



Poker Cards Analysis - December 2020

The Directors

GVC Plc

This is to confirm that iTech Labs has examined the game logs for Poker games for the period **December 01, 2020** to **December 31, 2020** 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 GVC 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	5.05	0.82969
2	9	3.64	0.93364
3	9	4.89	0.84394
4	9	7.92	0.54175
5	9	4.29	0.89142
6	9	5.61	0.77808
7	9	4.37	0.88577
8	9	10.69	0.29791
9	9	9.79	0.36810
10	9	2.76	0.97298
11	9	5.83	0.75717
12	9	15.99	0.06703
13	9	6.94	0.64305
14	9	9.02	0.43569
15	9	4.95	0.83905
16	9	7.29	0.60686
17	9	8.18	0.51632
18	9	3.93	0.91586
19	9	5.91	0.74895
20	9	2.42	0.98302
21	9	4.59	0.86839
22	9	6.24	0.71542
23	9	7.49	0.58631
24	9	11.52	0.24194
25	9	8.31	0.50347

26	9	6.66	0.67269
27	9	5.49	0.78920
28	9	8.22	0.51238
29	9	6.66	0.67244
30	9	20.82	0.01346
31	9	15.85	0.07018
32	9	8.60	0.47459
33	9	13.43	0.14391
34	9	9.08	0.43006
35	9	8.77	0.45859
36	9	8.59	0.47628
37	9	14.69	0.09996
38	9	5.15	0.82132
39	9	13.86	0.12732
40	9	11.18	0.26329
41	9	4.01	0.91105
42	9	1.82	0.99398
43	9	3.97	0.91357
44	9	11.13	0.26683
45	9	9.76	0.37040
46	9	5.57	0.78226
47	9	11.41	0.24896
48	9	6.11	0.72845
49	9	2.46	0.98203
50	9	4.60	0.86779
51	9	7.86	0.54812
52	9	6.51	0.68812
53	9	10.41	0.31815
54	9	12.18	0.20360
55	9	7.52	0.58268
56	9	13.91	0.12560
57	9	4.34	0.88790
58	9	8.82	0.45420
59	9	10.74	0.29361
60	9	3.23	0.95429
61	9	2.71	0.97468
62	9	8.69	0.46649
63	9	9.23	0.41602
64	9	7.44	0.59092
65	9	13.76	0.13098
66	9	12.22	0.20126
67	9	5.11	0.82438
68	9	19.18	0.02373
69	9	9.68	0.37732
70	9	6.48	0.69080
71	9	9.79	0.36801
72	9	15.54	0.07714
73	9	8.15	0.51941
74	9	8.78	0.45786
75	9	11.98	0.21425
76	9	12.02	0.21205
77	9	12.98	0.16372
78	9	6.61	0.67717
79	9	10.66	0.29982
80	9	11.41	0.24872

81	9	14.01	0.12210
82	9	6.37	0.70188
83	9	7.70	0.56454
84	9	5.52	0.78716
85	9	8.43	0.49171
86	9	10.41	0.31866
87	9	10.89	0.28299
88	9	16.69	0.05372
89	9	16.25	0.06193
90	9	7.45	0.59020
91	9	11.72	0.22982
92	9	8.46	0.48849
93	9	10.60	0.30395
94	9	5.45	0.79346
95	9	7.52	0.58272
96	9	7.34	0.60153
97	9	16.42	0.05859
98	9	5.23	0.81359
99	9	11.71	0.22988
100	9	6.76	0.66173
Combined P-value for all tests (Using KS method)			0.92368

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.

1.2 Poker hand types statistics for 36 cards deck:

Test No.	DOF	ChiSqr	P-Value
1	9	4.55	0.87167
2	9	6.00	0.74032
3	9	9.49	0.39311
4	9	7.38	0.59773
5	9	9.34	0.40633
6	9	8.02	0.53260
7	9	14.85	0.09500
Combined P-value for all tests (Using KS method)			N/A(Insufficient data)

