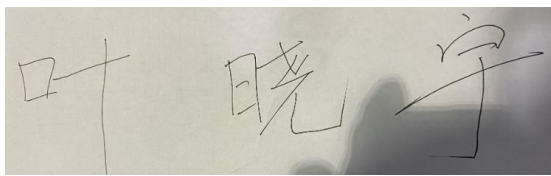
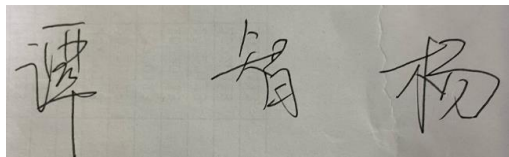
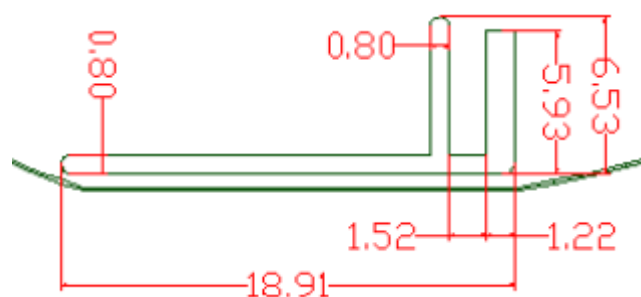


## Sony BM165 Antenna report

Applicant	Tonly Technology Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China

Manufacturer or Supplier	Tonly Technology Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China
Product	IFA
Brand Name	sony
Model	BM165 ANT
Max. Peak Gain	1.72dBi
Date of tests	2023-1-16
Tested by xiaoyu ye	Approved by zhiyang tan
	

1. Antenna Size (mm)



2. Antenna photo (Please refer to Antena photos document)

3. Test setup photo (Please refer to Antena photos document)

4. Test standard

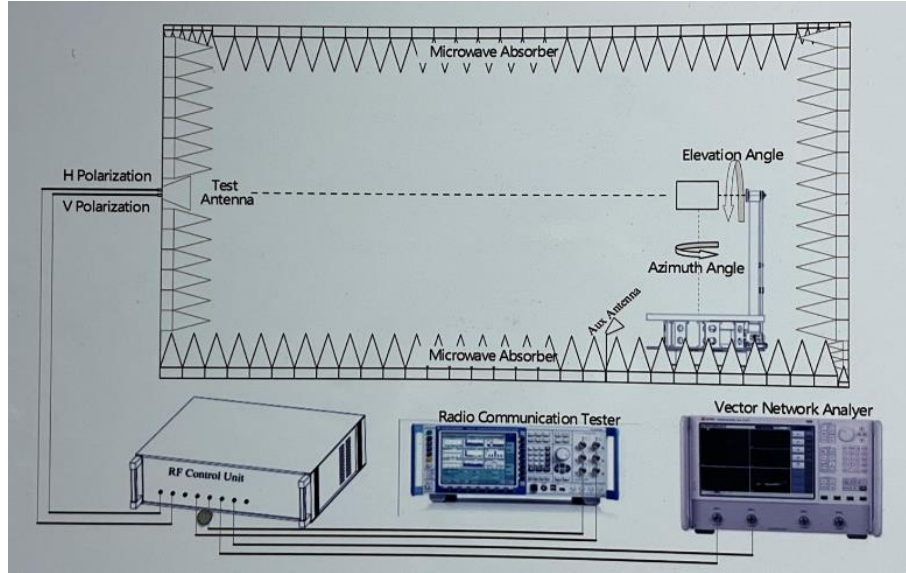
Name	Parameter	Method	Standard no.
Antenna performance	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979

5. Equipment list

Equipment	Manufacturer	Model No	Serial No.	Last Cal.	Due Date
Network Aanalyzer	Agilent	E5071C	MY46630767	2022. 4. 28	2023. 4. 27
Microwave chamber	GTS	GTS Maxsign-Dart7000		2022. 4. 28	2023. 4. 27
Turn table	GTS	Dart-700 turn table		2022. 4. 28	2023. 4. 27
turn table controller	GTS	Dart-700 turn table controller		2022. 4. 28	2023. 4. 27
Broad-Band Horn Antenna	GTS	AT-6000	MA-D0460	2022. 4. 28	2023. 4. 27

