

Poker Cards Analysis – March 2026

The Directors

Entain Plc

This is to confirm that iTech Labs has examined the game logs for Poker games for the period **March 01, 2026, to March 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	10.72	0.29540
2	9	8.94	0.44282
3	9	8.37	0.49726
4	9	9.47	0.39483
5	9	9.44	0.39737
6	9	10.64	0.30141
7	9	8.86	0.45013
8	9	1.56	0.99669
9	9	7.11	0.62571
10	9	6.27	0.71234
11	9	10.53	0.30895
12	9	4.25	0.89407
13	9	5.40	0.79797

Test No.	DOF	ChiSqr	P-Value
14	9	11.33	0.25402
15	9	14.02	0.12171
16	9	13.21	0.15342
17	9	7.75	0.55996
18	9	2.10	0.98982
19	9	3.06	0.96197
20	9	10.16	0.33802
21	9	6.09	0.73128
22	9	12.27	0.19856
23	9	8.16	0.51847
24	9	7.45	0.59018
25	9	7.01	0.63584
26	9	14.70	0.09938
27	9	9.35	0.40605
28	9	9.47	0.39533
29	9	6.31	0.70891
30	9	6.30	0.70977
31	9	12.66	0.17880
32	9	11.23	0.26025
33	9	3.91	0.91720
34	9	6.03	0.73663
35	9	13.50	0.14110
36	9	5.51	0.78778
37	9	5.48	0.79066
38	9	6.95	0.64188
39	9	10.10	0.34238
40	9	6.42	0.69691
41	9	13.55	0.13938
42	9	4.60	0.86759
43	9	10.10	0.34285
44	9	6.79	0.65921

Test No.	DOF	ChiSqr	P-Value
45	9	11.23	0.25999
46	9	14.61	0.10220
47	9	9.03	0.43487
48	9	7.08	0.62894
49	9	10.05	0.34617
50	9	12.97	0.16417
51	9	7.55	0.57955
52	9	15.76	0.07196
53	9	27.72	0.00106
54	9	4.06	0.90776
55	9	3.80	0.92418
56	9	8.46	0.48850
57	9	7.89	0.54525
58	9	1.60	0.99636
59	9	12.95	0.16478
60	9	2.64	0.97674
61	9	4.65	0.86340
62	9	5.32	0.80544
63	9	5.67	0.77207
64	9	11.52	0.24147
65	9	16.52	0.05682
66	9	15.02	0.09033
67	9	6.69	0.66947
68	9	15.12	0.08764
69	9	5.25	0.81243
70	9	6.82	0.65585
71	9	4.66	0.86297
72	9	7.48	0.58777
73	9	8.07	0.52749
74	9	12.45	0.18888
75	9	6.85	0.65279

Test No.	DOF	ChiSqr	P-Value
76	9	24.91	0.00307
77	9	11.39	0.25000
78	9	4.18	0.89928
79	9	14.00	0.12217
80	9	13.95	0.12394
81	9	4.15	0.90136
82	9	7.94	0.54062
83	9	8.76	0.45972
84	9	8.04	0.53051
85	9	8.73	0.46291
86	9	14.91	0.09344
87	9	7.86	0.54833
88	9	6.80	0.65784
89	9	8.46	0.48807
90	9	9.34	0.40612
91	9	8.42	0.49231
92	9	9.54	0.38860
93	9	14.87	0.09452
94	9	14.45	0.10734
95	9	13.90	0.12580
96	9	2.77	0.97287
97	9	7.20	0.61590
98	9	6.24	0.71556
99	9	3.30	0.95124
100	9	2.29	0.98591
Combined P-value for all tests (Using KS method)			0.97395

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	73.80	0.77917
2	84	93.04	0.23426
3	84	89.25	0.32692
4	84	64.90	0.93944
5	84	97.68	0.14602
6	84	93.39	0.22653
7	84	76.68	0.70210
8	84	79.37	0.62268
9	84	81.17	0.56724
10	84	72.96	0.79971
11	84	79.19	0.62792
12	84	81.77	0.54871
13	84	112.13	0.02187
14	84	86.25	0.41172
15	84	90.94	0.28349
16	84	87.45	0.37693
17	84	79.48	0.61915
18	84	88.65	0.34333
19	84	77.59	0.67584
20	84	89.61	0.31736
21	84	83.37	0.49886
22	84	85.01	0.44867
23	84	84.70	0.45796
24	84	90.49	0.29468
25	84	92.92	0.23700
26	84	88.22	0.35517
27	84	91.31	0.27450
28	84	79.74	0.61132

Test No.	DOF	ChiSqr	P-Value
29	84	80.96	0.57377
30	84	73.99	0.77438
31	84	100.46	0.10638
32	84	87.25	0.38247
33	84	79.37	0.62248
34	84	94.02	0.21329
35	84	85.74	0.42659
36	84	91.09	0.27987
37	84	68.07	0.89698
38	84	98.66	0.13099
39	84	97.01	0.15692
40	84	96.36	0.16816
41	84	84.25	0.47183
42	84	58.49	0.98458
43	84	81.52	0.55620
44	84	106.72	0.04785
45	84	104.46	0.06466
46	84	94.86	0.19617
47	84	88.13	0.35760
48	84	95.54	0.18323
49	84	90.51	0.29416
50	84	87.48	0.37591
51	84	102.82	0.07978
52	84	81.07	0.57043
53	84	72.76	0.80433
54	84	70.10	0.86121
55	84	71.35	0.83586
56	84	73.02	0.79818
57	84	65.18	0.93635
58	84	76.38	0.71054
59	84	76.11	0.71809