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 and 9 ranks (6, 7, 8, 9, 10, J, Q, K, A) for a 36 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.	Positions	DOF	ChiSqr	P-Value
1	7	84	67.35	0.90794
2	7	84	70.78	0.84766
3	7	84	56.39	0.99107
4	7	84	99.22	0.12284
5	7	84	97.23	0.15330
6	7	84	90.88	0.28509
7	7	84	91.36	0.27329
8	7	84	87.45	0.37667
9	7	84	82.20	0.53534
10	7	84	62.33	0.96326
11	7	84	84.27	0.47130
12	7	84	62.81	0.95941
13	7	84	79.90	0.60649
14	7	84	74.64	0.75772
15	7	84	81.36	0.56118
16	7	84	63.57	0.95288
17	7	84	82.22	0.53450
18	7	84	79.91	0.60606
19	7	84	72.59	0.80832
20	7	84	84.39	0.46741
21	7	84	87.08	0.38751
22	7	84	85.97	0.41980
23	7	84	108.16	0.03916
24	7	84	84.17	0.47429
25	7	84	104.03	0.06840
26	7	84	54.82	0.99428
27	7	84	114.53	0.01505
28	7	84	69.97	0.86362
29	7	84	80.50	0.58801
30	7	84	86.65	0.39973
31	7	84	78.06	0.66209
32	7	84	78.04	0.66250
33	7	84	105.02	0.06009
34	7	84	79.88	0.60694
35	7	84	101.87	0.08982
36	7	84	76.90	0.69583
37	7	84	95.00	0.19351
38	7	84	107.43	0.04339
39	7	84	93.84	0.21708
40	7	84	93.25	0.22970
41	7	84	60.01	0.97783
42	7	84	68.44	0.89090
43	7	84	89.72	0.31447
44	7	84	83.00	0.51022
45	7	84	81.81	0.54737
46	7	84	99.48	0.11929
47	7	84	88.89	0.33684
48	7	84	74.13	0.77090
49	7	84	78.81	0.63955
50	7	84	69.93	0.86445
51	7	84	77.68	0.67326
52	7	84	64.51	0.94366
53	7	84	87.30	0.38096

54	7	84	83.05	0.50887
55	7	84	61.91	0.96635
56	7	84	95.52	0.18346
57	7	84	76.01	0.72076
58	7	84	76.97	0.69380
59	7	84	71.61	0.83036
60	7	84	88.42	0.34951
61	7	84	63.03	0.95762
62	7	84	86.84	0.39434
63	7	84	69.87	0.86559
64	7	84	72.51	0.81022
65	7	84	58.87	0.98308
66	7	84	57.09	0.98924
67	7	84	72.81	0.80324
68	7	84	103.43	0.07385
69	7	84	68.99	0.88166
70	7	84	87.81	0.36659
71	7	84	73.02	0.79812
72	7	84	98.48	0.13363
73	7	84	73.94	0.77566
74	7	84	87.83	0.36590
75	7	84	108.82	0.03563
76	7	84	88.74	0.34093
77	7	84	88.60	0.34454
78	7	84	84.69	0.45825
79	7	84	98.61	0.13166
80	7	84	97.71	0.14546
81	7	84	86.95	0.39130
82	7	84	107.51	0.04290
83	7	84	90.55	0.29320
84	7	84	84.64	0.45992
85	7	84	94.54	0.20252
86	7	84	87.06	0.38798
87	7	84	93.37	0.22700
88	7	84	78.94	0.63549
89	7	84	65.94	0.92729
90	7	84	79.79	0.60975
91	7	84	94.87	0.19596
92	7	84	79.61	0.61538
93	7	84	55.02	0.99393
94	7	84	82.12	0.53782
95	7	84	92.65	0.24289
96	7	84	93.90	0.21575
97	7	84	99.88	0.11393
98	7	84	74.25	0.76777
99	7	84	70.81	0.84716
100	7	84	88.03	0.36055
Combined P-value for all tests (Using KS method)				0.79978

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.

