Supplementary File

TABLE I: The attributes and corresponding levels of different products

Categories	Attributes	Levels
Smartphone	CPU	1GHz 1.2GHz 1.5GHz
	RAM	768MB 1GB 2GB
	Battery life	<3500mAh 4000mAh 4500mAh
Smart TV	Resolution	1280*768 1366*768 1920*1080
	Viewing angle	160 165 176
	Size	25inch 29inch 34inch
Smart router	Routing table type	Direct routing Static routing Dynamic routing
	Linear speed	1024 1280 1518
	Device throughput	<25Gbps 25Gbps∼40Gbps >40Gbps

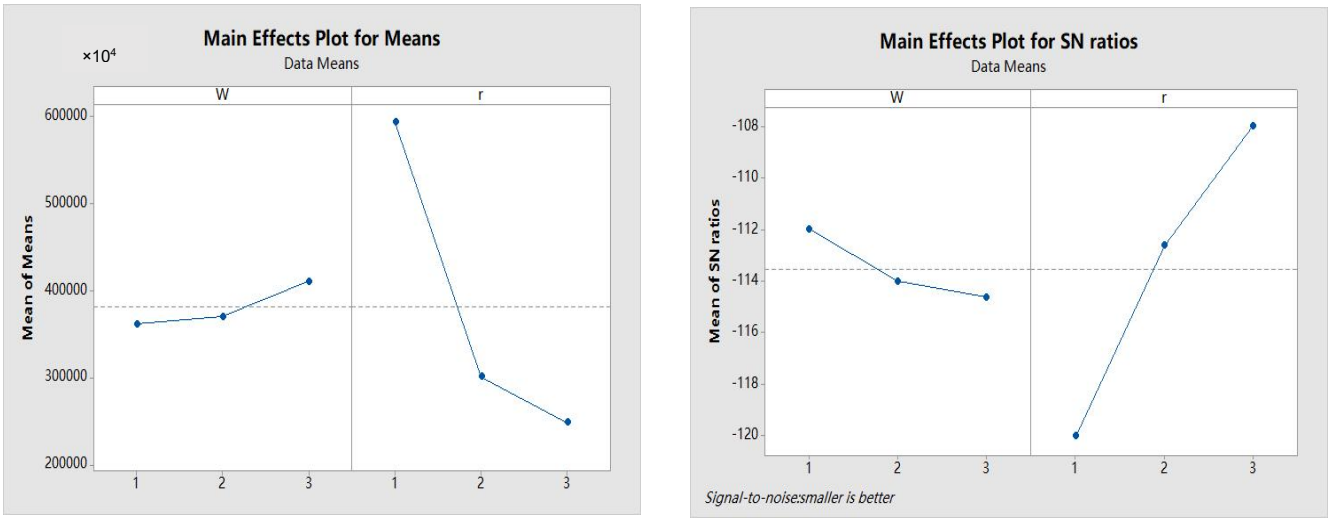

Fig. A: The diagram of the Taguchi experiment

TABLE II: Statistical t-test results from SPSS for samples of entries 1-6

Samples of the nth Entry	Algorithm	Samples Statistics			Pair	Paired Differences			T-Value	P-Value
		$Mean$ ($\times 10^4$)	Std. Deviation ($\times 10^4$)	Std. Error Mean ($\times 10^4$)		Mean ($\times 10^4$)	95% Confidence Interval($\times 10^4$)			
							Lower	Upper		
	HLCA	41500	39240	12408	1: HLCA - LCA	6880	95	13664	2.29	0.023
	LCA	34619	30776	9732	2: HLCA - GA	11300	3589	19011	3.32	0.004
1	GA	30199	29957	9473	3: LCA - GA	4420	1557	7283	3.49	0.003
	HLCA	151700	132483	41894	1: HLCA - LCA	17285	5192	29378	3.23	0.002
	LCA	134415	128368	40593	2: HLCA - GA	34711	16974	52448	4.42	0.001
2	GA	116988	120669	38158	3: LCA - GA	17426	5738	29114	3.37	0.004
	HLCA	334287	248952	78725	1: HLCA - LCA	34242	6040	62444	2.75	0.011
	LCA	300044	226624	71665	2: HLCA - GA	82340	27953	136727	3.43	0.004
3	GA	251946	195345	61773	3: LCA - GA	48097	8521	87673	2.75	0.011
	HLCA	350402	256228	81026	1: HLCA - LCA	40923	23476	58370	5.30	0.000
	LCA	309478	257428	81406	2: HLCA - GA	92961	66601	119320	7.97	0.000
4	GA	257441	231633	73248	3: LCA - GA	52037	29424	74649	5.21	0.000
	HLCA	147898	133537	42228	1: HLCA - LCA	13665	4052	23278	3.22	0.005
	LCA	134232	120993	38261	2: HLCA - GA	28931	10405	47457	3.53	0.003
5	GA	118966	108944	34451	3: LCA - GA	15266	4866	25665	3.32	0.004
	HLCA	349455	322588	102011	1: HLCA - LCA	33470	10422	56517	3.28	0.004
	LCA	315985	298651	94442	2: HLCA - GA	76756	3311	150201	2.36	0.021
6	GA	272699	234100	74029	3: LCA - GA	43286	-9350	95923	1.86	0.048

