

SPECIFICATION

SHEET FOR APPROVAL

(Revision: R: A4)

	CUSTOMER(客户名称)	GSD	
	CS P/N(客户机种)	WC0F	
	PART NAME(品名)	WIFI Antenna	
	FREQUENCY(频率)	2.4~2.5G/5.15-5.85G	
	ZTX NO.(物料编号)	1.01.00636	G.5.13.WC0FXXXXXX
	DATE(日期)	2019-10-09	

CUSTOMER			
QA CHECKED	ME CHECKED	RF CHECKED	MANAGER CHECKED

ZHONG TIAN XUN TECHNOLOGY CO., LTD				
MANAGER CHECKED	MANAGER CHECKED	ME CHECKED	RF CHECKED	LISTER
		黄小宇	李方森	

manufacturer



深圳市中天迅通信科技股份有限公司

SHENZHEN ZHONGTIAN XUN Communication Technology Co.,Ltd.

地址: 深圳市宝安区石岩镇石龙大道 34 号(腾达工业园) 邮编: 518000

电话: 0755-27588320 传真: 0755-27588045 <http://www.chinaztx.com>

Address: Tenada Industrial Park, Shilong Avenue, Shivan Town, Baoan District, Shenzhen

ANTENNA SPECIFICATION

CUS P/N :WC0F
ZTX P/N :WC0F

ApplicationDate:Qct.09,2019
Editor:

Rev: R:A4
Page 1 of 8

Revision history

Version	date	status
A1	2014-11-13	Make an admission
A2	2016-10-25	Optimized structure
A3	2017-03-06	Adjust the length control dimensions
A4	2017-09-14	Change the packaging material



ANTENNA SPECIFICATION

CUS P/N :WC0F
ZTX P/N :WC0F

ApplicationDate:Qct.09,2019
Editor:

Rev: R:A4
Page 2 of 8

Index

		Revision history	1
1		Test equipment	3
2		Product figure	4
3		Antenna test data	4
	3-1	VSWR	4
	3-2	Return loss plot	5
	3-3	Smith Chart	5
	3-4	Matching circuit	6
	3-5	No-source test data	6
	3-6	Environment treatment	6
	3-7	Directional drawing of horizontal plane of	6
	3-8	3D radiation drawing	6~7
4		Mechanical Specification	8



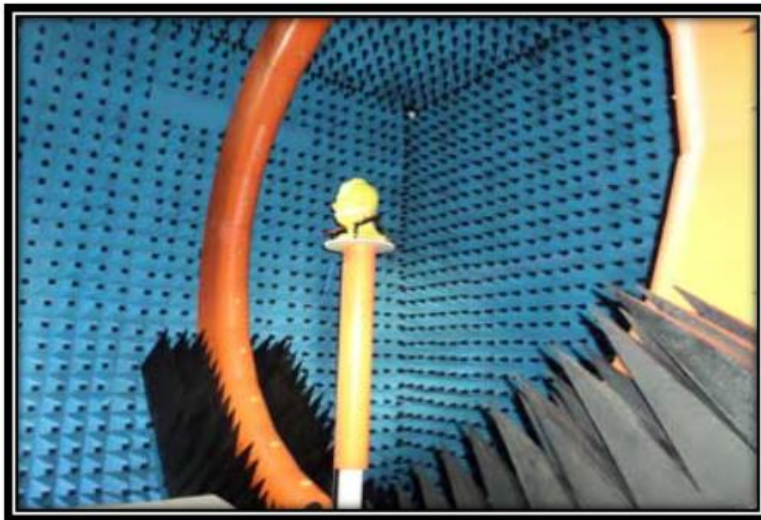
ANTENNA SPECIFICATION

CUS P/N :WC0F
ZTX P/N :WC0F

ApplicationDate:Qct.09,2019
Editor:

