

SPECIFICATION

SHEET FOR APPROVAL

(Revision: R: A1)

CUSTOMER	Tozed Kangwei Tech Co., Ltd
CS P/N	X100-PRO
PART NAME	FPC ANT
FREQUENCY	700~960MHz/1700~1980MHz/2000~2700MHz/ 3300~3980MHz/4000~4200MHz
ZTX NO.	2.00006349
DATE	2023-11-09

CUSTOMER			
QA CHECKED	ME CHECKED	RF CHECKED	MANAGER CHECKED

Remark:

Sign:

Shenzhen ZTX Communication Technology Co., Ltd				
MANAGER CHECKED	MANAGER CHECKED	ME CHECKED	RF CHECKED	LISTER
		Liping Liu	Zefeng Jiang	



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ANTENNA SPECIFICATION

CUS P/N :X10-PRO_FPC ANT
ZTX P/N :X10-PRO_FPC ANT

ApplicationDate:Nov,09,2023
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Revision history

Version	Date	Description
A1	2023-11-09	Original Report.

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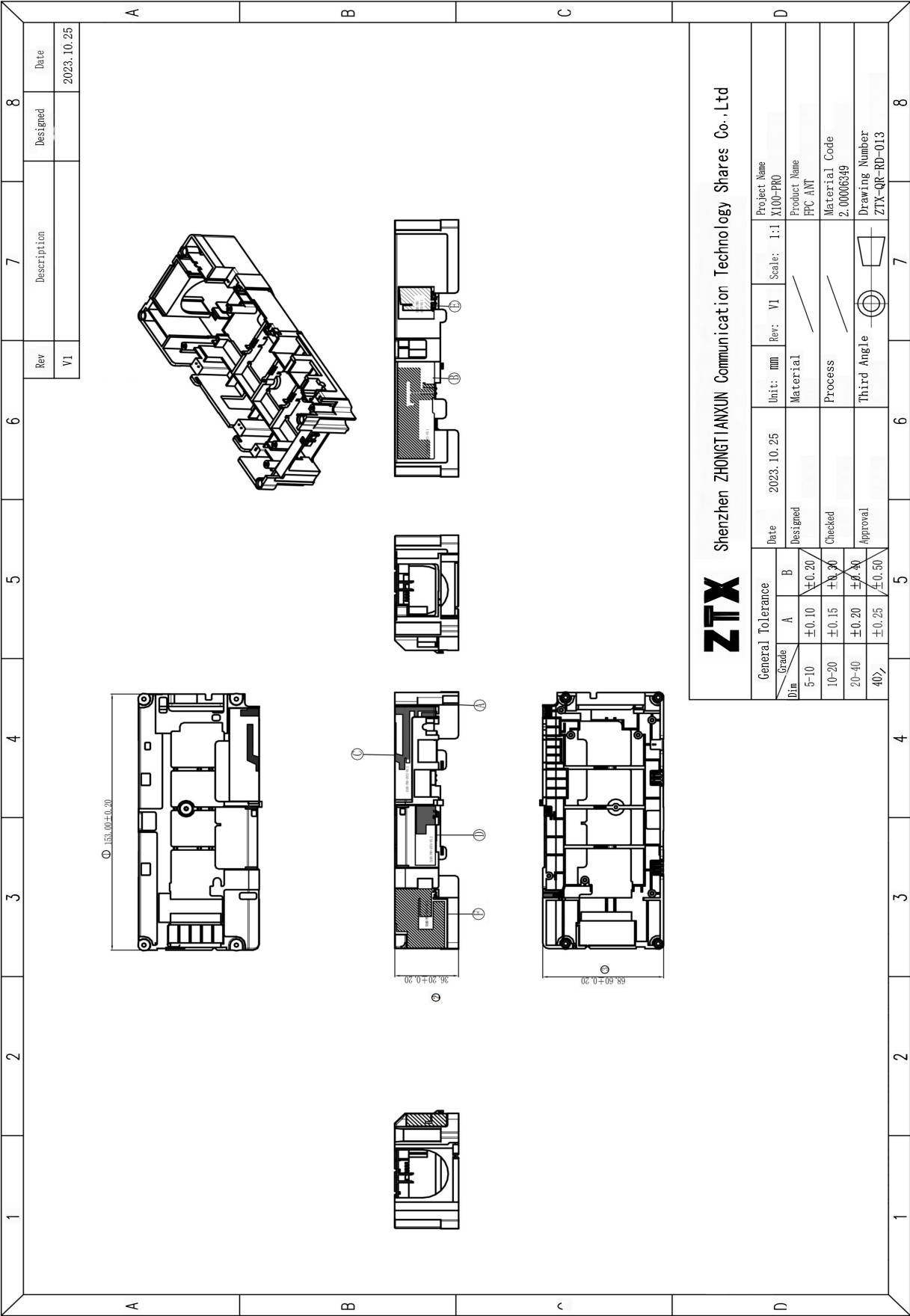
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1. Mechanical Specification
1-1 Mechanical Configuration (FPC ANT)



