

Supporting Information

Frequency Selective Surface Integrated Self-Isolated Four element MIMO Antenna for 5G mmWave Applications

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Table S1. Port-to-Port S-parameter values

Frequency (GHz)	S11 (dB)	S21 (dB)	S31 (dB)	S41 (dB)
20.000000000000	-6.2426988864347	-25.496752361269	-29.313228769122	-24.492044807672
20.017999649048	-6.2522675684118	-25.541276146276	-29.288864859953	-24.515394225140
20.035999298096	-6.2611510551068	-25.588609604138	-29.263456288442	-24.541294010228
20.054000854492	-6.2694024620740	-25.638670864602	-29.237040647125	-24.569668317467
20.072000503540	-6.2770775690331	-25.691375573595	-29.209659725068	-24.600440579094
20.090000152588	-6.2842306796971	-25.746630103611	-29.181364686238	-24.633532811814
20.107999801636	-6.2909216446890	-25.804338068785	-29.152209437378	-24.668860862497
20.125999450684	-6.2972058215547	-25.864394284705	-29.122256262521	-24.706338299938
20.143999099731	-6.3031419735637	-25.926690969724	-29.091568788664	-24.745872502743
20.162000656128	-6.3087892823746	-25.991108857073	-29.060219713553	-24.787365845520
20.180000305176	-6.3142010264894	-26.057525809992	-29.028283551340	-24.830719238979
20.197999954224	-6.3194347385710	-26.125806788570	-28.995842676426	-24.875826728482
20.215999603271	-6.3245441320700	-26.195818158937	-28.962982416374	-24.922577357526
20.233999252319	-6.3295808342722	-26.267409405600	-28.929791498169	-24.970857232104
20.252000808716	-6.3345964326941	-26.340427248882	-28.896363972439	-25.020547482267
20.270000457764	-6.3396366880086	-26.414709108657	-28.862796122829	-25.071523653103
20.288000106812	-6.3447476912376	-26.490085899632	-28.829190142372	-25.123656194901
20.305999755859	-6.3499724222225	-26.566375017321	-28.795647653490	-25.176811350155
20.323999404907	-6.3553496230196	-26.643392504356	-28.762274306345	-25.230852647344
20.341999053955	-6.3609171423106	-26.720944764243	-28.729176862304	-25.285636898352
20.360000610352	-6.3667073827522	-26.798828750118	-28.696467371586	-25.341015986610
20.378000259399	-6.3727507498740	-26.876835273817	-28.664254083393	-25.396842788938
20.395999908447	-6.3790739687930	-26.954753167841	-28.632651054572	-25.452961330940
20.413999557495	-6.3857018455008	-27.032357402900	-28.601770821905	-25.509214162650
20.431999206543	-6.3926535179285	-27.109423250818	-28.571726368681	-25.565442698914
20.450000762939	-6.3999477322946	-27.185723844458	-28.542633585997	-25.621485473468
20.468000411987	-6.4075978893903	-27.261024904108	-28.514604224957	-25.677178759365
20.486000061035	-6.4156154659067	-27.335093713156	-28.487751932747	-25.732358901781
20.503999710083	-6.4240093417743	-27.407696793061	-28.462191574852	-25.786860611923
20.521999359131	-6.4327837911133	-27.478604468474	-28.438034026927	-25.840523297673
20.540000915527	-6.4419423587920	-27.547586411914	-28.415390943065	-25.893183952519
20.558000564575	-6.4514848178351	-27.614421468998	-28.394375139597	-25.944683199759
20.576000213623	-6.4614092263411	-27.678894680592	-28.375093454255	-25.994868738051

