

Antenna Specification

Customer Name: Guangdong Transtek Electronics Co., Ltd.

Product Name: Hearing Aids

Sample Model: Nova

Reference Standard: *GB/T 9410-2008; ANSI/IEEE Std 149-1979*

Issue Date: 2022.9.20

Engineer:		Date	2022.9.20
Auditor:		Date	2022.9.20
Approve		Date	2022.9.20

Version

Version No.	Date	Description	Formulate	Approval
AO	2022.7.13	For the first time.		
A1	2022.9.20	For the second time.		

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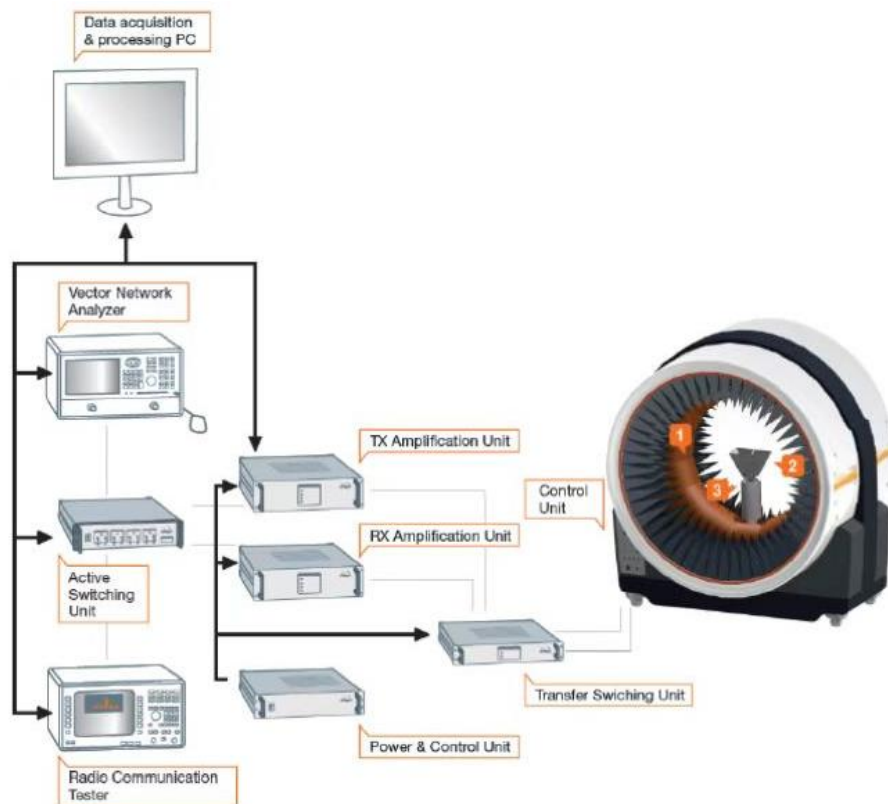
1. General Information

1.1 General information of testing institutions

Name	Shenzhen <u>Cicent</u> Communication Technology Co., Ltd.
Address	<u>505-506, ABlock DonglianBuilding, Chuangye 2 road, BaoanDistrict, Shenzhen, Guangdong, P. Rchina</u>
Tel	0755-85255580-615
E-mail	suggestion@cicent.com.cn
Equipment	1.RayZone 1800 2.Keysight E5071C

1.2 Testing principle

Multi-Probe OTA Measurement System



1.3 Test equipment

Equipment	Model No.	Serial No.	Manufacturer	Calibration date	Next calibration date
16 probe microwave chamber	Satimo	RFI-LAB-RF-A00	MVG	2021.11.13	2022.11.13
Network Analyzer	E5071C	RFI-LAB-RF-A02	Agilent	2021.11.08	2022.11.07
Network Analyzer	E5071C	RFI-LAB-RF-C02	KEYSIGHT	2021.11.08	2022.11.07

1.4 Test environment

Temperature	25.0℃
Humidity	59%RH
Pressure	100.12kPa

1.5 Statement

- (1) The test results in the report are only applicable to the tested samples and the tested samples work under the environment described in the report.
- (2) Only Shenzhen Cigent Communication Technology Co., Ltd. have the right to modify the report, and the modification information shall be annotated in the revision form.
- (3) Any objection to this report shall be raised within 30 days after formal confirmation of the report.
- (4) This report is invalid if there is any evidence that the sample information provided is falsified.
- (5) The report is invalid without the signature of the auditor and approver.