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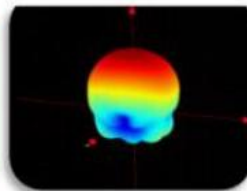
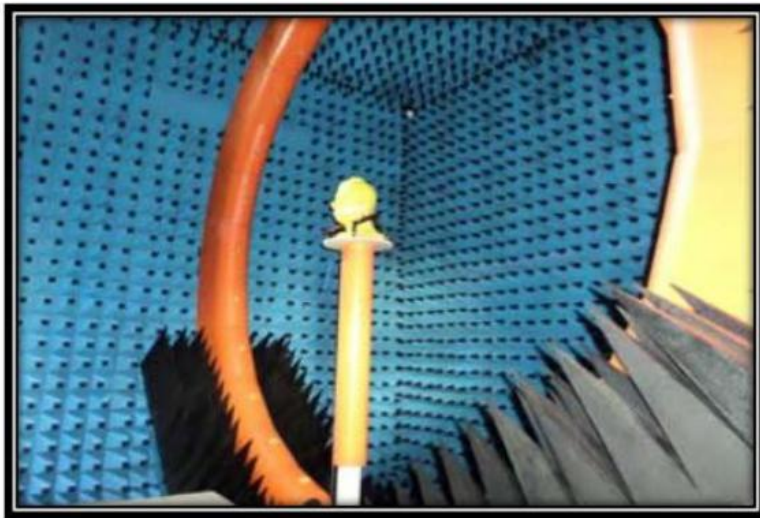
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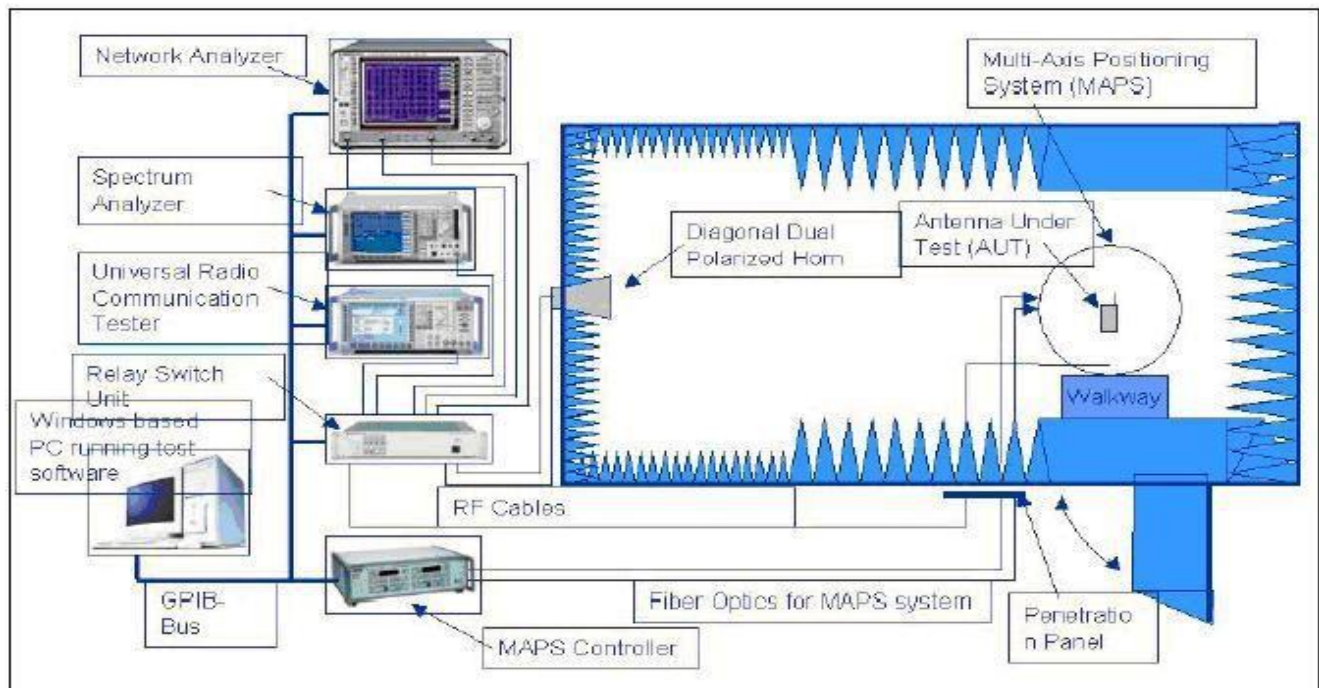
2.Test equipment



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 CTIA 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.



