

Hardware Unit Test Report

IR Range Test

Hardware version	FW version	Sample No.	eMMC Flash P/N
V125	19.531.16	DUT1 S/N: 2149695001202099000245 DUT2 S/N: 2149695001202099000351	KLM8G1GETF-B041

1. IR Range Test Setup

Equipment:

Monitor x 1, DUT x 2, adapter x 1, remote control BMM-BA02/BRM-BA03, HDMI cable x1, and table lamp x1.

Top cover material of housing: ABS



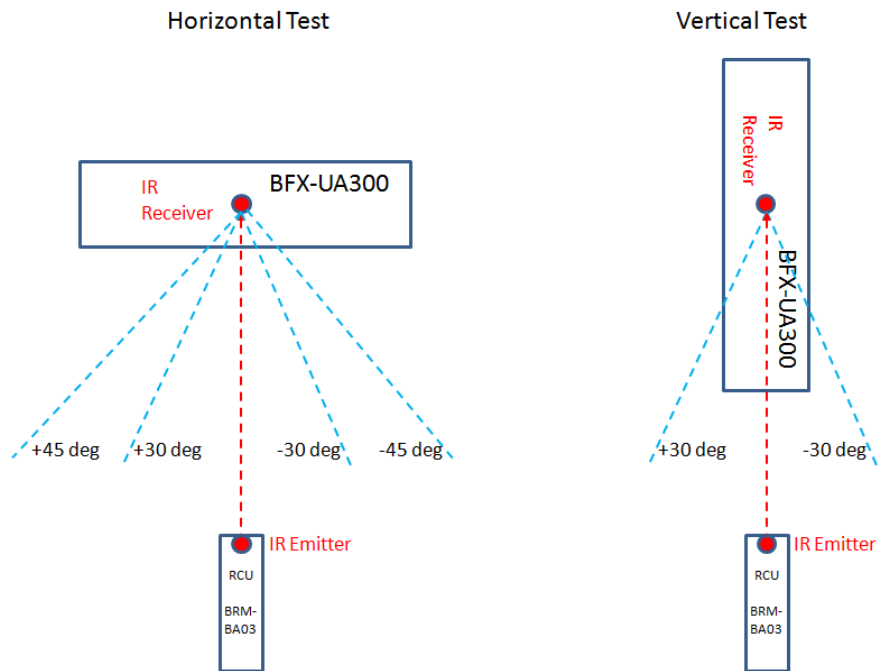
Criteria:

DUT MUST be able to receive and acknowledge commands transmitted by the Remote Control
at a distance of 10M in 0 deg/30 deg and 7M in 45 deg

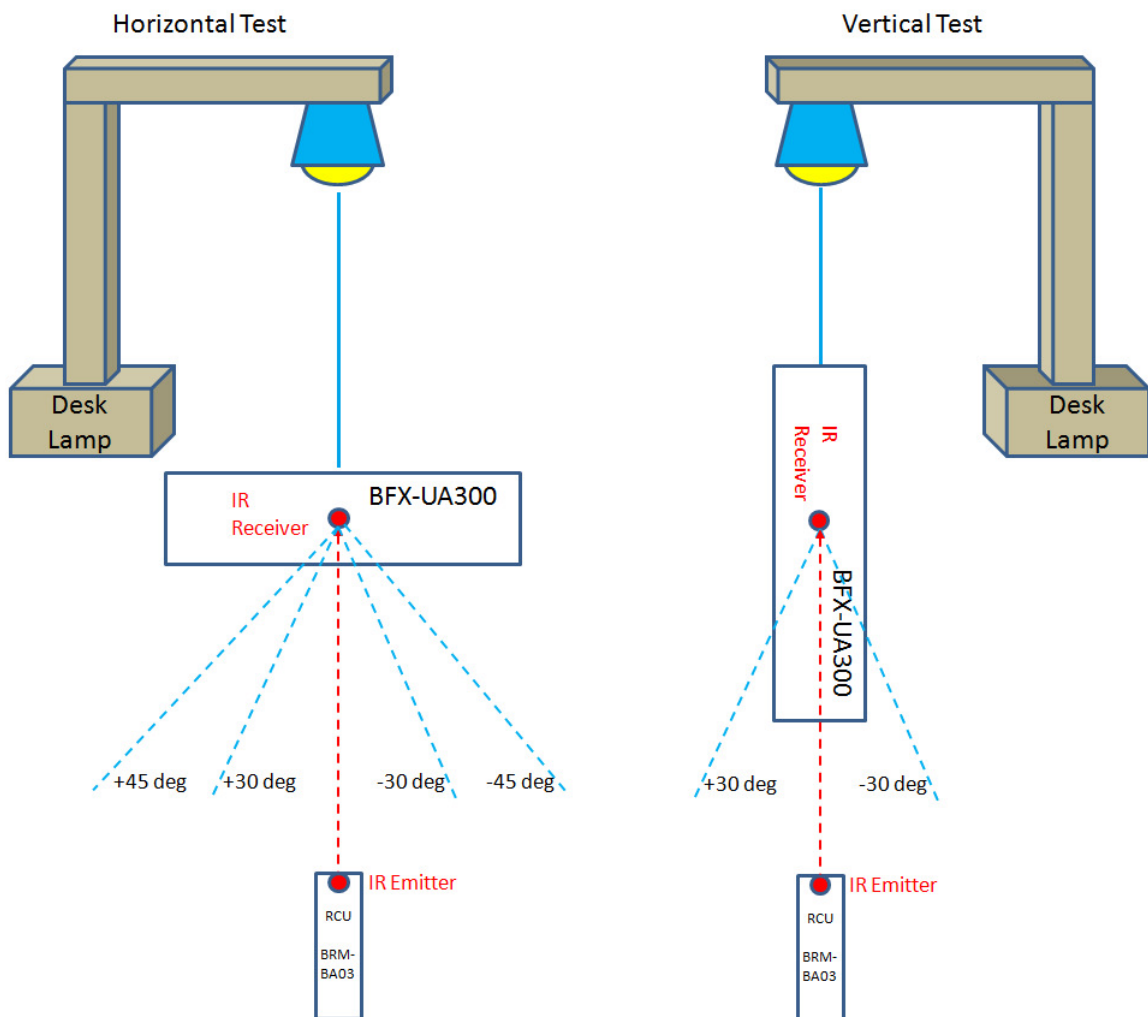
BFX-UA300 DVT3 Hardware unit test report

