

Poker Cards Analysis – January 2026

The Directors

Entain Plc

This is to confirm that iTech Labs has examined the game logs for Poker games for the period **January 01, 2026, to January 31, 2026**, as recorded by the respective game servers and analyzed the Poker cards for statistical randomness. The results of the analysis are given below.

For details on the gaming sites serviced by the Entain Plc game servers and used in this audit refer to the [List](#).

1. Poker hand types statistics

These calculations were done for Royal Flush, Straight Flush, Four of a Kind, Full House, Flush, Straight, 3 of a Kind, 2 pairs, 1 Pair, High Card.

The Poker hand types analysis involved creating subsets of data and conducting Chi-square tests on each subset.

The null hypothesis for the chi-square test is that the observed frequencies of each type of hand matches the theoretical values for a deck that has been shuffled using a perfect random number generator. The p-values observed in these multiple tests are expected to follow a uniform distribution for the range 0.0 to 1.0.

The analysis performs a KS Test (Kolmogorov-Smirnov test) for uniform distribution on the observed p-values, and the combined p-value result of this test is taken as the final result of the Poker hand types statistics tests.

1.1 Poker hand types statistics for 52 cards deck:

Test No.	DOF	ChiSqr	P-Value
1	9	13.02	0.16173
2	9	7.04	0.63297
3	9	1.63	0.99603
4	9	4.27	0.89300
5	9	12.29	0.19767
6	9	7.31	0.60499
7	9	7.49	0.58625
8	9	4.77	0.85415
9	9	3.95	0.91442
10	9	14.45	0.10733
11	9	12.32	0.19572
12	9	8.14	0.52030
13	9	8.06	0.52836

Test No.	DOF	ChiSqr	P-Value
14	9	6.79	0.65862
15	9	8.11	0.52272
16	9	8.03	0.53076
17	9	5.14	0.82183
18	9	8.72	0.46398
19	9	18.02	0.03492
20	9	5.30	0.80772
21	9	22.91	0.00639
22	9	5.06	0.82878
23	9	11.85	0.22173
24	9	8.39	0.49533
25	9	14.83	0.09579
26	9	7.66	0.56918
27	9	8.09	0.52489
28	9	5.06	0.82880
29	9	14.58	0.10317
30	9	9.59	0.38431
31	9	10.65	0.30046
32	9	4.55	0.87196
33	9	10.84	0.28715
34	9	3.87	0.91996
35	9	8.93	0.44353
36	9	5.48	0.79058
37	9	12.90	0.16699
38	9	5.36	0.80212
39	9	5.77	0.76317
40	9	10.26	0.33009
41	9	10.78	0.29090
42	9	11.09	0.26962
43	9	13.04	0.16066
44	9	7.43	0.59260

Test No.	DOF	ChiSqr	P-Value
45	9	11.31	0.25478
46	9	17.84	0.03703
47	9	22.73	0.00682
48	9	12.58	0.18251
49	9	4.32	0.88877
50	9	14.17	0.11641
51	9	10.55	0.30791
52	9	8.45	0.48961
53	9	14.80	0.09670
54	9	17.92	0.03608
55	9	12.50	0.18657
56	9	7.55	0.57975
57	9	11.10	0.26879
58	9	14.62	0.10197
59	9	12.61	0.18092
60	9	8.45	0.48966
61	9	10.62	0.30287
62	9	9.48	0.39383
63	9	8.05	0.52956
64	9	7.59	0.57583
65	9	5.32	0.80600
66	9	6.35	0.70415
67	9	3.82	0.92298
68	9	8.97	0.44035
69	9	4.35	0.88669
70	9	21.91	0.00915
71	9	10.02	0.34924
72	9	8.62	0.47328
73	9	5.24	0.81269
74	9	12.89	0.16774
75	9	6.65	0.67331

Test No.	DOF	ChiSqr	P-Value
76	9	9.91	0.35814
77	9	16.53	0.05666
78	9	13.72	0.13263
79	9	7.29	0.60738
80	9	4.04	0.90856
81	9	8.57	0.47813
82	9	10.04	0.34711
83	9	9.08	0.42954
84	9	2.29	0.98594
85	9	2.49	0.98125
86	9	11.04	0.27271
87	9	7.79	0.55566
88	9	6.23	0.71701
89	9	13.70	0.13347
90	9	2.13	0.98917
91	9	10.05	0.34622
92	9	10.19	0.33571
93	9	4.07	0.90680
94	9	5.05	0.83004
95	9	4.83	0.84906
96	9	12.02	0.21203
97	9	3.79	0.92443
98	9	6.85	0.65225
99	9	8.01	0.53359
100	9	4.20	0.89742
Combined P-value for all tests (Using KS method)			0.93881

Notes:

- 1) The P-values are observed probabilities from the Chi-Square tests. The last row shows the result of the KS Test performed on the p-values for all Chi-Square tests, where there are sufficient data.

2. Poker rank statistics

The Poker rank analysis aims to establish that the rank of the cards in each position was equally distributed in one of the 13 possible ranks (2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K, A) for a 52 card deck.