2. Sample Information

2.1 Client information

Name	Guangdong Transtek Medical Electronics Co., Ltd.
Address	Zone A, No. 105, Dongli Road, Torch Development District, 528437 Zhongshan, Guangdong, China
Contacts	Zhaowei.zhu
Tel	13302964031
E-mail	zhaowei.zhu@linner.com.cn

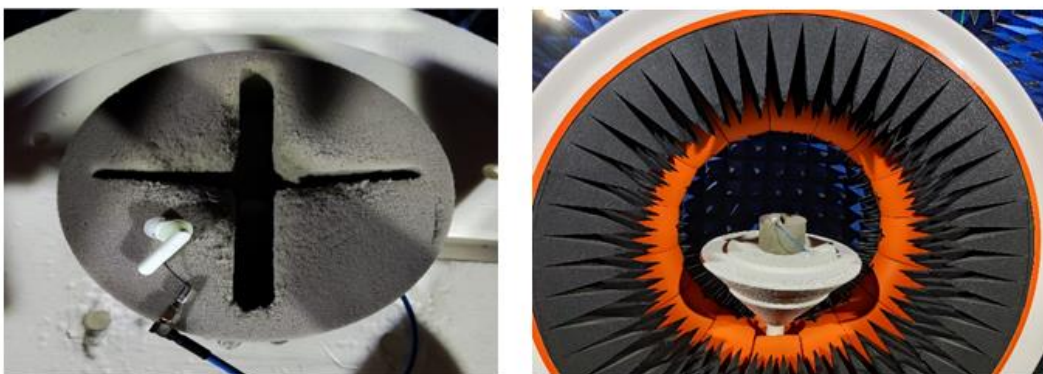
2.2 Description of EUT(S)

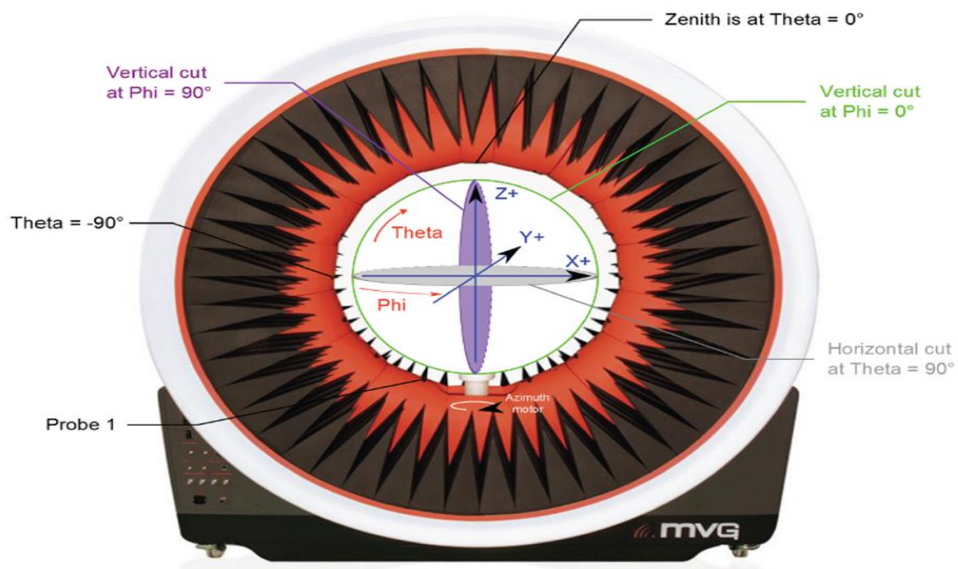
Product Name	2.4GHz Antenna
Sample Model	B200 L9/R9
Antenna Size	14.95*4.5*0.2mm
Antenna Type	FPC Antenna
Serial No.	
Test Item	VSWR; Gain; Efficiency; Radiation pattern
Frequency Range	2400-2480MHZ
Received Date	2022.9.20
Test Date	2022.9.20
Remark	/