Environment setup:

Test w/o desk lamp



Test w/ desk lamp



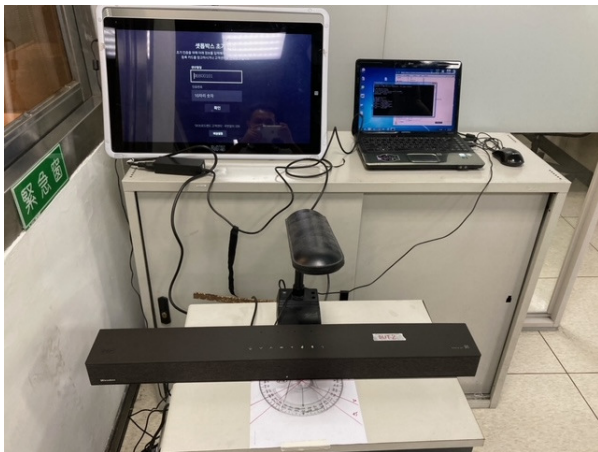
Setup for horizontal test (Desk lamp on)



Setup for vertical test (Desk lamp on)



Setup for horizontal test (Desk lamp off)



Setup for vertical test (Desk lamp off)



2. Specification Analysis

1.1 Horizontal Deflection

	Azimuth: +45°	Azimuth: +30°	Azimuth: 0°	Azimuth: -30°	Azimuth: -45°
Available Receiver Distance (meter)	>7M	>10M	>10M	>10M	>7M

1.2 Vertical Deflection

	Elevation +30°	Elevation 0°	Elevation -30°
Available Receiver Distance (meter)	>10M	>10M	>10M

Component Specification Analysis

Component Specification Compare Result	
IR Component P/N	Vishay / TSOP75338TR
IR Carrier Frequency (KHz)	38
Minimum Irradiance, Ee min (mW/m2)	0.15

ELECTRICAL AND OPTICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply voltage		V_S	2.5		5.5	V
Supply current	$E_v = 0, V_S = 3.3\text{ V}$	I_{SD}	0.27	0.35	0.45	mA
	$E_v = 40\text{ klx, sunlight}$	I_{SH}		0.45		mA
Transmission distance	$E_v = 0$, test signal see fig. 1, IR diode TSAL6200, $I_F = 250\text{ mA}$	d		45		m
Output voltage low	$I_{OSL} = 0.5\text{ mA}$, $E_e = 0.7\text{ mW/m}^2$, test signal see fig. 1	V_{OSL}			100	mV
Minimum irradiance	Pulse width tolerance: $t_{pi} - 5/f_o < t_{po} < t_{pi} + 6/f_o$, test signal see fig. 1	$E_e\text{ min.}$		0.15	0.35	mW/m ²
Maximum irradiance	$t_{pi} - 5/f_o < t_{po} < t_{pi} + 6/f_o$, test signal see fig. 1	$E_e\text{ max.}$	30			W/m ²
Directivity	Angle of half transmission distance	$\phi_{1/2}$		± 50		deg