Note: Sample size of each pair N=10, degree of freedom df=9, significance level α=0.05

TABLE III: Statistical t-test results from SPSS for samples of entries 7-12

Samples of the nth Entry	Algorithm	Samples Statistics			Pair	Paired Differences			T-Value	P-Value
		$Mean$ ($\times 10^4$)	Std. Deviation ($\times 10^4$)	Std. Error Mean ($\times 10^4$)		Mean ($\times 10^4$)	95% Confidence Interval($\times 10^4$)			
							Lower	Upper		
	HLCA	478315	298969	94542	1: HLCA - LCA	41676	18545	64808	4.08	0.001
	LCA	436638	280951	88844	2: HLCA - GA	100888	58074	143701	5.33	0.000
7	GA	377426	254442	80461	3: LCA - GA	59211	27340	91082	4.20	0.001
	HLCA	460996	168049	53142	1: HLCA - LCA	43784	21985	65584	4.54	0.000
	LCA	417211	156082	49357	2: HLCA - GA	106208	63435	149281	5.57	0.000
8	GA	354787	132149	41789	3: LCA - GA	62423	32491	92355	4.72	0.000
	HLCA	351877	238704	75484	1: HLCA - LCA	56424	3839	109009	2.42	0.019
	LCA	295452	197945	62595	2: HLCA - GA	127746	12181	243310	2.50	0.017
9	GA	224131	130161	41160	3: LCA - GA	71321	-1403	144045	2.22	0.027
	HLCA	422834	222113	70238	1: HLCA - LCA	68796	15852	121740	3.00	0.008
	LCA	354037	175329	55444	2: HLCA - GA	134996	74624	195369	5.06	0.000
10	GA	287837	172899	54675	3: LCA - GA	66200	18934	113466	3.17	0.005
	HLCA	331399	292825	92599	1: HLCA - LCA	21711	6054	37369	3.14	0.006
	LCA	309687	283093	89522	2: HLCA - GA	93438	23221	163654	3.01	0.007
11	GA	237961	217131	68663	3: LCA - GA	71726	10555	132897	2.65	0.013
	HLCA	461578	378246	119612	1: HLCA - LCA	35360	9548	61172	3.10	0.006
	LCA	426217	366328	115843	2: HLCA - GA	142637	67237	218037	4.28	0.001
12	GA	318941	294328	93074	3: LCA - GA	107276	38590	175962	3.53	0.003

Note: Sample size of each pair N=10, degree of freedom df=9, significance level α=0.05