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2-2 Passive Test

Ant1

Frequency	Efficiency	Efficiency _ dB	Gain _ dB	Frequency	Efficiency	Efficiency _ dB	Gain _ dB	Frequency	Efficiency	Efficiency _ dB	Gain _ dB
700000000	16%	-8.055671434	-2.980325219	1700000000	33%	-4.798131075	2.11908517	2260000000	53%	-2.763388875	4.523964289
710000000	16%	-7.825857962	-2.918172891	1710000000	33%	-4.850831475	2.182923852	2280000000	51%	-2.931110414	4.116037176
720000000	17%	-7.722281695	-2.572858165	1720000000	35%	-4.548266568	2.476391966	2300000000	54%	-2.687819054	4.351416353
730000000	18%	-7.522044983	-2.195354621	1740000000	39%	-4.087211103	3.130818785	2320000000	53%	-2.773304197	4.113617173
740000000	26%	-5.823357581	-0.335331517	1760000000	42%	-3.756355249	3.221420765	2340000000	58%	-2.39788683	4.576693794
750000000	32%	-4.894967956	0.665655115	1780000000	49%	-3.13697233	3.468471344	2360000000	62%	-2.06277368	4.229223442
760000000	34%	-4.68045124	0.504475597	1800000000	56%	-2.502298352	4.253728005	2380000000	54%	-2.642747215	4.497424132
770000000	32%	-4.889709872	-0.165178511	1820000000	59%	-2.288523664	4.432622691	2400000000	51%	-2.905090133	4.337718478
780000000	29%	-5.338016135	-1.012136322	1840000000	57%	-2.444201492	4.527237017	2420000000	53%	-2.725687248	4.339490638
791000000	27%	-5.647871406	-1.460527225	1860000000	59%	-2.306533131	4.323680409	2440000000	53%	-2.724152548	4.192775273
800000000	27%	-5.737112402	-1.281571467	1880000000	62%	-2.053640674	5.207551261	2460000000	53%	-2.77656378	3.681265532
810000000	28%	-5.492360623	-1.007839319	1900000000	60%	-2.197915093	4.957750451	2480000000	55%	-2.575266843	3.793525307
820000000	28%	-5.519027239	-1.00395041	1920000000	65%	-1.89598475	5.025120968	2500000000	59%	-2.268464273	3.116561309
824000000	31%	-5.10279811	-0.589019252	1940000000	70%	-1.547072402	5.658040046	2520000000	54%	-2.691122058	3.040306115
830000000	29%	-5.41638068	-1.023788844	1960000000	70%	-1.572815017	5.618564851	2540000000	52%	-2.805876114	3.205122212
840000000	29%	-5.346928769	-1.079276162	1980000000	71%	-1.511015688	5.537053821	2560000000	56%	-2.547401784	3.137052259
850000000	33%	-4.769837341	-0.803361524	2000000000	73%	-1.396535029	5.528810169	2580000000	53%	-2.564534638	3.277565542
860000000	39%	-4.048377883	-0.328926256	2020000000	69%	-1.612165271	5.449594849	2600000000	55%	-2.592888311	3.22692742
870000000	46%	-3.404857803	0.112722512	2040000000	73%	-1.369804063	5.760763751	2620000000	58%	-2.336373123	3.396676153
880000000	46%	-3.383434244	-0.113857789	2060000000	74%	-1.292325241	5.721146551	2640000000	59%	-2.312010408	3.270705058
890000000	44%	-3.519587413	-0.350536688	2080000000	74%	-1.314325017	5.920946474	2660000000	58%	-2.328762854	3.180706304
894000000	42%	-3.722250935	-0.593493985	2100000000	77%	-1.149685251	5.960624635	2680000000	53%	-2.742775744	3.197129668
900000000	41%	-3.849860028	-0.258577026	2120000000	72%	-1.437871199	5.681175766	2690000000	52%	-2.868675215	3.137891131
910000000	39%	-4.050951705	0.043011774	2140000000	67%	-1.768079513	5.336879066	2700000000	50%	-3.019554037	2.61553263
920000000	37%	-4.353395779	0.054442681	2160000000	66%	-1.815049207	5.492967533				
930000000	36%	-4.393415292	0.215270396	2180000000	67%	-1.747396179	5.654808371				
940000000	39%	-4.038667457	0.593493985	2200000000	63%	-2.027870448	4.99101834				
950000000	44%	-3.551925088	0.602109084	2220000000	62%	-2.065280194	5.224977202				
960000000	42%	-3.763682573	0.769461625	2240000000	59%	-2.280071113	5.187845526				

