

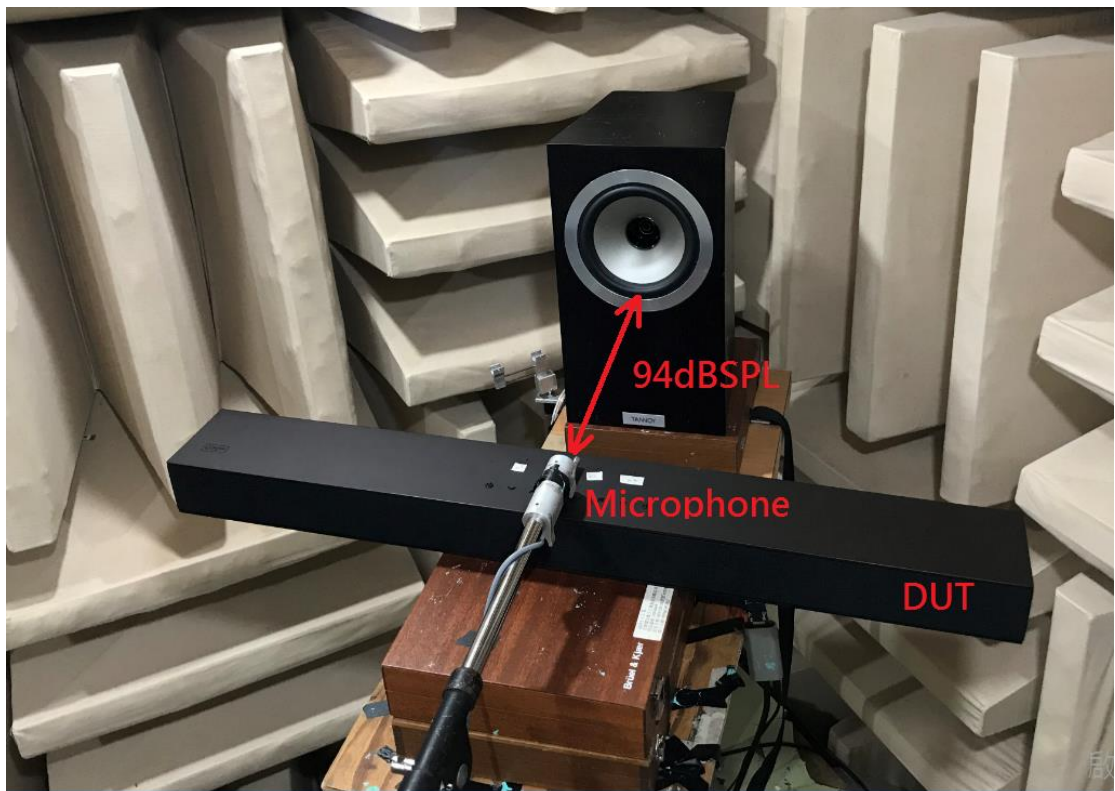
BFX-UA300

Hardware Unit Test Report

4 *MIC Test

Hardware version	FW version	Sample No.
V015	TBD	PCB S/N: YUH0FYF

1.1 Audio Test Setup & Environment





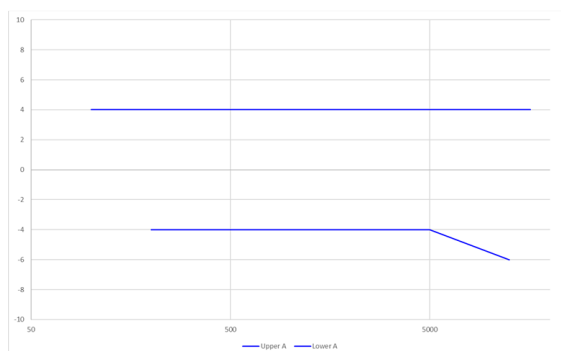
- (1) Play 1KHz Tone
- (2) DUT(4*Mic)
- (3) Microphone(Use for AP analysis)

1.2 Test Condition

Use Audio precision send 1 KHz signal and the sample rate is 48 KHz.