TABLE IV: Statistical t-test results from SPSS for samples of entries 13-18

Samples of the nth Entry	Algorithm	Samples Statistics			Pair	Paired Differences			T-Value	P-Value
		$Mean$ ($\times 10^4$)	Std. Deviation ($\times 10^4$)	Std. Error Mean ($\times 10^4$)		Mean ($\times 10^4$)	95% Confidence Interval($\times 10^4$)			
							Lower	Upper		
	HLCA	264072	153817	48641	1: HLCA - LCA	39003	10739	67267	3.12	0.006
	LCA	225068	143174	45275	2: HLCA - GA	78790	38459	119120	4.42	0.001
13	GA	185281	116550	36856	3: LCA - GA	39786	16688	62884	3.90	0.002
	HLCA	275004	235532	74481	1: HLCA - LCA	20342	2290	38393	2.55	0.015
	LCA	254662	216370	68422	2: HLCA - GA	74166	19023	129309	3.04	0.007
14	GA	200837	179178	56661	3: LCA - GA	53824	12908	94740	2.98	0.008
	HLCA	257985	120352	38058	1: HLCA - LCA	24226	1104	47347	2.37	0.021
	LCA	233759	129342	40901	2: HLCA - GA	73216	45275	101158	5.93	0.000
15	GA	184768	101051	31955	3: LCA - GA	48990	21302	76679	4.00	0.001
	HLCA	448223	186434	58955	1: HLCA - LCA	50192	19469	80915	3.70	0.002
	LCA	398030	152436	48204	2: HLCA - GA	109268	73412	145123	6.89	0.000
16	GA	338955	158027	49972	3: LCA - GA	59075	32595	85556	5.05	0.001
	HLCA	282029	138091	43668	1: HLCA - LCA	38047	14346	61749	3.60	0.002
	LCA	243981	133078	42083	2: HLCA - GA	79898	45106	114690	5.20	0.000
17	GA	202131	116217	36751	3: LCA - GA	41850	19821	63879	4.30	0.001
	HLCA	235644	67397	21312	1: HLCA - LCA	27636	418	54853	3.30	0.028
	LCA	208007	75845	23984	2: HLCA - GA	66548	35006	98089	4.77	0.000
18	GA	169096	74063	23420	3: LCA - GA	38911	26910	50912	7.33	0.000

Note: Sample size of each pair N=10, degree of freedom df=9, significance level α=0.05

TABLE V: Statistical t-test results from SPSS for samples of entries 19-24

Samples of the nth Entry	Algorithm	Samples Statistics			Pair	Paired Differences			T-Value	P-Value
		$Mean$ ($\times 10^4$)	Std. Deviation ($\times 10^4$)	Std. Error Mean ($\times 10^4$)		Mean ($\times 10^4$)	95% Confidence Interval($\times 10^4$)			
							Lower	Upper		
	HLCA	371994	88420	27960	1: HLCA - LCA	26960	10992	42927	3.82	0.002
	LCA	345033	84920	26854	2: HLCA - GA	85578	61780	109377	8.14	0.000
19	GA	286415	84840	26828	3: LCA - GA	58618	39179	78057	6.82	0.000
	HLCA	301295	209753	66329	1: HLCA - LCA	46892	7753	86031	2.71	0.012
	LCA	254403	180699	57142	2: HLCA - GA	94817	33436	156199	3.50	0.003
20	GA	206478	140485	44425	3: LCA - GA	47925	15863	79987	3.38	0.004
	HLCA	347650	234291	74089	1: HLCA - LCA	42765	11446	74083	3.09	0.007
	LCA	304885	212344	67149	2: HLCA - GA	94521	42616	146427	4.12	0.001
21	GA	253128	177254	56052	3: LCA - GA	51756	21018	82495	3.81	0.002
	HLCA	437210	209229	66164	1: HLCA - LCA	37898	11496	64299	3.25	0.005
	LCA	399312	178758	56528	2: HLCA - GA	101741	63311	140171	6.00	0.000
22	GA	335469	163200	51608	3: LCA - GA	63843	37274	90411	5.44	0.000
	HLCA	264981	116216	36750	1: HLCA - LCA	36456	19453	53459	4.85	0.000
	LCA	228525	103977	32880	2: HLCA - GA	75816	4227	109404	5.11	0.000
23	GA	189165	82106	25964	3: LCA - GA	39359	15056	63662	3.67	0.002
	HLCA	394796	146595	46357	1: HLCA - LCA	54310	27735	80886	4.62	0.000
	LCA	340485	129056	40811	2: HLCA - GA	119392	81869	156915	7.20	0.000
24	GA	275403	110257	34866	3: LCA - GA	65081	38397	91765	5.51	0.000

Note: Sample size of each pair N=10, degree of freedom df=9, significance level α=0.05