



16 October 2009

To Whom It May Concern,

RE: TST Evaluation of Top Game's Software-based Random Number Generator (RNG)

This Certification Letter pertains to Technical Systems Testing (TST)'s evaluation of Top Game Platform (Top Game)'s software-based Random Number Generator (RNG), for use within the jurisdiction of Netherlands Antilles, as regulated by the Curacao Gaming Commission.

TST's evaluation of Top Game's software-based RNG was performed with the aim of verifying compliance with the following sets of standards:

- Generally-accepted industry standards for highly-regulated jurisdictions, and
- Top Game's technical specifications for their software-based RNG.

The scope of work for the evaluation of Top Game's software-based RNG included (but was not necessarily limited to) the following elements:

- General RNG Analysis,
 - Submitted Documentation Review,
 - Source Code Read,
 - Theoretical Mathematics Analysis,
 - Assessment of the RNG Period,
 - Determination of the RNG Range,
 - Investigation of the Seeding / Re-Seeding, and
 - Inspection of the Background Cycling / Activity.
- DIEHARD Battery of Tests, and
- Final Outcome Distribution Tests;

TST completed the evaluation of Top Game's RNG on 15 October 2009 with no Compliance Report (CR) issued.

TST's certification of the Top Game RNG pertains to a specific Operating System (OS) and software configuration. The RNG itself can function in one of the three modes referred to as 'native' mode, 'device' mode, and 'socket' mode. TST's current certification only applies to 'socket' mode, where the connection is made to the server provided by **random.c**, and where **/dev/ttyUSB1** is an alias to **/dev/urandom** – a file service provided by a **x86_64 GNU/Linux** kernel version **2.6.18-128.1.10.el5**.

The following are the Message Digest 5 (MD5) checksums of the primary files of the RNG under certification:

Source Code File	MD5 Checksums
Random.c	2391638da142a4aa156fdb2907d8bd42
random/RandomProvider.java	5bca09852ce8b784a766f2f632304061
random/RandomSocketConnection.java	5ed108a3138c17f6b25db4b714c5ac97

TST has verified, through mathematical and statistical analysis that Top Game's software-based RNG distributes numbers with sufficient non-predictably, fair distribution and lack of bias to particular outcomes. TST's Final Outcome Distribution Tests were performed using confidence intervals between 95% and 98%, which are documented intervals of confidence for such statistical analysis.

The evaluation has shown that the Top Game RNG produces a statistically acceptable source of random numbers for the following Top Game games / applications¹:

Game Type	Game Name	Associated Degree of Freedom (DOF)
Card Games	Royal Blackjack	415
	Multihand Blackjack	415
Keno	Keno	79
Table Games	Electronic Roulette	36
5-Reel Video Slots	Shia Safavids Treasure 20 Line	127, 14
	Ocean Fantasy 25 lines	127, 14
	Lucky Number 20 lines	127, 8
	Fruit Slot 25 lines	127
	Black Diamond 25 lines	127
	Fantasy Nuts 25 Line	127
	Treasures of Pharaohs 15 Line	127, 5
	Fandango's 15 Lines	127, 18
	Wild Sevens 15 Lines	127
	Sweets Surprise 25 Line	127
	Dougie's Delights 9 Line	127
	Bingo Slot 25 lines	127
	Crazy Jungle 15 lines	127, 2
Dioblo 13 lines	127, 1	

Cont'...

¹ Please note that TST's testing was only performed on the DOFs as supplied by Top Game according to the table below. TST's testing excludes any additional DOFs (if exist) that are not listed in the table.

Game Type	Game Name	Associated Degree of Freedom (DOF)
3-Reel Classic Slots	Berry Flavors 3 Lines	7
	Big Bang 3 Lines	7
	Bingo Slot 3 Lines	7
	Black Diamond 1 Line	7
	Crazy Pizza 1 Line	7
	Diamonds are Forever 3 Lines	7
	Fandango's 1 Line	7
	Fruit Slot 1 Line	7
	Kings and Queens 3 Lines	7
	Red Chili Hunter 5 Lines	7
	Red White Blue 1 Line	7
	Russian Attack 3 Lines	7
	Sweet's Surprise 3 Lines	7
	Treasures of Pharaohs 1 Line	7
	Tropical Punch 3 Lines	7
Wild Sevens 1 Line	7	
Videopoker	Deuces Wild	51
	Deuces and Joker	51
	Jacks or Better	51
	Joker Poker	51

Subject to 1) the inherent limitations of laboratory compliance testing, and 2) the specific limitations of the scope of work as listed above, TST certifies the Top Game software-based RNG, using the 'socket' mode, as complying with any applicable requirements listed above.

TST's evaluation was performed using a specific test version of Top Game's software-based RNG, and was based on specific information and materials including (but not necessarily limited to) software, configurations, source code, documentation and general correspondence, as submitted to TST throughout the duration of the project. For verification purposes, TST has maintained a control version (or the means of verifying the control version) of all submitted information and materials.

If you have any questions or comments regarding TST's evaluation of Top Game software-based RNG, please contact us at our London office.

Yours sincerely,



Ms. Yvonne Yuan
 Laboratory Manager

TECHNICAL SYSTEMS TESTING (TST)