2.1 Test Criteria for unit microphone

Item 1: Frequency Response: Measurement of microphone frequency characteristics at 94dB SPL in front of 1m measuring speaker.



	Upper A	Lower A
100	4	
200	4	-4
5000	4	-4
12500	4	-6
16000	4	

Item 2: Harmonic Distortion: check distortion at 94dB SPL in front of 1m measuring speaker.

Item 3: Total harmonic distortion is within 1% at 1 kHz of 94dB SPL.

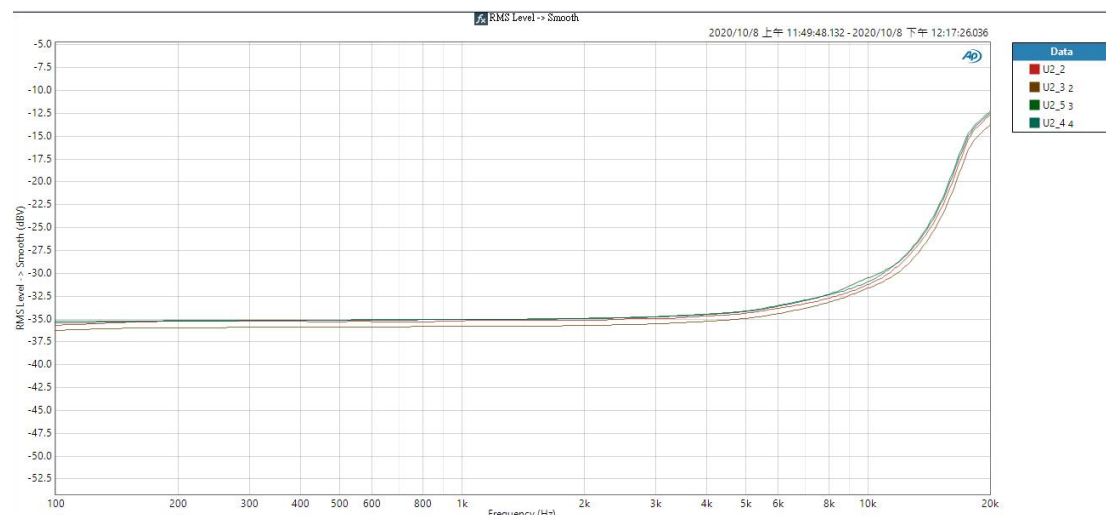
Item 4: Sensitivity: Over -35 dBV (analog mic.) at 1kHz of 94dB SPL.

Item 5: Signal-Noise-Ratio (SNR): Over 64 dB .

2.2 Result and Picture

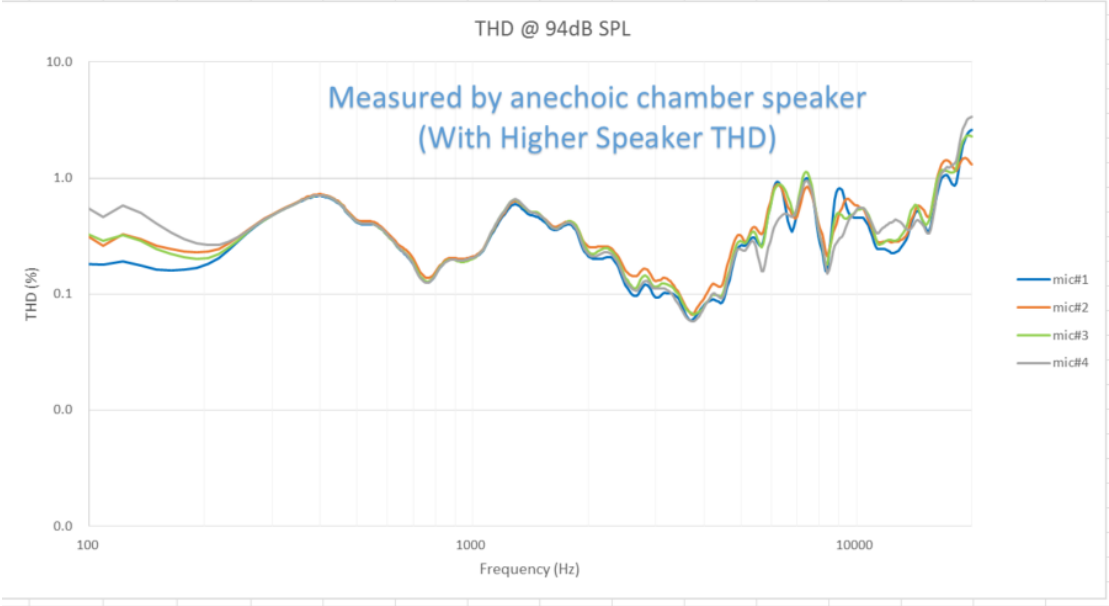
item 1: Frequency Response =====> **PASS**