Rev: R:A4
Page 3 of 8

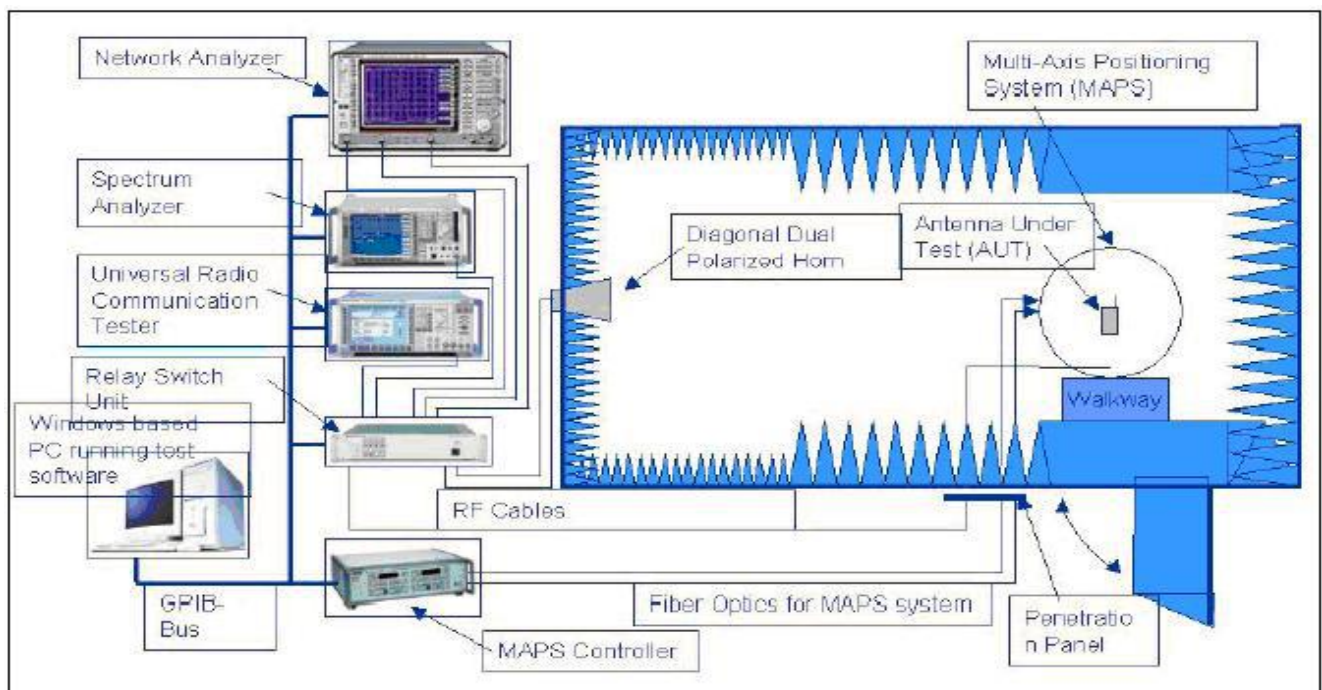
1. Test equipment



Owned 6 microwave dark room, equipped 2 sets world leading France Satimo SG24 OTA certification test systems (one in SHENZHEN, another one in Shanghai), ETS OTA Standard test system, Blue test reverberation test system which is High repeatability, high accuracy and high resolution. It can quickly provide accurate test reports, fully meet the CITA standards.

Testing range:

Support active, passive testing of
GSM/CDMA/WCDMA/TD-
SCDMA/LTE/WIFI/WLAN/WiMax/BT
/GPS/MIMO/UWB within 0.4-6G.



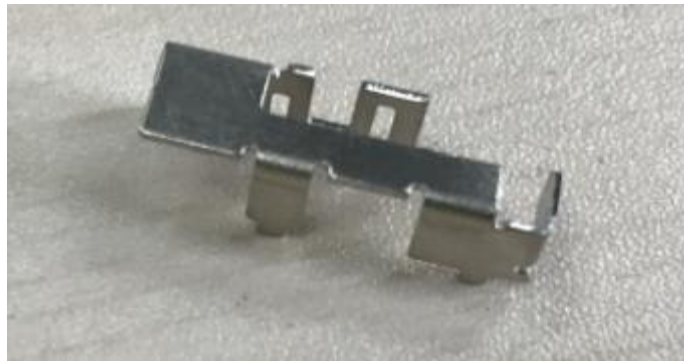
ANTENNA SPECIFICATION

CUS P/N :WC0F
ZTX P/N :WC0F

ApplicationDate:Qct.09,2019
Editor:

