ENCRYPTION METRICS

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm							
Video Stream	v_ApplyEyeMakeup_g01_c01							
Resolution	240p							

Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC_h	CC_v	CC_d	Red	Green	Blue	Combined	NPCR	UACI
1	-0.0142134666	-0.0203943742	-0.0478492115	7.9974802710	7.9974899309	7.9976805874	7.9991420192	99.5720486111	33.2607060185
2	0.0009716324	0.0504127869	0.0007531266	7.9977716794	7.9975604033	7.9976472979	7.9992499366	99.5850694444	33.2124523420
3	-0.0044720125	0.0279081551	-0.0590885225	7.9973931178	7.9952668142	7.9973458651	7.9985774990	99.6072048611	33.1689457380
4	-0.0361486557	-0.0181227150	0.0770428560	7.9974059331	7.9971336937	7.9977051828	7.9989889856	99.6019965278	33.2958350354
5	-0.0315744938	-0.0050155239	0.0380108173	7.9974469683	7.9970639326	7.9976524409	7.9990706871	99.6202256944	33.2056917211
6	-0.0047867529	-0.0075756055	0.0224065987	7.9975399487	7.9972949757	7.9978752184	7.9992914108	99.6289062500	33.0320738017
7	0.2227671961	-0.3013562894	-0.1300906108	7.8295467711	7.5912444742	7.8323457177	7.7745899931	99.5989583333	32.9549087691
8	-0.0149931511	-0.0163771772	0.0399698556	7.9972900061	7.9964358870	7.9977557619	7.9988204453	99.5768229167	33.1830541939
9	-0.0454331516	-0.0218905316	0.0120948692	7.9973675350	7.9975940804	7.9976426598	7.9992365239	99.6050347222	33.2199720861
10	0.0040321383	-0.0056660171	0.0192372231	7.9976560614	7.9977569407	7.9974939371	7.9992079011	99.6284722222	33.1760127315
11	0.0114615492	0.0399418177	-0.0020354561	7.9976563005	7.9971345080	7.9975702177	7.9991161290	99.6085069444	33.2260586874
12	0.0001923085	-0.0162786638	-0.0010500064	7.9977457023	7.9968983692	7.9978486689	7.9990722212	99.6050347222	33.2114430147
13	-0.0146749261	0.0260499527	-0.0114191094	7.9975433649	7.9978370500	7.9970665084	7.9990986779	99.6037326389	33.2202648420
14	0.0113632533	0.0124508241	-0.0179613231	7.9976971269	7.9970868877	7.9975647101	7.9989990922	99.6080729167	33.1746919254
15	-0.0050994033	-0.0376752253	-0.0487380969	7.9974635359	7.9972156091	7.9975637331	7.9992168602	99.6250000000	33.2207482298
16	0.0060063881	0.0358012030	-0.0163570141	7.9974648867	7.9974659369	7.9978087938	7.9991323001	99.6041666667	33.1587094907
17	0.0328309873	0.0130029785	0.0043689112	7.9977804022	7.9974338376	7.9970549430	7.9991741641	99.6184895833	33.2242868328
18	-0.0150476480	-0.0121236755	-0.0367454902	7.9977349532	7.9970762232	7.9973345478	7.9990010588	99.5807291667	33.2500136166
19	-0.0034285386	-0.0171295042	-0.0037524246	7.9972652035	7.9970766287	7.9976361074	7.9991200041	99.6111111111	33.1114021650
20	-0.0139164150	0.0010325372	-0.0433982950	7.9975810521	7.9960750699	7.9974079643	7.9984829138	99.6223958333	33.2139263344
21	0.0211118779	-0.0048776192	0.0011327648	7.9973644387	7.9974872674	7.9974073374	7.9990060821	99.5963541667	33.1407186138
22	-0.0094585498	-0.0250132257	0.0207335317	7.9978965359	7.9966371471	7.9975226042	7.9989256240	99.6111111111	33.2064116966
23	0.0244183799	-0.0012818578	-0.0117167986	7.9974063718	7.9973041344	7.9974450920	7.9990171006	99.6193576389	33.3014688862
24	-0.0400235516	-0.0013652291	-0.0158252016	7.9976201709	7.9974077492	7.9970351180	7.9990448165	99.6037326389	33.2048764297
25	-0.1851389897	0.2351720010	-0.2235198329	7.7144755646	7.4117365728	7.7271466951	7.6500652534	99.6302083333	31.9788977397
26	0.4004371644	-0.5708483302	-0.0996015188	7.7986580054	7.5409142875	7.8199110433	7.7507527091	99.5941840278	34.3951559096
27	0.0004163816	0.0154826903	-0.0028408567	7.9970364684	7.9974229439	7.9977807818	7.9989667405	99.5898437500	33.2054347086
28	-0.0035275707	-0.0198647552	0.0141796995	7.9974257490	7.9973737155	7.9978276997	7.9989957558	99.6176215278	33.2030824483
29	-0.0026493412	-0.0154339406	-0.0380071635	7.9971862423	7.9957160604	7.9975052413	7.9985417694	99.5872395833	33.2950725082
30	-0.0020011692	0.0037109954	-0.0617267761	7.9976478530	7.9973512565	7.9973293465	7.9990147802	99.6171875000	33.1712145969
31	-0.0307315388	0.0133055464	-0.0462025585	7.9971728568	7.9974542028	7.9974787810	7.9990390983	99.6085069444	33.2171364379
32	-0.0087909237	-0.0002094322	-0.0368230033	7.9973230794	7.9964968610	7.9976964556	7.9988792142	99.6241319444	33.1863647195
33	0.0077138315	0.0281852316	-0.0475870018	7.9976412685	7.9960532022	7.9969722344	7.9984955061	99.6085069444	33.2014859069
34	0.0189116961	-0.0035479983	-0.0060271401	7.9975991405	7.9973531025	7.9976123484	7.9990914036	99.6440972222	33.2021429058

35	0.0237225952	0.0271844132	0.0309799917	7.9976263037	7.9963159740	7.9968365345	7.9987697058	99.6041666667	33.2136540033
36	0.0174829591	-0.0116692846	0.0482099228	7.9973392670	7.9967575800	7.9974995342	7.9989548828	99.6180555556	33.2345366966
37	-0.0016729212	0.0179215234	-0.0330608234	7.9975380936	7.9969953634	7.9976169051	7.9989274863	99.6197916667	33.3095979711
38	-0.0255802321	-0.0273019666	0.0119955555	7.9972829525	7.9975563290	7.9977420321	7.9991025279	99.6098090278	33.2775582108
39	-0.0060669903	-0.0419536766	0.0583872677	7.9971706207	7.9965892686	7.9975072963	7.9987559906	99.5959201389	33.1752723312
40	-0.0011852505	-0.0057825683	-0.0185529639	7.9971477603	7.9971841531	7.9972963576	7.9989671898	99.6089409722	33.2335682190
41	-0.0169326526	-0.0267689474	0.0578328546	7.9977870306	7.9971861330	7.9976580019	7.9990472176	99.6150173611	33.2142990877
42	0.0035513806	0.0046143828	-0.0050494483	7.9973793167	7.9971298826	7.9975810007	7.9989536997	99.6206597222	33.1113000408
43	-0.2473449566	-0.0454313855	-0.0557960033	7.8207191424	7.5474094667	7.8171898381	7.7563563474	99.6054687500	32.9899748094
44	-0.0215867031	0.0115648041	-0.0312042384	7.9975176201	7.9971840199	7.9974773489	7.9990199852	99.6028645833	33.1998331972
45	-0.0236334313	0.0091207766	-0.0118949725	7.9974328114	7.9973226792	7.9977863878	7.9991511091	99.5998263889	33.2208112064
46	-0.0072629972	0.0007544150	0.0082086833	7.9975404366	7.9975728760	7.9977906455	7.9991517639	99.6076388889	33.2002110566
47	-0.0144194372	-0.0057900822	-0.0119380239	7.9965879482	7.9957134480	7.9970788104	7.9985307588	99.6132812500	33.1873110703
48	-0.0134661365	-0.0291262133	0.0079490579	7.9974301890	7.9974243471	7.9977091875	7.9991429549	99.6189236111	33.2146718410
49	0.0151229966	-0.0148088914	-0.0559394444	7.9975234107	7.9972426487	7.9976379096	7.9991405845	99.6388888889	33.1790985839
50	0.0037378701	-0.0402578440	0.0452208722	7.9970572356	7.9962757496	7.9971723751	7.9986739541	99.5937500000	31.6372055419
Total	46.0302426999	49.8054190159	48.4845847132	399.0463647040	397.9547096747	399.0822518078	398.8850708351	4980.4370659722	1658.2295649510
Average	-0.0007801873	-0.0159450788	-0.0142607306	7.9809272941	7.9590941935	7.9816450362	7.9777014167	99.6087413194	33.1645912990

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm							
Video Stream	v_ApplyLipstick_g01_c01							
Resolution	240p							

Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC$_h$	CC$_v$	CC$_d$	Red	Green	Blue	Combined	NPCR	UACI
1	-0.0151888501	0.0023533174	0.0109896840	7.9972604022	7.9968921232	7.9968483033	7.9986664395	99.6093750000	33.0612625953
2	0.0033652752	-0.0141979716	-0.0364005243	7.9973263019	7.9970073427	7.9972987783	7.9988577232	99.6267361111	33.2086414080
3	0.0117684109	-0.0163904742	-0.0386045273	7.9951452502	7.9943043027	7.9948641825	7.9964871203	99.6271701389	33.1748995779
4	-0.0332227193	0.0067199912	0.0723366170	7.9972797382	7.9961153663	7.9972549317	7.9986266682	99.5863715278	33.2457465278
5	0.1065757248	-0.3628196927	-0.0478593173	7.7632268665	7.7134297863	7.7395538658	7.7468250022	99.6024305556	33.5216588371
6	-0.0300416511	-0.0144302981	0.0147001854	7.9973705314	7.9964432070	7.9970543059	7.9985161325	99.6089409722	33.2160675381
7	0.0019466283	-0.0221134769	0.0043534874	7.9970438409	7.9972132852	7.9973007141	7.9986703722	99.6067708333	33.1712503404
8	-0.0001971299	0.0025204842	-0.0617618511	7.9979188971	7.9974768528	7.9977544963	7.9991424147	99.5885416667	33.2108575027
9	-0.0403044530	0.0021779446	-0.0116355900	7.9975298867	7.9975944680	7.9973985193	7.9988854458	99.6098090278	33.1481243192
10	-0.0041324945	-0.0076119981	0.0105077913	7.9963542364	7.9953915434	7.9963163458	7.9974777314	99.5924479167	33.1691346678
11	0.0269714479	-0.0236419929	0.0172189674	7.9971536755	7.9967827672	7.9970914383	7.9987365997	99.6145833333	33.2185185185
12	-0.0222822627	0.0044174689	-0.0392121232	7.9962098311	7.9947025560	7.9952247905	7.9968491357	99.6189236111	33.2689746732
13	-0.0281949060	0.0013261847	0.0072505858	7.9975440496	7.9974197893	7.9975198642	7.9990766019	99.6150173611	33.2113323802
14	-0.0151760498	-0.0066006135	-0.0703366736	7.9968584889	7.9966317172	7.9970158046	7.9985907338	99.6145833333	33.3023845997
15	-0.0175367543	0.0194705421	0.0260991773	7.9964863896	7.9974256966	7.9969677375	7.9986028717	99.6154513889	33.2417007081
16	-0.1525157232	-0.0453701755	0.1306999713	7.1108543689	7.0843177266	7.0360508847	7.0988587425	99.5963541667	33.2712997004
17	-0.0081655646	-0.0034566958	-0.0314489143	7.9971744680	7.9968192482	7.9971837893	7.9986065916	99.6024305556	33.2140897331
18	0.0022094156	-0.0209774573	0.0321690744	7.9972740805	7.9969819331	7.9969577740	7.9987448401	99.5972222222	33.1962775735
19	-0.0109770457	-0.0363846382	0.0124011897	7.9971139990	7.9966329598	7.9969864696	7.9984298876	99.6028645833	33.1916700708
20	-0.0111287640	-0.0146492404	-0.0248360680	7.9971551612	7.9972743365	7.9970365634	7.9985521765	99.5993923611	33.1955695125
21	0.0033550686	0.0213828604	-0.0049631645	7.9974284471	7.9969307480	7.9970349503	7.9986220454	99.6106770833	33.1902539488
22	-0.0030610861	-0.0083822831	-0.0097091612	7.9965924963	7.9968727820	7.9978051544	7.9985975910	99.6284722222	33.1733711193
23	-0.0240376439	-0.0139602535	-0.0511481224	7.9966930384	7.9969793630	7.9971143452	7.9986227279	99.6067708333	33.2111519608
24	-0.0229204202	-0.0063294439	0.0438634321	7.9974061394	7.9970126247	7.9965545992	7.9985573996	99.6176215278	33.2337128949
25	0.0074153202	-0.0077287088	0.0116981729	7.9971823601	7.9974411308	7.9974482405	7.9988276680	99.6228298611	33.2244893791
26	0.0077693631	-0.0251034801	-0.0408046021	7.9977868176	7.9971514517	7.9972934935	7.9989433543	99.6011284722	33.1778747958
27	0.0164208483	-0.0008404488	-0.0121964085	7.9971019535	7.9968292382	7.9966858817	7.9985023729	99.6015625000	33.1865485430
28	-0.0138541855	-0.0016405740	0.0132711817	7.9971045254	7.9968863641	7.9975224013	7.9987271572	99.5872395833	33.2553972631
29	-0.0121400095	-0.0117330565	0.0218890808	7.9976757107	7.9975127693	7.9973513940	7.9991252260	99.6206597222	34.0600234886
30	0.0022083088	-0.0009525082	-0.0088941919	7.9973382151	7.9971632762	7.9969229351	7.9986275591	99.6093750000	33.2358115468
31	-0.0094097542	-0.0200223959	0.0004144771	7.9974618174	7.9967553462	7.9969592409	7.9987609874	99.5976562500	33.2677798203
32	0.0008632737	0.0354203169	-0.0776013036	7.9966434062	7.9972752878	7.9971896813	7.9985793522	99.6006944444	33.2440172249
33	0.0262135338	0.0000402975	-0.0244367629	7.9952950218	7.9949544034	7.9950981046	7.9967820898	99.6046006944	33.2591979847
34	0.0142268548	-0.0099606875	0.0547408358	7.9973362111	7.9971322653	7.9966423860	7.9987899156	99.6080729167	33.0864225899

35	-0.0047160329	0.0155111366	-0.0418837293	7.9970360744	7.9966364066	7.9974208492	7.9986810789	99.6032986111	33.2610209014
36	-0.0057044430	0.0271548748	0.0044753099	7.9960243551	7.9954850196	7.9961342794	7.9976479361	99.5941840278	33.3051828023
37	-0.0203503496	-0.0047766389	-0.0576067971	7.9971440614	7.9972452579	7.9970264778	7.9988019960	99.6115451389	33.2960358796
38	-0.0168435137	-0.0236899253	-0.0252896558	7.9973152269	7.9979905214	7.9972037017	7.9989023522	99.5868055556	33.2296789897
39	0.0291469323	-0.0097982869	0.0525674777	7.9974379023	7.9974451518	7.9977243904	7.9990647628	99.6206597222	33.2260535812
40	-0.0022707594	0.0092867315	-0.0232809418	7.9955779240	7.9954482846	7.9949831542	7.9969436922	99.5963541667	33.2849417892
41	-0.2151849496	-0.4807077201	0.1479224209	7.0906209471	7.0675830601	7.0041515060	7.0699856736	99.5954861111	33.6656318083
42	0.0260228330	-0.0171468739	0.0016409524	7.9957314763	7.9949790775	7.9949521102	7.9969417601	99.6111111111	33.2297130310
43	-0.0217423091	0.0141377840	-0.0477314005	7.9973528486	7.9969467754	7.9975855233	7.9986685320	99.6072048611	33.2425347222
44	0.0155302948	-0.0144770911	0.0112157323	7.9972475876	7.9967494072	7.9971456733	7.9985711380	99.6015625000	33.9871238426
45	0.0024166325	0.0214197773	0.0095487640	7.9972576746	7.9971024544	7.9967845906	7.9986627055	99.6119791667	33.1500187228
46	0.0084034811	-0.0080458790	0.0073808336	7.9973038621	7.9969880301	7.9969518616	7.9986988861	99.6349826389	33.2240825844
47	-0.0194032575	-0.0037317366	0.0492289191	7.9971284966	7.9973934723	7.9970608713	7.9989326457	99.6323784722	33.1966128813
48	0.0060035307	0.0380323407	0.1130608713	7.9973028178	7.9971686255	7.9969297818	7.9987735779	99.6202256944	33.3045955882
49	0.0160104613	-0.0061331261	0.0003365283	7.9973187854	7.9972603830	7.9970695875	7.9987816846	99.6254340278	33.2141884532
50	-0.0090255366	0.0037505332	0.0723740832	7.9976991201	7.9971983614	7.9977930951	7.9991622168	99.6371527778	33.1590175654
Total	49.9403420454	50.0000000000	46.3158003839	397.8248257842	397.7133743478	397.6342198203	397.8444893159	4980.4431423611	1663.2219464869
Average	-0.0090974486	-0.0207706774	0.0033342671	7.9564965157	7.9542674870	7.9526843964	7.9568897863	99.6088628472	33.2644389297