	SPEC	MIC#1	MIC#2	MIC#3	MIC#4
Frequency Response	See 2.1(item1)	PASS	PASS	PASS	PASS



Picture (1)

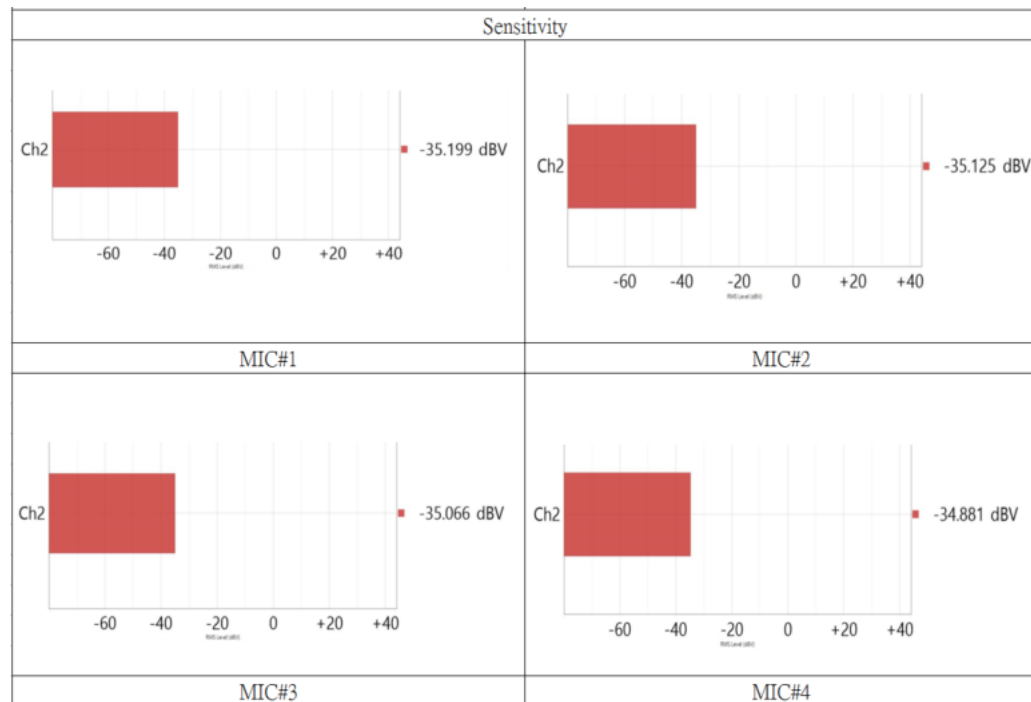
Item 2: Harmonic Distortion =====> **PASS**



Item 3: Harmonic Distortion(Mic1~Mic4) =====> **PASS**



Item 4: Sensitivity =====> **PASS**



2.5V	MIC#1	MIC#2	MIC#3	MIC#4	PASS/FAIL
Sensitivity (dBV)	-35.20	-35.12	-35.00	-34.88	PASS

Item 5: Signal-Noise-Ratio (SNR) =====> **PASS**

2.5V	Spec	MIC#1	MIC#2	MIC#3	MIC#4	PASS/FAIL
Sensitivity @ 1KHz	>-35dBV	-35.2	-35.12	-35	-34.88	PASS
Noise Floor(A-weight)		-101.39	-100.67	-100.44	-100.43	PASS
SNR	>64	66.19	65.55	65.44	65.55	PASS

3.1 Test Criteria for Microphone

Item 1: Frequency response: Deviation range is within ± 4 dB at 100 Hz to 8000 Hz of 94dB SPL.