2.2 Poker rank statistics for 36 cards deck:

Test No.	Positions	DOF	ChiSqr	P-Value
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1	7	56	58.00	0.40150
2	7	56	54.81	0.51990
3	7	56	67.38	0.14191
4	7	56	49.74	0.70948
5	7	56	53.77	0.55982
6	7	56	54.13	0.54604
7	7	56	51.63	0.64099
8	7	56	70.09	0.09751
9	7	56	45.72	0.83493
10	7	56	69.03	0.11334
11	7	56	92.04	0.00172
12	7	56	60.32	0.32247
13	7	56	59.49	0.34972
14	7	56	48.89	0.73854
15	7	56	67.25	0.14429
16	7	56	46.23	0.82109
17	7	56	46.15	0.82310
18	7	56	85.59	0.00664
19	7	56	53.97	0.55224
20	7	56	50.94	0.66626
21	7	56	58.21	0.39383
22	7	56	58.09	0.39823
23	7	56	55.60	0.49006
24	7	56	58.98	0.36708
25	7	56	48.10	0.76454
26	7	56	67.54	0.13886
27	7	56	46.15	0.82330
28	7	56	62.92	0.24465
29	7	56	42.06	0.91639
30	7	56	42.11	0.91560
31	7	56	53.55	0.56801
32	7	56	63.46	0.23011
33	7	56	59.71	0.34244
34	7	56	73.10	0.06211
35	7	56	68.84	0.11646
36	7	56	46.35	0.81773
37	7	56	72.10	0.07244
38	7	56	55.55	0.49176
39	7	56	51.53	0.64460
40	7	56	67.47	0.14020
41	7	56	48.79	0.74179
42	7	56	52.84	0.59513
43	7	56	49.18	0.72871
44	7	56	47.07	0.79645
45	7	56	71.15	0.08359
46	7	56	44.10	0.87534
47	7	56	52.95	0.59102
48	7	56	40.86	0.93583
49	7	56	38.62	0.96298
50	7	56	69.03	0.11345
51	7	56	51.59	0.64226
52	7	56	57.33	0.42577
53	7	56	61.21	0.29437
54	7	56	60.31	0.32269
55	7	56	74.47	0.04999

56	7	56	57.60	0.41565
57	7	56	46.65	0.80894
58	7	56	72.39	0.06933
59	7	56	80.01	0.01929
60	7	56	47.25	0.79101
61	7	56	62.69	0.25113
62	7	56	57.15	0.43235
63	7	56	55.87	0.47987
64	7	56	49.51	0.71725
65	7	56	62.30	0.26207
66	7	56	42.42	0.90989
67	7	56	46.76	0.80579
68	7	56	64.38	0.20672
69	7	56	66.77	0.15371
70	7	56	42.45	0.90939
71	7	56	44.95	0.85494
72	7	56	58.74	0.37547
73	7	56	46.01	0.82704
74	7	56	69.48	0.10637
75	7	56	56.19	0.46770
76	7	56	56.07	0.47242
77	7	56	58.69	0.37703
78	7	56	45.04	0.85268
79	7	56	48.25	0.75959
80	7	56	65.90	0.17163
81	7	56	42.38	0.91072
82	7	56	54.13	0.54597
83	7	56	41.36	0.92814
84	7	56	45.56	0.83920
85	7	56	57.10	0.43399
86	7	56	41.71	0.92241
87	7	56	55.44	0.49620
88	7	56	74.26	0.05168
89	7	56	64.71	0.19886
90	7	56	36.23	0.98140
91	7	56	53.28	0.57867
92	7	56	42.03	0.91702
93	7	56	54.10	0.54700
94	7	56	48.54	0.75017
95	7	56	38.95	0.95970
96	7	56	45.21	0.84834
97	7	56	51.22	0.65593
98	7	56	44.05	0.87637
99	7	56	68.24	0.12636
100	7	56	69.18	0.11107
Combined P-value for all tests (Using KS method)			0.67870	