Encryption Algorithm			Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm					
Video Stream			v_Archery_g01_c01					
Resolution			240p					
Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC_h	CC_v	CC_d	Red	Green	Blue	Combined	NPCR	UACI
1	-0.0306276621	-0.0104385105	0.0213532421	7.9971958361	7.9975022050	7.9976781368	7.9992224126	99.6206597222	33.1649339597
2	-0.0273904890	-0.0049742874	0.0452616254	7.9974964348	7.9976552214	7.9972913834	7.9991470836	99.6011284722	33.2872225626
3	0.4137131439	0.0131034692	-0.0764031686	7.8501445812	7.8605498347	7.8993619601	7.9042162443	99.6050347222	34.2187976580
4	0.0128930285	-0.0114634681	0.0367514919	7.9974987151	7.9976879567	7.9977083477	7.9991793420	99.6254340278	33.1827495234
5	0.0043895335	0.0075666850	0.0302068440	7.9975325769	7.9977839830	7.9972979465	7.9992636475	99.6054687500	33.2351205065
6	-0.0148410188	0.0115276348	0.0041081840	7.9974123529	7.9977588687	7.9977614712	7.9993407753	99.6150173611	33.2729932598
7	0.0165607713	0.0146770989	-0.0393534374	7.9977220691	7.9973502259	7.9974405889	7.9991450574	99.6093750000	33.1711260893
8	0.2623984427	-0.2432452709	-0.0418064259	7.9428917614	7.8891941135	7.9319392113	7.9450745664	99.6046006944	34.5600166803
9	-0.0382600751	-0.0008671142	0.0244834837	7.9976741105	7.9974945940	7.9972085460	7.9991940948	99.6189236111	33.2900633170
10	-0.0205851322	0.0054549419	0.0121879743	7.9976697591	7.9976993985	7.9972489694	7.9991494792	99.6137152778	33.2190887119
11	0.0156968176	-0.0094862580	-0.0098515857	7.9975111355	7.9976784891	7.9975639004	7.9991659354	99.6019965278	33.1992647059
12	-0.2667210196	-0.3536607838	0.1400352791	7.7050900321	7.7332464973	7.8276108397	7.7967248190	99.6124131944	32.2344090414
13	0.0160085550	0.0123747883	-0.0154416384	7.9977470578	7.9974960214	7.9976814129	7.9992367116	99.6180555556	33.3251753132
14	0.0377937298	-0.0263123437	0.0085146395	7.9975656093	7.9976659988	7.9974272642	7.9992036026	99.6241319444	33.2321180556
15	-0.0361681074	-0.0123641829	-0.0311203376	7.9976899563	7.9970571542	7.9971585330	7.9992340106	99.5946180556	33.2612881264
16	0.0020108289	-0.0016214261	-0.0152248524	7.9977469774	7.9974412470	7.9973090547	7.9991763361	99.6414930556	33.2713507625
17	-0.0068781383	-0.0174910610	-0.0240652774	7.9976812858	7.9977001577	7.9972410922	7.9992250545	99.5933159722	33.2479421977
18	-0.0088192791	-0.0134435553	0.0208591092	7.9978217172	7.9978659408	7.9973079428	7.9992588126	99.5950520833	33.2456971678
19	-0.0062910117	0.0089577430	0.0279761904	7.9975389851	7.9975922807	7.9973690819	7.9991856983	99.5980902778	33.2376021242
20	-0.0188600921	0.0319675998	-0.0466840382	7.9976766757	7.9975268451	7.9975745485	7.9991640957	99.6241319444	33.2675313181
21	0.0128480292	0.0073611815	-0.0181270487	7.9977753672	7.9973896455	7.9977593398	7.9992246690	99.6006944444	33.1873434096
22	-0.0121826123	-0.0206398123	0.0439924621	7.9974210329	7.9973762889	7.9980118613	7.9992549839	99.6124131944	33.2595945670
23	0.0021506786	0.0195059297	-0.0498946990	7.9974176432	7.9975686827	7.9976072977	7.9991049485	99.6189236111	33.2449363426
24	0.0111217236	-0.0369422701	-0.0582521799	7.9972119597	7.9972429454	7.9973829289	7.9991511482	99.6284722222	33.2102975218
25	0.0253937746	0.0115966274	0.0241281870	7.9972509145	7.9976717907	7.9973974551	7.9992405196	99.6002604167	33.2293351716
26	0.0088385076	0.0105574231	-0.0019261379	7.9973045441	7.9978505560	7.9976093941	7.9991994689	99.5889756944	33.2905858524
27	-0.0233501976	0.0098732132	0.0113129969	7.9976295403	7.9974935683	7.9978023529	7.9991284236	99.6128472222	33.2507931645
28	-0.0094273084	0.0121229368	-0.0492832609	7.9974587490	7.9970522514	7.9973397674	7.9990450383	99.6132812500	33.1730800654
29	-0.0205957787	0.0117633490	-0.0247330013	7.9977053365	7.9977846004	7.9973039603	7.9991400013	99.5980902778	33.2753302015
30	0.0182613409	-0.0267646474	-0.0137852745	7.9974498004	7.9977361520	7.9974316903	7.9990765419	99.6167534722	33.2327631400
31	0.0436210072	-0.0070046274	-0.0031441160	7.9970327064	7.9978223473	7.9974540948	7.9990804410	99.6115451389	33.2740519472
32	0.0128306783	0.0136772867	-0.0523635322	7.9978322881	7.9975437479	7.9975910869	7.9992201475	99.5993923611	33.3142258987
33	0.0191617377	0.0081018193	-0.0425842689	7.9975624528	7.9974898137	7.9979057892	7.9991913746	99.6037326389	33.2101800790
34	0.0043238764	-0.0106995505	-0.0058507744	7.9977473077	7.9978798029	7.9974983829	7.9992160142	99.6046006944	33.1096881808

35	-0.0163129224	0.0046896253	-0.0086899167	7.9978377788	7.9974286948	7.9975909793	7.9992148790	99.6141493056	33.1728656046
36	0.0167479134	0.0316819861	0.0367174128	7.9975990447	7.9975984644	7.9978009671	7.9992017414	99.6206597222	33.2397501362
37	-0.0125039935	0.0124011222	-0.0635070104	7.9976519986	7.9973698331	7.9973944243	7.9992311059	99.6037326389	33.2892871732
38	-0.0166459527	0.0283518049	0.0259720327	7.9975659508	7.9975618663	7.9972755154	7.9990591774	99.6067708333	33.1701610158
39	-0.2236210619	-0.0105285131	-0.0968176174	7.9832578151	7.9774538260	7.9838439093	7.9898147105	99.6345486111	33.4360072849
40	-0.0280535346	0.0071918513	0.0037277071	7.9977893000	7.9975575823	7.9973376203	7.9992254156	99.5989583333	33.2836754493
41	0.0119829653	-0.0179686114	0.0481431044	7.9976374111	7.9977521494	7.9977364349	7.9992720371	99.6132812500	33.3123093682
42	0.0082659353	0.0200501411	0.0676669318	7.9974754568	7.9975438421	7.9975547945	7.9990721672	99.6041666667	33.2385910267
43	-0.2685709268	-0.0974041908	-0.0885236925	7.6836482759	7.6767102495	7.7778579539	7.7601696563	99.5963541667	30.2808823529
44	-0.2803978717	-0.1042935260	0.4092232964	7.8579945232	7.8758965963	7.9023649059	7.9093070736	99.6271701389	35.0125442538
45	0.0328412745	0.0064218262	0.0026008293	7.9975154046	7.9972264918	7.9976452210	7.9991773695	99.6245659722	33.2272177968
46	-0.0301734786	0.0146683243	-0.0056529106	7.9979178556	7.9976757002	7.9975809155	7.9992425203	99.6141493056	33.1876055283
47	0.0411664107	0.7014686581	-0.1497440207	7.9786337238	7.9758932590	7.9813718214	7.9899698610	99.6041666667	32.9615400327
48	-0.0319178312	0.0366585794	-0.0138601735	7.9976669976	7.9975611486	7.9977413571	7.9992803450	99.6002604167	32.9401994826
49	-0.0067754396	0.0274200178	-0.0061233999	7.9973330440	7.9974651765	7.9977460007	7.9991999059	99.5989583333	33.2667619826
50	-0.0017412909	-0.0079392792	-0.0004690781	7.9977237118	7.9975639102	7.9975568185	7.9992578596	99.6119791667	33.2186155365
Total	48.2929393068	49.6901607060	40.6097882133	398.8973555647	398.8841080176	399.1976752723	399.2604773251	4980.5065104167	1661.6247106482
Average	-0.0081336511	0.0011128070	-0.0001611970	7.9779471113	7.9776821604	7.9839535054	7.9852095465	99.6101302083	33.2324942130

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm								
Video Stream	v_BabyCrawling_g01_c01								
Resolution	240p								

Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC$_h$	CC$_v$	CC$_d$	Red	Green	Blue	Combined	NPCR	UACI
1	0.0049407475	-0.0304447570	-0.0169667209	7.9967921706	7.9968813519	7.9960588355	7.998325067	99.5733506944	33.2873808551
2	-0.0114176069	-0.0032148225	0.0249825625	7.9968921515	7.9972468631	7.9966885388	7.998620202	99.6115451389	33.1546994145
3	-0.0192837280	-0.0151865358	-0.0820814022	7.9970245937	7.9970965419	7.9964925646	7.998469209	99.6215277778	33.1697218818
4	0.0302547775	0.0008768446	0.0241468263	7.9974786758	7.9966705358	7.9966086854	7.998535586	99.6028645833	33.2197474129
5	0.0078760670	-0.0157426400	0.0358660435	7.9971606095	7.9975940658	7.9969481546	7.998839709	99.6106770833	33.3816925381
6	-0.0064250885	-0.0120728689	-0.0189383607	7.9961216326	7.9959197070	7.9954583843	7.997562089	99.5885416667	33.2310270289
7	0.0401606551	-0.0221152000	0.0280015849	7.9965467862	7.9969391652	7.9961864882	7.998248361	99.6089409722	33.2062534041
8	-0.0145039848	-0.0004801780	-0.0032047850	7.9969286592	7.9970442781	7.9969560103	7.998623186	99.5898437500	33.2353945398
9	-0.0042013272	-0.0022415915	0.0013850211	7.9970114492	7.9974212853	7.9968283083	7.998674878	99.6041666667	33.2373536220
10	-0.0277569615	-0.0091809271	0.0279560361	7.9970384874	7.9968380895	7.9966339541	7.99845145	99.6236979167	33.2215175654
11	-0.0057708895	0.0134226982	-0.0553065327	7.9971121297	7.9971565793	7.9967995479	7.998585233	99.5946180556	33.2132182734
12	0.0145842750	0.0255794684	-0.0245594533	7.9975199550	7.9971480489	7.9967692053	7.998685301	99.5954861111	33.2543164488
13	-0.0080249565	0.0294389335	-0.0259674900	7.9950215130	7.9947510874	7.9938623319	7.996203438	99.6371527778	33.2862064270
14	-0.0118947061	0.0113340597	0.0404521109	7.9950026644	7.9949987426	7.9949311750	7.996464987	99.5885416667	33.2296330338
15	-0.0117222632	0.0083939993	-0.0416288560	7.9966715587	7.9968187329	7.9963313398	7.998257968	99.6263020833	33.1131655093
16	0.1654144080	-0.2058645474	-0.1855718425	7.5756843225	7.5817545440	7.5289287858	7.571938784	99.5993923611	33.0217047930
17	0.0162000623	-0.0216711897	-0.0249946783	7.9971584597	7.9974008678	7.9974291395	7.998862132	99.6028645833	33.1952546296
18	-0.2863755730	0.0495701283	-0.6802268176	7.1067704533	7.1147813018	6.9602906928	7.125762381	99.6189236111	32.9624591503
19	0.0025487914	0.0018338585	-0.0346350933	7.9935158840	7.9939937121	7.9923939224	7.994976887	99.5933159722	33.1807223584
20	0.0103893304	0.0279631349	-0.0426294246	7.9943691914	7.9937309136	7.9936778977	7.995469931	99.6050347222	33.2729387936
21	0.0455365550	0.0239835380	-0.0490915355	7.9973893615	7.9974776373	7.9978084987	7.999069254	99.5898437500	33.3100047658
22	-0.2419748209	0.6446364036	0.0440302651	7.3555090888	7.3217560680	7.1776843194	7.323406179	99.6137152778	33.3774731073
23	-0.0313474162	0.0254698439	0.0109594804	7.9944574621	7.9946647845	7.9936327449	7.996013864	99.5972222222	33.2326559096
24	0.0014764216	0.0057585569	-0.0113878849	7.9972090966	7.9969135993	7.9965313917	7.998278992	99.6111111111	33.2184793709
25	-0.0113430682	-0.0147475814	-0.0250811692	7.9961738232	7.9972496623	7.9970904379	7.998453906	99.5972222222	32.5047828159
26	0.0094721944	-0.0285651554	-0.0058516976	7.9964304457	7.9964451346	7.9964711697	7.998116248	99.6054687500	33.1843171296
27	-0.0057917186	-0.0082209176	0.0153835401	7.9967556806	7.9975233354	7.9969889778	7.998511984	99.5963541667	33.2416819853
28	-0.0042826497	0.0196731211	0.0138615307	7.9944927558	7.9951423951	7.9941830393	7.996123006	99.6115451389	33.1792483660
29	0.0115627782	-0.0124435277	-0.0606788504	7.9957664165	7.9958009849	7.9954227512	7.997234468	99.6150173611	33.2762169798
30	0.0184580290	0.0021100775	0.0161058839	7.9967543986	7.9968768232	7.9966964357	7.998271404	99.6111111111	33.1867715142
31	0.0031485245	0.0308101816	-0.0263187744	7.9945223896	7.9944169302	7.9936276401	7.995878966	99.6128472222	33.1882369962
32	-0.0039054868	0.0115172939	0.0296702503	7.9945512523	7.9953864608	7.9944805298	7.996501676	99.6219618056	33.2186223448
33	-0.2707961900	-0.0719785843	0.0457021691	7.5742190018	7.5794714741	7.5243439992	7.57573973	99.5776909722	33.1927049292
34	-0.0203824445	-0.0177109729	0.0705392651	7.9958571169	7.9956601407	7.9957516375	7.997349052	99.6254340278	33.3202699483