2.3 EUT appearance

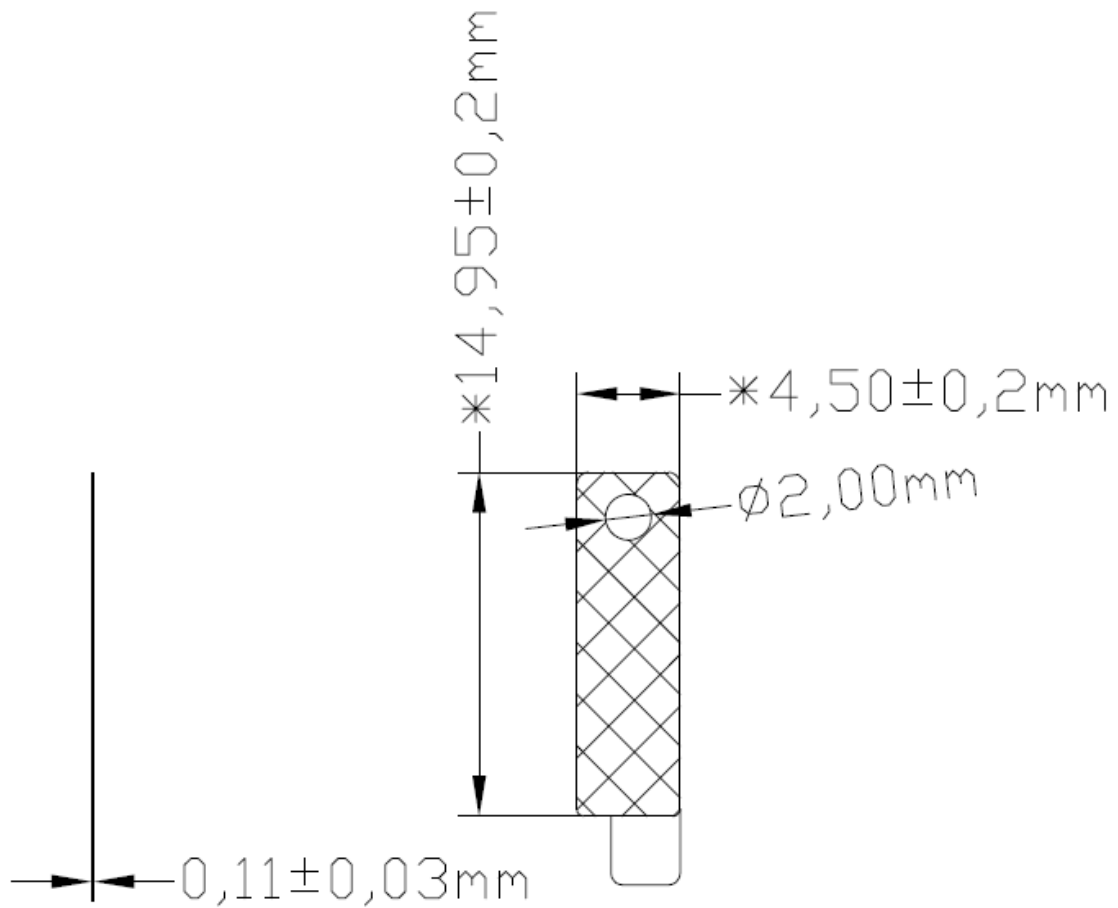


2.4 DUT setup photo of free space OTA testing





2.5 Antenna dimension



3. Test Results

3.1 Test standard

Name	Parameter	Method	Standard no.
Mobile Communication antenna	VSWR	Generic specification for antennas used in the mobile communications	GB/T 9410-2008
	Antenna gain		
	Radiation pattern		
Antenna	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979

