

Project No.	SHT2212043201EW		
Test sample No.	YPHT22120432004	Model No.	RB66
Start test date	2022/12/15	Finish date	2022/12/19
Temperature	22.3°C	Humidity	42%
Test Engineer	<i>Chunshui Gu</i>	Auditor	<i>Xiaodong Zhao</i>

Appendix clause	Test Item	Test Result (PASS/FAIL)
A	Transmit Power (ERP)	PASS
B	Occupied Bandwidth	PASS
C	Emission Mask	PASS
D	Modulation Limit	PASS
E	Audio Frequency Response	PASS
F	Audio Low Pass Filter Response	PASS
G	Frequency Stability Test & Temperature	PASS
H	Frequency Stability Test & Voltage	PASS

**Appendix A: Transmit Power (ERP)**

Test Mode	Modulation Type	Test Channel	Measured power (dBm)	Measured power (W)	Limit(W)	Result
TX-FRS	FM	CH <sub>M1</sub>	28.22	0.66	≤2	PASS
TX-FRS	FM	CH <sub>M2</sub>	26.88	0.49	≤0.5	PASS

**Appendix B: 99% Occupied Bandwidth & 26dB Bandwidth**

Test Mode	Modulation Type	Test Channel	Occupied Bandwidth		99% Limit(kHz)	Result
			99%(kHz)	26dB(kHz)		
TX-FRS	FM	CH <sub>M1</sub>	9.736	10.67	≤12.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	9.782	10.50	≤12.5	PASS

**Appendix B: 99% Occupied Bandwidth & 26dB Bandwidth**

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH <sub>M1</sub>	<p>Agilent Spectrum Analyzer - Occupied BW          Center Freq 462.637500 MHz          #Res BW 100 Hz          #VBW 300 Hz          Span 50 kHz          Sweep FFT          Occupied Bandwidth 9.736 kHz          Total Power 28.3 dBm          Transmit Freq Error 59 Hz          x dB Bandwidth 10.67 kHz          OBW Power 99.00 %          x dB -26.00 dB</p>
TX-FRS	FM	CH <sub>M2</sub>	<p>Agilent Spectrum Analyzer - Occupied BW          Center Freq 467.637500 MHz          #Res BW 100 Hz          #VBW 300 Hz          Span 50 kHz          Sweep FFT          Occupied Bandwidth 9.782 kHz          Total Power 31.1 dBm          Transmit Freq Error 69 Hz          x dB Bandwidth 10.50 kHz          OBW Power 99.00 %          x dB -26.00 dB</p>

**Appendix C:Emission Mask**

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH <sub>M1</sub>	<p>MultiView Spectrum            Ref Level 37.00 dBm Offset 10.50 dB RBW 100 Hz            Att 36 dB SWT 41.9 ms (-56 ms) VBW 300 Hz Mode Auto FFT            Frequency Sweep            Limit Check PASS            Line MASK-FRS PASS            M1[1] 19.56 dBm            462.637620 MHz            CF 462.6375 MHz 1001 pts 12.0 kHz/ Span 120.0 kHz            Date: 19 DEC 2022 12:25:28</p>
TX-FRS	FM	CH <sub>M2</sub>	<p>MultiView Spectrum            Ref Level 37.00 dBm Offset 10.50 dB RBW 100 Hz            Att 36 dB SWT 41.9 ms (-56 ms) VBW 300 Hz Mode Auto FFT            Frequency Sweep            Limit Check PASS            Line MASK-FRS PASS            M1[1] 23.12 dBm            467.637740 MHz            CF 467.6375 MHz 1001 pts 12.0 kHz/ Span 120.0 kHz            Date: 19 DEC 2022 12:28:01</p>

**Appendix D:Modulation Limit**

Test Mode	Modulation Type	Test Channel	Modulation Level (dB)	Peak Frequency Deviation (Hz)				Limit (kHz)	Result
				300	1004	1500	2500		
TX-FRS	FM	CH <sub>M1</sub>	-20	0.328	0.383	0.421	0.488	2.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	-15	0.342	0.459	0.52	0.643	2.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	-10	0.371	0.687	0.815	1.031	2.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	-5	0.479	0.989	1.286	1.824	2.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	0	0.614	1.525	2.042	2.441	2.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	5	0.867	2.395	2.446	2.46	2.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	10	1.304	2.411	2.385	2.462	2.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	15	1.74	2.394	2.374	2.47	2.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	20	1.895	2.397	2.367	2.468	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	-20	0.201	0.269	0.305	0.385	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	-15	0.213	0.342	0.408	0.535	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	-10	0.275	0.584	0.761	1.079	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	-5	0.359	0.91	1.239	1.825	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	0	0.504	1.491	2.065	2.331	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	5	0.783	2.293	2.305	2.347	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	10	1.256	2.289	2.249	2.34	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	15	1.568	2.269	2.241	2.339	2.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	20	1.71	2.276	2.249	2.348	2.5	PASS