35	-0.0200972793	0.0297204355	-0.0026123886	7.9968481231	7.9968207465	7.9971567462	7.998582745	99.6015625000	33.2249029820
36	0.0070467404	-0.0022849539	0.0211390217	7.9964074535	7.9969518413	7.9970752785	7.998342529	99.6154513889	33.2768348312
37	-0.0142756730	-0.0020637902	0.0578926556	7.9971319579	7.9968539335	7.9969716053	7.998615201	99.5815972222	33.1802713099
38	-0.0205077853	-0.0307126800	-0.0147436853	7.9972555906	7.9972376173	7.9970970493	7.998773075	99.6089409722	33.2046772876
39	0.0209169407	-0.3303781484	-0.0198853976	7.3244458309	7.3477507535	7.2774057904	7.346384349	99.6827256944	34.7133578431
40	0.0069119922	0.0032611451	-0.0166515000	7.9971728079	7.9967243996	7.9961255875	7.998327004	99.6245659722	33.5325248502
41	-0.0178052539	-0.0257423756	-0.0113816788	7.9965770278	7.9965960805	7.9966764085	7.998291747	99.6041666667	33.2570550790
42	-0.0360289799	-0.0125214536	-0.0472544434	7.9971129274	7.9964449977	7.9963658889	7.998353911	99.5876736111	32.7612030229
43	-0.0141221839	-0.0136921597	0.0525183687	7.9966728286	7.9970324508	7.9965623672	7.998457661	99.6059027778	33.2082754630
44	-0.0124194889	0.0084410948	0.0040557444	7.9960767232	7.9964020907	7.9962401944	7.99775284	99.6106770833	33.2218205338
45	-0.0060338368	-0.0152163778	-0.0356308983	7.9973054357	7.9972729503	7.9966128233	7.998515866	99.6210937500	33.4566670071
46	-0.0211913217	0.0060292947	-0.0351551943	7.9966399921	7.9965136686	7.9961034455	7.998084048	99.6085069444	33.1963916122
47	-0.0148769277	0.0017623806	0.0117625615	7.9964655900	7.9971581540	7.9962370155	7.998245937	99.6267361111	33.1856787854
48	-0.0561006748	0.2631348081	-0.0473209599	7.5599329310	7.3441383853	7.2610210941	7.410501493	99.6046006944	33.3989004630
49	-0.0173283757	0.0040859737	-0.0275904096	7.9966936856	7.9969951628	7.9963887430	7.998374702	99.5941840278	33.6332158905
50	-0.0171915691	0.0107539082	0.0410940237	7.9973356352	7.9974324316	7.9966624216	7.998670121	99.6145833333	33.2207992919
Total	49.6396913373	50.0000000000	40.4059956888	396.3379841778	396.1352975087	395.5576899937	396.2627787	4980.3763020833	1662.3784500953
Average	-0.0169639912	0.0067012446	-0.0211137213	7.9267596836	7.9227059502	7.9111537999	7.925255575	99.6075260417	33.2475690019

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm							
Video Stream	v_BalanceBeam_g01_c01							
Resolution	240p							

Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC_h	CC_v	CC_d	Red	Green	Blue	Combined	NPCR	UACI
1	0.0028309612	0.0056608660	0.0344105375	7.9973854634	7.9973376925	7.9972358576	7.9987943171	99.5876736111	33.2399356618
2	0.0153671099	0.0239038701	-0.0504312928	7.9964185720	7.9962217637	7.9957378542	7.9977137503	99.5907118056	32.7317861520
3	0.0280792097	0.0061630052	0.0252547360	7.9957030438	7.9959721643	7.9958123301	7.9973600740	99.5868055556	33.2470554194
4	-0.0153448739	0.0049355598	-0.0312193886	7.9968613202	7.9964896914	7.9964110904	7.9984840504	99.6054687500	33.1911628540
5	0.0382788082	0.0239420349	-0.0479410269	7.9972123163	7.9972288948	7.9969417213	7.9987464017	99.6059027778	33.1332329112
6	-0.0232301316	-0.0247892664	-0.0290622479	7.9957129482	7.9956939624	7.9957469993	7.9973682750	99.6171875000	33.2291598584
7	-0.1198207643	0.0029796346	-0.2330648422	7.4198505874	7.4266895519	7.4284164671	7.4432762531	99.6388888889	33.4559929875
8	0.0094679985	-0.0105703280	0.0150684909	7.9971279271	7.9972908836	7.9975404574	7.9987090373	99.5820312500	33.3296840959
9	0.0245172802	-0.0075952712	-0.0269420594	7.9975004374	7.9969093816	7.9971092927	7.9986556888	99.6137152778	33.1636471950
10	0.0203042862	-0.0074586492	-0.0008815866	7.9973931636	7.9970893886	7.9969848074	7.9986777396	99.5824652778	33.2104064542
11	0.0162856793	0.0068282839	-0.0231804322	7.9970439097	7.9966745146	7.9969538876	7.9986814447	99.6193576389	33.1921245234
12	-0.0151237344	-0.0062389128	0.0203730950	7.9962926472	7.9962596680	7.9958637115	7.9977300861	99.6228298611	33.2666462418
13	-0.0098428879	0.0133521613	0.0248185863	7.9972921878	7.9980220021	7.9972891720	7.9990450419	99.6171875000	33.2588218273
14	0.0237465775	-0.0185592439	0.0078432734	7.9970023271	7.9969319808	7.9973320420	7.9985387651	99.6124131944	33.2301674837
15	0.0103258690	-0.0049272167	0.0146647170	7.9958157617	7.9957890834	7.9955996166	7.9972929437	99.6180555556	33.2502144608
16	-0.0083920738	-0.0071795162	-0.0365119297	7.9974700372	7.9970784860	7.9972719541	7.9987454092	99.5894097222	33.1929398148
17	-0.0516635610	0.0017684200	0.0397996592	7.9970705503	7.9970333351	7.9975852426	7.9987893272	99.5959201389	32.4882421024
18	0.0199799978	0.0100924210	-0.0282209919	7.9958522988	7.9959999925	7.9959067019	7.9974629817	99.6076388889	33.2271684368
19	0.0219529640	0.0060794300	-0.0197462769	7.9970460224	7.9971308954	7.9967347413	7.9986436846	99.6093750000	33.2567418981
20	0.0078256542	-0.0104607831	0.0395360904	7.9974730760	7.9975270540	7.9972970453	7.9991318143	99.6145833333	33.1411798747
21	-0.0202756122	0.0205265022	-0.0007779539	7.9975315281	7.9977257099	7.9973040050	7.9991669136	99.6232638889	33.1737642974
22	0.0222196147	-0.0163253947	0.0578021084	7.9974696105	7.9969701207	7.9973194924	7.9988536359	99.6011284722	33.2480085784
23	-0.0057583639	-0.0012791347	-0.0447185832	7.9970692341	7.9967357510	7.9964908210	7.9985646707	99.6041666667	33.2249982979
24	-0.0115417145	-0.0068351481	0.0133788375	7.9975270585	7.9974195839	7.9976409070	7.9991447704	99.6093750000	33.2047198393
25	0.0213331656	-0.0064111934	0.0020597468	7.9970571517	7.9973196663	7.9976144828	7.9988129629	99.6050347222	32.9330099401
26	0.0003311378	-0.0037097441	0.0392482954	7.9973846781	7.9972898017	7.9971801981	7.9989172757	99.6054687500	33.2278543709
27	0.0084013919	0.0042227701	0.0473806803	7.9961457176	7.9956369383	7.9964808776	7.9978307155	99.5802951389	33.1305283224
28	0.0237313959	-0.0384793218	-0.0395588617	7.9970822705	7.9970094069	7.9969202165	7.9988605029	99.6046006944	33.3202988834
29	0.0087083449	0.0148638628	-0.0533899948	7.9955292026	7.9953407043	7.9946800317	7.9968123805	99.6137152778	33.1692470044
30	0.0240078688	0.0018120722	0.0284518818	7.9968093899	7.9970036826	7.9965228886	7.9984177022	99.5729166667	33.1914130583
31	-0.5143185380	0.5061380198	-0.5364144483	7.3933141343	7.3789284450	7.3672127642	7.3915807938	99.7200520833	35.4104694308
32	-0.2453113833	-0.4536488653	0.5051470874	7.3633507086	7.3629073487	7.3665537607	7.3839703993	99.6093750000	33.2313963780
33	-0.0392322786	0.0096126124	0.0169359345	7.9971803417	7.9967588411	7.9973740299	7.9987368726	99.6115451389	33.1429074755
34	0.0001065716	-0.0241282327	0.0239938880	7.9973865546	7.9972651947	7.9974194611	7.9990064381	99.6041666667	33.2153390523

35	0.2136118818	-0.1951961767	0.1424479789	7.6065324488	7.5920795519	7.5888784972	7.6008526650	99.6241319444	33.2935083061
36	0.0137323416	0.0134530080	0.0085979213	7.9945312214	7.9953839968	7.9947347625	7.9964585134	99.6032986111	33.2461039624
37	0.0173722265	0.0174880306	0.0224282686	7.9964300769	7.9968280602	7.9956482242	7.9979124928	99.6184895833	33.1241336465
38	-0.0148057689	-0.0102786558	0.0100464190	7.9971944409	7.9972115659	7.9968321892	7.9987513768	99.6098090278	33.2316959423
39	-0.0125550328	0.0222481016	0.0140837763	7.9974631248	7.9972317814	7.9970944199	7.9987529131	99.6150173611	33.2053904548
40	0.0047200829	-0.0424485928	-0.0182118307	7.9971397727	7.9969944928	7.9971142477	7.9987180979	99.6289062500	33.2461192810
41	-0.0035516344	-0.0169661086	-0.0262399598	7.9974946614	7.9975341249	7.9969900972	7.9988310654	99.6241319444	33.3503182870
42	-0.0166509506	0.0310569336	0.0264977405	7.9972624613	7.9973938941	7.9968475711	7.9988730361	99.6067708333	33.2781930828
43	0.0185674461	0.0168906420	-0.0658850039	7.9973819475	7.9973500703	7.9969688594	7.9987151803	99.6115451389	33.2474383851
44	0.0167228267	0.0027676568	0.0138390028	7.9976934947	7.9973848590	7.9973610654	7.9989830858	99.6137152778	33.2553479031
45	-0.0380985010	0.0115070119	0.0318080340	7.9973535754	7.9967683740	7.9974648175	7.9987680311	99.6015625000	33.2377025463
46	0.0124067128	-0.0175510395	-0.0469563420	7.9971212009	7.9968548914	7.9968481320	7.9985224682	99.6080729167	33.1968954248
47	-0.0147906572	-0.0260560419	-0.0465529689	7.9977453235	7.9968650999	7.9968645635	7.9987526472	99.5711805556	33.1620029956
48	0.0136785040	0.0039674925	0.0082055781	7.9967231441	7.9965215879	7.9961058573	7.9982192954	99.6076388889	33.2225558279
49	0.0339536143	0.0363643563	-0.0363912949	7.9972853818	7.9972635081	7.9971935062	7.9989179798	99.6080729167	33.1908292484
50	0.0280495690	0.0263760290	-0.0090090639	7.9972603521	7.9972671104	7.9965272419	7.9988300731	99.6276041667	33.1468052151
Total	46.9323412972	50.0000000000	38.9270694047	397.6429748066	397.6166145509	397.6019589813	397.7493820410	4980.4626736111	1661.8953056917
Average	-0.0091935684	-0.0022418372	-0.0043436930	7.9528594961	7.9523322910	7.9520391796	7.9549876408	99.6092534722	33.2379061138

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm							
Video Stream	v_BandMarching_g01_c01							
Resolution	240p							

Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC_h	CC_v	CC_d	Red	Green	Blue	Combined	NPCR	UACI
1	-0.0219588531	-0.0103474600	0.0267802605	7.9974543512	7.9978401485	7.9978940529	7.9992768909	99.6119791667	33.2364685458
2	0.0043116886	0.0071127589	0.0181962183	7.9973701736	7.9973545492	7.9977726364	7.9992364226	99.6171875000	33.2352839052
3	-0.0036852008	0.0132635813	0.0539790420	7.9975871566	7.9972841904	7.9974200277	7.9991222842	99.6032986111	33.1740910948
4	-0.0469201802	-0.0070687759	0.0038383136	7.9973334079	7.9976572894	7.9975872113	7.9992224640	99.6024305556	33.2132591231
5	-0.0062037618	0.0063723320	-0.0092510076	7.9974981523	7.9976535439	7.9975453621	7.9991448780	99.6037326389	33.2634480528
6	0.0149935552	0.0163563689	-0.0466386727	7.9973905185	7.9971613973	7.9976962237	7.9991847239	99.6141493056	33.3638565496
7	0.0033171640	0.0178766792	-0.0317239758	7.9975101899	7.9971334567	7.9978368038	7.9993639759	99.5985243056	33.2067418981
8	-0.0088046529	-0.0376215426	0.0211571807	7.9973189103	7.9980098541	7.9975186614	7.9993061414	99.6124131944	33.1931661901
9	-0.0180129626	0.0205320946	0.0107488957	7.9978405473	7.9977390078	7.9973364218	7.9992089729	99.6319444444	33.2812653186
10	-0.0071790044	0.0100419809	-0.0088159012	7.9973261069	7.9979275844	7.9978288948	7.9992581945	99.6341145833	33.2532169118
11	0.0089568975	-0.0307973811	-0.0413578088	7.9973669480	7.9975088553	7.9971391333	7.9989600504	99.6167534722	33.2013191040
12	-0.0048287699	-0.0145542405	-0.0164319871	7.9967127719	7.9972459199	7.9974940648	7.9990511746	99.6167534722	33.2586754493
13	0.0132355552	-0.0136908828	0.0530922632	7.9977129538	7.9978134559	7.9974102800	7.9992134969	99.6150173611	33.2316431781
14	-0.0110685598	-0.0104714111	-0.0061678951	7.9969975122	7.9976883777	7.9972595319	7.9990157298	99.6019965278	33.2345401008
15	0.0054311159	-0.0018339540	-0.0183413366	7.9973059367	7.9973277225	7.9973828617	7.9991026156	99.6180555556	33.2029530910
16	0.0261928572	-0.0108514070	-0.0192533412	7.9974133119	7.9974552687	7.9972391931	7.9991549546	99.6137152778	33.2345128676
17	0.0138107962	-0.0247986776	0.0145860854	7.9973431480	7.9973298110	7.9976064204	7.9991549425	99.6202256944	33.1951320806
18	-0.0102383535	0.0022048340	0.0245864227	7.9972773927	7.9974723355	7.9975058567	7.9991641054	99.6236979167	33.2469107435
19	0.3730908714	-0.4175924019	-0.0519753379	7.5369459978	7.6811364976	7.4879170615	7.6507515434	99.6141493056	34.7914470997
20	-0.0101845687	0.0052980995	-0.0075832543	7.9973556251	7.9975029616	7.9974335447	7.9990827307	99.6150173611	33.2705916394
21	-0.0126147880	0.0031325057	0.0204526652	7.9972037713	7.9974588181	7.9974871700	7.9990427409	99.5763888889	33.2921619690
22	-0.0180600055	-0.0081553279	-0.0113812038	7.9974012235	7.9980427252	7.9973077939	7.9991741814	99.6002604167	33.2141476035
23	0.0042223956	-0.0364437917	0.0209154534	7.9965302945	7.9975802424	7.9968645357	7.9989207256	99.6223958333	33.1244502315
24	-0.0270274455	-0.0112096977	-0.0582325160	7.9976436514	7.9976513144	7.9971128621	7.9991154566	99.6150173611	33.2065972222
25	-0.0231617836	0.0178543572	-0.0281683082	7.9974243887	7.9974873719	7.9970982876	7.9990607084	99.6102430556	33.2833843954
26	-0.0009960441	0.0144562160	-0.0490687524	7.9974317701	7.9975570040	7.9976200736	7.9991762191	99.6041666667	33.2576116558
27	0.0136349179	0.0016683915	-0.0341511113	7.9974985588	7.9974691247	7.9969981324	7.9990102441	99.5846354167	33.2006110430
28	-0.0113005198	0.0039506875	0.0212107095	7.9972097610	7.9975181528	7.9975267870	7.9991500580	99.6219618056	33.3108217593
29	0.0153749941	-0.0100511153	-0.0070996037	7.9975745785	7.9978723187	7.9966559307	7.9990583348	99.5985243056	33.1790475218
30	-0.0471887265	0.0061457486	0.0114907370	7.9974922261	7.9972759017	7.9978352472	7.9991442899	99.6076388889	33.1365893927
31	-0.0397425468	0.0000285001	-0.0058258096	7.9973596344	7.9977760078	7.9971431842	7.9991202339	99.6106770833	33.3060763889
32	0.0029025173	0.0025360922	-0.0164370415	7.9975840199	7.9976127367	7.9978459103	7.9991690427	99.6032986111	33.2335341776
33	0.0312634908	-0.0080847494	0.0013042361	7.9962627773	7.9978172680	7.9972215819	7.9989573486	99.6006944444	33.2482026144
34	-0.0019086960	0.0032545021	-0.0062773730	7.9972419115	7.9978262273	7.9972286889	7.9990081390	99.5941840278	33.2376616966