The Poker rank analysis involved creating subsets of data and conducting Chi-square tests on each subset. The analysis performs a KS Test (Kolmogorov-Smirnov test) for uniform distribution on the observed p-values, and the combined p-value result of this test is taken as the final result of the Ranks statistics tests.

2.1 Poker rank statistics for 52 cards deck:

Test No.	DOF	ChiSqr	P-Value
1	84	89.03	0.33299
2	84	78.12	0.66030
3	84	84.80	0.45493
4	84	67.41	0.90707
5	84	81.45	0.55845
6	84	94.00	0.21361
7	84	90.60	0.29189
8	84	91.32	0.27410
9	84	68.13	0.89599
10	84	83.83	0.48472
11	84	106.18	0.05151
12	84	86.40	0.40710
13	84	81.29	0.56345
14	84	82.43	0.52809
15	84	76.79	0.69890
16	84	67.33	0.90822
17	84	90.00	0.30738
18	84	104.03	0.06845
19	84	85.33	0.43899
20	84	69.35	0.87516
21	84	85.30	0.43980
22	84	68.91	0.88296
23	84	93.50	0.22421
24	84	75.20	0.74295
25	84	106.80	0.04728
26	84	82.83	0.51561
27	84	74.28	0.76696
28	84	94.34	0.20667

Test No.	DOF	ChiSqr	P-Value
29	84	115.35	0.01320
30	84	72.87	0.80178
31	84	106.78	0.04745
32	84	82.46	0.52702
33	84	100.99	0.09982
34	84	96.02	0.17420
35	84	80.54	0.58659
36	84	95.55	0.18304
37	84	94.41	0.20513
38	84	91.40	0.27234
39	84	83.68	0.48925
40	84	79.08	0.63153
41	84	83.07	0.50805
42	84	86.49	0.40464
43	84	68.78	0.88518
44	84	80.99	0.57276
45	84	82.10	0.53820
46	84	99.73	0.11585
47	84	77.52	0.67777
48	84	72.41	0.81249
49	84	106.68	0.04809
50	84	74.69	0.75639
51	84	106.91	0.04659
52	84	61.02	0.97219
53	84	102.31	0.08508
54	84	74.50	0.76141
55	84	71.19	0.83923
56	84	84.73	0.45708
57	84	131.69	0.00069
58	84	94.81	0.19727
59	84	62.75	0.95993

Test No.	DOF	ChiSqr	P-Value
60	84	77.21	0.68676
61	84	108.53	0.03717
62	84	105.96	0.05306
63	84	69.49	0.87271
64	84	116.34	0.01124
65	84	61.45	0.96947
66	84	87.82	0.36621
67	84	55.90	0.99220
68	84	92.22	0.25292
69	84	98.55	0.13255
70	84	80.85	0.57721
71	84	85.66	0.42900
72	84	84.10	0.47630
73	84	77.11	0.68975
74	84	71.85	0.82508
75	84	84.22	0.47283
76	84	89.60	0.31770
77	84	60.28	0.97642
78	84	101.00	0.09980
79	84	63.55	0.95303
80	84	94.17	0.21014
81	84	109.91	0.03045
82	84	77.80	0.66957
83	84	74.26	0.76740
84	84	68.10	0.89650
85	84	88.77	0.33994
86	84	64.08	0.94799
87	84	70.32	0.85697
88	84	68.03	0.89755
89	84	66.34	0.92206
90	84	105.27	0.05820

Test No.	DOF	ChiSqr	P-Value
91	84	69.17	0.87851
92	84	66.80	0.91591
93	84	86.08	0.41654
94	84	89.05	0.33236
95	84	75.19	0.74312
96	84	89.49	0.32056
97	84	77.88	0.66738
98	84	96.59	0.16410
99	84	69.27	0.87673
100	84	91.58	0.26795
Combined P-value for all tests (Using KS method)			0.64978

Notes:

- 1) The P-values are observed probabilities from the Chi-Square tests. The last row shows the result of the KS Test performed on the p-values for all Chi-Square tests, where there are sufficient data.

3. Poker suits statistics

The Poker suits analysis aims to verify that the cards dealt exhibit an equal probability of all 4 suits (Clubs, Diamonds, Hearts and Spades) in all positions.

The Poker suits analysis involved creating subsets of data and conducting Chi-square tests on each subset. The analysis performs a KS Test (Kolmogorov-Smirnov test) for uniform distribution on the observed p-values, and the combined p-value result of this test is taken as the final result of the Suits statistics tests.