**Appendix D:Modulation Limit**

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH <sub>M1</sub>	<p>Legend for CH<sub>M1</sub> plot:</p> <ul style="list-style-type: none"> <li>Limit (kHz): 2.5</li> <li>300</li> <li>1004</li> <li>1500</li> <li>2500</li> </ul>
TX-FRS	FM	CH <sub>M2</sub>	<p>Legend for CH<sub>M2</sub> plot:</p> <ul style="list-style-type: none"> <li>Limit (kHz): 2.5</li> <li>300</li> <li>1004</li> <li>1500</li> <li>2500</li> </ul>

**Appendix E:Audio Frequency Response**

Test Mode	Modulation Type	Test Channel	Frequency (Hz)	Audio Frequency Response (dB)	Lower Limit	Upper Limit	Result
TX-FRS	FM	CH <sub>M1</sub>	100	-8.64			PASS
TX-FRS	FM	CH <sub>M1</sub>	200	-8.64			PASS
TX-FRS	FM	CH <sub>M1</sub>	300	-10.08	-17.84	-9.42	PASS
TX-FRS	FM	CH <sub>M1</sub>	400	-7.01	-12.86	-6.93	PASS
TX-FRS	FM	CH <sub>M1</sub>	500	-5.91	-9.00	-5.00	PASS
TX-FRS	FM	CH <sub>M1</sub>	600	-3.83	-7.42	-3.42	PASS
TX-FRS	FM	CH <sub>M1</sub>	700	-2.68	-6.09	-2.09	PASS
TX-FRS	FM	CH <sub>M1</sub>	800	-1.70	-4.93	-0.93	PASS
TX-FRS	FM	CH <sub>M1</sub>	900	-0.80	-3.91	0.09	PASS
TX-FRS	FM	CH <sub>M1</sub>	1000	-0.01	-3.00	1.00	PASS
TX-FRS	FM	CH <sub>M1</sub>	1200	1.28	-1.42	2.58	PASS
TX-FRS	FM	CH <sub>M1</sub>	1400	2.32	-0.09	3.91	PASS
TX-FRS	FM	CH <sub>M1</sub>	1600	3.21	1.07	5.07	PASS
TX-FRS	FM	CH <sub>M1</sub>	1800	4.04	2.09	6.09	PASS
TX-FRS	FM	CH <sub>M1</sub>	2000	4.92	3.00	7.00	PASS
TX-FRS	FM	CH <sub>M1</sub>	2100	5.32	3.42	7.42	PASS
TX-FRS	FM	CH <sub>M1</sub>	2200	5.66	3.83	7.83	PASS
TX-FRS	FM	CH <sub>M1</sub>	2300	5.97	4.21	8.21	PASS
TX-FRS	FM	CH <sub>M1</sub>	2400	6.16	4.58	8.58	PASS
TX-FRS	FM	CH <sub>M1</sub>	2500	6.24	4.93	8.93	PASS
TX-FRS	FM	CH <sub>M1</sub>	2600	6.20	4.59	9.27	PASS
TX-FRS	FM	CH <sub>M1</sub>	2700	5.96	4.27	9.60	PASS
TX-FRS	FM	CH <sub>M1</sub>	2800	5.51	3.95	9.91	PASS
TX-FRS	FM	CH <sub>M1</sub>	2900	4.83	3.65	10.22	PASS
TX-FRS	FM	CH <sub>M1</sub>	3000	3.89	3.35	10.51	PASS
TX-FRS	FM	CH <sub>M1</sub>	3500	-4.69			PASS
TX-FRS	FM	CH <sub>M1</sub>	4000	-8.58			PASS
TX-FRS	FM	CH <sub>M1</sub>	4500	-8.59			PASS
TX-FRS	FM	CH <sub>M1</sub>	5000	-8.65			PASS