35	-0.0121061224	0.0293795989	0.0072933147	7.9974583161	7.9975633964	7.9977826553	7.9992126495	99.6193576389	33.2240093954
36	-0.0099914053	0.0146731140	-0.0307302090	7.9977173799	7.9977150432	7.9978942786	7.9992320832	99.5976562500	33.1402488426
37	-0.0273480097	0.0225913577	0.0081403745	7.9975047590	7.9977103315	7.9975822195	7.9991822788	99.6271701389	33.1893399374
38	-0.0182610751	0.0007940141	0.0100258633	7.9964706517	7.9975234946	7.9968731677	7.9989814440	99.5963541667	33.2233387800
39	-0.0270630451	0.0061920289	-0.0018237375	7.9974498953	7.9975311738	7.9977662322	7.9992529556	99.6145833333	33.1760586874
40	-0.0187323865	-0.0256431828	0.0230639426	7.9975604537	7.9978275680	7.9975747962	7.9991998973	99.6128472222	33.1795751634
41	-0.0135975512	0.0176491778	0.0132862585	7.9974811077	7.9976734389	7.9972094227	7.9992334079	99.6002604167	33.2634412446
42	0.0040148754	0.0188937779	-0.0682604185	7.9964982025	7.9975781667	7.9972286989	7.9989322368	99.6054687500	33.1762101716
43	0.0305218777	0.0122984287	-0.0228878114	7.9975540360	7.9976064559	7.9972983743	7.9990611053	99.5963541667	33.1438912718
44	-0.0323381644	-0.0087732030	-0.0079413102	7.9972869211	7.9977708736	7.9976241280	7.9991783532	99.6093750000	33.2696282680
45	-0.0225688970	0.0068601109	-0.0133337030	7.9975086071	7.9976279562	7.9974552182	7.9990598683	99.6106770833	33.2124948938
46	-0.0217370832	0.0126452504	0.0071706527	7.9974560890	7.9972068065	7.9973365641	7.9991948958	99.5972222222	33.1868157680
47	-0.0243811754	0.0309061238	0.0579970100	7.9978806629	7.9978328935	7.9975572377	7.9992183047	99.5954861111	33.2296721814
48	-0.0141956088	-0.0093654246	-0.0181667267	7.9967973141	7.9968814383	7.9970927820	7.9991099555	99.5898437500	33.2211431100
49	0.0035474953	0.0273301756	-0.0098962056	7.9973381504	7.9972480080	7.9978632333	7.9991214866	99.6080729167	33.1675704657
50	0.0112855254	-0.0191838425	-0.0148714182	7.9970337574	7.9975057151	7.9975723998	7.9992016455	99.5855034722	33.2358677151
Total	49.7793808967	38.5015070996	43.8774007419	399.4059159835	399.5619902013	399.3624818379	399.6084565833	4980.4014756944	1662.7587265114
Average	0.0001340529	-0.0072846628	-0.0046555239	7.9881183197	7.9912398040	7.9872496368	7.9921691317	99.6080295139	33.2551745302

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm							
Video Stream	v_BaseballPitch_g01_c01							
Resolution	240p							
Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC_h	CC_v	CC_d	Red	Green	Blue	Combined	NPCR	UACI
1	0.0060288394	-0.0219490650	-0.0167603451	7.9973988902	7.9974590099	7.9977807472	7.9992442049	99.6362847222	33.2616710920
2	-0.0251354077	-0.0278676857	-0.0302158152	7.9976375489	7.9976742729	7.9973976084	7.9992011953	99.6150173611	33.2257965686
3	0.0013511514	0.0063170477	0.0388227828	7.9975229941	7.9976915683	7.9978455759	7.9992327235	99.6041666667	33.2688878676
4	-0.0154891038	0.0086522014	0.0630818611	7.9979448248	7.9978301758	7.9977410165	7.9992747991	99.6106770833	33.2465499047
5	0.0195223389	0.0037910314	0.0413794958	7.9973575614	7.9977615916	7.9974641820	7.9991602981	99.5993923611	33.2460375817
6	-0.0013168983	0.0128615189	-0.0710630528	7.9977744193	7.9977705758	7.9976923398	7.9991978650	99.6011284722	33.2728553922
7	-0.0145270409	-0.0351067168	-0.0062012338	7.9977820768	7.9976037964	7.9975195100	7.9991571984	99.6132812500	33.2659807326
8	-0.0029353854	-0.0414614847	-0.0460249824	7.9975219582	7.9976952612	7.9980538410	7.9992851873	99.6089409722	33.1789096541
9	0.0215291038	0.0040160671	0.0308301044	7.9978328846	7.9972984674	7.9974626182	7.9991527004	99.6093750000	33.2126463780
10	-0.0628497340	0.0695279688	0.0216055505	7.9367569148	7.9079267021	7.9266641083	7.9372374699	99.6067708333	33.9059742647
11	-0.0216276739	-0.0247871277	0.0048395884	7.9978035101	7.9976568933	7.9975071207	7.9992390686	99.6037326389	33.1941074346
12	-0.0172990129	-0.0262691368	0.0199795049	7.9976872724	7.9978162416	7.9976192278	7.9991693236	99.5920138889	33.2218001089
13	-0.0192620742	-0.0151039686	0.0271493319	7.9977955724	7.9976477712	7.9978050333	7.9993804591	99.6306423611	33.1649884259
14	0.0017089265	-0.0277250812	-0.0101228238	7.9979651919	7.9976508320	7.9974736650	7.9992520801	99.6128472222	33.1972971133
15	0.0017374474	-0.0035546914	-0.0021114327	7.9974936476	7.9978904728	7.9978408376	7.9991854420	99.5716145833	33.2283530773
16	-0.1812256022	-0.1420142535	-0.0104899185	7.8667795671	7.9042789042	7.7890320398	7.8757602328	99.6202256944	32.4270850354
17	0.0009302491	0.0011230866	0.0683733014	7.9977331983	7.9975621189	7.9977588786	7.9992460652	99.6080729167	33.1751668028
18	-0.0090670548	-0.0090818292	0.0046480924	7.9975562354	7.9978265584	7.9975651056	7.9993338317	99.6362847222	33.2259378404
19	0.0147381390	0.0040079029	0.0202735202	7.9979208936	7.9975102400	7.9977925812	7.9992631085	99.6059027778	33.2441670071
20	-0.0160458103	-0.0144360747	0.0366905026	7.9973865711	7.9975005268	7.9974454889	7.9991228546	99.6050347222	33.1829758987
21	-0.0095245786	-0.0022454367	0.0035097146	7.9977530631	7.9974573893	7.9974606680	7.9991793213	99.6145833333	33.2046364379
22	0.0013948876	-0.0001577660	-0.0426374227	7.9975998974	7.9977420758	7.9978817792	7.9992417565	99.5993923611	33.2248536220
23	0.0063245352	0.0029004360	-0.0596789388	7.9975977520	7.9976744890	7.9977745188	7.9992380595	99.6354166667	33.1905671296
24	0.0002926128	0.0018951685	0.0180925763	7.9972211745	7.9978207616	7.9974075315	7.9991618100	99.6024305556	33.1842660675
25	-0.0052146927	0.0078810827	0.0224633484	7.9976957006	7.9976534871	7.9976053076	7.9990749611	99.6163194444	33.1868906590
26	0.0154008782	-0.0147948500	-0.0177501011	7.9978761887	7.9976627766	7.9974782149	7.9991673354	99.6132812500	33.2958231209
27	0.0129121591	-0.0007600881	-0.0034713288	7.9971996001	7.9976901137	7.9977262982	7.9991864535	99.6041666667	33.2865638617
28	0.0187447194	-0.0273667457	0.0038815272	7.9979541795	7.9978691219	7.9974385982	7.9992694298	99.6263020833	33.2393909995
29	0.2191378428	0.0001923344	0.0500323370	7.9862496249	7.9888727171	7.9757345388	7.9873932092	99.5967881944	33.2212350218
30	0.2683333993	0.0389538684	0.0184795487	7.9727835430	7.9802277574	7.9490266248	7.9745818655	99.6163194444	33.5260365605
31	0.0533659760	-0.2278849247	-0.0063394400	7.9661372915	7.9591317941	7.9685737369	7.9703630965	99.6254340278	33.9173049428
32	-0.0184228448	0.0015821898	-0.0074358746	7.9978527579	7.9972947786	7.9976446402	7.9991458979	99.6202256944	33.1842269199
33	-0.0144784732	0.0168421160	-0.0249943945	7.9973894592	7.9977207950	7.9976778299	7.9991767483	99.6111111111	33.1206188725
34	-0.0259932039	-0.0104134124	-0.0637921598	7.9977537390	7.9978070595	7.9977189249	7.9992807835	99.6141493056	33.2657066993

35	0.0278869759	-0.0145891460	-0.0362873253	7.9975284996	7.9974243682	7.9977955407	7.9991109389	99.6085069444	33.2461431100
36	-0.0100170623	0.0170839358	-0.0119089559	7.9976740807	7.9974418053	7.9977191122	7.9991182692	99.5872395833	33.0135791122
37	-0.0403959643	0.0623361286	-0.0063327644	7.9974705446	7.9973584581	7.9978300237	7.9992236715	99.6072048611	33.2311342593
38	-0.0186975831	0.0056822239	-0.0077590082	7.9975657993	7.9974488230	7.9976794312	7.9991434961	99.6080729167	33.2958214188
39	-0.0097989264	-0.0239503082	0.0626129193	7.9355962447	7.9117833346	7.9469960788	7.9432679063	99.6002604167	32.2576848448
40	0.0163866380	0.0008999270	0.0635347281	7.9978489787	7.9977605034	7.9975718892	7.9992421998	99.6015625000	33.2195499728
41	0.0146718992	-0.0071735424	0.0030282625	7.9979416055	7.9973074796	7.9975371729	7.9992824138	99.6250000000	33.2273335376
42	-0.0171739988	-0.0051557341	-0.0478808243	7.9973022121	7.9977412607	7.9975711393	7.9991229766	99.5946180556	33.3065104167
43	0.0373013792	0.0433907664	0.0268419548	7.9975521080	7.9976859427	7.9976491412	7.9992097359	99.6067708333	33.2182819308
44	0.0137147935	-0.0197447454	-0.0081103282	7.9976567225	7.9974285338	7.9979830388	7.9992859875	99.5998263889	33.1881161492
45	-0.0025704235	0.0072208796	-0.0149631400	7.9975788757	7.9977446514	7.9978690137	7.9993340968	99.6210937500	33.1765744145
46	0.2315861122	-0.0152283213	0.0077872770	7.9296932651	7.9226138363	7.9030378519	7.9328918801	99.6111111111	34.0416394336
47	-0.0066168947	0.0026175940	0.0255488750	7.9977981913	7.9976965573	7.9976539946	7.9991801795	99.5993923611	33.2036985975
48	-0.0326418407	-0.0263319300	-0.0022837164	7.9977751901	7.9976727124	7.9975019282	7.9991602253	99.6345486111	33.2538398693
49	-0.0007271536	-0.0099862559	-0.0223049050	7.9980810792	7.9974917126	7.9979077982	7.9992287391	99.6427951389	33.1928768382
50	0.0161290878	0.0061449156	0.0189478295	7.9980716005	7.9977601414	7.9974448813	7.9992909100	99.6197916667	33.2438776552
Total	48.0545494407	48.1966475985	39.1693808565	399.4938507022	399.4730372185	399.3583587737	399.5876504625	4980.5551215278	1661.7119706563
Average	0.0084413125	-0.0093841231	0.0025102808	7.9898770140	7.9894607444	7.9871671755	7.9917530093	99.6111024306	33.2342394131

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm							
Video Stream	v_Basketball_g01_c01							
Resolution	240p							

Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC_h	CC_v	CC_d	Red	Green	Blue	Combined	NPCR	UACI
1	-0.0079613815	-0.0052352334	-0.0490465092	7.9978525449	7.9977329067	7.9974820796	7.9992543033	99.6076388889	33.2626974401
2	0.0073003943	-0.0022794945	0.0399916823	7.9977076865	7.9979577005	7.9975885092	7.9993363926	99.6089409722	33.1184436275
3	0.0027573130	0.0128513498	0.0011468243	7.9974649632	7.9976378991	7.9974419532	7.9990993915	99.6128472222	33.4213456563
4	0.0188890973	0.0101032961	-0.0045895595	7.9977770718	7.9978434193	7.9976281756	7.9992402315	99.5946180556	33.2226307190
5	-0.0157533378	0.0242141601	0.0303778027	7.9975080941	7.9971561346	7.9975523679	7.9990867056	99.6028645833	33.1213694853
6	0.0072861246	0.0018688358	0.0121293174	7.9977897141	7.9976029958	7.9974256825	7.9992613044	99.6102430556	33.2384599673
7	0.0383928493	0.0150808234	-0.0329914164	7.9974641636	7.9975076574	7.9974853558	7.9990263012	99.6002604167	33.2025105528
8	-0.0271375518	-0.0349315110	-0.0261697453	7.9976676599	7.9976050923	7.9978243743	7.9992929759	99.6137152778	33.2599928513
9	-0.0064048296	-0.0107401320	-0.0586951493	7.9979275942	7.9973246272	7.9979909641	7.9992465437	99.6323784722	33.2664794390
10	0.0165469762	0.0051247039	-0.0225084518	7.9977287928	7.9974009061	7.9976280764	7.9991658424	99.6093750000	33.2793028322
11	0.0262874542	0.0088230539	-0.0358142374	7.9978023666	7.9976870218	7.9975316547	7.9992143474	99.6193576389	33.2148999183
12	0.0247674573	-0.0387070823	0.0123953299	7.9981371641	7.9972883831	7.9978604855	7.9991912812	99.6276041667	33.1568474265
13	0.0104292158	-0.0182021813	-0.0055288149	7.9975829425	7.9976910466	7.9979625147	7.9992797578	99.5985243056	33.2294849537
14	-0.0412741134	0.0031204327	0.0099446980	7.9973040774	7.9974911608	7.9973214784	7.9990486131	99.6297743056	33.2063657407
15	-0.0199615233	0.0136062752	0.0259936980	7.9969580846	7.9976235296	7.9973232338	7.9993333873	99.6223958333	33.1679364107
16	0.0059661028	0.0113978953	-0.0006292081	7.9975911838	7.9975295852	7.9974961229	7.9991543385	99.5876736111	33.2127025463
17	0.0059938973	0.0065500325	0.0167870641	7.9977454695	7.9974960103	7.9975360054	7.9991966239	99.6019965278	33.2369706563
18	0.0153647172	0.0056462681	-0.0133343119	7.9978747319	7.9973119518	7.9975828909	7.9992123307	99.6019965278	33.2453720724
19	-0.0223064637	-0.0174674858	0.0174115006	7.9974427859	7.9977929143	7.9975251583	7.9990367487	99.6284722222	33.2666802832
20	-0.2476893218	0.0480832529	-0.0021893595	7.9747316265	7.9698527814	7.9731319529	7.9808898891	99.6072048611	33.0708929058
21	0.0175222126	-0.0114609376	0.0240096009	7.9976463205	7.9973799067	7.9972972762	7.9991646058	99.6124131944	33.1784892429
22	-0.0360092436	-0.0187066156	-0.0374729789	7.9974993335	7.9976085542	7.9975792882	7.9992127786	99.5820312500	33.0653833061
23	-0.0337186756	0.0151007037	-0.0032157710	7.9971101237	7.9978805644	7.9977070266	7.9993036663	99.5980902778	33.2573325163
24	0.0018926809	-0.0252446659	-0.0345326362	7.9976367908	7.9975374327	7.9974263699	7.9991710005	99.6054687500	33.2350830610
25	-0.0097655850	0.0384945453	0.0752825830	7.9974821048	7.9978681244	7.9979930006	7.9992500359	99.6215277778	33.2658173339
26	-0.0145276211	-0.0038449910	-0.0495819368	7.9978917116	7.9977383139	7.9977169931	7.9992166713	99.6015625000	33.2170564406
27	-0.0228831230	-0.0129187993	0.0044328063	7.9975732014	7.9978444801	7.9971354615	7.9991392070	99.6032986111	33.1996868192
28	-0.0322104439	-0.0067460400	-0.0226092776	7.9977816666	7.9974848026	7.9974864406	7.9991462512	99.5946180556	33.2355528322
29	0.0133181140	-0.0189481694	-0.0190450799	7.9974290403	7.9977105035	7.9976990123	7.9992804273	99.6002604167	33.1735549428
30	-0.0169235961	0.0197566518	0.0100946862	7.9979438176	7.9975407724	7.9973857058	7.9991425001	99.5933159722	33.1685729847
31	0.0032833567	0.0307307399	-0.0147684789	7.9974459056	7.9975120222	7.9973985990	7.9992216769	99.6063368056	33.2199108115
32	-0.0220521583	0.0188182141	-0.0011650543	7.9974696509	7.9974111591	7.9979863016	7.9992500173	99.6163194444	33.2162819989
33	-0.0154044335	-0.0245553865	0.0103570790	7.9974820490	7.9972648208	7.9976177590	7.9990679304	99.6019965278	33.1002433960
34	0.0102349418	0.0082597075	-0.0140833934	7.9976897734	7.9975033463	7.9976456846	7.9991412341	99.6210937500	33.2135620915