Test Software	GTS	Libra Version-3.0.3.1		2022.4.28	2023.4.27
---------------	-----	-----------------------	--	-----------	-----------

## 6. Test configuration diagram

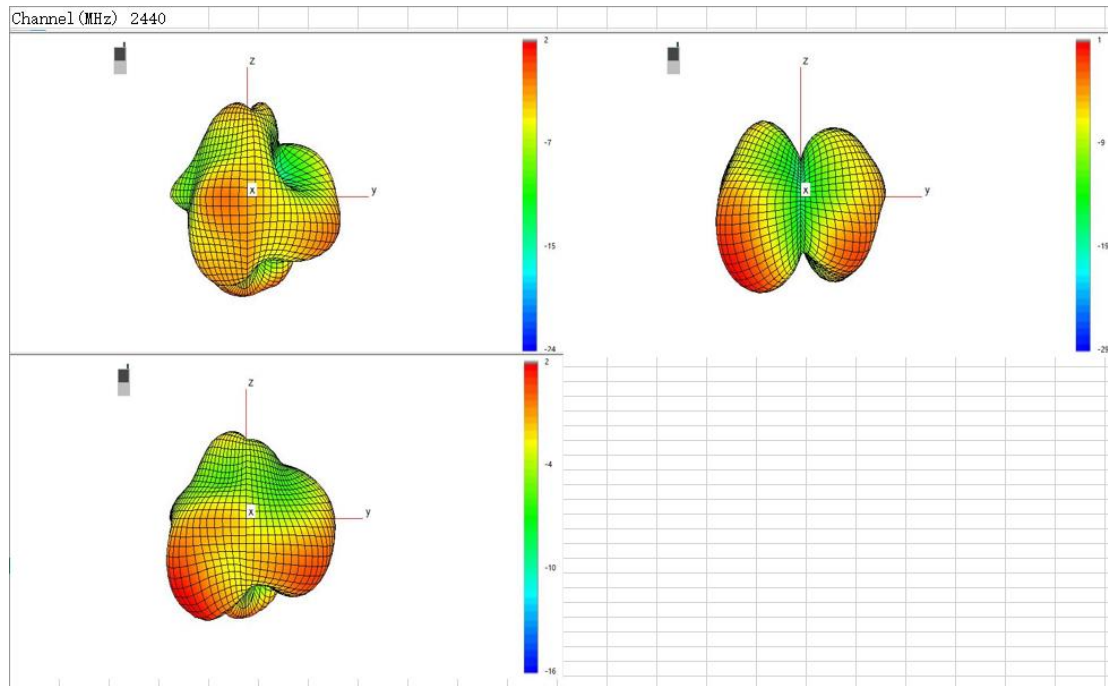


Test step flow:

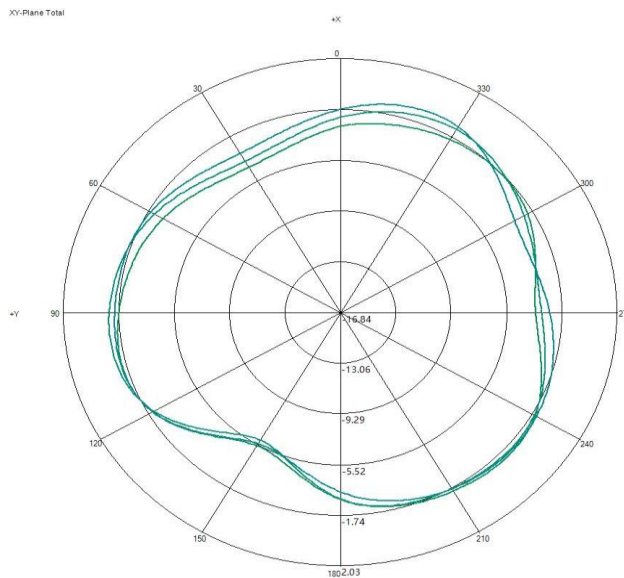
- 1) Maintain the test ambient temperature of  $23 \pm 2$  C, the instrument is powered on and preheated for more than 30 minutes;
- 2) Turn on the darkroom power supply, connect the test cable, and set up the sample according to the standard;
- 3) Outline sets the test content objectives and conducts calibration tests;
- 4) Run the software, when the test is completed, export the corresponding test diagram and test data, and save to the corresponding directory.