Ant2

Frequency	Efficiency	Efficiency _ dB	Gain _ dB	Frequency	Efficiency	Efficiency _ dB	Gain _ dB	Frequency	Efficiency	Efficiency _ dB	Gain _ dB
700000000	42%	-3.78341336	0.96070987	1820000000	28%	-5.561150233	0.228015527	2320000000	33%	-4.754106662	-0.018252544
710000000	34%	-4.713428119	0.355427593	1830000000	31%	-5.141428707	0.348504663	2330000000	32%	-4.975625573	0.001729326
720000000	28%	-5.454238068	0.053166546	1840000000	34%	-4.687558667	0.718675375	2340000000	34%	-4.705478752	0.499828074
730000000	25%	-6.076543893	-0.334291428	1850000000	39%	-4.047359338	1.411224246	2350000000	36%	-4.469772555	0.98401469
740000000	23%	-6.319061593	-0.738295734	1860000000	39%	-4.124629869	1.312137008	2360000000	40%	-4.006636394	1.788594365
750000000	26%	-5.88357592	-0.452043921	1870000000	41%	-3.876164907	1.397475243	2370000000	42%	-3.731836285	2.142138574
760000000	29%	-5.318209173	-0.057449512	1880000000	40%	-3.991548781	1.007650018	2380000000	41%	-3.863094438	2.064944506
770000000	35%	-4.553570835	0.562204182	1890000000	40%	-4.011821901	0.770487249	2390000000	38%	-4.164260232	1.277762532
780000000	39%	-4.058651598	1.134297848	1900000000	41%	-3.853243786	0.979625344	2400000000	40%	-4.006658209	1.452271223
790000000	44%	-3.571167785	1.601781607	1910000000	39%	-4.050036915	0.887725651	2410000000	40%	-3.959292797	1.323230863
800000000	49%	-3.121846968	2.36418581	1920000000	40%	-3.931502019	1.124738812	2420000000	39%	-4.078885554	0.715254068
810000000	51%	-2.921266859	2.801187754	1930000000	40%	-4.020467852	1.362635374	2430000000	42%	-3.732752076	1.573311925
820000000	48%	-3.145473336	2.646394014	1940000000	43%	-3.659209374	2.102366924	2440000000	46%	-3.40358647	2.23537302
830000000	43%	-3.708436362	2.172838211	1950000000	45%	-3.507429708	2.598506333	2450000000	43%	-3.64614374	1.39270854
840000000	37%	-4.369125849	1.464515448	1960000000	47%	-3.268422505	3.116697788	2460000000	43%	-3.626436421	0.958911823
850000000	31%	-5.069244057	-0.301877648	1970000000	51%	-2.938681719	3.747850862	2470000000	43%	-3.623310289	1.420681357
860000000	31%	-5.056024522	-1.296374295	1980000000	52%	-2.808094875	4.154625416	2480000000	46%	-3.356934633	1.933259249
870000000	33%	-4.779752306	-0.850777149	1990000000	55%	-2.587827289	4.537495136	2490000000	45%	-3.421232472	1.062737942
880000000	36%	-4.452438624	-0.462342829	2000000000	58%	-2.397897532	4.884944439	2500000000	49%	-3.123789961	1.403353691
890000000	37%	-4.29621965	-0.305121988	2010000000	57%	-2.441731096	4.78714323	2510000000	50%	-3.035941782	1.547827601
900000000	39%	-4.055574516	0.031490039	2020000000	56%	-2.530404245	4.741445541	2520000000	52%	-2.837690848	2.057010889
910000000	39%	-4.037025851	0.205550924	2030000000	54%	-2.686901351	4.456976891	2530000000	53%	-2.764730991	2.140052557
920000000	42%	-3.802535932	0.764318645	2040000000	58%	-2.33313271	4.930392742	2540000000	52%	-2.822920955	2.149046183
930000000	45%	-3.468163184	1.05752933	2050000000	57%	-2.424284415	4.90732897	2550000000	55%	-2.61933847	2.462204218
940000000	49%	-3.088731996	1.39471519	2060000000	55%	-2.569267155	4.606140137	2560000000	54%	-2.663156656	2.499379635
950000000	45%	-3.46209992	1.121002316	2070000000	50%	-3.021059315	3.975420475	2570000000	55%	-2.565141437	2.75297451
960000000	35%	-4.557557523	0.200577751	2080000000	48%	-3.200479716	3.587771654	2580000000	56%	-2.554940057	2.995498657
1700000000	6%	-12.38207893	-6.924715996	2090000000	51%	-2.956608173	3.785924196	2590000000	53%	-2.765747788	2.815021753
1710000000	7%	-11.41368338	-6.153796196	2100000000	49%	-3.085932919	3.78193903	2600000000	53%	-2.721789033	2.713151217
1720000000	7%	-11.37230102	-6.180912495	2110000000	50%	-3.02352736	4.130569458	2610000000	52%	-2.864814024	2.548974514
1730000000	8%	-11.17356127	-6.191573143	2120000000	45%	-3.422278032	3.728354692	2620000000	54%	-2.686026326	2.863609791
1740000000	7%	-11.56480586	-6.694630623	2130000000	45%	-3.429493679	3.637181282	2630000000	55%	-2.593492152	2.989106655
1750000000	8%	-11.12243342	-6.359650135	2140000000	43%	-3.710900879	3.249597311	2640000000	55%	-2.598902571	2.987035275
1760000000	10%	-10.20937743	-5.334553242	2150000000	41%	-3.875942152	2.936697483	2650000000	54%	-2.658188368	3.019677639
1770000000	11%	-9.48486185	-4.254079342	2160000000	41%	-3.823730282	2.956196785	2660000000	54%	-2.699912007	3.008767128
1780000000	14%	-8.403975808	-2.654300213	2170000000	41%	-3.875411691	3.016030312	2670000000	51%	-2.88903728	2.779671669
1790000000	17%	-7.791680758	-1.761171699	2300000000	35%	-4.54217006	0.85643959	2680000000	50%	-3.047578157	2.716106176
1800000000	22%	-6.562791996	-0.534431934	2310000000	33%	-4.773812253	0.237382889	2690000000	49%	-3.070817289	2.764563084
1810000000	25%	-5.947073928	0.057527315					2700000000	47%	-3.237038046	2.675069332