35	0.0066248592	-0.0296715425	0.0243246290	7.9977624940	7.9978199701	7.9973343797	7.9991555903	99.6119791667	33.2432955474
36	0.0154318148	0.0024202247	-0.0068160132	7.9974526459	7.9972870385	7.9979366645	7.9991062229	99.6098090278	33.1806406590
37	0.0045306583	0.0330574305	0.0338734928	7.9974672287	7.9974646939	7.9978420974	7.9991927252	99.6041666667	33.1944087010
38	-0.0569508338	-0.0085551247	0.0048061290	7.9975476398	7.9973217039	7.9979397505	7.9990890940	99.6137152778	33.1873774510
39	-0.0090099627	-0.0101933083	-0.0019746147	7.9975156631	7.9978119580	7.9978381917	7.9991889029	99.6024305556	33.1932751225
40	0.0204138350	-0.0038454242	0.0439105951	7.9976470832	7.9975326314	7.9977317225	7.9992514388	99.6050347222	33.1962486383
41	0.3075746098	0.3435880224	-0.0920578050	7.9437105273	7.8968023588	7.9320580619	7.9416420816	99.5859375000	33.5486077070
42	0.0288697230	-0.0228354309	0.0398048342	7.9975972971	7.9977572519	7.9980362331	7.9991676724	99.6167534722	33.2689099946
43	0.0008673471	0.0139082895	0.0452130564	7.9975072247	7.9973161557	7.9978891171	7.9992123798	99.5989583333	33.1547300517
44	0.0042562381	0.0076721296	0.0086789723	7.9976956027	7.9976981623	7.9979234000	7.9992639208	99.6106770833	33.2502825436
45	-0.0344965602	-0.0194497611	-0.0229427976	7.9974850172	7.9975747911	7.9978782736	7.9991118618	99.6046006944	33.2093750000
46	0.0069392001	0.0172756447	0.0074960801	7.9977694300	7.9976229394	7.9975772359	7.9991589112	99.6111111111	33.1987779139
47	0.0253963547	-0.0242797562	0.0027547972	7.9977265603	7.9975446465	7.9975691849	7.9992087009	99.5824652778	33.1328890931
48	0.0087204428	-0.0020174368	0.0088701861	7.9975149730	7.9972897036	7.9972477193	7.9991992351	99.6228298611	33.2621085240
49	-0.0067852837	0.0038173056	0.0157458486	7.9977732912	7.9976897058	7.9976336645	7.9991843391	99.6206597222	33.2447763480
50	-0.0066051666	-0.0028379294	-0.0457887394	7.9973789678	7.9973162917	7.9974332459	7.9991121555	99.5937500000	33.2151382081
Total	49.2674233819	44.2341585872	45.2623584897	399.8036918537	399.7496685301	399.7912628973	399.8835205451	4980.3710937500	1660.8287547658
Average	-0.0009994641	0.0069138008	-0.0018343589	7.9960738371	7.9949933706	7.9958252579	7.9976704109	99.6074218750	33.2165750953

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm							
Video Stream	v_BasketballDunk_g01_c01							
Resolution	240p							
Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC$_h$	CC$_v$	CC$_d$	Red	Green	Blue	Combined	NPCR	UACI
1	-0.3865947198	-0.0346078456	-0.1368490971	7.9937635579	7.9851301247	7.9839536710	7.9928254945	99.6271701389	33.3932053377
2	0.0318923931	0.0624649503	0.1480887420	7.9804958442	7.9240693460	7.8960427739	7.9591056435	99.5967881944	33.1347783905
3	0.0047493204	0.0050363908	-0.0132892410	7.9978209297	7.9974970070	7.9974543209	7.9991421342	99.6158854167	33.2206750408
4	0.0295568728	0.0307080914	-0.0797666898	7.9975680717	7.9976786311	7.9975703800	7.9992426187	99.6006944444	33.2032798883
5	0.0155065919	0.0010163225	-0.0530960186	7.9976587463	7.9978076865	7.9977877568	7.9991798891	99.6024305556	32.9461669390
6	0.0008319831	-0.0200062536	0.0105615757	7.9975410978	7.9973883025	7.9973221450	7.9991475168	99.6037326389	33.2474639161
7	-0.0151819051	0.0125477190	0.0005134113	7.9974317513	7.9977136599	7.9975796027	7.9991434884	99.6171875000	33.2919713371
8	0.0005083474	0.0163222460	0.0042484412	7.9973697559	7.9977184750	7.9976674373	7.9991656755	99.6297743056	33.3057376770
9	0.0052974522	0.0031340475	0.0184968683	7.9972149486	7.9979805923	7.9974210478	7.9992081518	99.5928819444	33.2236519608
10	-0.0269348737	-0.4433396976	0.4189819190	7.9452739329	7.9512529852	7.9405244587	7.9639500303	99.6193576389	33.6214392702
11	0.0012603082	-0.0050466248	0.0008453449	7.9977175243	7.9977853789	7.9975162808	7.9992761732	99.5985243056	33.2851409314
12	0.0318263509	-0.0015007702	-0.0110956641	7.9975166871	7.9976498358	7.9977372909	7.9991822573	99.5920138889	33.1395084423
13	-0.0140240472	0.0141729128	0.0113109107	7.9976992972	7.9973281004	7.9974110055	7.9991873226	99.5959201389	33.1840890523
14	0.0248090453	-0.0138535862	0.0503427911	7.9977865468	7.9971503958	7.9974760262	7.9991328052	99.6080729167	33.3040662446
15	-0.0136078890	-0.0047556337	0.0504568714	7.9975285523	7.9975572923	7.9975947287	7.9992145390	99.5902777778	33.1843818083
16	-0.0989847254	-0.0254238277	0.0361469322	7.9793269547	7.9425382626	7.9550665316	7.9731783793	99.6319444444	33.3862591912
17	0.0704839749	-0.1394932703	0.1824420860	7.9690422449	7.9078087400	7.9144351900	7.9549463048	99.6493055556	34.0128914760
18	0.0311829929	-0.0173064653	0.0168869762	7.9977259768	7.9976970544	7.9974750174	7.9993948587	99.6176215278	33.2470996732
19	0.0207381187	0.0213205272	0.0289753646	7.9971234309	7.9972418893	7.9975187462	7.9991503199	99.6167534722	32.4260757081
20	-0.0299170226	0.0194252884	-0.0477156037	7.9973161845	7.9983241019	7.9975760500	7.9991559209	99.6189236111	33.1804244962
21	0.0243087082	0.0368143383	0.0160805850	7.9975530116	7.9974390913	7.9976410344	7.9992375184	99.6015625000	33.2672777097
22	-0.0143599380	-0.0045947388	-0.0099149694	7.9974658098	7.9973722672	7.9976031958	7.9991189366	99.6171875000	33.2582907816
23	-0.0058621618	-0.0515206606	0.1068626959	7.9975042285	7.9975731634	7.9977592539	7.9992181076	99.6145833333	33.3132489107
24	0.0102765326	0.0080149945	0.0156213879	7.9978200321	7.9976993284	7.9975481308	7.9992070396	99.6059027778	33.2350251906
25	-0.0447433315	0.0369416928	-0.0641848291	7.9781190925	7.9558314992	7.9641506487	7.9766373585	99.6141493056	32.1928036492
26	-0.0244307429	0.0232898929	-0.0462453058	7.9974701779	7.9976558832	7.9973220890	7.9991155801	99.6202256944	33.2953278186
27	-0.0223352810	-0.0291032213	-0.0253478612	7.9976080949	7.9976559194	7.9979569841	7.9993013915	99.6015625000	33.2199805964
28	0.0076473993	0.0052897973	-0.0365187350	7.9978500221	7.9973323868	7.9978137420	7.9991616499	99.5998263889	33.2546568627
29	0.0042371465	0.0113103361	0.0082648056	7.9978361987	7.9976534866	7.9973666404	7.9990917808	99.6128472222	33.2054942810
30	0.0050119011	-0.0207950281	-0.0202599992	7.9973772151	7.9970429038	7.9978118045	7.9992016957	99.6072048611	33.1699227260
31	0.0078993495	-0.0073268182	-0.0360247219	7.9976589985	7.9976411327	7.9972967840	7.9992539956	99.5911458333	33.2366727941
32	0.0354468929	-0.0095374007	0.0114433769	7.9975680506	7.9976215320	7.9976834536	7.9992536778	99.6106770833	33.2259395425
33	-0.0118958969	0.0104650792	-0.0703467386	7.9978380263	7.9973165024	7.9971916472	7.9990948655	99.6124131944	33.0755225354
34	0.0082338727	-0.0356299129	-0.0447764017	7.9976381486	7.9975407851	7.9980666125	7.9992059428	99.6102430556	33.2304993873

35	0.0211509801	0.0067293950	-0.0007404721	7.9978393533	7.9975653991	7.9978056957	7.9992196923	99.6028645833	33.0393978077
36	0.0081378010	-0.0195380222	0.0188906462	7.9977878022	7.9975314988	7.9974135773	7.9991012759	99.6037326389	33.2236553649
37	0.0042034025	-0.0050440206	0.0100207266	7.9974108316	7.9972357945	7.9980239345	7.9993999011	99.6050347222	33.1655450027
38	-0.0210770589	-0.0283782516	0.0248027987	7.9975657469	7.9976118965	7.9975184678	7.9991642056	99.6054687500	33.2497736247
39	0.0072182234	-0.0094869459	-0.0457702330	7.9975474725	7.9974501826	7.9976279251	7.9991562372	99.6293402778	33.1847069036
40	-0.0339067254	-0.0191363535	-0.0076809550	7.9977010095	7.9976898721	7.9977973041	7.9992551254	99.6223958333	33.2680998094
41	0.0155798737	-0.0223745625	-0.0356788829	7.9976716895	7.9975919163	7.9975714369	7.9990871005	99.6132812500	33.2700639978
42	0.0351342764	0.0243855961	-0.0280646760	7.9972852272	7.9975728985	7.9979290734	7.9991951171	99.6232638889	33.1398233252
43	-0.4508454276	0.0482035478	-0.1052346729	7.9845819765	7.9774103475	7.9786652113	7.9906383400	99.6145833333	33.2883442266
44	0.0343806054	-0.0080154509	-0.0147660706	7.9978655724	7.9976006177	7.9977116806	7.9992623895	99.6054687500	33.2031250000
45	-0.0091381243	-0.0296807144	-0.0324235544	7.9974844858	7.9977612706	7.9978120210	7.9992724154	99.6050347222	33.1898897059
46	0.0105765651	0.0113946226	-0.0283390345	7.9981032264	7.9975950578	7.9972526806	7.9992278647	99.6289062500	33.3078907952
47	0.0081683982	-0.3789831304	0.0371396470	7.9804860281	7.9818300175	7.9664530348	7.9844145523	99.6046006944	33.2956750408
48	-0.0103676265	-0.0054545202	-0.0347590526	7.9975270884	7.9977279322	7.9977505236	7.9992245919	99.6046006944	33.1723107298
49	-0.2087083493	0.1087820557	-0.2319529277	7.9682118170	7.9288846633	7.9106104956	7.9539958650	99.6150173611	33.3578329248
50	0.0222308832	0.0307318925	0.0034969579	7.9974115023	7.9974055090	7.9977930551	7.9991014073	99.6089409722	33.2310525599
Total	41.1619486555	46.7609615629	43.6301885787	399.6807099725	399.4551586173	399.4120785998	399.7167451456	4980.5373263889	1660.7061563862
Average	-0.0180866131	-0.0168270514	-0.0005984108	7.9936141995	7.9891031723	7.9882415720	7.9943349029	99.6107465278	33.2141231277