3.1 Poker suits statistics for 52 cards deck:

Test No.	Positions	DOF	ChiSqr	P-Value
1	7	21	19.81	0.53330
2	7	21	11.83	0.94415
3	7	21	16.97	0.71271
4	7	21	20.40	0.49601
5	7	21	12.40	0.92815
6	7	21	24.34	0.27692
7	7	21	23.05	0.34153
8	7	21	30.19	0.08815
9	7	21	18.51	0.61652
10	7	21	21.51	0.42807
11	7	21	13.46	0.89152

Test No.	Positions	DOF	ChiSqr	P-Value
12	7	21	13.39	0.89454
13	7	21	12.40	0.92820
14	7	21	26.90	0.17407
15	7	21	25.88	0.21098
16	7	21	30.05	0.09091
17	7	21	17.45	0.68348
18	7	21	11.23	0.95820
19	7	21	14.97	0.82465
20	7	21	18.66	0.60663
21	7	21	28.90	0.11642
22	7	21	26.90	0.17432
23	7	21	16.65	0.73193
24	7	21	17.37	0.68867
25	7	21	33.00	0.04621
26	7	21	26.10	0.20273
27	7	21	15.10	0.81779
28	7	21	12.44	0.92707
29	7	21	14.08	0.86615
30	7	21	22.25	0.38504
31	7	21	17.01	0.71048
32	7	21	17.13	0.70341
33	7	21	31.61	0.06413
34	7	21	9.23	0.98732
35	7	21	22.13	0.39224
36	7	21	21.38	0.43612
37	7	21	28.04	0.13904
38	7	21	23.42	0.32223
39	7	21	11.52	0.95179
40	7	21	21.40	0.43474
41	7	21	10.40	0.97327
42	7	21	10.75	0.96749

Test No.	Positions	DOF	ChiSqr	P-Value
43	7	21	24.60	0.26470
44	7	21	14.62	0.84151
45	7	21	15.40	0.80227
46	7	21	18.39	0.62451
47	7	21	27.59	0.15202
48	7	21	12.87	0.91324
49	7	21	16.85	0.72018
50	7	21	26.86	0.17568
51	7	21	10.37	0.97374
52	7	21	25.94	0.20856
53	7	21	31.63	0.06378
54	7	21	29.42	0.10434
55	7	21	12.75	0.91720
56	7	21	17.70	0.66807
57	7	21	19.28	0.56746
58	7	21	13.74	0.88063
59	7	21	10.60	0.96997
60	7	21	18.98	0.58661
61	7	21	27.21	0.16411
62	7	21	16.20	0.75830
63	7	21	21.30	0.44068
64	7	21	18.87	0.59349
65	7	21	23.52	0.31694
66	7	21	22.18	0.38938
67	7	21	9.21	0.98745
68	7	21	22.60	0.36582
69	7	21	20.01	0.52088
70	7	21	15.58	0.79279
71	7	21	12.10	0.93691
72	7	21	18.91	0.59120
73	7	21	22.81	0.35399

Test No.	Positions	DOF	ChiSqr	P-Value
74	7	21	15.26	0.80973
75	7	21	12.67	0.91973
76	7	21	18.72	0.60321
77	7	21	27.76	0.14708
78	7	21	28.74	0.12037
79	7	21	16.40	0.74670
80	7	21	34.30	0.03361
81	7	21	18.63	0.60869
82	7	21	24.07	0.28991
83	7	21	14.26	0.85828
84	7	21	18.88	0.59254
85	7	21	14.26	0.85826
86	7	21	31.21	0.07017
87	7	21	22.36	0.37895
88	7	21	14.82	0.83203
89	7	21	24.33	0.27741
90	7	21	21.33	0.43896
91	7	21	29.72	0.09769
92	7	21	23.67	0.30919
93	7	21	15.10	0.81780
94	7	21	10.66	0.96908
95	7	21	21.75	0.41405
96	7	21	37.13	0.01627
97	7	21	20.66	0.47965
98	7	21	9.71	0.98246
99	7	21	19.59	0.54707
100	7	21	23.84	0.30100
Combined P-value for all tests (Using KS method)				0.14683

Notes:

- 1) The P-values are observed probabilities from the Chi-Square tests. The last row shows the result of the KS Test performed on the p-values for all Chi-Square tests, where there are sufficient data.

4. Summary of the analysis

4.1 Summary of the analysis of 52 cards deck:

The analysis of 52 cards completes by combining the result of the KS Test performed in the 3 types of analysis (Hand Types, Ranks and Suits) for 52 card decks using the Holm's method and producing a single Combined P -value.

The combined p-value produced using the Holm's method is used as indication for statistical randomness.

Combination of p-values using Holm's Method		
Test	P-Value	P-Adjusted
Ranks Test	0.64978	1.00000
Suits Test	0.14683	0.44048
Hand Types Test	0.93881	1.00000
Combined P-Value using Holm's Method		0.44048

Notes:

1) The combined p-value of all statistical tests using Holm's Method conducted for 52 card decks is greater than the minimum value of 0.05 which indicates that the randomness of the observed data falls within 95% confidence limits. The final outcome of the analysis of 52 cards deck indicates that the RNG is working correctly.

5. Conclusion

Analysis of actual data from game logs for 'Hand Types', 'Ranks' and 'Suits' for **52-card decks** indicated statistical randomness. Since there is no data in the case of 36 card deck, this report does not contain the details of 36 card deck.

iTech Labs has done limited sanity checks to verify the integrity of the game logs. iTech Labs also maintains a copy of the game logs for verification purposes. There were a large enough number of game records to give the calculations sufficient statistical power.

We conclude that the Random Number Generator (RNG) is working correctly.

Signed:



James Boje
Managing Director EMEA
Executive
Date:04 March 2026