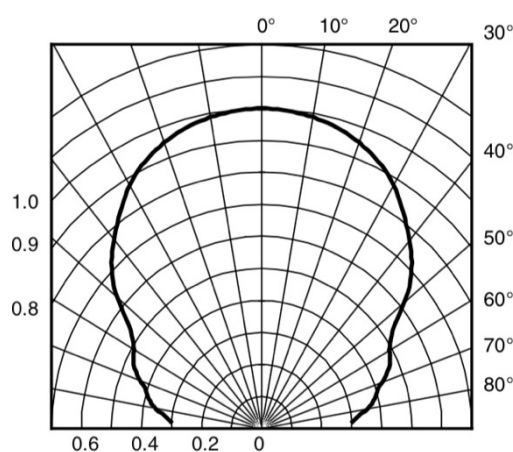
 d_{rel} - Relative Transmission Distance

Fig. 12 - Horizontal Directivity

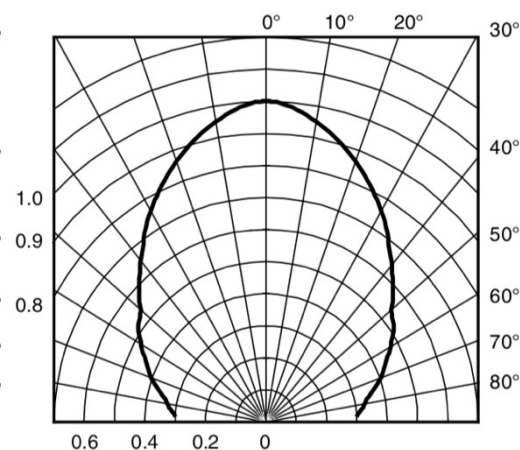
 d_{rel} - Relative Transmission Distance

Fig. 13 - Vertical Directivity

3. Test Result

The test results are all pass on 2 pcs DUTs and 2 pcs RCUs (BMM-BA02/BRM-BA03).

- BMM-BA02, #DUT1

Test Result

Test Item	W/O desk lamp		W/ desk lamp	
Nearby: >=20cm	>=20cm	Pass	>=20cm	Pass
Horizontal: +45°	17.4m	Pass	16.8m	Pass
Horizontal: +30°	17.4m	Pass	17.4m	Pass
Horizontal: 0°	17.4m	Pass	17.4m	Pass
Horizontal: -30°	17.4m	Pass	17.4m	Pass
Horizontal: -45°	17.4m	Pass	15m	Pass
Vertical: +30°	17.4m	Pass	17.4m	Pass
Vertical: 0°	17.4m	Pass	17.4m	Pass
Vertical: -30°	17.4m	Pass	17.4m	Pass

- BMM-BA02, #DUT2

Test Result

Test Item	W/O desk lamp		W/ desk lamp	
Nearby: >=20cm	>=20cm	Pass	>=20cm	Pass
Horizontal: +45°	17.4m	Pass	16.2m	Pass
Horizontal: +30°	17.4m	Pass	17.4m	Pass
Horizontal: 0°	17.4m	Pass	17.4m	Pass
Horizontal: -30°	17.4m	Pass	17.4m	Pass
Horizontal: -45°	17.4m	Pass	15m	Pass
Vertical: +30°	17.4m	Pass	16.8m	Pass
Vertical: 0°	17.4m	Pass	17.4m	Pass
Vertical: -30°	17.4m	Pass	16.8m	Pass

● BRM-BA03, #DUT1

Test Result

Test Item	W/O desk lamp		W/ desk lamp	
Nearby: >=20cm	>=20cm	Pass	>=20cm	Pass
Horizontal: +45°	17.4m	Pass	17.4m	Pass
Horizontal: +30°	17.4m	Pass	17.4m	Pass
Horizontal: 0°	17.4m	Pass	17.4m	Pass
Horizontal: -30°	17.4m	Pass	17.4m	Pass
Horizontal: -45°	17.4m	Pass	17.4m	Pass
Vertical: +30°	17.4m	Pass	17.4m	Pass
Vertical: 0°	17.4m	Pass	17.4m	Pass
Vertical: -30°	17.4m	Pass	16.8m	Pass

● BRM-BA03, #DUT2

Test Result

Test Item	W/O desk lamp		W/ desk lamp	
Nearby: >=20cm	>=20cm	Pass	>=20cm	Pass
Horizontal: +45°	17.4m	Pass	17.4m	Pass
Horizontal: +30°	17.4m	Pass	17.4m	Pass
Horizontal: 0°	17.4m	Pass	17.4m	Pass
Horizontal: -30°	17.4m	Pass	17.4m	Pass
Horizontal: -45°	17.4m	Pass	17.4m	Pass
Vertical: +30°	17.4m	Pass	17.4m	Pass
Vertical: 0°	17.4m	Pass	17.4m	Pass
Vertical: -30°	17.4m	Pass	17.4m	Pass