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm								
Video Stream	v_BenchPress_g01_c01								
Resolution	240p								
Frame Number	Correlation Coefficient			E(i)				Differential Attacks	
	CC_h	CC_v	CC_d	Red	Green	Blue	Combined	NPCR	UACI
1	-0.0072460045	0.0015162984	-0.0127173031	7.9975709852	7.9977126681	7.9978426486	7.9992442176	99.5989583333	33.1879714733
2	0.0156042209	0.0090381785	0.0093595812	7.9976053094	7.9976746145	7.9977841762	7.9992824967	99.6041666667	33.3243770425
3	-0.0014231434	-0.0153340971	-0.0559622992	7.9975109368	7.9979239013	7.9978616514	7.9992136560	99.6384548611	33.1917704929
4	-0.0183968806	0.0234859422	-0.0195538828	7.9980977423	7.9973901751	7.9973406015	7.9992465414	99.5933159722	33.2658700980
5	0.0071629582	-0.0139023253	0.0165923319	7.9974722196	7.9975248144	7.9972502102	7.9991196539	99.6206597222	33.1426147195
6	0.0363798044	-0.0194295398	-0.0496180188	7.9980930312	7.9972904277	7.9971680106	7.9991567693	99.6289062500	33.1816993464
7	-0.0239198423	-0.0111217968	0.0763436463	7.9970526409	7.9974635093	7.9977384457	7.9991278332	99.6137152778	33.1963694853
8	-0.0229311117	0.0132393285	0.0002044596	7.9973496818	7.9976128932	7.9976789693	7.9992100000	99.5989583333	33.2594413807
9	-0.0118144631	-0.0029620240	0.0393169791	7.9973469894	7.9974997101	7.9973796280	7.9991844962	99.5993923611	32.6246017157
10	-0.0167200895	0.0182422692	-0.0140540205	7.9974917472	7.9978291208	7.9971594666	7.9990606006	99.5933159722	33.2823444308
11	-0.0281516691	-0.0069351317	-0.0146528352	7.9978543259	7.9970400679	7.9981598859	7.9991672024	99.5907118056	33.2233779276
12	-0.0109217792	0.0098210976	-0.0218602814	7.9975243419	7.9973968930	7.9975072152	7.9991543106	99.5950520833	33.1336856618
13	0.0017371679	-0.0115426981	0.0069867768	7.9976255879	7.9975509563	7.9975083048	7.9992015300	99.5928819444	33.1729966639
14	-0.0197551136	-0.0030945333	0.0154542320	7.9980693461	7.9971849827	7.9976701375	7.9992188357	99.6015625000	33.1641050517
15	-0.0269816289	-0.0204512639	0.0404117813	7.9977151061	7.9973434295	7.9972189714	7.9991148153	99.6072048611	33.2605800654
16	-0.0015670103	-0.0137305808	0.0354425187	7.9974449585	7.9981583309	7.9978527138	7.9992257734	99.6167534722	33.2338882081
17	0.0125215295	-0.0015818874	-0.0431860380	7.9976574860	7.9978031083	7.9975356156	7.9992706337	99.6111111111	33.1670360158
18	-0.0293194393	0.0162163250	0.0194159012	7.9975390703	7.9977185975	7.9975042900	7.9991340969	99.6154513889	33.2047606890
19	0.0062449760	0.0002060748	-0.0010887284	7.9976368372	7.9976705206	7.9980206924	7.9992242064	99.6202256944	33.3139348448
20	0.0312555434	-0.0135547035	-0.0553954449	7.9975587577	7.9977828276	7.9973179582	7.9992464124	99.6028645833	33.2740230120
21	0.0066810735	0.0235978239	-0.0443107340	7.9976387190	7.9977610604	7.9979537454	7.9993135997	99.5928819444	33.2516578159
22	0.0310833423	-0.0011968593	0.0279040335	7.9975941069	7.9975481916	7.9973205998	7.9991069347	99.6176215278	33.2174734477
23	-0.0263045427	0.0026735417	-0.0461600075	7.9977739477	7.9975853430	7.9975446518	7.9991757916	99.6041666667	33.1589035267
24	-0.0484576517	-0.0195904371	0.0168647045	7.9978726076	7.9973828859	7.9978024587	7.9991949836	99.6015625000	33.1870387391
25	-0.0176381619	0.0057573790	-0.0505429704	7.9975205236	7.9974404044	7.9974070168	7.9992221702	99.6024305556	33.2283105256
26	0.0059075788	0.0130522757	0.0203498618	7.9980015356	7.9979186286	7.9975061430	7.9992804377	99.6054687500	33.1451184641
27	0.0497370432	0.2088518622	-0.0339625672	7.9638902787	7.9762069777	7.9497050974	7.9719717471	99.5993923611	33.7251038263
28	-0.0093803882	-0.0323705607	-0.0001049458	7.9974599017	7.9977318192	7.9978491211	7.9991969281	99.5941840278	33.2044304875
29	-0.0377509638	-0.0079655081	-0.0161210138	7.9976430304	7.9973657394	7.9975267153	7.9991397042	99.6037326389	33.2961516204
30	-0.0185077193	-0.0237222342	-0.0143275956	7.9971440978	7.9978164375	7.9974282950	7.9990573140	99.6111111111	33.1593767021
31	0.0012673087	0.0027562970	-0.0460668126	7.9977909425	7.9973771423	7.9971536877	7.9992646656	99.6250000000	33.2317793437
32	0.0175681106	-0.0025555797	0.0050997355	7.9977911510	7.9977076485	7.9976992651	7.9992983451	99.6245659722	33.2250153186
33	-0.0087082127	-0.0171489627	-0.0270638393	7.9973694591	7.9974676999	7.9978734632	7.9991832448	99.6254340278	33.2027199074
34	-0.0032610736	0.0094892476	-0.0102101844	7.9974236352	7.9975182031	7.9976451104	7.9992730512	99.6093750000	33.2218392565

35	-0.0000635480	0.0111747113	-0.0070898556	7.9972580254	7.9974551707	7.9975651834	7.9991343470	99.6019965278	33.3468324483
36	-0.0014303634	-0.0176910038	0.0404891990	7.9973424151	7.9975511459	7.9974498937	7.9991398533	99.6145833333	33.3183857571
37	0.0183078758	-0.0130836792	0.0640519470	7.9978209765	7.9979647140	7.9972418318	7.9991598654	99.6119791667	33.2777011846
38	0.0196899957	0.0254666182	-0.0237759830	7.9978408138	7.9975025080	7.9975034216	7.9991907997	99.6089409722	33.1944989107
39	0.0097787389	0.0203702408	0.0062430594	7.9975876502	7.9978466395	7.9978003492	7.9992278562	99.6167534722	33.1697303922
40	-0.0141748650	-0.0040142869	-0.0181430746	7.9974437599	7.9974704181	7.9976137576	7.9992362251	99.6349826389	33.1861400463
41	0.0107114236	0.0008159288	0.0123061425	7.9974116278	7.9976542937	7.9973602229	7.9991394155	99.6054687500	33.1295326117
42	0.0032986669	-0.0156754451	-0.0117395544	7.9978912472	7.9979788076	7.9973855817	7.9991913863	99.6019965278	33.2580831291
43	0.0107168813	0.0042964069	-0.0481345979	7.9974462695	7.9975472407	7.9977366017	7.9991473735	99.6241319444	33.2049019608
44	0.0013250025	-0.0220177856	-0.0271644991	7.9978446339	7.9973512414	7.9975057290	7.9992017910	99.5985243056	33.3191925381
45	-0.1176993485	0.2987580044	0.0095299907	7.9604104499	7.9816195559	7.9333934712	7.9716243193	99.6158854167	33.5235855801
46	-0.0155974463	-0.0355118617	-0.0109629775	7.9978607908	7.9975617538	7.9975230387	7.9993479011	99.5828993056	33.3003982843
47	0.0246890299	-0.0361678097	0.0208831989	7.9971211319	7.9979126346	7.9974928796	7.9991063528	99.6106770833	32.4837673611
48	0.0104543936	0.0042961734	-0.0306089783	7.9977706708	7.9975740998	7.9976003576	7.9992004946	99.6067708333	33.2195176334
49	0.0085618561	-0.0244928164	-0.0034373373	7.9974754288	7.9973267775	7.9978579733	7.9991832638	99.5998263889	33.1694750817
50	0.0061653136	0.0061221530	0.0291998648	7.9972346010	7.9972909776	7.9974562808	7.9989810453	99.6024305556	33.4154088371
Total	49.6424947033	49.5332597913	46.4679849214	399.8088915309	399.8420077093	399.7664015375	399.9046952890	4980.3984375000	1660.7775190632
Average	-0.0038254339	0.0064478860	-0.0049112892	7.9961778306	7.9968401542	7.9953280308	7.9980939058	99.6079687500	33.2155503813

DECRYPTION METRICS

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_ApplyEyeMakeup_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0000693036	41.5924416437
2	0.0000821603	40.8533794698
3	0.0000853254	40.6892189292
4	0.0000826320	40.8285166273
5	0.0000903794	40.4393070001
6	0.0000913419	40.3933009337
7	0.0000879413	40.5580693760
8	0.0000955957	40.1956159212
9	0.0000903302	40.4416682832
10	0.0000890733	40.5025239347
11	0.0000959365	40.1801631652
12	0.0000968960	40.1369403626
13	0.0001095120	39.6053815746
14	0.0001166829	39.3299283626
15	0.0001129560	39.4709087043
16	0.0001117359	39.5180738196
17	0.0001176865	39.2927332782
18	0.0001186044	39.2589911503
19	0.0001039926	39.8299761230
20	0.0001124160	39.4917200911
21	0.0001064211	39.7297208727
22	0.0001067546	39.7161334701
23	0.0001066344	39.7210266724
24	0.0001096202	39.6010954941
25	0.0001119163	39.5110669423
26	0.0001296892	38.8709629355
27	0.0001272959	38.9518572588
28	0.0001271674	38.9562431435
29	0.0001272924	38.9519756765
30	0.0001245861	39.0453042049
31	0.0001197829	39.2160533635
32	0.0001303018	38.8504942806
33	0.0001283651	38.9155306376
34	0.0001311573	38.8220757446
35	0.0001284510	38.9126252250
36	0.0001249141	39.0338855226
37	0.0001108736	39.5517202496
38	0.0001353503	38.6854092947
39	0.0001310635	38.8251821683
40	0.0001341718	38.7233869041
41	0.0001368526	38.6374690667
42	0.0001259035	38.9996220138
43	0.0001203983	39.1937950915
44	0.0001404932	38.5234477887
45	0.0001368020	38.6390770834
46	0.0001414762	38.4931650594
47	0.0001389126	38.5725840887
48	0.0001399703	38.5396399095
49	0.0001154521	39.3759832727
50	0.0001280343	38.9267370354
Total	0.0057366057	1973.1021292219
Average	0.0001147321	39.4620425844

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_ApplyLipstick_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0000785089	41.0508129132
2	0.0000996609	40.0147539450
3	0.0000902138	40.4472686280
4	0.0001034561	39.8524402638
5	0.0000939127	40.2727552891
6	0.0001006127	39.9734700163
7	0.0000931058	40.3102318615
8	0.0001026776	39.8852433647
9	0.0000984609	40.0673607314
10	0.0001068834	39.7108958954
11	0.0001016610	39.9284553804
12	0.0001053737	39.7726790331
13	0.0000972565	40.1208152496
14	0.0001017437	39.9249267090
15	0.0000986640	40.0584138982
16	0.0001045461	39.8069204682
17	0.0001015950	39.9312763886
18	0.0001070517	39.7040639833
19	0.0000967346	40.1441802824
20	0.0001006377	39.9723925934
21	0.0000903433	40.4410393378
22	0.0000927163	40.3284401885
23	0.0000925469	40.3363826327
24	0.0001040956	39.8256743125
25	0.0000973480	40.1167277970
26	0.0001020165	39.9132978472
27	0.0000982304	40.0775387427
28	0.0001020332	39.9125846833
29	0.0001024077	39.8966726980
30	0.0001057607	39.7567552573
31	0.0001036817	39.8429770767
32	0.0001075705	39.6830692431
33	0.0000988746	40.0491512185
34	0.0000988029	40.0523011301
35	0.0001017003	39.9267790465
36	0.0001043844	39.8136440869
37	0.0001011939	39.9484558684
38	0.0001134091	39.4535207509
39	0.0000978540	40.0942145926
40	0.0000986718	40.0580701570
41	0.0001008856	39.9617077471
42	0.0001057764	39.7561139284
43	0.0001036301	39.8451416304
44	0.0001129294	39.4719302234
45	0.0001102796	39.5750468641
46	0.0001079760	39.6667263566
47	0.0001054825	39.7681972290
48	0.0001097581	39.5956329074
49	0.0001016956	39.9269785762
50	0.0001166643	39.3306215540
Total	0.0050714764	1997.3747505787
Average	0.0001014295	39.9474950116

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_Archery_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0001136575	39.4440174459
2	0.0001499600	38.2402451598
3	0.0001267303	38.9711952318
4	0.0001590870	37.9836535396
5	0.0001405908	38.5204302024
6	0.0001642437	37.8451140261
7	0.0001379100	38.6040435117
8	0.0001667006	37.7806290329
9	0.0001461613	38.3516750728
10	0.0001717764	37.6503646921
11	0.0001537303	38.1324061192
12	0.0001760996	37.5424162117
13	0.0001572103	38.0351900062
14	0.0001801705	37.4431634680
15	0.0001540661	38.1229278569
16	0.0001752375	37.5637297904
17	0.0001505027	38.2245557991
18	0.0001693477	37.7122062854
19	0.0001466421	38.3374147654
20	0.0001685690	37.7322234138
21	0.0001474740	38.3128455463
22	0.0001685520	37.7326602306
23	0.0001580026	38.0133577246
24	0.0001742432	37.5884412904
25	0.0001554723	38.0834710436
26	0.0001837847	37.3569068841
27	0.0001611310	37.9282089231
28	0.0001781337	37.4925396685
29	0.0001527126	38.1612522785
30	0.0001770253	37.5196458866
31	0.0001553750	38.0861885089
32	0.0001786472	37.4800386335
33	0.0001546495	38.1065142226
34	0.0001795004	37.4593456520
35	0.0001511395	38.2062196429
36	0.0001745317	37.5812568805
37	0.0001560182	38.0682477928
38	0.0001831286	37.3724394096
39	0.0001570705	38.0390528779
40	0.0001731931	37.6146932349
41	0.0001585386	37.9986484518
42	0.0001712820	37.6628824349
43	0.0001662075	37.7934936110
44	0.0001793114	37.4639215683
45	0.0001546806	38.1056408187
46	0.0001755134	37.5568966047
47	0.0001544640	38.1117264341
48	0.0001750092	37.5693909264
49	0.0001618581	37.9086559925
50	0.0001854360	37.3180589423
Total	0.0081104794	1895.9302437477
Average	0.0001622096	37.9186048750

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BabyCrawling_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0000665648	41.7675530671
2	0.0000822441	40.8489502464
3	0.0000695261	41.5785185772
4	0.0000846704	40.7226825566
5	0.0000720134	41.4258687550
6	0.0000891220	40.5001488562
7	0.0000810874	40.9104661243
8	0.0000960258	40.1761191186
9	0.0000866651	40.6215566674
10	0.0001098173	39.5932908837
11	0.0000910258	40.4083571504
12	0.0001038030	39.8378999239
13	0.0000911882	40.4006158810
14	0.0001108822	39.5513829885
15	0.0000902194	40.4470019341
16	0.0001076114	39.6814176377
17	0.0000880487	40.5527688447
18	0.0001075930	39.6821584923
19	0.0000934712	40.2932220818
20	0.0001096986	39.5979894074
21	0.0000880332	40.5535360165
22	0.0001078152	39.6731985946
23	0.0000973413	40.1170285644
24	0.0001111969	39.5390739006
25	0.0000940940	40.2643829241
26	0.0001122291	39.4989463377
27	0.0001008420	39.9635873407
28	0.0001102388	39.5766558714
29	0.0000966402	40.1484226475
30	0.0001078010	39.6737740132
31	0.0000955266	40.1987555651
32	0.0001089857	39.6263037587
33	0.0000957014	40.1908183207
34	0.0001095225	39.6049660100
35	0.0001001581	39.9931381156
36	0.0001092852	39.6143855257
37	0.0000943264	40.2536688974
38	0.0001111995	39.5389722316
39	0.0001012223	39.9472385754
40	0.0001131655	39.4628604593
41	0.0000982716	40.0757212813
42	0.0001131723	39.4625991863
43	0.0001021024	39.9096395061
44	0.0001146507	39.4062335792
45	0.0001013410	39.9421496906
46	0.0001146068	39.4078950521
47	0.0001041391	39.8238618073
48	0.0001103110	39.5738115930
49	0.0000947764	40.2329957094
50	0.0001101719	39.5792915143
Total	0.0049601459	2003.4518817846
Average	0.0000992029	40.0690376357

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BalanceBeam_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0000651431	41.8613126226
2	0.0000735952	41.3315075575
3	0.0000804323	40.9456966178
4	0.0000812900	40.8996297287
5	0.0000895305	40.4802881645
6	0.0000904902	40.4339859887
7	0.0000884148	40.5347480624
8	0.0001288587	38.8988628077
9	0.0001031319	39.8660708633
10	0.0001025203	39.8918999866
11	0.0001111688	39.5401689480
12	0.0001063678	39.7318978264
13	0.0001066057	39.7221957708
14	0.0001229191	39.1038049988
15	0.0001175029	39.2995147573
16	0.0001150669	39.3904975826
17	0.0001200639	39.2058744129
18	0.0001205980	39.1865972442
19	0.0001122138	39.4995378737
20	0.0001234211	39.0861042261
21	0.0001226074	39.1148323220
22	0.0001200223	39.2073788436
23	0.0001220138	39.1359115825
24	0.0001217255	39.1461848690
25	0.0001132388	39.4600487575
26	0.0001265745	38.9765372938
27	0.0001223340	39.1245297252
28	0.0001216621	39.1484478281
29	0.0001375566	38.6151856039
30	0.0001342771	38.7199789263
31	0.0001203752	39.1946306411
32	0.0001326245	38.7737633419
33	0.0001304791	38.8445895009
34	0.0001249236	39.0335560025
35	0.0001373796	38.6207779384
36	0.0001374355	38.6190100499
37	0.0001214801	39.1549478837
38	0.0001344375	38.7147964989
39	0.0001299833	38.8611235324
40	0.0001277112	38.9377091170
41	0.0001331665	38.7560491514
42	0.0001332372	38.7537444901
43	0.0001258779	39.0005062314
44	0.0001415264	38.4916244988
45	0.0001384474	38.5871513701
46	0.0001352304	38.6892553821
47	0.0001440094	38.4160921311
48	0.0001453465	38.3759549750
49	0.0001244862	39.0487864360
50	0.0001384498	38.5870780875
Total	0.0059579546	1965.0203790527
Average	0.0001191591	39.3004075811