Rev: R:A4
Page 4 of 8

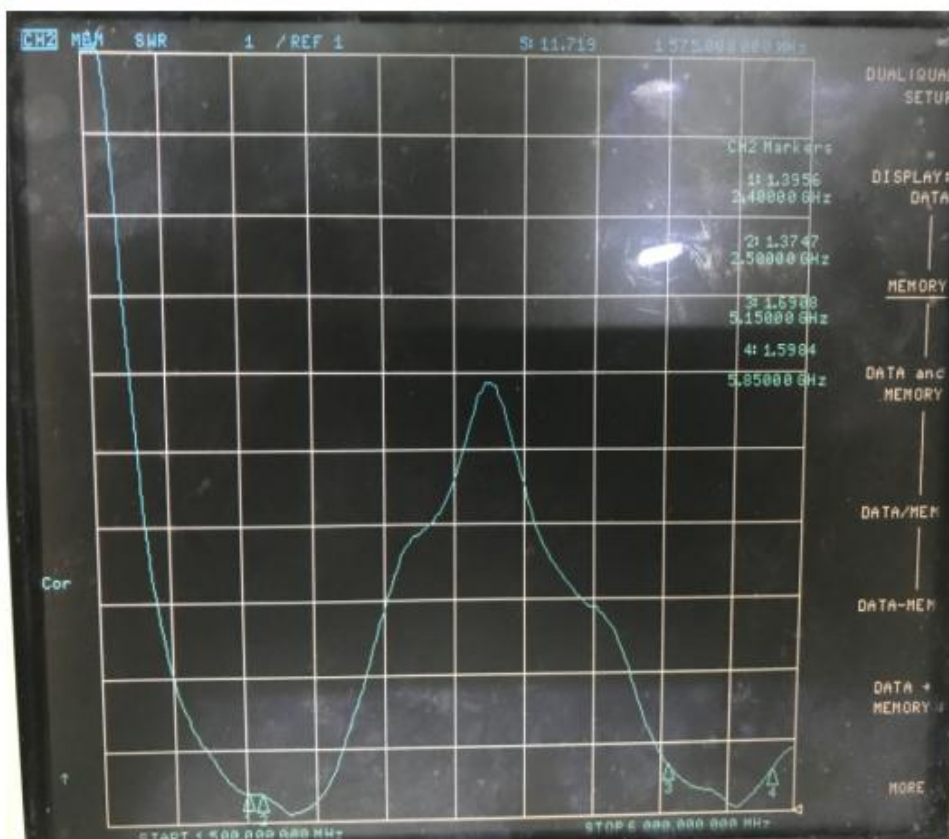
2.Product figure



3.Antenna test data

3-1 VSWR

2.4G	2.5G	5.15G	5.85G
1.39	1.37	1.69	1.59



ANTENNA SPECIFICATION

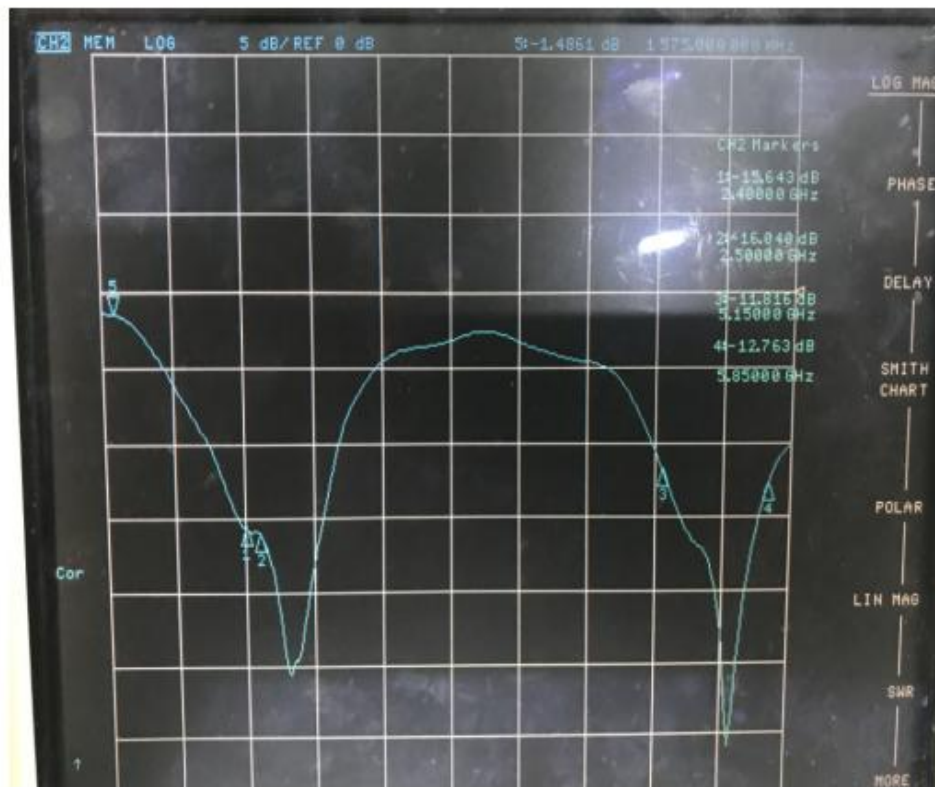
CUS P/N :WC0F
ZTX P/N :WC0F

ApplicationDate:Qct.09,2019
Editor:

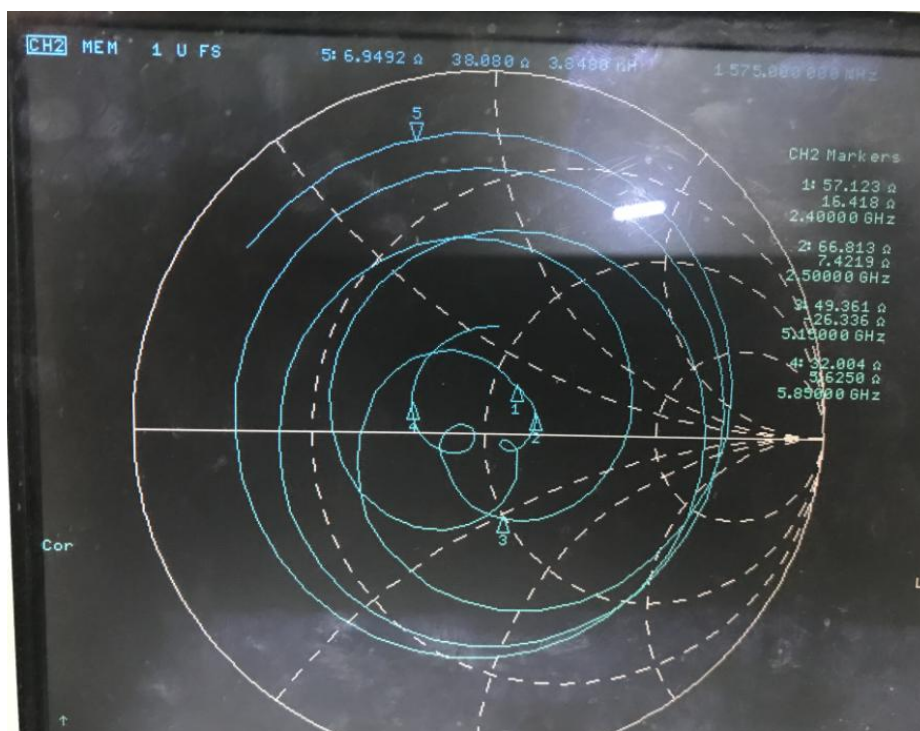
Rev: R:A4
Page 5 of 8

3-2 Return loss plot

2.4G	2.5G	5.15G	5.85G
-15.6dB	-16.0dB	-11.8dB	-12.7dB



3-3 Smith Chart



ANTENNA SPECIFICATION

CUS P/N :WC0F
ZTX P/N :WC0F

ApplicationDate:Qct.09,2019
Editor:

Rev: R:A4
Page 6 of 8

3-4 Matching circuit

N/A

3-5 No-source test data

Frequency	2.4G	2.42G	2.45G	2.47G	2.49G
Efficiency	59%	58%	57%	58%	57%
Gain.dB	2.53	2.92	2.86	2.87	2.96

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
2.4E+09	59%	-2.27028	2.4E+09	2.538545
2.41E+09	58%	-2.34515	2.41E+09	2.741231
2.42E+09	58%	-2.39054	2.42E+09	2.922523
2.43E+09	57%	-2.45035	2.43E+09	2.970949
2.44E+09	58%	-2.3768	2.44E+09	2.976098
2.45E+09	57%	-2.44196	2.45E+09	2.864206
2.46E+09	59%	-2.29193	2.46E+09	2.906926
2.47E+09	58%	-2.34219	2.47E+09	2.873983
2.48E+09	58%	-2.37285	2.48E+09	2.916145
2.49E+09	57%	-2.47035	2.49E+09	2.965443
2.5E+09	58%	-2.3868	2.5E+09	2.880728

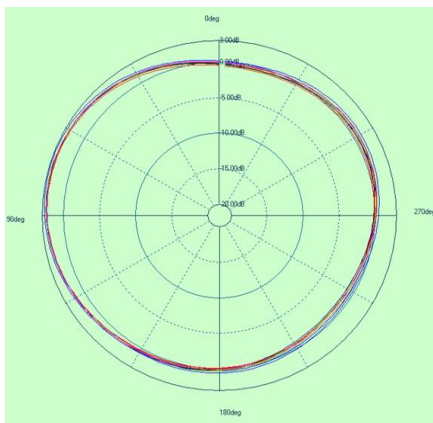
Frequency	5.15G	5.25G	5.75G	5.8G	5.85G
Efficiency	65%	60%	62%	58%	61%
Gain.dB	2.27	2.39	2.57	2.34	2.55

Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
5.15E+09	65%	-1.85252	5.15E+09	2.274527
5.2E+09	62%	-2.0823	5.2E+09	2.314546
5.25E+09	60%	-2.18393	5.25E+09	2.391462
5.3E+09	61%	-2.1755	5.3E+09	2.468697
5.35E+09	61%	-2.14496	5.35E+09	2.405616
5.4E+09	60%	-2.22463	5.4E+09	2.422098
5.45E+09	61%	-2.11757	5.45E+09	2.781158
5.5E+09	61%	-2.15105	5.5E+09	2.714014
5.55E+09	66%	-1.8314	5.55E+09	2.572588
5.6E+09	67%	-1.7071	5.6E+09	2.690885
5.65E+09	67%	-1.74773	5.65E+09	2.804433
5.7E+09	64%	-1.91613	5.7E+09	2.800621
5.75E+09	62%	-2.10672	5.75E+09	2.572987
5.8E+09	58%	-2.34557	5.8E+09	2.347272
5.85E+09	61%	-2.12044	5.85E+09	2.550763

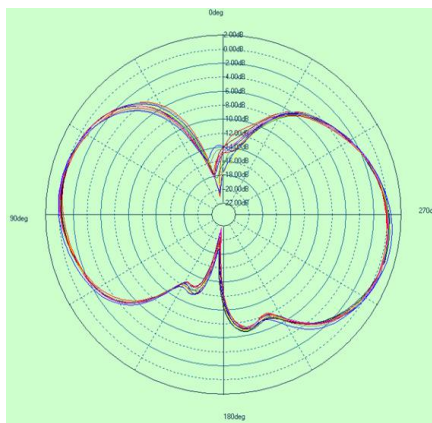
3-6 Environment treatment

N/A

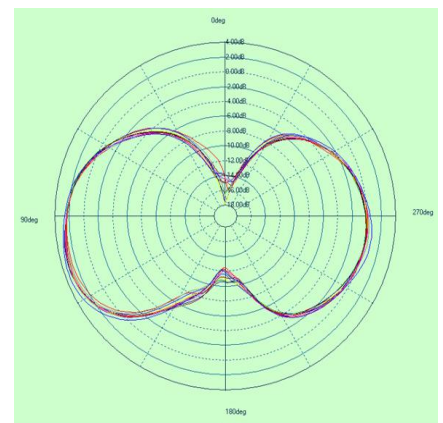
3-7 Directional drawing of horizontal plane of (2.4G)



Theta 90deg



Phi 0deg



Phi 90deg

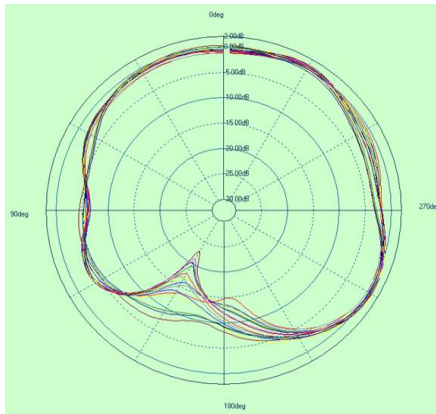
ANTENNA SPECIFICATION

CUS P/N :WC0F
ZTX P/N :WC0F

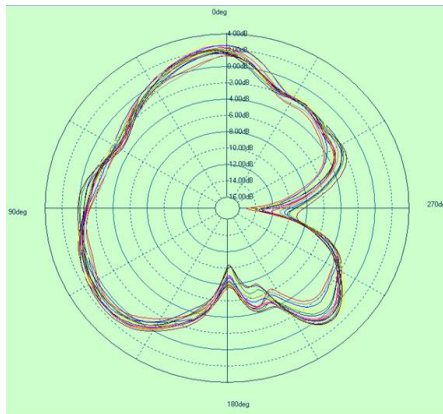
ApplicationDate:Qct.09,2019
Editor:

Rev: R:A4
Page 7 of 8

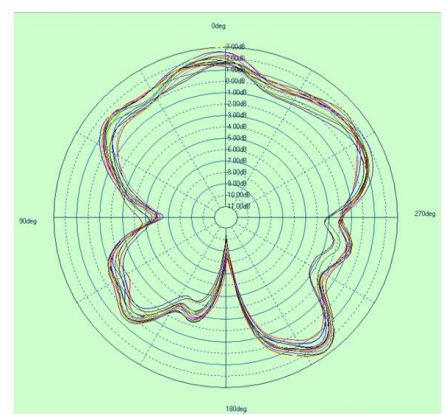
(5G)



Theta 90deg

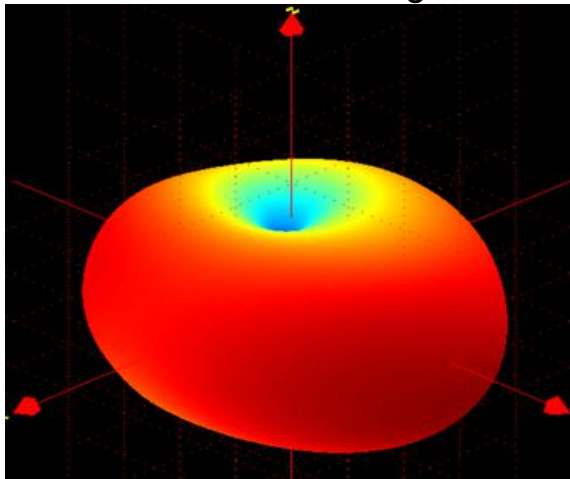


Phi 0deg

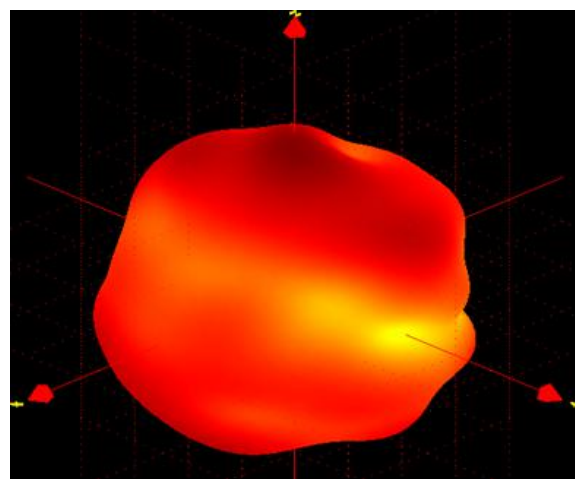


Phi 90deg

3-8 3D radiation drawing



(2.4G)