Test No.	DOF	ChiSqr	P-Value
60	84	78.72	0.64239
61	84	97.62	0.14687
62	84	80.34	0.59298
63	84	81.45	0.55837
64	84	108.56	0.03700
65	84	82.24	0.53398
66	84	109.36	0.03299
67	84	77.36	0.68242
68	84	75.80	0.72661
69	84	71.76	0.82699
70	84	71.90	0.82386
71	84	84.87	0.45293
72	84	81.09	0.56968
73	84	87.26	0.38209
74	84	90.43	0.29618
75	84	73.65	0.78282
76	84	60.14	0.97719
77	84	86.87	0.39355
78	84	74.51	0.76103
79	84	71.97	0.82228
80	84	65.19	0.93625
81	84	82.14	0.53699
82	84	73.99	0.77434
83	84	80.54	0.58684
84	84	81.36	0.56124
85	84	85.41	0.43666
86	84	78.44	0.65064
87	84	89.05	0.33232
88	84	84.83	0.45417
89	84	95.41	0.18557
90	84	84.67	0.45909

Test No.	DOF	ChiSqr	P-Value
91	84	72.75	0.80451
92	84	65.90	0.92771
93	84	74.64	0.75762
94	84	89.01	0.33336
95	84	91.02	0.28142
96	84	57.59	0.98772
97	84	93.40	0.22633
98	84	95.01	0.19331
99	84	93.66	0.22082
100	84	75.24	0.74174
Combined P-value for all tests (Using KS method)			0.76220

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	22.59	0.36617
2	7	21	17.57	0.67624
3	7	21	27.79	0.14614
4	7	21	18.60	0.61067
5	7	21	20.34	0.49968
6	7	21	12.75	0.91722
7	7	21	18.23	0.63444
8	7	21	27.16	0.16565
9	7	21	16.95	0.71430
10	7	21	15.05	0.82041
11	7	21	21.69	0.41778

Test No.	Positions	DOF	ChiSqr	P-Value
12	7	21	16.05	0.76665
13	7	21	19.19	0.57282
14	7	21	17.02	0.71006
15	7	21	17.13	0.70339
16	7	21	16.39	0.74755
17	7	21	27.88	0.14364
18	7	21	25.22	0.23785
19	7	21	12.14	0.93584
20	7	21	29.22	0.10882
21	7	21	12.97	0.90980
22	7	21	13.21	0.90109
23	7	21	24.60	0.26503
24	7	21	19.10	0.57877
25	7	21	19.17	0.57444
26	7	21	15.86	0.77754
27	7	21	18.16	0.63904
28	7	21	16.41	0.74625
29	7	21	25.30	0.23437
30	7	21	20.86	0.46746
31	7	21	23.62	0.31167
32	7	21	18.15	0.63948
33	7	21	24.53	0.26812
34	7	21	12.00	0.93969
35	7	21	40.70	0.00610
36	7	21	27.82	0.14519
37	7	21	20.55	0.48679
38	7	21	16.43	0.74530
39	7	21	23.41	0.32232
40	7	21	38.42	0.01151
41	7	21	18.28	0.63139
42	7	21	29.47	0.10314

Test No.	Positions	DOF	ChiSqr	P-Value
43	7	21	20.33	0.50070
44	7	21	21.59	0.42361
45	7	21	15.76	0.78275
46	7	21	17.93	0.65329
47	7	21	21.03	0.45704
48	7	21	28.33	0.13105
49	7	21	21.78	0.41208
50	7	21	15.10	0.81771
51	7	21	16.80	0.72290
52	7	21	23.61	0.31221
53	7	21	9.62	0.98339
54	7	21	14.99	0.82348
55	7	21	20.98	0.46037
56	7	21	10.11	0.97738
57	7	21	17.73	0.66582
58	7	21	27.52	0.15441
59	7	21	23.02	0.34290
60	7	21	8.33	0.99356
61	7	21	18.20	0.63617
62	7	21	24.33	0.27745
63	7	21	20.01	0.52032
64	7	21	14.72	0.83671
65	7	21	20.60	0.48343
66	7	21	23.27	0.32980
67	7	21	13.80	0.87788
68	7	21	24.51	0.26923
69	7	21	28.83	0.11823
70	7	21	18.48	0.61866
71	7	21	14.03	0.86824
72	7	21	11.28	0.95709
73	7	21	13.14	0.90374

Test No.	Positions	DOF	ChiSqr	P-Value
74	7	21	24.20	0.28345
75	7	21	22.74	0.35780
76	7	21	23.86	0.29967
77	7	21	19.63	0.54448
78	7	21	9.76	0.98185
79	7	21	16.79	0.72401
80	7	21	32.01	0.05841
81	7	21	12.62	0.92150
82	7	21	33.29	0.04309
83	7	21	18.70	0.60445
84	7	21	33.50	0.04095
85	7	21	13.91	0.87338
86	7	21	17.12	0.70390
87	7	21	23.50	0.31770
88	7	21	25.36	0.23186
89	7	21	10.41	0.97302
90	7	21	24.51	0.26901
91	7	21	20.04	0.51896
92	7	21	19.15	0.57572
93	7	21	24.91	0.25102
94	7	21	31.34	0.06823
95	7	21	26.83	0.17670
96	7	21	14.05	0.86758
97	7	21	28.19	0.13496
98	7	21	25.46	0.22777
99	7	21	18.21	0.63594
100	7	21	17.80	0.66155
Combined P-value for all tests (Using KS method)				0.64787

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	0.76220	1.00000
Suits Test	0.64787	1.00000
Hand Types Test	0.97395	1.00000
Combined P-Value using Holm's Method		1.00000

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 May 2026