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Ant4

Frequency	Efficiency	Efficiency . dB	Gain . dB	Frequency	Efficiency	Efficiency . dB	Gain . dB	Frequency	Efficiency	Efficiency . dB	Gain . dB
1700000000	8%	-10.71498427	-3.18027217	2340000000	54%	-2.704076143	4.316086094	3560000000	22%	-6.515935933	-1.318368758
1710000000	8%	-10.79179561	-3.356685262	2360000000	57%	-2.450295114	4.056206134	3580000000	22%	-6.520689632	-1.250177953
1720000000	9%	-10.40156533	-2.917578049	2380000000	54%	-2.67838317	3.348303361	3600000000	23%	-6.337167827	-0.614342848
1740000000	10%	-9.962451716	-2.417296167	2400000000	55%	-2.618981159	3.538589326	3620000000	23%	-6.328449001	-0.303659914
1760000000	10%	-10.0563308	-2.488927473	2420000000	55%	-2.586388916	3.900648824	3640000000	23%	-6.422898612	-0.245873811
1780000000	11%	-9.528869594	-1.871523203	2440000000	55%	-2.563354021	3.132379729	3660000000	24%	-6.114214924	0.251865128
1800000000	11%	-9.569157698	-1.918039879	2460000000	55%	-2.611188019	3.812710448	3680000000	24%	-6.250890117	0.349197945
1820000000	12%	-9.234180559	-1.385868386	2480000000	55%	-2.603042903	3.238779223	3700000000	24%	-6.191632037	0.206051336
1840000000	11%	-9.579607709	-1.783740389	2500000000	57%	-2.420700132	3.801062057	3720000000	26%	-5.919696448	0.312493177
1860000000	13%	-8.820066338	-1.431289874	2520000000	56%	-2.499562504	3.428674272	3740000000	25%	-6.014847974	-0.058050657
1880000000	15%	-8.133846629	-1.773674334	2540000000	54%	-2.713494379	3.292059174	3760000000	24%	-6.247647114	-0.34642288
1900000000	17%	-7.635261082	-1.843511235	2560000000	52%	-2.805529297	3.673241698	3780000000	23%	-6.425702028	-0.369837034
1920000000	21%	-6.693012964	-0.476462076	2580000000	50%	-2.996728994	4.09639698	3800000000	22%	-6.569115109	-0.535188239
1940000000	24%	-6.180756017	0.285605131	2600000000	48%	-3.181488045	4.129172371	3820000000	20%	-6.961031288	-0.799254615
1960000000	26%	-5.875067647	0.758941487	2620000000	50%	-3.040205228	4.372663653	3840000000	20%	-6.943039311	-0.75721634
1980000000	28%	-5.596554219	1.249983058	2640000000	50%	-3.001917841	4.811990973	3860000000	22%	-6.578976333	-0.567470824
2000000000	30%	-5.159315374	1.81013006	2660000000	50%	-3.028174006	4.68709815	3880000000	21%	-6.676253644	-0.648057455
2020000000	29%	-5.388069469	1.152713254	2680000000	45%	-3.43948523	3.536110995	3900000000	20%	-6.893115532	-0.725923712
2040000000	32%	-4.968600283	1.874886418	2690000000	45%	-3.484099572	3.606804625	3920000000	20%	-6.944623892	-0.645840161
2060000000	36%	-4.465605889	2.091829419	2700000000	42%	-3.739493064	3.350822872	3940000000	21%	-6.691146352	-0.504639911
2080000000	36%	-4.393166872	2.48400831	3300000000	24%	-6.168844794	0.42856136	3960000000	19%	-7.204919482	-1.180706785
2100000000	42%	-3.729070177	3.131328922	3320000000	26%	-5.890018277	0.549806959	3980000000	21%	-6.854948395	-0.981846141
2120000000	45%	-3.510369426	3.560307492	3340000000	28%	-5.576303525	0.774089099	4000000000	23%	-6.424316427	-0.49132118
2140000000	46%	-3.342343121	3.632081973	3360000000	25%	-6.055048332	-0.01044083	4020000000	21%	-6.682198383	-0.656199455
2160000000	47%	-3.26944223	3.620489932	3380000000	25%	-6.041252597	-0.015428192	4040000000	22%	-6.543771975	-0.604210563
2180000000	50%	-3.032718422	3.957924633	3400000000	26%	-5.900427623	0.114821168	4060000000	22%	-6.519930821	-0.470379033
2200000000	49%	-3.068607625	3.917320114	3420000000	25%	-6.010075449	-0.122162864	4080000000	23%	-6.419561057	-0.218882107
2220000000	47%	-3.288646216	3.434895699	3440000000	24%	-6.142508975	-0.115492557	4100000000	21%	-6.765112294	-0.488774336
2240000000	48%	-3.164533259	3.637046457	3460000000	26%	-5.924372132	0.173334542	4120000000	24%	-6.19454112	0.188277084
2260000000	48%	-3.228431281	2.929591366	3480000000	26%	-5.931063068	0.092881096	4140000000	24%	-6.159859166	0.631175582
2280000000	50%	-3.034325208	2.335178493	3500000000	23%	-6.322087165	-0.515705592	4160000000	23%	-6.300123583	0.473810092
2300000000	52%	-2.854233925	3.850804877	3520000000	24%	-6.257126887	-0.890519369	4180000000	24%	-6.139988688	0.625313272
2320000000	51%	-2.912676162	4.359235904	3540000000	23%	-6.373441226	-1.278520868	4200000000	24%	-6.213403028	0.435013985