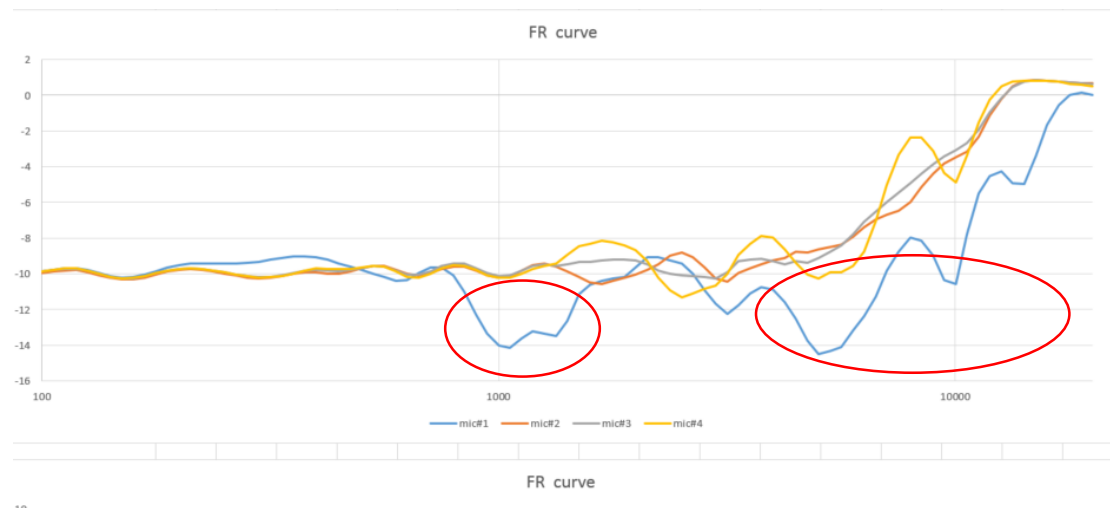
Item 2: THD: Total harmonic distortion is within 1% at 1 kHz of 94dB SPL.

Item 3: Sealing: Difference of Average RMS Should be over 25dB between Mic hole open and close at 100Hz~10KHz.

3.2 Result& Picture

Item 1 : Frequency Response ==> Please see below comment in details.

	SPEC	MIC#1	MIC#2	MIC#3	MIC#4	Comment
Frequency Response(at 94dB SPL)	(+/-)4dB	FAIL	PASS	PASS	PASS	See Note(1).