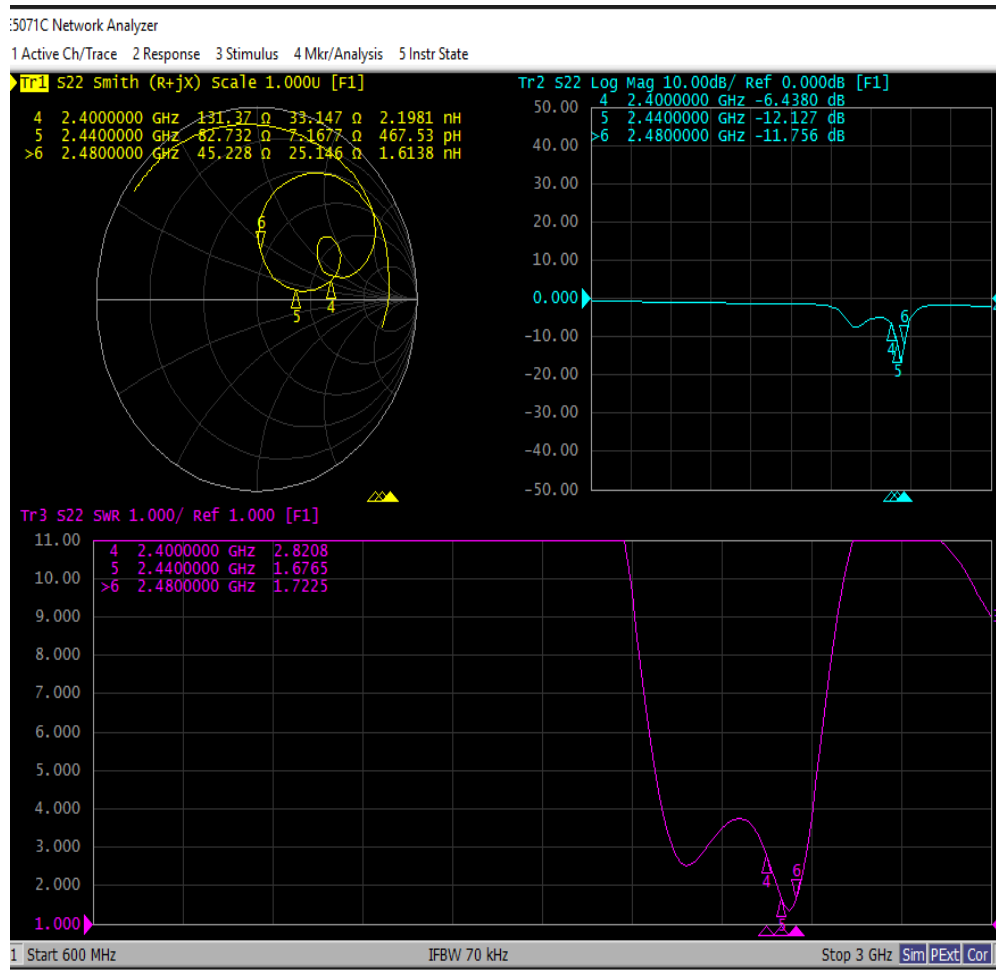
3.2 Test uncertainty

The uncertainty was calculated on the basis of the GUM published by ISO, using the inclusion factor of $K=2$ and the 95% confidence level to express the extended uncertainty.

Item	Uncertainty
VSWR	± 0.3
Antenna gain	$\pm 1\text{dB}$
Radiation efficiency	$\pm 10\%$