(5G)



ANTENNA SPECIFICATION

CUS P/N :WC0F
ZTX P/N :WC0F

ApplicationDate:Qct.09,2019
Editor:

Rev: R:A4
Page 8 of 8

4. Mechanical Specification

版本	说明	审核	日期	批准	日期
A2	4处插脚改模	黄小宇	2016.10.25		
A3	调整长度管控尺寸	黄小宇	2017.03.06		
A4	更改包装材质	黄小宇	2017.09.12		

备注:

1. 角度尺寸模具设计时依图纸尺寸作参照, 样品及量产实配即可;
2. 打“*”为Cpk尺寸 (Cpk≥1.67);
3. 材质说明: (SUS304 硬度270°~300° 厚度0.50mm);
4. 字码说明(采用宋体, 要求字迹清晰, 弹片无变形);
5. 产品不能有油污、毛刺、利边、缺料、变形、压印过深等不良;
6. 需通过48小时盐雾测试;
7. 包装方式载带包装, 运输过程中产品不能挤压碰撞等;
8. 未经过ZTX公司确认, 材料不能随意更改;

未注明公差		制图		审核		批准		日期	
5	UND	±0.08	射频	李方森	2017.09.12	黄小宇	2017.09.12	1:1	1.01.00642
5-10	±0.10	±0.10	射频	李方森	2017.09.12	黄小宇	2017.09.12	1:1	1.01.00642
10-35	±0.12	±0.12	审核	李方森	2017.09.12	黄小宇	2017.09.12	1:1	1.01.00642
35-50	±0.15	±0.15	批准	李方森	2017.09.12	黄小宇	2017.09.12	1:1	1.01.00642
50-100	±0.18	±0.18	批准	李方森	2017.09.12	黄小宇	2017.09.12	1:1	1.01.00642
100 OVE	±0.20	±0.20	批准	李方森	2017.09.12	黄小宇	2017.09.12	1:1	1.01.00642

环保要求:

MATTER	Rohs (PPM)
Cd	≤100
Pb	≤1000
Hg	≤1000
Cr6+	≤1000
PBB	≤1000
PBDE	≤1000

深圳市中天迅通信技术股份有限公司

图例: 1. 0.50mm 2. 0.50mm 3. 0.50mm 4. 0.50mm 5. 0.50mm 6. 0.50mm 7. 0.50mm 8. 0.50mm 9. 0.50mm 10. 0.50mm 11. 0.50mm 12. 0.50mm 13. 0.50mm 14. 0.50mm 15. 0.50mm 16. 0.50mm 17. 0.50mm 18. 0.50mm 19. 0.50mm 20. 0.50mm 21. 0.50mm 22. 0.50mm 23. 0.50mm 24. 0.50mm 25. 0.50mm 26. 0.50mm 27. 0.50mm 28. 0.50mm 29. 0.50mm 30. 0.50mm 31. 0.50mm 32. 0.50mm 33. 0.50mm 34. 0.50mm 35. 0.50mm 36. 0.50mm 37. 0.50mm 38. 0.50mm 39. 0.50mm 40. 0.50mm 41. 0.50mm 42. 0.50mm 43. 0.50mm 44. 0.50mm 45. 0.50mm 46. 0.50mm 47. 0.50mm 48. 0.50mm 49. 0.50mm 50. 0.50mm 51. 0.50mm 52. 0.50mm 53. 0.50mm 54. 0.50mm 55. 0.50mm 56. 0.50mm 57. 0.50mm 58. 0.50mm 59. 0.50mm 60. 0.50mm 61. 0.50mm 62. 0.50mm 63. 0.50mm 64. 0.50mm 65. 0.50mm 66. 0.50mm 67. 0.50mm 68. 0.50mm 69. 0.50mm 70. 0.50mm 71. 0.50mm 72. 0.50mm 73. 0.50mm 74. 0.50mm 75. 0.50mm 76. 0.50mm 77. 0.50mm 78. 0.50mm 79. 0.50mm 80. 0.50mm 81. 0.50mm 82. 0.50mm 83. 0.50mm 84. 0.50mm 85. 0.50mm 86. 0.50mm 87. 0.50mm 88. 0.50mm 89. 0.50mm 90. 0.50mm 91. 0.50mm 92. 0.50mm 93. 0.50mm 94. 0.50mm 95. 0.50mm 96. 0.50mm 97. 0.50mm 98. 0.50mm 99. 0.50mm 100. 0.50mm 101. 0.50mm 102. 0.50mm 103. 0.50mm 104. 0.50mm 105. 0.50mm 106. 0.50mm 107. 0.50mm 108. 0.50mm 109. 0.50mm 110. 0.50mm 111. 0.50mm 112. 0.50mm 113. 0.50mm 114. 0.50mm 115. 0.50mm 116. 0.50mm 117. 0.50mm 118. 0.50mm 119. 0.50mm 120. 0.50mm 121. 0.50mm 122. 0.50mm 123. 0.50mm 124. 0.50mm 125. 0.50mm 126. 0.50mm 127. 0.50mm 128. 0.50mm 129. 0.50mm 130. 0.50mm 131. 0.50mm 132. 0.50mm 133. 0.50mm 134. 0.50mm 135. 0.50mm 136. 0.50mm 137. 0.50mm 138. 0.50mm 139. 0.50mm 140. 0.50mm 141. 0.50mm 142. 0.50mm 143. 0.50mm 144. 0.50mm 145. 0.50mm 146. 0.50mm 147. 0.50mm 148. 0.50mm 149. 0.50mm 150. 0.50mm 151. 0.50mm 152. 0.50mm 153. 0.50mm 154. 0.50mm 155. 0.50mm 156. 0.50mm 157. 0.50mm 158. 0.50mm 159. 0.50mm 160. 0.50mm 161. 0.50mm 162. 0.50mm 163. 0.50mm 164. 0.50mm 165. 0.50mm 166. 0.50mm 167. 0.50mm 168. 0.50mm 169. 0.50mm 170. 0.50mm 171. 0.50mm 172. 0.50mm 173. 0.50mm 174. 0.50mm 175. 0.50mm 176. 0.50mm 177. 0.50mm 178. 0.50mm 179. 0.50mm 180. 0.50mm 181. 0.50mm 182. 0.50mm 183. 0.50mm 184. 0.50mm 185. 0.50mm 186. 0.50mm 187. 0.50mm 188. 0.50mm 189. 0.50mm 190. 0.50mm 191. 0.50mm 192. 0.50mm 193. 0.50mm 194. 0.50mm 195. 0.50mm 196. 0.50mm 197. 0.50mm 198. 0.50mm 199. 0.50mm 200. 0.50mm 201. 0.50mm 202. 0.50mm 203. 0.50mm 204. 0.50mm 205. 0.50mm 206. 0.50mm 207. 0.50mm 208. 0.50mm 209. 0.50mm 210. 0.50mm 211. 0.50mm 212. 0.50mm 213. 0.50mm 214. 0.50mm 215. 0.50mm 216. 0.50mm 217. 0.50mm 218. 0.50mm 219. 0.50mm 220. 0.50mm 221. 0.50mm 222. 0.50mm 223. 0.50mm 224. 0.50mm 225. 0.50mm 226. 0.50mm 227. 0.50mm 228. 0.50mm 229. 0.50mm 230. 0.50mm 231. 0.50mm 232. 0.50mm 233. 0.50mm 234. 0.50mm 235. 0.50mm 236. 0.50mm 237. 0.50mm 238. 0.50mm 239. 0.50mm 240. 0.50mm 241. 0.50mm 242. 0.50mm 243. 0.50mm 244. 0.50mm 245. 0.50mm 246. 0.50mm 247. 0.50mm 248. 0.50mm 249. 0.50mm 250. 0.50mm 251. 0.50mm 252. 0.50mm 253. 0.50mm 254. 0.50mm 255. 0.50mm 256. 0.50mm 257. 0.50mm 258. 0.50mm 259. 0.50mm 260. 0.50mm 261. 0.50mm 262. 0.50mm 263. 0.50mm 264. 0.50mm 265. 0.50mm 266. 0.50mm 267. 0.50mm 268. 0.50mm 269. 0.50mm 270. 0.50mm 271. 0.50mm 272. 0.50mm 273. 0.50mm 274. 0.50mm 275. 0.50mm 276. 0.50mm 277. 0.50mm 278. 0.50mm 279. 0.50mm 280. 0.50mm 281. 0.50mm 282. 0.50mm 283. 0.50mm 284. 0.50mm 285. 0.50mm 286. 0.50mm 287. 0.50mm 288. 0.50mm 289. 0.50mm 290. 0.50mm 291. 0.50mm 292. 0.50mm 293. 0.50mm 294. 0.50mm 295. 0.50mm 296. 0.50mm 297. 0.50mm 298. 0.50mm 299. 0.50mm 300. 0.50mm 301. 0.50mm 302. 0.50mm 303. 0.50mm 304. 0.50mm 305. 0.50mm 306. 0.50mm 307. 0.50mm 308. 0.50mm 309. 0.50mm 310. 0.50mm 311. 0.50mm 312. 0.50mm 313. 0.50mm 314. 0.50mm 315. 0.50mm 316. 0.50mm 317. 0.50mm 318. 0.50mm 319. 0.50mm 320. 0.50mm 321. 0.50mm 322. 0.50mm 323. 