**Appendix E:Audio Frequency Response**

Test Mode	Modulation Type	Test Channel	Frequency (Hz)	Audio Frequency Response (dB)	Lower Limit	Upper Limit	Result
TX-FRS	FM	CH <sub>M2</sub>	100	-18.49			PASS
TX-FRS	FM	CH <sub>M2</sub>	200	-18.76			PASS
TX-FRS	FM	CH <sub>M2</sub>	300	-10.58	-17.84	-9.42	PASS
TX-FRS	FM	CH <sub>M2</sub>	400	-7.92	-12.86	-6.93	PASS
TX-FRS	FM	CH <sub>M2</sub>	500	-6.45	-9.00	-5.00	PASS
TX-FRS	FM	CH <sub>M2</sub>	600	-4.86	-7.42	-3.42	PASS
TX-FRS	FM	CH <sub>M2</sub>	700	-3.29	-6.09	-2.09	PASS
TX-FRS	FM	CH <sub>M2</sub>	800	-2.04	-4.93	-0.93	PASS
TX-FRS	FM	CH <sub>M2</sub>	900	-0.93	-3.91	0.09	PASS
TX-FRS	FM	CH <sub>M2</sub>	1000	0.00	-3.00	1.00	PASS
TX-FRS	FM	CH <sub>M2</sub>	1200	1.39	-1.42	2.58	PASS
TX-FRS	FM	CH <sub>M2</sub>	1400	2.50	-0.09	3.91	PASS
TX-FRS	FM	CH <sub>M2</sub>	1600	3.47	1.07	5.07	PASS
TX-FRS	FM	CH <sub>M2</sub>	1800	4.34	2.09	6.09	PASS
TX-FRS	FM	CH <sub>M2</sub>	2000	5.25	3.00	7.00	PASS
TX-FRS	FM	CH <sub>M2</sub>	2100	5.68	3.42	7.42	PASS
TX-FRS	FM	CH <sub>M2</sub>	2200	6.00	3.83	7.83	PASS
TX-FRS	FM	CH <sub>M2</sub>	2300	6.33	4.21	8.21	PASS
TX-FRS	FM	CH <sub>M2</sub>	2400	6.53	4.58	8.58	PASS
TX-FRS	FM	CH <sub>M2</sub>	2500	6.62	4.93	8.93	PASS
TX-FRS	FM	CH <sub>M2</sub>	2600	6.56	4.59	9.27	PASS
TX-FRS	FM	CH <sub>M2</sub>	2700	6.32	4.27	9.60	PASS
TX-FRS	FM	CH <sub>M2</sub>	2800	5.86	3.95	9.91	PASS
TX-FRS	FM	CH <sub>M2</sub>	2900	5.15	3.65	10.22	PASS
TX-FRS	FM	CH <sub>M2</sub>	3000	4.18	3.35	10.51	PASS
TX-FRS	FM	CH <sub>M2</sub>	3500	-6.12			PASS
TX-FRS	FM	CH <sub>M2</sub>	4000	-16.86			PASS
TX-FRS	FM	CH <sub>M2</sub>	4500	-16.75			PASS
TX-FRS	FM	CH <sub>M2</sub>	5000	-17.22			PASS

Appendix E:Audio Frequency Response

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH <sub>M1</sub>	<p>Graph showing Response Attenuation (dB) vs Frequency (Hz) for CH<sub>M1</sub>. The y-axis ranges from -25.00 to 15.00 dB, and the x-axis ranges from 100 to 10000 Hz. The legend indicates: Audio Frequency Response (dB) (red line), Upper Limit (yellow line).</p>
TX-FRS	FM	CH <sub>M2</sub>	<p>Graph showing Response Attenuation (dB) vs Frequency (Hz) for CH<sub>M2</sub>. The y-axis ranges from -25.00 to 15.00 dB, and the x-axis ranges from 100 to 10000 Hz. The legend indicates: Audio Frequency Response (dB) (red line), Upper Limit (yellow line).</p>