Ant5

Frequency	Efficiency	Efficiency . dB	Gain . dB	Frequency	Efficiency	Efficiency . dB	Gain . dB	Frequency	Efficiency	Efficiency . dB	Gain . dB
1700000000	46%	-3.370933135	2.128774643	2360000000	61%	-2.167679878	4.185796261	3600000000	46%	-3.327609201	2.736373663
1720000000	50%	-3.017705771	2.746666431	2380000000	56%	-2.480434704	3.86931777	3620000000	47%	-3.323287858	2.825836897
1740000000	48%	-3.193819115	2.552344561	2400000000	59%	-2.297017938	3.755278826	3640000000	48%	-3.162622492	2.860674958
1760000000	53%	-2.78952922	2.691786435	2420000000	57%	-2.457411664	3.515289307	3660000000	45%	-3.425133119	2.72250104
1780000000	53%	-2.762987139	2.760516405	2440000000	57%	-2.431259663	4.16326046	3680000000	43%	-3.620871602	2.524174213
1800000000	56%	-2.552465785	2.991975546	2460000000	59%	-2.270231936	4.412367821	3700000000	44%	-3.529388524	2.483219862
1820000000	53%	-2.745775528	2.732787132	2480000000	60%	-2.247396568	4.289338589	3720000000	44%	-3.579246998	2.574476004
1840000000	52%	-2.808228797	2.559120655	2500000000	60%	-2.226634371	4.666599151	3740000000	40%	-3.94694255	1.991868019
1860000000	53%	-2.760568427	2.476031065	2520000000	59%	-2.317389211	4.754983425	3760000000	39%	-4.104654728	1.928835392
1880000000	54%	-2.647127718	2.400437593	2540000000	56%	-2.546837863	3.982445717	3780000000	37%	-4.281871904	1.883222222
1900000000	58%	-2.338472049	2.699207306	2560000000	53%	-2.763800523	3.747807741	3800000000	32%	-4.89146384	1.691272378
1920000000	59%	-2.292790368	2.594039679	2580000000	51%	-2.889345591	3.977211952	3820000000	33%	-4.76933622	2.161936283
1940000000	61%	-2.155088207	2.869086266	2600000000	50%	-3.042958779	3.288057346	3840000000	34%	-4.719853823	2.736457348
1960000000	60%	-2.188414257	2.46872592	2620000000	53%	-2.764118484	3.400241375	3860000000	35%	-4.555097463	3.551747799
1980000000	61%	-2.167593316	2.367059231	2640000000	53%	-2.716475031	3.609389067	3880000000	36%	-4.385511526	4.084810257
2000000000	62%	-2.059006481	2.280061483	2660000000	56%	-2.53163424	3.375946045	3900000000	39%	-4.128211685	4.508470058
2020000000	62%	-2.052257882	2.332581043	2680000000	50%	-2.976189201	2.614844322	3920000000	39%	-4.098421979	4.736089706
2040000000	64%	-1.914192884	2.622662783	2700000000	49%	-3.122978548	2.710770607	3940000000	39%	-4.070287843	4.705967903
2060000000	62%	-2.044950148	2.526226897	3300000000	48%	-3.187824748	3.300483704	3960000000	39%	-4.089703564	4.570958614
2080000000	65%	-1.844816377	2.985342741	3320000000	49%	-3.101814031	3.181505919	3980000000	38%	-4.164468227	4.491399288
2100000000	64%	-1.909229282	2.511776447	3340000000	51%	-2.952412971	2.940465689	4000000000	38%	-4.252204445	4.335598946
2120000000	63%	-1.997871925	2.558312178	3360000000	48%	-3.184370427	2.790491819	4020000000	37%	-4.359406886	4.004586697
2140000000	59%	-2.314891331	2.854718447	3380000000	48%	-3.172234046	2.585380554	4040000000	38%	-4.246362662	3.893725872
2160000000	60%	-2.203987801	3.384294033	3400000000	50%	-3.011053563	2.34756279	4060000000	35%	-4.542509684	3.342132568
2180000000	59%	-2.309011257	3.970664024	3420000000	50%	-3.034739196	1.958532929	4080000000	35%	-4.55436788	3.202169657
2200000000	60%	-2.242136734	4.153002739	3440000000	49%	-3.133974997	1.893466353	4100000000	35%	-4.581028892	3.144481421
2220000000	57%	-2.410553222	3.53780961	3460000000	50%	-3.006272415	2.293986082	4120000000	32%	-4.893485815	2.706523418
2240000000	59%	-2.257995466	3.448411226	3480000000	50%	-3.046864915	2.14740634	4140000000	33%	-4.859314521	2.57958889
2260000000	59%	-2.307206682	3.482103825	3500000000	49%	-3.111931965	2.308245659	4160000000	32%	-4.889316723	2.317742586
2280000000	59%	-2.304036673	3.96261096	3520000000	49%	-3.06220507	2.740078688	4180000000	31%	-5.055045744	2.174581528
2300000000	59%	-2.314928385	4.453108788	3540000000	48%	-3.22123412	2.646728992	4200000000	30%	-5.246328907	1.80749917
2320000000	55%	-2.60822659	3.884926319	3560000000	47%	-3.246736628	2.556113005				
2340000000	61%	-2.124021957	4.09116888	3580000000	47%	-3.264440467	2.711523056				