0.50mm 324. 0.50mm 325. 0.50mm 326. 0.50mm 327. 0.50mm 328. 0.50mm 329. 0.50mm 330. 0.50mm 331. 0.50mm 332. 0.50mm 333. 0.50mm 334. 0.50mm 335. 0.50mm 336. 0.50mm 337. 0.50mm 338. 0.50mm 339. 0.50mm 340. 0.50mm 341. 0.50mm 342. 0.50mm 343. 0.50mm 344. 0.50mm 345. 0.50mm 346. 0.50mm 347. 0.50mm 348. 0.50mm 349. 0.50mm 350. 0.50mm 351. 0.50mm 352. 0.50mm 353. 0.50mm 354. 0.50mm 355. 0.50mm 356. 0.50mm 357. 0.50mm 358. 0.50mm 359. 0.50mm 360. 0.50mm 361. 0.50mm 362. 0.50mm 363. 0.50mm 364. 0.50mm 365. 0.50mm 366. 0.50mm 367. 0.50mm 368. 0.50mm 369. 0.50mm 370. 0.50mm 371. 0.50mm 372. 0.50mm 373. 0.50mm 374. 0.50mm 375. 0.50mm 376. 0.50mm 377. 0.50mm 378. 0.50mm 379. 0.50mm 380. 0.50mm 381. 0.50mm 382. 0.50mm 383. 0.50mm 384. 0.50mm 385. 0.50mm 386. 0.50mm 387. 0.50mm 388. 0.50mm 389. 0.50mm 390. 0.50mm 391. 0.50mm 392. 0.50mm 393. 0.50mm 394. 0.50mm 395. 0.50mm 396. 0.50mm 397. 0.50mm 398. 0.50mm 399. 0.50mm 400. 0.50mm 401. 0.50mm 402. 0.50mm 403. 0.50mm 404. 0.50mm 405. 0.50mm 406. 0.50mm 407. 0.50mm 408. 0.50mm 409. 0.50mm 410. 0.50mm 411. 0.50mm 412. 0.50mm 413. 0.50mm 414. 0.50mm 415. 0.50mm 416. 0.50mm 417. 0.50mm 418. 0.50mm 419. 0.50mm 420. 0.50mm 421. 0.50mm 422. 0.50mm 423. 0.50mm 424. 0.50mm 425. 0.50mm 426. 0.50mm 427. 0.50mm 428. 0.50mm 429. 0.50mm 430. 0.50mm 431. 0.50mm 432. 0.50mm 433. 0.50mm 434. 0.50mm 435. 0.50mm 436. 0.50mm 437. 0.50mm 438. 0.50mm 439. 0.50mm 440. 0.50mm 441. 0.50mm 442. 0.50mm 443. 0.50mm 444. 0.50mm 445. 0.50mm 446. 0.50mm 447. 0.50mm 448. 0.50mm 449. 0.50mm 450. 0.50mm 451. 0.50mm 452. 0.50mm 453. 0.50mm 454. 0.50mm 455. 0.50mm 456. 0.50mm 457. 0.50mm 458. 0.50mm 459. 0.50mm 460. 0.50mm 461. 0.50mm 462. 0.50mm 463. 0.50mm 464. 0.50mm 465. 0.50mm 466. 0.50mm 467. 0.50mm 468. 0.50mm 469. 0.50mm 470. 0.50mm 471. 0.50mm 472. 0.50mm 473. 0.50mm 474. 0.50mm 475. 0.50mm 476. 0.50mm 477. 0.50mm 478. 0.50mm 479. 0.50mm 480. 0.50mm 481. 0.50mm 482. 0.50mm 483. 0.50mm 484. 0.50mm 485. 0.50mm 486. 0.50mm 487. 0.50mm 488. 0.50mm 489. 0.50mm 490. 0.50mm 491. 0.50mm 492. 0.50mm 493. 0.50mm 494. 0.50mm 495. 0.50mm 496. 0.50mm 497. 0.50mm 498. 0.50mm 499. 0.50mm 500. 0.50mm 501. 0.50mm 502. 0.50mm 503. 0.50mm 504. 0.50mm 505. 0.50mm 506. 0.50mm 507. 0.50mm 508. 0.50mm 509. 0.50mm 510. 0.50mm 511. 0.50mm 512. 0.50mm 513. 0.50mm 514. 0.50mm 515. 0.50mm 516. 0.50mm 517. 0.50mm 518. 0.50mm 519. 0.50mm 520. 0.50mm 521. 0.50mm 522. 0.50mm 523. 0.50mm 524. 0.50mm 525. 0.50mm 526. 0.50mm 527. 0.50mm 528. 0.50mm 529. 0.50mm 530. 0.50mm 531. 0.50mm 532. 0.50mm 533. 0.50mm 534. 0.50mm 535. 0.50mm 536. 0.50mm 537. 0.50mm 538. 0.50mm 539. 0.50mm 540. 0.50mm 541. 0.50mm 542. 0.50mm 543. 0.50mm 544. 0.50mm 545. 0.50mm 546. 0.50mm 547. 0.50mm 548. 0.50mm 549. 0.50mm 550. 0.50mm 551. 0.50mm 552. 0.50mm 553. 0.50mm 554. 0.50mm 555. 0.50mm 556. 0.50mm 557. 0.50mm 558. 0.50mm 559. 0.50mm 560. 0.50mm 561. 0.50mm 562. 0.50mm 563. 0.50mm 564. 0.50mm 565. 0.50mm 566. 0.50mm 567. 0.50mm 568. 0.50mm 569. 0.50mm 570. 0.50mm 571. 0.50mm 572. 0.50mm 573. 0.50mm 574. 0.50mm 575. 0.50mm 576. 0.50mm 577. 0.50mm 578. 0.50mm 579. 0.50mm 580. 0.50mm 581. 0.50mm 582. 0.50mm 583. 0.50mm 584. 0.50mm 585. 0.50mm 586. 0.50mm 587. 0.50mm 588. 0.50mm 589. 0.50mm 590. 0.50mm 591. 0.50mm 592. 0.50mm 593. 0.50mm 594. 0.50mm 595. 0.50mm 596. 0.50mm 597. 0.50mm 598. 0.50mm 599. 0.50mm 600. 0.50mm 601. 0.50mm 602. 0.50mm 603. 0.50mm 604. 0.50mm 605. 0.50mm 606. 0.50mm 607. 0.50mm 608. 0.50mm 609. 0.50mm 610. 0.50mm 611. 0.50mm 612. 0.50mm 613. 0.50mm 614. 0.50mm 615. 0.50mm 616. 0.50mm 617. 0.50mm 618. 0.50mm 619. 0.50mm 620. 0.50mm 621. 0.50mm 622. 0.50mm 623. 0.50mm 624. 0.50mm 625. 0.50mm 626. 0.50mm 627. 0.50mm 628. 0.50mm 629. 0.50mm 630. 0.50mm 631. 0.50mm 632. 0.50mm 633. 0.50mm 634. 0.50mm 635. 0.50mm 636. 0.50mm 637. 0.50mm 638. 0.50mm 639. 0.50mm 640. 0.50mm 641. 0.50mm 642. 0.50mm 643. 0.50mm 644. 0.50mm 645. 