3.3 Test data

3.3.1 S11 parameters



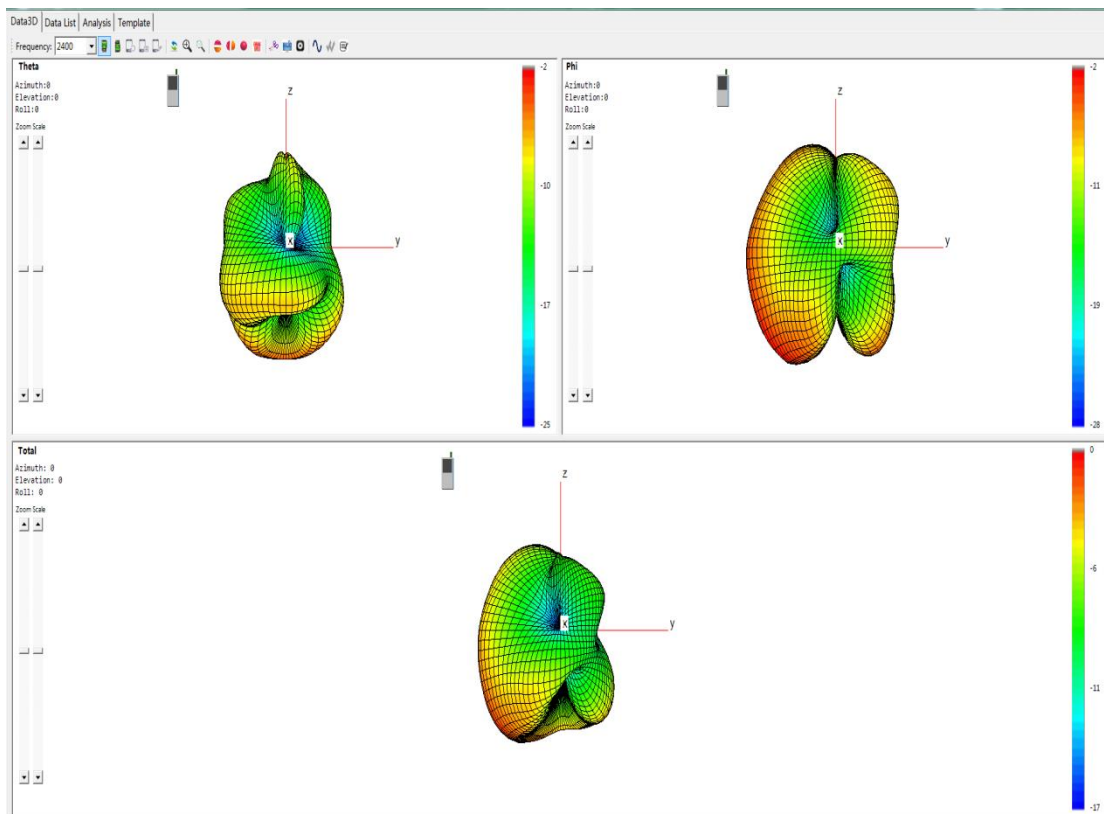
3.3.2 VSWR

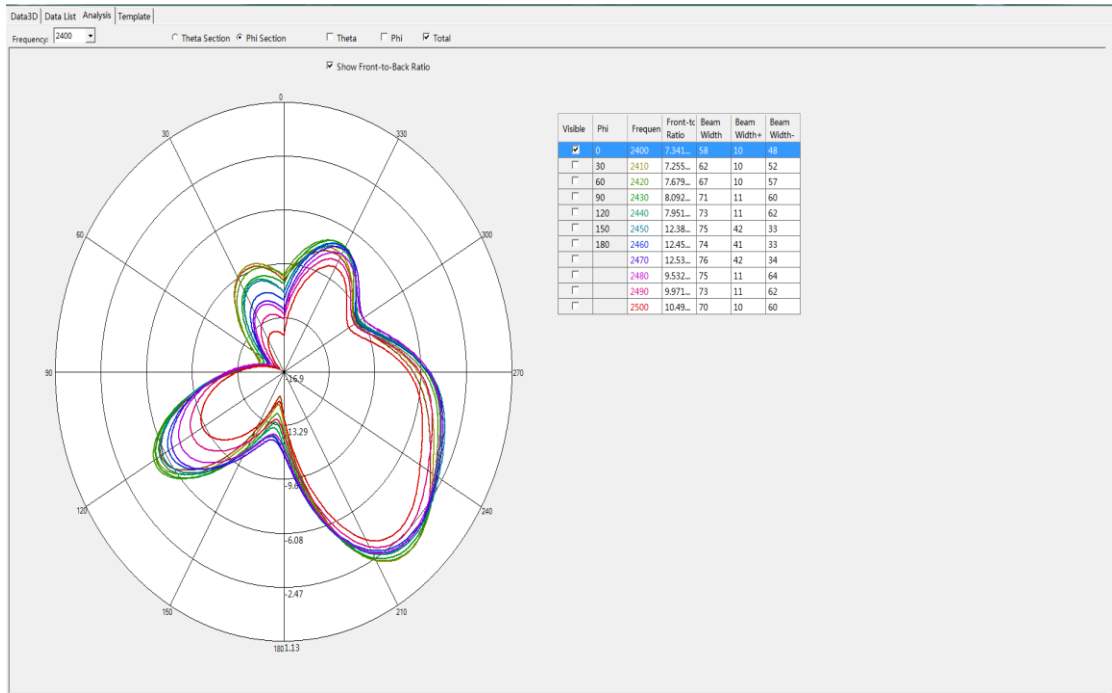
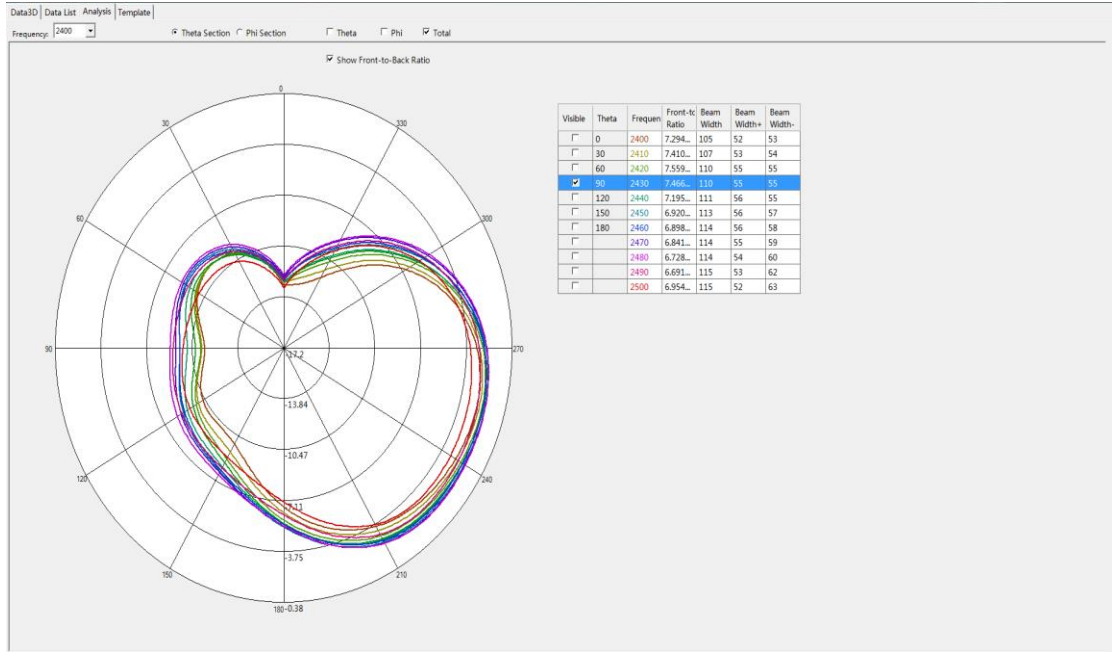
Frequency/MHz	2400	2440	2480
VSWR	2.8208	1.6765	1.7225