ANTENNA SPECIFICATION

CUS P/N :X100-PRO_FPC ANT

ApplicationDate:Nov,09,2023

Rev: R:A1

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Frequency	Efficiency	Efficiency . dB	Gain . dB	Frequency	Efficiency	Efficiency . dB	Gain . dB	Frequency	Efficiency	Efficiency . dB	Gain . dB
700000000	10%	-10.19405282	-4.832036855	1820000000	50%	-2.983276979	0.787178973	2340000000	58%	-2.340196395	1.170607444
710000000	16%	-7.888628633	-2.959336221	1830000000	48%	-3.200015749	0.475558986	2350000000	61%	-2.151688256	1.422690172
720000000	28%	-5.488064709	-0.402124248	1840000000	46%	-3.338869975	0.268449091	2360000000	60%	-2.217461664	1.757150236
730000000	38%	-4.221322609	1.396169546	1850000000	44%	-3.560641195	-0.007432705	2370000000	60%	-2.196835716	1.89579356
740000000	42%	-3.758954972	2.315746456	1860000000	44%	-3.548119169	0.078737179	2380000000	57%	-2.474286365	1.610011051
750000000	42%	-3.717703874	2.471849253	1870000000	43%	-3.696719838	0.131696068	2390000000	56%	-2.496624493	2.171669331
760000000	40%	-3.999652279	2.12027608	1880000000	42%	-3.733231825	0.179648659	2400000000	57%	-2.444329307	2.594586056
770000000	38%	-4.174304672	1.963869561	1890000000	39%	-4.09015625	-0.16692576	2410000000	54%	-2.695830248	2.190656903
780000000	35%	-4.531088641	1.610287577	1900000000	38%	-4.223766008	-0.261841962	2420000000	55%	-2.575125806	2.329910944
790000000	33%	-4.864743528	1.367331996	1910000000	38%	-4.173501134	-0.216517664	2430000000	54%	-2.669934754	2.398087043
800000000	31%	-5.04933349	1.702709453	1920000000	37%	-4.334526574	-0.376118627	2440000000	56%	-2.524108477	2.626064302
810000000	32%	-4.890610468	1.985611693	1930000000	37%	-4.281925698	-0.289073824	2450000000	55%	-2.565309663	2.806117219
820000000	36%	-4.454216075	2.206276295	1940000000	34%	-4.677057133	-0.58402055	2460000000	58%	-2.364081331	2.971774805
830000000	41%	-3.91300079	2.309546211	1950000000	34%	-4.667916208	-0.57877879	2470000000	54%	-2.646999861	2.466388461
840000000	44%	-3.52405539	2.35583975	1960000000	32%	-4.902895623	-0.791437003	2480000000	54%	-2.671534119	2.30787442
850000000	44%	-3.541906396	2.04552905	1970000000	33%	-4.753749756	-0.525998122	2490000000	55%	-2.609917251	2.108068171
860000000	42%	-3.758165192	1.850240071	1980000000	33%	-4.880518724	-0.705598046	2500000000	55%	-2.623482539	2.20808712
870000000	39%	-4.046112982	1.830122748	1990000000	32%	-5.004158483	-0.852157423	2510000000	56%	-2.500866808	2.300213269