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	19.87	0.52977
2	7	21	16.52	0.73999
3	7	21	17.73	0.66609
4	7	21	23.95	0.29567
5	7	21	11.87	0.94316
6	7	21	23.08	0.33965
7	7	21	11.58	0.95021
8	7	21	20.10	0.51509
9	7	21	10.70	0.96834
10	7	21	21.92	0.40408
11	7	21	16.65	0.73202
12	7	21	26.20	0.19910
13	7	21	21.98	0.40057
14	7	21	16.98	0.71257
15	7	21	19.80	0.53380
16	7	21	18.98	0.58656
17	7	21	16.25	0.75517
18	7	21	21.87	0.40727
19	7	21	22.89	0.35013
20	7	21	21.94	0.40316
21	7	21	18.46	0.61944
22	7	21	21.88	0.40631
23	7	21	23.28	0.32902
24	7	21	25.18	0.23950
25	7	21	23.92	0.29683
26	7	21	19.61	0.54609
27	7	21	12.41	0.92801
28	7	21	24.11	0.28799
29	7	21	21.17	0.44862
30	7	21	15.02	0.82172
31	7	21	26.49	0.18821
32	7	21	16.32	0.75115
33	7	21	12.85	0.91390
34	7	21	26.24	0.19728
35	7	21	12.01	0.93944
36	7	21	21.06	0.45516
37	7	21	20.03	0.51947
38	7	21	14.29	0.85677
39	7	21	21.97	0.40139
40	7	21	22.51	0.37067
41	7	21	35.95	0.02215
42	7	21	17.05	0.70807
43	7	21	24.14	0.28612
44	7	21	26.87	0.17522
45	7	21	21.89	0.40559
46	7	21	7.99	0.99521
47	7	21	20.59	0.48409
48	7	21	20.80	0.47119

49	7	21	22.54	0.36918
50	7	21	35.63	0.02407
51	7	21	27.29	0.16157
52	7	21	25.13	0.24160
53	7	21	18.93	0.58940
54	7	21	19.71	0.53994
55	7	21	25.80	0.21426
56	7	21	10.52	0.97128
57	7	21	13.58	0.88707
58	7	21	18.88	0.59272
59	7	21	14.80	0.83292
60	7	21	28.88	0.11694
61	7	21	17.55	0.67704
62	7	21	16.38	0.74773
63	7	21	20.43	0.49433
64	7	21	19.03	0.58290
65	7	21	25.05	0.24479
66	7	21	29.34	0.10614
67	7	21	16.65	0.73195
68	7	21	18.38	0.62479
69	7	21	17.35	0.68952
70	7	21	20.03	0.51950
71	7	21	11.87	0.94315
72	7	21	14.28	0.85729
73	7	21	23.36	0.32534
74	7	21	19.01	0.58472
75	7	21	22.09	0.39431
76	7	21	10.23	0.97571
77	7	21	9.94	0.97972
78	7	21	16.33	0.75080
79	7	21	16.77	0.72477
80	7	21	10.79	0.96667
81	7	21	14.61	0.84189
82	7	21	18.75	0.60117
83	7	21	15.18	0.81386
84	7	21	28.26	0.13306
85	7	21	13.22	0.90074
86	7	21	16.38	0.74784
87	7	21	29.07	0.11238
88	7	21	12.56	0.92340
89	7	21	23.58	0.31399
90	7	21	17.53	0.67835
91	7	21	32.45	0.05264
92	7	21	13.35	0.89583
93	7	21	23.62	0.31200
94	7	21	12.67	0.91973
95	7	21	16.36	0.74883
96	7	21	27.82	0.14526
97	7	21	19.25	0.56897
98	7	21	17.78	0.66271
99	7	21	15.24	0.81046
100	7	21	11.24	0.95800
Combined P-value for all tests (Using KS method)			0.12553	

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.

3.2 Poker suits statistics for 36 cards deck:

Test No.	Positions	DOF	ChiSqr	P-Value
1	7	21	21.59	0.42334
2	7	21	22.08	0.39491
3	7	21	23.24	0.33132
4	7	21	23.08	0.33973
5	7	21	17.32	0.69154
6	7	21	8.70	0.99141
7	7	21	28.01	0.13992
8	7	21	17.93	0.65356
9	7	21	16.62	0.73410
10	7	21	17.89	0.65608
11	7	21	22.59	0.36611
12	7	21	17.46	0.68262
13	7	21	19.76	0.53651
14	7	21	20.86	0.46728
15	7	21	17.61	0.67366
16	7	21	15.78	0.78166
17	7	21	24.74	0.25842
18	7	21	24.19	0.28385
19	7	21	35.01	0.02818
20	7	21	33.39	0.04205
21	7	21	11.20	0.95875
22	7	21	16.65	0.73221
23	7	21	10.79	0.96676
24	7	21	21.07	0.45455
25	7	21	22.16	0.39034
26	7	21	23.14	0.33677
27	7	21	12.33	0.93034
28	7	21	23.29	0.32882
29	7	21	25.00	0.24699
30	7	21	14.84	0.83109
31	7	21	26.29	0.19568
32	7	21	39.47	0.00863
33	7	21	10.10	0.97764
34	7	21	32.98	0.04644
35	7	21	12.79	0.91573
36	7	21	16.53	0.73929
37	7	21	21.32	0.43956
38	7	21	19.59	0.54722
39	7	21	15.50	0.79684
40	7	21	20.78	0.47269
41	7	21	15.49	0.79748
42	7	21	21.24	0.44461
43	7	21	12.52	0.92438
44	7	21	10.04	0.97839
45	7	21	21.17	0.44873
46	7	21	23.88	0.29871
47	7	21	22.70	0.36018
48	7	21	35.94	0.02218
49	7	21	17.26	0.69523
50	7	21	23.99	0.29364