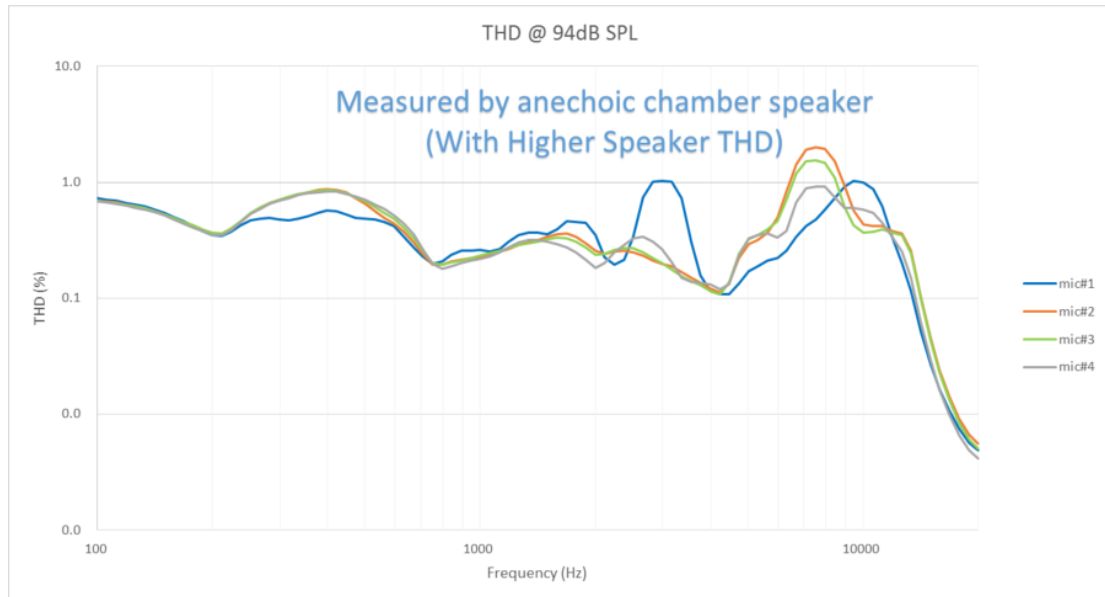


Picture (1)

Note(1): According to the result, we found that Mic#1 curve drops between 1 KHz~10000KHz, Please see red circle in details and the result is not good than the other 3 Mic and also can't meet the criteria which need to do more analysis and improve it.

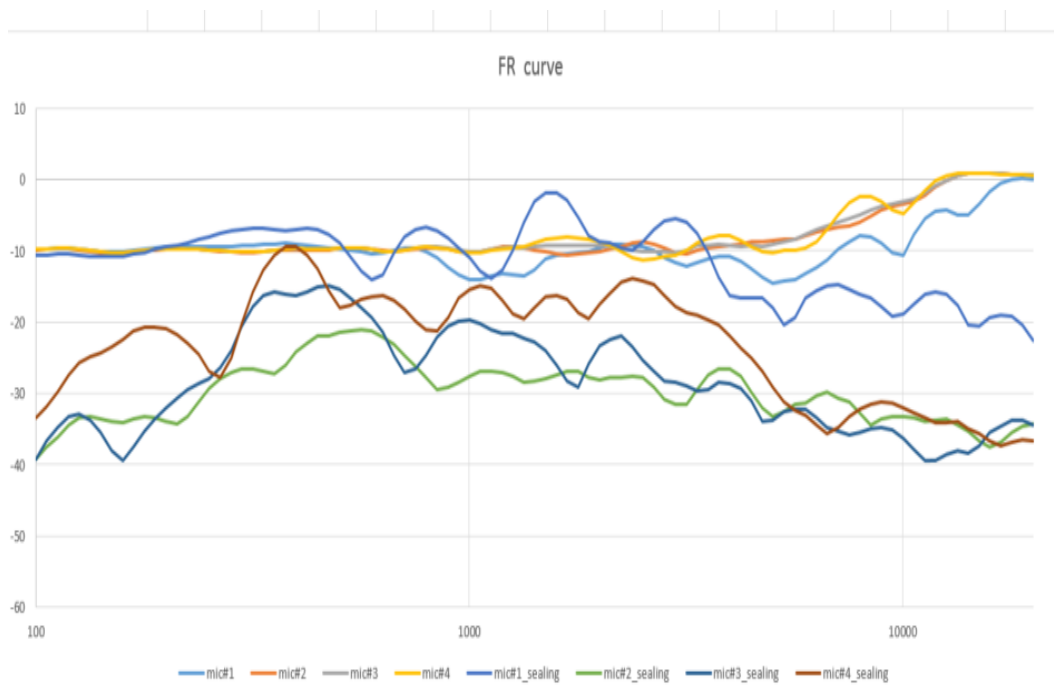
Item 2: Harmonic Distortion(Mic1~Mic4) ==> **PASS**

	SPEC	MIC#1	MIC#2	MIC#3	MIC#4	PASS/FAIL
THD at 94dbSPL	<1%	0.12	0.21	0.23	0.22	PASS



Item 3: Sealing =====> Please see below comment in details.

	SPEC	MIC#1	MIC#2	MIC#3	MIC#4	Comment
Sealing 100~10KHz	>25dB	FAIL	PASS	PASS	PASS	See Note(1).



Note (1): According to the above result, Mic#1 of sealing is not good than the other 3 Mic. And it also can't meet the criteria which is need to be over 25dB. Therefore, there is need to improve and to do more analysis it.