880000000	34%	-4.739458314	1.054944821	2000000000	34%	-4.639574347	-0.289695552	2520000000	55%	-2.590149806	1.769422182
890000000	29%	-5.32614554	0.35741113	2010000000	32%	-5.002610455	-0.798000212	2530000000	54%	-2.645420448	1.634006065
900000000	25%	-6.051576641	-0.191107033	2020000000	30%	-5.252252937	-1.342368604	2540000000	54%	-2.699375108	1.604046278
910000000	22%	-6.629255687	-0.827474054	2030000000	26%	-5.881444113	-1.576251938	2550000000	54%	-2.664004961	1.574469579
920000000	19%	-7.117784341	-2.15985583	2040000000	28%	-5.467257783	-1.087337405	2560000000	55%	-2.59762782	2.104770338
930000000	18%	-7.333062037	-3.290187873	2050000000	30%	-5.193411946	-0.90315953	2570000000	54%	-2.709699149	1.930715137
940000000	19%	-7.17296312	-3.760317292	2060000000	31%	-5.064750334	-0.674850402	2580000000	54%	-2.650786869	1.699289565
950000000	22%	-6.561905362	-3.25757187	2070000000	30%	-5.250018699	-0.651354716	2590000000	54%	-2.663824271	1.885231359
960000000	25%	-6.010961207	-2.840466616	2080000000	27%	-5.625323975	-0.926866417	2600000000	52%	-2.815326902	1.874333357
1700000000	42%	-3.803457119	0.202905756	2090000000	30%	-5.22892025	-0.916249447	2610000000	50%	-2.992070755	1.762407754
1710000000	42%	-3.717652329	0.302188086	2100000000	30%	-5.169797708	-1.034625505	2620000000	49%	-3.07272781	1.965851811
1720000000	44%	-3.577061907	0.188223461	2110000000	32%	-4.887363688	-0.961196218	2630000000	50%	-3.012046728	2.170329441
1730000000	44%	-3.558907574	0.090837585	2120000000	32%	-4.943778293	-0.887546837	2640000000	49%	-3.135477018	2.408859731
1740000000	44%	-3.520673011	0.339736016	2130000000	34%	-4.745404052	-0.517358932	2650000000	49%	-3.117969224	2.398859395
1750000000	45%	-3.462946025	0.560508705	2140000000	34%	-4.680123709	-0.636718915	2660000000	47%	-3.307448533	2.324947949
1760000000	45%	-3.450116303	0.640532704	2150000000	33%	-4.832691529	-0.831350665	2670000000	43%	-3.632608884	2.026173762
1770000000	45%	-3.426575089	0.922248515	2160000000	34%	-4.654064383	-0.705440076	2680000000	41%	-3.889501792	1.526556792
1780000000	47%	-3.289937202	1.126480602	2170000000	34%	-4.713695146	-0.793939148	2690000000	42%	-3.782005672	1.371606686
1790000000	49%	-3.109013776	1.029989998	2300000000	52%	-2.839244259	1.336508294	2700000000	44%	-3.609530248	1.255569825
1800000000	49%	-3.070798612	0.741778583	2310000000	53%	-2.773699963	0.7421297				
1810000000	50%	-2.96959125	0.784639559	2320000000	55%	-2.635358767	0.800778588				
				2330000000	56%	-2.53692508	0.974366352				