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BandMarching_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0001111727	39.5400177107
2	0.0001295425	38.8758764640
3	0.0001234530	39.0849840294
4	0.0001339819	38.7295379640
5	0.0001248240	39.0370195334
6	0.0001431056	38.4434332126
7	0.0001305451	38.8423928205
8	0.0001448549	38.3906667860
9	0.0001359663	38.6656882179
10	0.0001523771	38.1708032302
11	0.0001441536	38.4117463571
12	0.0001558597	38.0726627917
13	0.0001335014	38.7451416569
14	0.0001532499	38.1459984216
15	0.0001435582	38.4297209634
16	0.0001555046	38.0825687065
17	0.0001397781	38.5456085628
18	0.0001560524	38.0672947422
19	0.0001420770	38.4747632691
20	0.0001587839	37.9919340411
21	0.0001554963	38.0827998659
22	0.0001669325	37.7745921561
23	0.0001620314	37.9040091346
24	0.0001705280	37.6820439821
25	0.0001490941	38.2653954684
26	0.0001647679	37.8312741692
27	0.0001512457	38.2031692127
28	0.0001612444	37.9251534184
29	0.0001537550	38.1317065978
30	0.0001727516	37.6257792338
31	0.0001591332	37.9823909653
32	0.0001718117	37.6494720672
33	0.0001595399	37.9713059224
34	0.0001720729	37.6428750345
35	0.0001638406	37.8557839020
36	0.0001743537	37.5856887990
37	0.0001508972	38.2131874867
38	0.0001691464	37.7173720154
39	0.0001581532	38.0092188540
40	0.0001702738	37.6885220676
41	0.0001585742	37.9976758181
42	0.0001711521	37.6661788393
43	0.0001623886	37.8944446805
44	0.0001781205	37.4928602642
45	0.0001638214	37.8562934885
46	0.0001777677	37.5014714935
47	0.0001783272	37.4878229758
48	0.0001897409	37.2183898662
49	0.0001590300	37.9852081214
50	0.0001813697	37.4143531597
Total	0.0077897038	1905.0042985414
Average	0.0001557941	38.1000859708

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BaseballPitch_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0000951861	40.2142655994
2	0.0001065733	39.7235175028
3	0.0001065546	39.7242764566
4	0.0001489847	38.2685833293
5	0.0001473663	38.3160172965
6	0.0001472882	38.3183193964
7	0.0001064882	39.7269869227
8	0.0001133909	39.4542186154
9	0.0001135966	39.4463466656
10	0.0001440214	38.4157298171
11	0.0001385794	38.5830138855
12	0.0001390044	38.5697136070
13	0.0001206746	39.1838410691
14	0.0001265279	38.9781361543
15	0.0001263917	38.9828147121
16	0.0001595661	37.9705937215
17	0.0001542697	38.1171948165
18	0.0001531875	38.1477673953
19	0.0001096112	39.6014498613
20	0.0001140252	39.4299920318
21	0.0001139785	39.4317719815
22	0.0001471733	38.3217098365
23	0.0001467876	38.3331055010
24	0.0001478487	38.3018263481
25	0.0001030559	39.8692707220
26	0.0001088296	39.6325295324
27	0.0001086175	39.6410028194
28	0.0001402662	38.5304687434
29	0.0001361386	38.6601868405
30	0.0001375679	38.6148273664
31	0.0001085004	39.6456864810
32	0.0001348287	38.7021770114
33	0.0001260070	38.9960547355
34	0.0001576399	38.0233387656
35	0.0001471084	38.3236247734
36	0.0001476800	38.3067837850
37	0.0000962128	40.1676716992
38	0.0001195391	39.2249004416
39	0.0001189532	39.2462394192
40	0.0001433605	38.4357061521
41	0.0001404303	38.5253918697
42	0.0001410276	38.5069601979
43	0.0001093424	39.6121155548
44	0.0001138600	39.4362886981
45	0.0001171052	39.3142382015
46	0.0001414850	38.4928946023
47	0.0001385008	38.5854787406
48	0.0001385670	38.5834008882
49	0.0000988880	40.0485648951
50	0.0001081239	39.6607811551
Total	0.0064087118	1948.3477766147
Average	0.0001281742	38.9669555323

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_Basketball_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0000781840	41.0688208600
2	0.0000783165	41.0614673219
3	0.0000781615	41.0700705317
4	0.0000809355	40.9186103067
5	0.0000809579	40.9174070408
6	0.0000840505	40.7545949826
7	0.0000839851	40.7579796750
8	0.0000858934	40.6603997106
9	0.0000961905	40.1686781335
10	0.0001012873	39.9444501126
11	0.0000989605	40.0453796105
12	0.0001014094	39.9392158460
13	0.0000768089	41.1458826792
14	0.0000934845	40.2926018662
15	0.0000908357	40.4174332318
16	0.0000915454	40.3836354047
17	0.0000917249	40.3751289141
18	0.0000934174	40.2957224487
19	0.0000932266	40.3046001342
20	0.0000956768	40.1919331462
21	0.0000963209	40.1627965074
22	0.0000990858	40.0398848478
23	0.0000966621	40.1474388892
24	0.0000973280	40.1176242047
25	0.0000988869	40.0486117980
26	0.0001003271	39.9858160632
27	0.0000987378	40.0551656024
28	0.0000990239	40.0426006224
29	0.0001043764	39.8139773473
30	0.0001036207	39.8455360645
31	0.0001040874	39.8260168524
32	0.0001057874	39.7556617663
33	0.0001449935	38.3865143030
34	0.0001459003	38.3594387045
35	0.0001416251	38.4885982332
36	0.0001439510	38.4178517965
37	0.0001225789	39.1158420004
38	0.0001242663	39.0564660512
39	0.0001226600	39.1129696440
40	0.0001230558	39.0989802072
41	0.0001232759	39.0912180581
42	0.0001245945	39.0450110428
43	0.0001243496	39.0535557553
44	0.0001380296	38.6002784199
45	0.0001539386	38.1265249758
46	0.0001555965	38.0800006820
47	0.0001565741	38.0527999978
48	0.0001566166	38.0516208128
49	0.0001089969	39.6258569324
50	0.0001097884	39.5944340137
Total	0.0054000886	1987.9131041534
Average	0.0001080018	39.7582620831

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BasketballDunk_g01_c01	
Resolution	240p	
Frame Number	Mean Square Error	Peak Signal-to-Noise Ratio
1	0.0001146869	39.4048608779
2	0.0001555202	38.0821306559
3	0.0001390510	38.5682603148
4	0.0001686619	37.7298302997
5	0.0001505951	38.2218928303
6	0.0001758080	37.5496124492
7	0.0001609884	37.9320533874
8	0.0001859085	37.3070083569
9	0.0001591379	37.9822634530
10	0.0001855857	37.3145539958
11	0.0001597024	37.9668856238
12	0.0001896450	37.2205858393
13	0.0001873694	37.2730139304
14	0.0002002735	36.9837658636
15	0.0001870412	37.2806262200
16	0.0002005204	36.9784136658
17	0.0002021311	36.9436680732
18	0.0002078576	36.8223404655
19	0.0001810500	37.4220157460
20	0.0002031222	36.9224261559
21	0.0001774196	37.5099838241
22	0.0001942984	37.1153077527
23	0.0001842832	37.3451436110
24	0.0002090634	36.7972208573
25	0.0001935310	37.1324945851
26	0.0002128132	36.7200147702
27	0.0001853766	37.3194504542
28	0.0002159829	36.6558062809
29	0.0001938591	37.1251388409
30	0.0002119075	36.7385371414
31	0.0001756864	37.5526193544
32	0.0002058303	36.8649071484
33	0.0001797431	37.4534777009
34	0.0002065877	36.8489544689
35	0.0001821608	37.3954497754
36	0.0002031102	36.9226830472
37	0.0001938091	37.1262589832
38	0.0002219173	36.5380880470
39	0.0001881230	37.2555804816
40	0.0002160564	36.6543288215
41	0.0001809845	37.4235851241
42	0.0002032971	36.9186872533
43	0.0001694434	37.7097540301
44	0.0001550074	38.0964769263
45	0.0001416574	38.4876076816
46	0.0001731433	37.6159420325
47	0.0001507779	38.2166217729
48	0.0001934976	37.1332450773
49	0.0001879582	37.2593882177
50	0.0002073803	36.8323248529
Total	0.0092293627	1868.6712871195
Average	0.0001845873	37.3734257424

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BenchPress_g01_c01	
Resolution	240p	
Frame Number	**Mean Square Error**	**Peak Signal-to-Noise Ratio**
1	0.0001627907	37.8837044455
2	0.0001613524	37.9222455822
3	0.0001337217	38.7379798431
4	0.0001413875	38.4958890095
5	0.0001283529	38.9159416609
6	0.0001399224	38.5411271605
7	0.0001314197	38.8133939722
8	0.0001419926	38.4773429968
9	0.0001201824	39.2015909690
10	0.0001339647	38.7300962064
11	0.0001211442	39.1669745259
12	0.0001448574	38.3905927426
13	0.0001054580	39.7692031702
14	0.0001216912	39.1474091026
15	0.0001101126	39.5816286312
16	0.0001324320	38.7800715853
17	0.0001188665	39.2494061628
18	0.0001324702	38.7788175188
19	0.0001210597	39.1700049551
20	0.0001293696	38.8816783154
21	0.0001213299	39.1603202718
22	0.0001308984	38.8306553194
23	0.0001224664	39.1198309880
24	0.0001281740	38.9220008622
25	0.0001017760	39.9235479430
26	0.0001113546	39.5329180969
27	0.0001020223	39.9130478003
28	0.0001142332	39.4220775526
29	0.0001074438	39.6881870096
30	0.0001157534	39.3646640846
31	0.0001069637	39.7076371339
32	0.0001247889	39.0382389264
33	0.0001146144	39.4076067144
34	0.0001262658	38.9871424505
35	0.0001149498	39.3949185962
36	0.0001245976	39.0449016938
37	0.0000824587	40.8376332415
38	0.0001080643	39.6631759636
39	0.0000960601	40.1745677360
40	0.0001153703	39.3790601468
41	0.0001166062	39.3327838293
42	0.0001388679	38.5739824668
43	0.0001150009	39.3929873149
44	0.0001286645	38.9054118665
45	0.0001145819	39.4088386066
46	0.0001298520	38.8655146843
47	0.0001117896	39.5159858685
48	0.0001246797	39.0420433096
49	0.0000962073	40.1679217794
50	0.0001122893	39.4966145594
Total	0.0060906735	1958.8493153727
Average	0.0001218135	39.1769863075

PROCESSING TIME

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_ApplyEyeMakeup_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0507900715	0.0579521656
2	0.0286393166	0.0276653767
3	0.0284430981	0.0278031826
4	0.0281531811	0.0275087357
5	0.0274615288	0.0275537968
6	0.0280578136	0.0272455215
7	0.0280337334	0.0273387432
8	0.0278973579	0.0271999836
9	0.0274395943	0.0287344456
10	0.0279419422	0.0279066563
11	0.0280828476	0.0273931026
12	0.0277764797	0.0286886692
13	0.0273180008	0.0274860859
14	0.0279781818	0.0272476673
15	0.0279736519	0.0273287296
16	0.0276448727	0.0275535583
17	0.0275123119	0.0276019573
18	0.0282456875	0.0273284912
19	0.0279359818	0.0274348259
20	0.0276749134	0.0277130604
21	0.0274693966	0.0283737183
22	0.0281310081	0.0275654793
23	0.0281071663	0.0267367363
24	0.0276927948	0.0287563801
25	0.0275335312	0.0269892216
26	0.0281386375	0.0273535252
27	0.0283465385	0.0271561146
28	0.0277032852	0.0272102356
29	0.0273621082	0.0272946358
30	0.0280575752	0.0273935795
31	0.0279653072	0.0271873474
32	0.0274262428	0.0272598267
33	0.0274872780	0.0271003246
34	0.0278463364	0.0273208618
35	0.0281438828	0.0272405148
36	0.0278425217	0.0271711349
37	0.0276312828	0.0273213387
38	0.0281553268	0.0274438858
39	0.0280585289	0.0272579193
40	0.0277769566	0.0272955894
41	0.0276319981	0.0269331932
42	0.0280995369	0.0271303654
43	0.0279722214	0.0270063877
44	0.0276165009	0.0270736217
45	0.0274598598	0.0272867680
46	0.0279862881	0.0272688866
47	0.0280141830	0.0272150040
48	0.0273642540	0.0272059441
49	0.0274150372	0.0272114277
50	0.0279378891	0.0271837711
Total	1.4153740406	1.4016284943
Average	0.0283074808	0.0280325699

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_ApplyLipstick_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0522279739	0.0527377129
2	0.0358352661	0.0274424553
3	0.0286417007	0.0276265144
4	0.0281851292	0.0277059078
5	0.0278046131	0.0272457600
6	0.0276188850	0.0273675919
7	0.0279812813	0.0273942947
8	0.0278708935	0.0275280476
9	0.0278351307	0.0273182392
10	0.0273394585	0.0273289680
11	0.0280828476	0.0273392200
12	0.0279850960	0.0272727013
13	0.0278162956	0.0274693966
14	0.0275440216	0.0273902416
15	0.0280036926	0.0273280144
16	0.0280313492	0.0273616314
17	0.0276758671	0.0271859169
18	0.0278282166	0.0269887447
19	0.0278277397	0.0272543430
20	0.0275368690	0.0273571014
21	0.0280416012	0.0270707607
22	0.0280618668	0.0272519588
23	0.0277581215	0.0271246433
24	0.0277125835	0.0272772312
25	0.0281958580	0.0272295475
26	0.0279242992	0.0271894932
27	0.0278511047	0.0273575783
28	0.0277967453	0.0273864269
29	0.0278844833	0.0271160603
30	0.0277476311	0.0273458958
31	0.0279891491	0.0272133350
32	0.0279862881	0.0274593830
33	0.0278296471	0.0272521973
34	0.0275955200	0.0271227360
35	0.0279088020	0.0273778439
36	0.0274920464	0.0273454189
37	0.0279326439	0.0272612572
38	0.0279936790	0.0274152756
39	0.0278098583	0.0271952152
40	0.0275368690	0.0272560120
41	0.0280749798	0.0271522999
42	0.0281577110	0.0270674229
43	0.0279917717	0.0270402431
44	0.0276079178	0.0272519588
45	0.0282120705	0.0271790028
46	0.0281291008	0.0272350311
47	0.0282032490	0.0272171497
48	0.0273792744	0.0271451473
49	0.0279548168	0.0272412300
50	0.0279366970	0.0273127556
Total	1.4263687134	1.3897333145
Average	0.0285273743	0.0277946663