20.593999862671	-6.4717120772875	-27.740800233831	-28.357655076102	-26.043587511271
20.611999511719	-6.4823856075296	-27.799945092774	-28.342166816890	-26.090697251855
20.629999160767	-6.4934245736805	-27.856146760912	-28.328735841702	-26.136059504167
20.648000717163	-6.5048170206519	-27.909240302722	-28.317465236923	-26.179546303100
20.666000366211	-6.5165526860517	-27.959079571604	-28.308455071862	-26.221035661347
20.684000015259	-6.5286202886167	-28.005534261766	-28.301806841019	-26.260417805344
20.701999664307	-6.5410059735719	-28.048498049661	-28.297621569682	-26.297593507556
20.719999313354	-6.5536974597405	-28.087884626254	-28.295994036277	-26.332476167689
20.738000869751	-6.5666820790597	-28.123632508145	-28.297018178493	-26.364990997075
20.756000518799	-6.5799427755050	-28.155702003259	-28.300790987158	-26.395077429465
20.774000167847	-6.5934669703412	-28.184080126666	-28.307402496349	-26.422687033028
20.791999816895	-6.6072430179285	-28.208777528649	-28.316940513654	-26.447789601569
20.809999465942	-6.6212561552499	-28.229827286370	-28.329495749200	-26.470365195227
20.827999114990	-6.6354925045487	-28.247292468461	-28.345150006833	-26.490412401049
20.846000671387	-6.6499449486608	-28.261253086356	-28.363990855301	-26.507942787880
20.864000320435	-6.6645992142654	-28.271814590860	-28.386097905895	-26.522983448866
20.881999969482	-6.6794462615781	-28.279100890021	-28.411549550737	-26.535574239620
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20.972000122070	-6.7564008295380	-28.272049437061	-28.591610702136	-26.564183415611
20.989999771118	-6.7723173651624	-28.263267169021	-28.638664872670	-26.563682983839
21.007999420166	-6.7884143226582	-28.252519766235	-28.689547693174	-26.561371145165
21.025999069214	-6.8046941088551	-28.240029314211	-28.744313304835	-26.557382691363
21.044000625610	-6.8211680624725	-28.226024285575	-28.803012190089	-26.551850903461
21.062000274658	-6.8378455610151	-28.210735790404	-28.865690695770	-26.544922683651
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21.097999572754	-6.8718622948754	-28.177223013292	-29.003139692469	-26.527466747432
21.115999221802	-6.8892302587172	-28.159451964523	-29.077969217421	-26.517245317304
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21.728000640869	-7.8144356828188	-28.348551059985	-32.670609777760	-26.568545326674
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22.340000152588	-9.7933463752249	-30.867976458346	-28.021189260055	-28.969513464644
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22.645999908447	-11.189528153024	-31.068549219276	-26.159472184006	-30.243039136020
22.663999557495	-11.284843633603	-31.025432752821	-26.089562212483	-30.280795277958
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22.700000762939	-11.481428140456	-30.923646873852	-25.962407863139	-30.338578129676
22.718000411987	-11.582882081118	-30.865587402507	-25.905089197743	-30.358326066227
22.736000061035	-11.686572541103	-30.803185775128	-25.851891973082	-30.371853782339
22.753999710083	-11.792598594696	-30.736774438143	-25.802776062970	-30.379114810996
22.771999359131	-11.901057209620	-30.666696351512	-25.757698397879	-30.380102418882
22.790000915527	-12.012049790920	-30.593293146691	-25.716620297115	-30.374847928847
22.808000564575	-12.125677872724	-30.516902980631	-25.679498723582	-30.363424002733
22.826000213623	-12.242042731836	-30.437857015085	-25.646290173097	-30.345934258226
22.843999862671	-12.361245077062	-30.356479972807	-25.616950717278	-30.322518733038
22.861999511719	-12.483386936368	-30.273084177164	-25.591436160760	-30.293352066246
22.879999160767	-12.608563665635	-30.187967614102	-25.569700792843	-30.258631235806
22.898000717163	-12.736877258691	-30.101415846549	-25.551697732979	-30.218579215867
22.916000366211	-12.868421234894	-30.013697544975	-25.537377326997	-30.173443126243
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22.951999664307	-13.141566723782	-29.835753370936	-25.519589811977	-30.068979027397
22.969999313354	-13.283340239932	-29.745981674363	-25.516018940988	-30.010210353884
22.988000869751	-13.428690537528	-29.655951319216	-25.515924404381	-29.947469179785
23.006000518799	-13.577688150192	-29.565842461469	-25.519249411167	-29.881049583993
23.024000167847	-13.730397243423	-29.475827199670	-25.525936200341	-29.811242081484
23.041999816895	-13.886872814158	-29.386051736166	-25.535922347358	-29.738336145306
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23.114000320435	-14.551136927222	-29.031828459111	-25.607533148373	-29.421260903621
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