**Appendix F:Audio Low Pass Filter Response**

Test Mode	Modulation Type	Test Channel	Audio Frequency(Hz)	Audio Frequency Response(dB)	Limit	Result
TX-FRS	FM	CH <sub>M1</sub>	1000	-16.48	0	PASS
TX-FRS	FM	CH <sub>M1</sub>	3000	-22.53	0	PASS
TX-FRS	FM	CH <sub>M1</sub>	4000	-41.67	-7.5	PASS
TX-FRS	FM	CH <sub>M1</sub>	5000	-54.3	-13.3	PASS
TX-FRS	FM	CH <sub>M1</sub>	6000	-54.56	-18.1	PASS
TX-FRS	FM	CH <sub>M1</sub>	8000	-54.46	-25.6	PASS
TX-FRS	FM	CH <sub>M1</sub>	10000	-54.71	-31.4	PASS
TX-FRS	FM	CH <sub>M1</sub>	15000	-54.33	-41.9	PASS
TX-FRS	FM	CH <sub>M1</sub>	20000	-54.15	-50	PASS
TX-FRS	FM	CH <sub>M1</sub>	30000	-54.4	-50	PASS
TX-FRS	FM	CH <sub>M1</sub>	40000	-54.81	-50	PASS
TX-FRS	FM	CH <sub>M1</sub>	50000	-54.54	-50	PASS
TX-FRS	FM	CH <sub>M1</sub>	60000	-54.74	-50	PASS
TX-FRS	FM	CH <sub>M1</sub>	70000	-55.31	-50	PASS
TX-FRS	FM	CH <sub>M1</sub>	80000	-55.33	-50	PASS
TX-FRS	FM	CH <sub>M1</sub>	90000	-55.27	-50	PASS
TX-FRS	FM	CH <sub>M1</sub>	100000	-55.35	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	1000	-16.52	0	PASS
TX-FRS	FM	CH <sub>M2</sub>	3000	-22.57	0	PASS
TX-FRS	FM	CH <sub>M2</sub>	4000	-41.71	-7.5	PASS
TX-FRS	FM	CH <sub>M2</sub>	5000	-54.34	-13.3	PASS
TX-FRS	FM	CH <sub>M2</sub>	6000	-54.6	-18.1	PASS
TX-FRS	FM	CH <sub>M2</sub>	8000	-54.5	-25.6	PASS
TX-FRS	FM	CH <sub>M2</sub>	10000	-54.75	-31.4	PASS
TX-FRS	FM	CH <sub>M2</sub>	15000	-54.37	-41.9	PASS
TX-FRS	FM	CH <sub>M2</sub>	20000	-54.19	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	30000	-54.46	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	40000	-54.87	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	50000	-54.60	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	60000	-54.80	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	70000	-55.37	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	80000	-55.39	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	90000	-55.33	-50	PASS
TX-FRS	FM	CH <sub>M2</sub>	100000	-55.41	-50	PASS

**Appendix F:Audio Low Pass Filter Response**

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH <sub>M1</sub>	<p>The graph for CH<sub>M1</sub> shows the audio frequency response in dB on the y-axis (ranging from -70 to 0) against audio frequency in Hz on a logarithmic x-axis (ranging from 1000 to 100,000). A red line represents the limit, which is 0 dB until 5000 Hz, then drops to -50 dB. A blue line represents the actual audio frequency response, which starts at -15 dB at 1000 Hz, drops to -25 dB at 3000 Hz, then to -55 dB at 5000 Hz, and remains flat at -55 dB up to 100,000 Hz.</p>
TX-FRS	FM	CH <sub>M2</sub>	<p>The graph for CH<sub>M2</sub> shows the audio frequency response in dB on the y-axis (ranging from -70 to 0) against audio frequency in Hz on a logarithmic x-axis (ranging from 1000 to 100,000). A red line represents the limit, which is 0 dB until 5000 Hz, then drops to -50 dB. A blue line represents the actual audio frequency response, which starts at -15 dB at 1000 Hz, drops to -25 dB at 3000 Hz, then to -55 dB at 5000 Hz, and remains flat at -55 dB up to 100,000 Hz.</p>

**Appendix G:Frequency Stability Test & Temperature**

Test Mode	Modulation Type	Test Conditions		Frequency error (ppm)		Limit (ppm)	Result
		Voltage	Temperature	CH <sub>M1</sub>	CH <sub>M2</sub>		
TX-FRS	FM	V <sub>N</sub>	-30	0.213	0.241	±2.5	PASS
TX-FRS	FM	V <sub>N</sub>	-20	0.206	0.259	±2.5	PASS
TX-FRS	FM	V <sub>N</sub>	-10	0.211	0.244	±2.5	PASS
TX-FRS	FM	V <sub>N</sub>	0	0.213	0.256	±2.5	PASS
TX-FRS	FM	V <sub>N</sub>	10	0.208	0.259	±2.5	PASS
TX-FRS	FM	V <sub>N</sub>	20	0.206	0.238	±2.5	PASS
TX-FRS	FM	V <sub>N</sub>	30	0.225	0.238	±2.5	PASS
TX-FRS	FM	V <sub>N</sub>	40	0.220	0.249	±2.5	PASS
TX-FRS	FM	V <sub>N</sub>	50	0.218	0.244	±2.5	PASS

**Appendix H:Frequency Stability Test & Voltage**

Test Mode	Modulation Type	Test Conditions		Frequency error (ppm)		Limit (ppm)	Result
		Voltage	Temperature	CH <sub>M1</sub>	CH <sub>M2</sub>		
TX-FRS	FM	V <sub>N</sub>	T <sub>N</sub>	0.206	0.238	±2.5	PASS
TX-FRS	FM	V <sub>L</sub>	T <sub>N</sub>	0.193	0.229	±2.5	PASS
TX-FRS	FM	V <sub>H</sub>	T <sub>N</sub>	0.211	0.242	±2.5	PASS

-----End of Report-----