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_Archery_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0566434860	0.0432686806
2	0.0284471512	0.0279216766
3	0.0283064842	0.0277893543
4	0.0282609463	0.0276944637
5	0.0278370380	0.0275483131
6	0.0274224281	0.0273997784
7	0.0278308392	0.0275101662
8	0.0276398659	0.0274109840
9	0.0278687477	0.0275287628
10	0.0275011063	0.0275409222
11	0.0277976990	0.0274693966
12	0.0275859833	0.0273613930
13	0.0278134346	0.0273430347
14	0.0274605751	0.0276303291
15	0.0277686119	0.0277345181
16	0.0274138451	0.0277299881
17	0.0278913975	0.0276365280
18	0.0278053284	0.0277481079
19	0.0276868343	0.0274798870
20	0.0273990631	0.0275053978
21	0.0277781487	0.0276579857
22	0.0277910233	0.0276720524
23	0.0278503895	0.0275404453
24	0.0273745060	0.0276012421
25	0.0278377533	0.0275135040
26	0.0279612541	0.0275301933
27	0.0277938843	0.0273621082
28	0.0275216103	0.0273263454
29	0.0277953148	0.0276858807
30	0.0278520584	0.0276508331
31	0.0275976658	0.0275433064
32	0.0273599625	0.0275027752
33	0.0278847218	0.0277392864
34	0.0278708935	0.0275757313
35	0.0278730392	0.0357964039
36	0.0274877548	0.0280091763
37	0.0278816223	0.0268938541
38	0.0279877186	0.0268433094
39	0.0276668072	0.0276517868
40	0.0272932053	0.0275287628
41	0.0279712677	0.0276679993
42	0.0277965069	0.0274283886
43	0.0277600288	0.0274584293
44	0.0275733471	0.0275988579
45	0.0280032158	0.0274426937
46	0.0278570652	0.0273671150
47	0.0278980732	0.0274362564
48	0.0272657871	0.0273408890
49	0.0277402401	0.0274393559
50	0.0280559063	0.0276088715
Total	1.4167616367	1.4006655216
Average	0.0283352327	0.0280133104

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BabyCrawling_g01_c01	
Resolution	240p	
Frame Number	**Encryption (In seconds)**	**Decryption (In seconds)**
1	0.0490775108	0.0483615398
2	0.0283725262	0.0273432732
3	0.0284798145	0.0276479721
4	0.0283291340	0.0274186134
5	0.0277757645	0.0271446705
6	0.0274851322	0.0273644924
7	0.0278453827	0.0274610519
8	0.0275745392	0.0274233818
9	0.0276634693	0.0272212029
10	0.0277681351	0.0273015499
11	0.0280199051	0.0273840427
12	0.0274610519	0.0286703110
13	0.0279176235	0.0273311138
14	0.0276799202	0.0274207592
15	0.0278530121	0.0275199413
16	0.0275065899	0.0274150372
17	0.0279107094	0.0272624493
18	0.0273387432	0.0274169445
19	0.0281567574	0.0272970200
20	0.0275194645	0.0274155140
21	0.0278577805	0.0270247459
22	0.0278451443	0.0276231766
23	0.0279407501	0.0276150703
24	0.0275177956	0.0285687447
25	0.0278980732	0.0274593830
26	0.0275061131	0.0274534225
27	0.0279943943	0.0273506641
28	0.0275390148	0.0274670124
29	0.0280253887	0.0274209976
30	0.0276966095	0.0273013115
31	0.0280535221	0.0272967815
32	0.0274820328	0.0273520947
33	0.0277724266	0.0273063183
34	0.0275511742	0.0272917747
35	0.0280234814	0.0268690586
36	0.0275530815	0.0276374817
37	0.0279502869	0.0272998810
38	0.0275521278	0.0275313854
39	0.0280294418	0.0270991325
40	0.0276794434	0.0271399021
41	0.0281038284	0.0270814896
42	0.0277633667	0.0271408558
43	0.0281848907	0.0273079872
44	0.0275418758	0.0272939205
45	0.0278050900	0.0272102356
46	0.0276401043	0.0271046162
47	0.0278882980	0.0272409916
48	0.0274536610	0.0273954868
49	0.0281498432	0.0270755291
50	0.0275714397	0.0271165371
Total	1.4113056660	1.3898968697
Average	0.0282261133	0.0277979374

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BalanceBeam_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0505075455	0.0507020950
2	0.0282392502	0.0275790691
3	0.0283153057	0.0277221203
4	0.0284152031	0.0276019573
5	0.0279285908	0.0274403095
6	0.0274715424	0.0279376507
7	0.0276792049	0.0273075104
8	0.0274140835	0.0286185741
9	0.0278406143	0.0275056362
10	0.0279648304	0.0273363590
11	0.0277202129	0.0274450779
12	0.0274257660	0.0274283886
13	0.0276939869	0.0273892879
14	0.0278594494	0.0272483826
15	0.0276904106	0.0275259018
16	0.0272972584	0.0274593830
17	0.0279767513	0.0273861885
18	0.0278060436	0.0271968842
19	0.0277354717	0.0272493362
20	0.0274560452	0.0283114910
21	0.0277545452	0.0272874832
22	0.0280361176	0.0272753239
23	0.0278182030	0.0272982121
24	0.0273666382	0.0274314880
25	0.0278382301	0.0275483131
26	0.0278682709	0.0274362564
27	0.0278015137	0.0273075104
28	0.0273239613	0.0271885395
29	0.0280051231	0.0273365974
30	0.0278668404	0.0273449421
31	0.0277400017	0.0272586346
32	0.0273323059	0.0276257992
33	0.0279617310	0.0273957253
34	0.0278518200	0.0272922516
35	0.0277774334	0.0274388790
36	0.0273907185	0.0273756981
37	0.0278415680	0.0275435448
38	0.0279192924	0.0275425911
39	0.0277111530	0.0272963047
40	0.0273058414	0.0269618034
41	0.0278704166	0.0269763470
42	0.0277597904	0.0267052650
43	0.0278580189	0.0270237923
44	0.0275843143	0.0268101692
45	0.0279188156	0.0268304348
46	0.0278143883	0.0267214775
47	0.0277831554	0.0268678665
48	0.0273008347	0.0268313885
49	0.0278358459	0.0271370411
50	0.0278527737	0.0269074440
Total	1.4105272293	1.3903887272
Average	0.0282105446	0.0278077745

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BandMarching_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0520653725	0.0502259731
2	0.0286097527	0.0275096893
3	0.0283334255	0.0276801586
4	0.0283353329	0.0277729034
5	0.0279941559	0.0274753571
6	0.0278990269	0.0273630619
7	0.0281803608	0.0287449360
8	0.0281453133	0.0274620056
9	0.0279173851	0.0275077820
10	0.0276815891	0.0278959274
11	0.0283410549	0.0274677277
12	0.0281462669	0.0274665356
13	0.0280489922	0.0275669098
14	0.0278604031	0.0275425911
15	0.0296416283	0.0275559425
16	0.0281503201	0.0278060436
17	0.0280203819	0.0274593830
18	0.0279247761	0.0275342464
19	0.0279586315	0.0273306370
20	0.0281453133	0.0274918079
21	0.0276496410	0.0275278091
22	0.0281739235	0.0276567936
23	0.0281496048	0.0273814201
24	0.0279805660	0.0274384022
25	0.0277910233	0.0274825096
26	0.0281453133	0.0274775028
27	0.0281472206	0.0275855064
28	0.0278806686	0.0271587372
29	0.0276787281	0.0274980068
30	0.0283193588	0.0273687840
31	0.0282516479	0.0276100636
32	0.0280141830	0.0275149345
33	0.0277025700	0.0274200439
34	0.0280532837	0.0276787281
35	0.0282793045	0.0273530483
36	0.0279717445	0.0274953842
37	0.0275952816	0.0274915695
38	0.0280208588	0.0273544788
39	0.0280749798	0.0275321007
40	0.0280647278	0.0272955894
41	0.0276002884	0.0273909569
42	0.0281662941	0.0270664692
43	0.0280539989	0.0274567604
44	0.0280065536	0.0273084641
45	0.0276062489	0.0272090435
46	0.0280089378	0.0272791386
47	0.0280144215	0.0272700787
48	0.0280094147	0.0274050236
49	0.0275471210	0.0275878906
50	0.0279667377	0.0272772312
Total	1.4263241291	1.3974320889
Average	0.0285264826	0.0279486418

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BaseballPitch_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0501921177	0.0471951962
2	0.0283377171	0.0277435780
3	0.0283532143	0.0276048183
4	0.0283734798	0.0276675224
5	0.0279250145	0.0275876522
6	0.0274572372	0.0273020267
7	0.0278649330	0.0288159847
8	0.0279016495	0.0273566246
9	0.0279862881	0.0273959637
10	0.0275373459	0.0276422501
11	0.0279107094	0.0274941921
12	0.0279204845	0.0273518562
13	0.0278444290	0.0275943279
14	0.0274207592	0.0275998116
15	0.0280046463	0.0273218155
16	0.0275657177	0.0275766850
17	0.0279672146	0.0275683403
18	0.0277538300	0.0274631977
19	0.0279560089	0.0282196999
20	0.0274562836	0.0272717476
21	0.0279555321	0.0273694992
22	0.0275247097	0.0273144245
23	0.0279185772	0.0275292397
24	0.0275673866	0.0274181366
25	0.0280935764	0.0274162292
26	0.0273933411	0.0275537968
27	0.0279426575	0.0272903442
28	0.0282146931	0.0272383690
29	0.0275566578	0.0272707939
30	0.0281002522	0.0271351337
31	0.0279829502	0.0271992683
32	0.0278060436	0.0273478031
33	0.0274672508	0.0270051956
34	0.0278720856	0.0274689198
35	0.0278673172	0.0276708603
36	0.0279812813	0.0274527073
37	0.0275230408	0.0273842812
38	0.0280244350	0.0277063847
39	0.0281212330	0.0273272991
40	0.0279340744	0.0273833275
41	0.0273854733	0.0273437500
42	0.0281178951	0.0272374153
43	0.0282099247	0.0273146629
44	0.0277602673	0.0272135735
45	0.0274348259	0.0274662971
46	0.0278508663	0.0273807049
47	0.0279006958	0.0273051262
48	0.0277748108	0.0271451473
49	0.0275027752	0.0273127556
50	0.0279715061	0.0274062157
Total	1.4144852161	1.3923809528
Average	0.0282897043	0.0278476191

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_Basketball_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0463364124	0.0478587151
2	0.0283615589	0.0276188850
3	0.0284638405	0.0287301540
4	0.0281007290	0.0273442268
5	0.0279343128	0.0273363590
6	0.0274195671	0.0272407532
7	0.0277817249	0.0274140835
8	0.0279717445	0.0274484158
9	0.0278728008	0.0273022652
10	0.0273540020	0.0275959969
11	0.0281801224	0.0271673203
12	0.0279438496	0.0275061131
13	0.0278348923	0.0274882317
14	0.0274336338	0.0271897316
15	0.0279488564	0.0399475098
16	0.0280973911	0.0273485184
17	0.0277514458	0.0275416374
18	0.0273399353	0.0274500847
19	0.0277743340	0.0272130966
20	0.0280191898	0.0272982121
21	0.0277760029	0.0271656513
22	0.0273489952	0.0275285244
23	0.0280244350	0.0273942947
24	0.0280730724	0.0273113251
25	0.0279042721	0.0277509689
26	0.0276467800	0.0272605419
27	0.0280077457	0.0274870396
28	0.0278630257	0.0270600319
29	0.0279247761	0.0273480415
30	0.0275256634	0.0272684097
31	0.0278513432	0.0272028446
32	0.0279572010	0.0274436474
33	0.0278053284	0.0275909901
34	0.0272784233	0.0276970863
35	0.0280044079	0.0268356800
36	0.0279159546	0.0270078182
37	0.0276911259	0.0275173187
38	0.0274355412	0.0274407864
39	0.0279364586	0.0275654793
40	0.0277786255	0.0272126198
41	0.0280005932	0.0274028778
42	0.0274524689	0.0271542072
43	0.0279543400	0.0273103714
44	0.0281441212	0.0272152424
45	0.0278427601	0.0273289680
46	0.0272076130	0.0272779465
47	0.0280728340	0.0271527767
48	0.0278949738	0.0272376537
49	0.0277848244	0.0274331570
50	0.0273473263	0.0272300243
Total	1.4093713760	1.4018726349
Average	0.0281874275	0.0280374527

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BasketballDunk_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0495491028	0.0522115231
2	0.0284316540	0.0278017521
3	0.0282974243	0.0278031826
4	0.0282537937	0.0278487206
5	0.0279612541	0.0286328793
6	0.0278203487	0.0278465748
7	0.0279252529	0.0274665356
8	0.0274133682	0.0274229050
9	0.0279042721	0.0273568630
10	0.0276451111	0.0272843838
11	0.0278630257	0.0274591446
12	0.0275781155	0.0273458958
13	0.0279502869	0.0272107124
14	0.0274524689	0.0273277760
15	0.0278935432	0.0274550915
16	0.0276706219	0.0275030136
17	0.0278308392	0.0286467075
18	0.0281071663	0.0273144245
19	0.0279970169	0.0274968147
20	0.0274024010	0.0276877880
21	0.0279538631	0.0273916721
22	0.0279364586	0.0276627541
23	0.0277743340	0.0270636082
24	0.0275211334	0.0276148319
25	0.0280444622	0.0274691582
26	0.0279116631	0.0274331570
27	0.0279874802	0.0274422169
28	0.0274488926	0.0275456905
29	0.0280177593	0.0299837589
30	0.0280327797	0.0276048183
31	0.0278992653	0.0276603699
32	0.0274791718	0.0284838676
33	0.0278182030	0.0274338722
34	0.0280015469	0.0276036263
35	0.0279297829	0.0276610851
36	0.0274226665	0.0279858112
37	0.0280449390	0.0279159546
38	0.0279300213	0.0277614594
39	0.0278773308	0.0281605721
40	0.0275382996	0.0275456905
41	0.0278625488	0.0273671150
42	0.0278501511	0.0275790691
43	0.0278720856	0.0276026726
44	0.0274868011	0.0279078484
45	0.0281174183	0.0275259018
46	0.0280909538	0.0277771950
47	0.0279793739	0.0277745724
48	0.0274865627	0.0275104046
49	0.0281221867	0.0275151730
50	0.0278842449	0.0275442600
Total	1.4142694473	1.4086508751
Average	0.0282853889	0.0281730175

Encryption Algorithm	Modified Permutation Approach Using Logistic Maps-Integrated Fisher-Yates Shuffling Algorithm	
Video Stream	v_BenchPress_g01_c01	
Resolution	240p	
Frame Number	Encryption (In seconds)	Decryption (In seconds)
1	0.0497269630	0.0498304367
2	0.0281689167	0.0276746750
3	0.0282092094	0.0277650356
4	0.0284209251	0.0275263786
5	0.0279982090	0.0271809101
6	0.0278530121	0.0390205383
7	0.0279614925	0.0275881290
8	0.0281095505	0.0277304649
9	0.0279271603	0.0274403095
10	0.0273544788	0.0274877548
11	0.0280914307	0.0274024010
12	0.0284278393	0.0275051594
13	0.0279350281	0.0274884701
14	0.0277202129	0.0277323723
15	0.0278923512	0.0276505947
16	0.0278055668	0.0275540352
17	0.0274353027	0.0276060104
18	0.0280301571	0.0273017883
19	0.0279967785	0.0269474983
20	0.0278997421	0.0274484158
21	0.0276334286	0.0273110867
22	0.0278253555	0.0275428295
23	0.0276215076	0.0272388458
24	0.0279579163	0.0272853374
25	0.0274448395	0.0275230408
26	0.0278263092	0.0275816917
27	0.0275437832	0.0273635387
28	0.0277554989	0.0273060799
29	0.0274832249	0.0272700787
30	0.0280168056	0.0273008347
31	0.0274491310	0.0272176266
32	0.0281774998	0.0274343491
33	0.0279405117	0.0273606777
34	0.0280442238	0.0273904800
35	0.0275647640	0.0274121761
36	0.0279655457	0.0273644924
37	0.0280311108	0.0274446011
38	0.0279722214	0.0274219513
39	0.0275187492	0.0274565220
40	0.0279805660	0.0273489952
41	0.0279793739	0.0273554325
42	0.0279703140	0.0274415016
43	0.0274851322	0.0272593498
44	0.0279815197	0.0272402763
45	0.0280706882	0.0273139477
46	0.0279390812	0.0272758007
47	0.0276508331	0.0273048878
48	0.0281121731	0.0273132324
49	0.0281286240	0.0272114277
50	0.0280327797	0.0273602009
Total	1.4160678387	1.4045326710
Average	0.0283213568	0.0280906534