0.50mm 646. 0.50mm 647. 0.50mm 648. 0.50mm 649. 0.50mm 650. 0.50mm 651. 0.50mm 652. 0.50mm 653. 0.50mm 654. 0.50mm 655. 0.50mm 656. 0.50mm 657. 0.50mm 658. 0.50mm 659. 0.50mm 660. 0.50mm 661. 0.50mm 662. 0.50mm 663. 0.50mm 664. 0.50mm 665. 0.50mm 666. 0.50mm 667. 0.50mm 668. 0.50mm 669. 0.50mm 670. 0.50mm 671. 0.50mm 672. 0.50mm 673. 0.50mm 674. 0.50mm 675. 0.50mm 676. 0.50mm 677. 0.50mm 678. 0.50mm 679. 0.50mm 680. 0.50mm 681. 0.50mm 682. 0.50mm 683. 0.50mm 684. 0.50mm 685. 0.50mm 686. 0.50mm 687. 0.50mm 688. 0.50mm 689. 0.50mm 690. 0.50mm 691. 0.50mm 692. 0.50mm 693. 0.50mm 694. 0.50mm 695. 0.50mm 696. 0.50mm 697. 0.50mm 698. 0.50mm 699. 0.50mm 700. 0.50mm 701. 0.50mm 702. 0.50mm 703. 0.50mm 704. 0.50mm 705. 0.50mm 706. 0.50mm 707. 0.50mm 708. 0.50mm 709. 0.50mm 710. 0.50mm 711. 0.50mm 712. 0.50mm 713. 0.50mm 714. 0.50mm 715. 0.50mm 716. 0.50mm 717. 0.50mm 718. 0.50mm 719. 0.50mm 720. 0.50mm 721. 0.50mm 722. 0.50mm 723. 0.50mm 724. 0.50mm 725. 0.50mm 726. 0.50mm 727. 0.50mm 728. 0.50mm 729. 0.50mm 730. 0.50mm 731. 0.50mm 732. 0.50mm 733. 0.50mm 734. 0.50mm 735. 0.50mm 736. 0.50mm 737. 0.50mm 738. 0.50mm 739. 0.50mm 740. 0.50mm 741. 0.50mm 742. 0.50mm 743. 0.50mm 744. 0.50mm 745. 0.50mm 746. 0.50mm 747. 0.50mm 748. 0.50mm 749. 0.50mm 750. 0.50mm 751. 0.50mm 752. 0.50mm 753. 0.50mm 754. 0.50mm 755. 0.50mm 756. 0.50mm 757. 0.50mm 758. 0.50mm 759. 0.50mm 760. 0.50mm 761. 0.50mm 762. 0.50mm 763. 0.50mm 764. 0.50mm 765. 0.50mm 766. 0.50mm 767. 0.50mm 768. 0.50mm 769. 0.50mm 770. 0.50mm 771. 0.50mm 772. 0.50mm 773. 0.50mm 774. 0.50mm 775. 0.50mm 776. 0.50mm 777. 0.50mm 778. 0.50mm 779. 0.50mm 780. 0.50mm 781. 0.50mm 782. 0.50mm 783. 0.50mm 784. 0.50mm 785. 0.50mm 786. 0.50mm 787. 0.50mm 788. 0.50mm 789. 0.50mm 790. 0.50mm 791. 0.50mm 792. 0.50mm 793. 0.50mm 794. 0.50mm 795. 0.50mm 796. 0.50mm 797. 0.50mm 798. 0.50mm 799. 0.50mm 800. 0.50mm 801. 0.50mm 802. 0.50mm 803. 0.50mm 804. 0.50mm 805. 0.50mm 806. 0.50mm 807. 0.50mm 808. 0.50mm 809. 0.50mm 810. 0.50mm 811. 0.50mm 812. 0.50mm 813. 0.50mm 814. 0.50mm 815. 0.50mm 816. 0.50mm 817. 0.50mm 818. 0.50mm 819. 0.50mm 820. 0.50mm 821. 0.50mm 822. 0.50mm 823. 0.50mm 824. 0.50mm 825. 0.50mm 826. 0.50mm 827. 0.50mm 828. 0.50mm 829. 0.50mm 830. 0.50mm 831. 0.50mm 832. 0.50mm 833. 0.50mm 834. 0.50mm 835. 0.50mm 836. 0.50mm 837. 0.50mm 838. 0.50mm 839. 0.50mm 840. 0.50mm 841. 0.50mm 842. 0.50mm 843. 0.50mm 844. 0.50mm 845. 0.50mm 846. 0.50mm 847. 0.50mm 848. 0.50mm 849. 0.50mm 850. 0.50mm 851. 0.50mm 852. 0.50mm 853. 0.50mm 854. 0.50mm 855. 0.50mm 856. 0.50mm 857. 0.50mm 858. 0.50mm 859. 0.50mm 860. 0.50mm 861. 0.50mm 862. 0.50mm 863. 0.50mm 864. 0.50mm 865. 0.50mm 866. 0.50mm 867. 0.50mm 868. 0.50mm 869. 0.50mm 870. 0.50mm 871. 0.50mm 872. 0.50mm 873. 0.50mm 874. 0.50mm 875. 0.50mm 876. 0.50mm 877. 0.50mm 878. 0.50mm 879. 0.50mm 880. 0.50mm 881. 0.50mm 882. 0.50mm 883. 0.50mm 884. 0.50mm 885. 0.50mm 886. 0.50mm 887. 0.50mm 888. 0.50mm 889. 0.50mm 890. 0.50mm 891. 0.50mm 892. 0.50mm 893. 0.50mm 894. 0.50mm 895. 0.50mm 896. 0.50mm 897. 0.50mm 898. 0.50mm 899. 0.50mm 900. 0.50mm 901. 0.50mm 902. 0.50mm 903. 0.50mm 904. 0.50mm 905. 0.50mm 906. 0.50mm 907. 0.50mm 908. 0.50mm 909. 0.50mm 910. 0.50mm 911. 0.50mm 912. 0.50mm 913. 0.50mm 914. 0.50mm 915. 0.50mm 916. 0.50mm 917. 0.50mm 918. 0.50mm 919. 0.50mm 920. 0.50mm 921. 0.50mm 922. 0.50mm 923. 0.50mm 924. 0.50mm 925. 0.50mm 926. 0.50mm 927. 0.50mm 928. 0.50mm 929. 0.50mm 930. 0.50mm 931. 0.50mm 932. 0.50mm 933. 0.50mm 934. 0.50mm 935. 0.50mm 936. 0.50mm 937. 0.50mm 938. 0.50mm 939. 0.50mm 940. 0.50mm 941. 0.50mm 942. 0.50mm 943. 0.50mm 944. 0.50mm 945. 0.50mm 946. 0.50mm 947. 0.50mm 948. 0.50mm 949. 0.50mm 950. 0.50mm 951. 0.50mm 952. 0.50mm 953. 0.50mm 954. 0.50mm 955. 0.50mm 956. 0.50mm 957. 0.50mm 958. 0.50mm 959. 0.50mm 960. 0.50mm 961. 0.50mm 962. 0.50mm 963. 0.50mm 964. 0.50mm 965. 0.50mm 966. 0.50mm 967. 0