51	7	21	24.58	0.26563
52	7	21	17.25	0.69597
53	7	21	15.24	0.81093
54	7	21	27.92	0.14255
55	7	21	13.56	0.88791
56	7	21	22.61	0.36501
57	7	21	17.67	0.66991
58	7	21	25.42	0.22927
59	7	21	18.12	0.64140
60	7	21	15.56	0.79406
61	7	21	20.68	0.47838
62	7	21	7.90	0.99555
63	7	21	22.15	0.39102
64	7	21	18.89	0.59207
65	7	21	17.49	0.68089
66	7	21	24.46	0.27149
67	7	21	25.49	0.22648
68	7	21	34.10	0.03536
69	7	21	14.50	0.84699
70	7	21	15.54	0.79513
71	7	21	22.02	0.39813
72	7	21	20.09	0.51569
73	7	21	17.45	0.68362
74	7	21	28.47	0.12737
75	7	21	14.91	0.82754
76	7	21	16.89	0.71763
77	7	21	23.40	0.32282
78	7	21	20.26	0.50485
79	7	21	26.08	0.20326
80	7	21	11.82	0.94425
81	7	21	13.16	0.90306
82	7	21	22.32	0.38105
83	7	21	13.48	0.89088
84	7	21	14.31	0.85583
85	7	21	25.25	0.23641
86	7	21	20.33	0.50058
87	7	21	17.50	0.68014
88	7	21	16.92	0.71570
89	7	21	12.30	0.93128
90	7	21	9.92	0.97993
91	7	21	18.18	0.63784
92	7	21	12.71	0.91851
93	7	21	20.51	0.48932
94	7	21	9.84	0.98096
95	7	21	24.50	0.26928
96	7	21	15.43	0.80088
97	7	21	14.35	0.85401
98	7	21	13.32	0.89700
99	7	21	15.18	0.81381
100	7	21	34.39	0.03288
Combined P-value for all tests (Using KS method)			0.06983	

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	0.79998	1.00000
Suits Test	0.12553	0.37660
Hand Types Test	0.92368	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.

4.2 Summary of the analysis of 36 cards deck:

The analysis of 36 cards completes by combining the result of the KS Test performed in the 3 types of analysis (Hand Types, Ranks and Suits) for 36 card decks using the Holm's method and producing a single Combined P -value. Where there are insufficient data the individual Chi-Square tests results are used in the Holm's method for producing a combined p-value.

The combined p-value produced from the 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	0.67870	1.00000
Suits Test	0.06983	0.62843
Hands Type Test	0.87167	1.00000
Hands Type Test	0.74032	1.00000
Hands Type Test	0.39311	1.00000
Hands Type Test	0.59773	1.00000
Hands Type Test	0.40633	1.00000
Hands Type Test	0.53260	1.00000
Hands Type Test	0.09500	0.76002

Notes:

- 1) The combined p-value of all statistical tests using Holm's Method conducted for 36 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 36 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** and **36-card decks** indicated statistical randomness.

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.

Please click here to see the [Original](#) report.

Signed:



Kiren Sreekumar
Principal Consultant
iTech Labs Australia
Date: 22 January 2021

Signed:



Geoff Nicoll
Principal Consultant
iTech Labs Australia
Date: 22 January 2021

Disclaimer.

While it is not possible to test all possible scenarios in a laboratory environment, iTech Labs has conducted a level of testing appropriate for a component test of this type.