## 7. Antenna gain

Freq (MHz)	Gain (dB)	Efficiency (dB)	Efficiency (%)
2400	1.556090304	-2.978008362	50.37315629
2410	1.536942413	-2.918041283	51.07352954
2420	1.500406269	-2.795554993	52.53448761
2430	1.33211455	-2.834536752	52.06505419
2440	1.226090304	-2.916560541	51.09094621
2450	1.316880639	-2.964246964	50.5330258
2460	1.476150268	-2.995162817	50.17457682
2470	1.557886195	-2.923106784	51.0139934
2480	1.723965444	-2.93138245	50.91687662

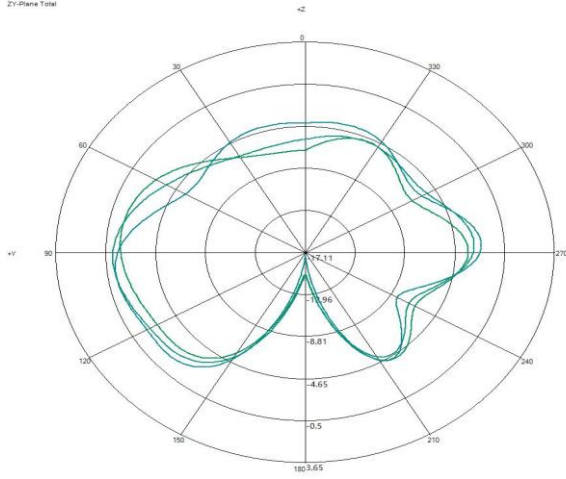


### 8. Antenna test data



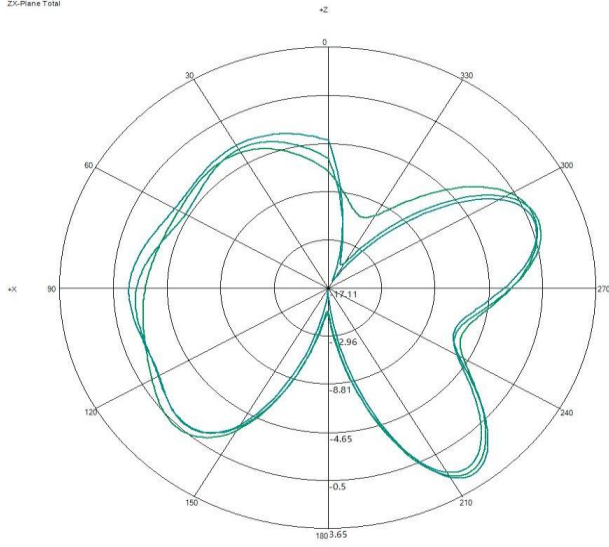
Channel (MHz)	Max. (dB)	Ave. (dB)
2400	-1.52198	-2.60411
2440	-1.05963	-2.35939
2480	-0.85201	-2.26193

ZY-Plane Total



Channel (MHz)	Max. (dB)	Ave. (dB)
2400	-1.71937	-4.62545
2440	-1.05963	-4.30449
2480	-1.44677	-4.07045

Zx-Plane Total



Channel (MHz)	Max. (dB)	Ave. (dB)
2400	1.55609	-2.86614
2440	1.22609	-3.05073
2480	1.723965	-2.74266