3.3.3 Typical free space efficiency and gain

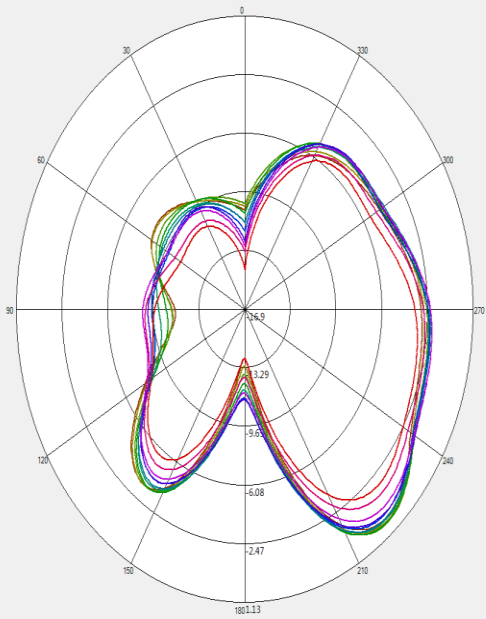
Frequency/MHz	2400	2410	2420	2430	2440	2450	2460	2470	2480
Peak Gain/dBi	-0.7	-0.5	-0.4	-0.4	-0.6	-0.7	-1.0	-0.9	-1.0
Efficiency/%	26.4	27.6	28.6	28.8	28.5	29.0	27.7	28.3	27.6

3.3.4 Typical free space radiation pattern





Show Front-to-Back Ratio



Visible	Phi	Frequen	Front-to-Back Ratio	Beam Width	Beam Width+	Beam Width-
<input type="checkbox"/>	0	2400	7.701...	96	8	88
<input type="checkbox"/>	30	2410	7.990...	95	8	87
<input type="checkbox"/>	60	2420	8.068...	91	8	83
<input checked="" type="checkbox"/>	90	2430	8.173...	90	8	82
<input type="checkbox"/>	120	2440	8.256...	95	8	87
<input type="checkbox"/>	150	2450	8.348...	99	9	90
<input type="checkbox"/>	180	2460	8.316...	96	9	87
<input type="checkbox"/>		2470	8.437...	100	39	61
<input type="checkbox"/>		2480	8.374...	113	38	75
<input type="checkbox"/>		2490	8.479...	103	37	66
<input type="checkbox"/>		2500	8.556...	97	36	61