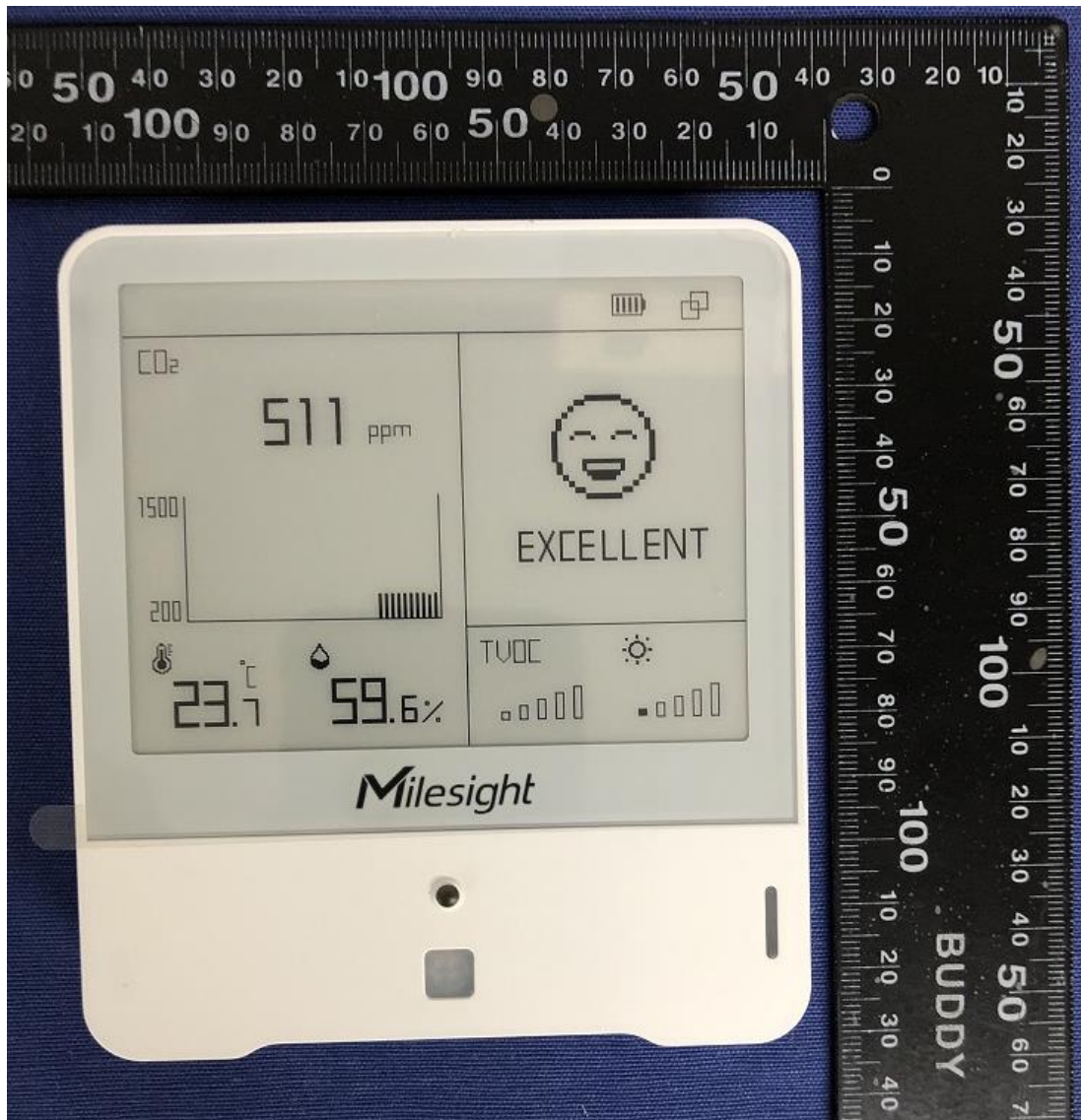
Item	Name	Value
1	End-Device Address (DvAddr)	917147c1
2	Application Session Key (AppSKey)	5572404C696E6B4C6F52613230313823
3	Network Session Key (NwkSKey)	5572404C696E6B4C6F52613230313823
4	Application Identifier (AppEUI)	24E124C0002A0001
5	Maximum Transmission Power	22 dBm
6	Minumum Transmission Power	0 dBm
7	Application Key (AppKey)	5572404C696E6B4C6F52613230313823
11	Device Identifier (DevEUI)	24E124707C147719

## Appendix D – General Parameters

Item	Name	Value
GW	Default TX Antenna	0
	List of IP address of the GWs	192.168.1.21; 192.168.1.22; 192.168.1.23; 192.168.1.24; 192.168.1.25; 192.168.1.26; 192.168.1.27; 192.168.1.28
	Gateway model	CoreCell
	Number of supported channels in Gateway	64 Channels
	Default TX Power	14 dBm
	Gateway Socket Port	1780
	Gateway supports LR-FHSS	FALSE
	Size of the reception window	100
TM	Number of GWs	8
	General Timer	90 min
	Network Server IP Address	192.168.1.111
TM – US915	Verbosity level for Logs	TRUE
	US915 Beacon default frequency	923.3 MHz
	US915 Beacon DR	SF12BW500
	US915 Class B default pingSlot frequency	923.3 MHz
	US915 Class C Response Timeout	8.0 s
	US915 Join_Accept_Delay1	5.0 s
	US915 Join_Accept_Delay2	6.0 s
	US915 Receive_Delay1	1.0 s
	US915 Receive_Delay2	2.0 s
US915 RX2 Receive Window DR	SF12BW500	
US915 RX2 Receive Window Frequency	923.3 MHz	

# Appendix E - Photographs

## FRONT VIEW



## REAR VIEW

