

## **RGS EVALUATION TESTING REPORT**

*Game:*

*“Jaguar Temple” – HTML5 (Desktop & Mobile)*

*Client rev: 1.0.4, Engine vers: 1.0.0, RNG vers: 3.5.0*

### **Reference regulation:**

Remote Technical and Operating Standards – Version 1.1.0 20/09/2012  
**Gibraltar Gambling Commissioner**

**17/09/2018**

## INTRODUCTION

The findings reported in this summary are the results of a broader set of documents and testing activities results archived in QUINEL Limited's facilities. It is intended that the requester declares that:

- Any Hardware provided or described for analysis and testing is configured identically to hardware in commercial use
- Game software/ function provided for the testing and code review is declared by the customer to have the same behaviour to the software/code in commercial use
- Functionality made by the software in automatic test mode has a realistic behaviour

and that

- all the files and modules,
- the database schemas and all the specific programming resources,
- all the parameters contained into any databases and/or configuration file

that have been subject to the audit process guarantee the same behaviour of what is going to be published/deployed according to this audit results.

The Recipient, by accepting and using this Report, declares to be aware and accept unconditionally all the terms and conditions set forth. If the Applicant and / or the Recipient does not agree on the terms and conditions set forth, QUINEL Limited reserves the right to cancel the certification provided with this Report, it follows therefore that the Recipient would have to immediately hand all copies of this Report to QUINEL Limited and would not be able to use them.

Any copy of this compliance report and calibration certificates must also include the page number and total number of pages.

Copy of this test report cannot be reproduced except in full, without written approval of the laboratory.

**A) Audit ID**

GIB\_THK008GAM\_Jaguar Temple\_REV.2

**B) Reference regulation**

Remote Technical and Operating Standards – Version 1.1.0 20/09/2012  
Gibraltar Gambling Commissioner

**C) Test methods**

QIVI001 – Visual inspection  
QISI001 – Software source inspection method  
QIAF001 – Accounting functionalities (bets vs winnings)  
QIMT001 – Mathematical analysis

**D) Auditor / Test lab**

**QUINEL Limited**  
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XBX 1421 Ta’ Xbiex - Malta  
[info@quinel.com.mt](mailto:info@quinel.com.mt)

**E) Audit subject / Scope**

**Description:** Compliance of the following test items (games):

<i>Test Item</i>	<i>Game Name</i>	<i>Revision</i>	<i>Interface</i>
G001	Jaguar Temple	Client rev: 1.0.4, Engine vers: 1.0.0, RNG vers: 3.5.0	HTML5 (Desktop & Mobile)

**Receipt date:**  
11/07/2018 – first submission for testing against the regulation as per Section (B)

**Inspection date:**  
28/08/2018 - 03/09/2018

**Note:** compliance of the RNG used by the test items was certified through report with ID “GIB J16030078-R001 RNG V.3.5.0 rev.1”.

**F) Requester**

Thunderkick Malta Ltd  
Level 5, The Mall Complex  
Floriana, Malta

## G) Owner of the system/software

Thunderkick AB  
Vasagatan 11, 111 20 Stockholm,  
Sweden

## H) Companies and organizations involved in the process

**Requester:** Ref. to Section F)  
  
**Producer(s):** Ref. to Section G)  
  
**Licensee/Operator:** N.A.

## I) Individuals involved in the process

**On the Requester side:** Mr. Sven Grip, Mr. Stéphane Redon, Mr. Johnny Aspelin, Mr. Daniel Gjørwell, Ms. Jeanette Karlsson.  
  
**On the Producer(s) / Integrator(s) side:** same as for Requester  
  
**On the Licensee/Operator side:** N.A.

## J) Processes, rules and parameters of the games / Limitation of use

Evaluation of game rules was conducted to ensure that they satisfy the requirements as per the regulation in the Section (B). Refer to the Annex I for the full list of requirements satisfied.  
Game / Test item type: **Slot Game**  
Game(s) / Test item(s) use(s) Jackpot: N  
Here follow the theoretical pay-outs of the test items:

<i>Test Item</i>	<i>Game/Item Name</i>	<i>Theor. RTP [%]</i>
G001	Jaguar Temple	96.1%

## K) Protocols and specifications of the gaming system

Both games (server side logic) and platform are developed entirely with the Java Language.

Games were provided through the following URLs on a QA environment:

<https://quinel.thunderkick.com/games/> (player's interface)  
<https://qa-int-backoffice.thunderkick.com> (Back office / Admin interface)  
<http://ext-qa-gameservice.thunderkick.com> (Runtime game configuration)

The QA environment used relies on a Linux environment hosted by Amazon's cloud services and runs on Oracle Java JDK 1.7.0\_09, Apache Tomcat application server 7.0.42

Live environment is reachable at the following IPs (primary site, secondary site omitted):

Game traffic:	37.114.73.113
API:	37.114.73.114
Back office	37.114.73.115
Firewall	37.114.73.120

Live environment servers are running Linux “Ubuntu 12.04.5 LT; Precise Pangolin”, with Oracle Java JDK 1.7.0\_51, Apache Tomcat application server 7.0.50.

The difference between the Java JDK is negligible considered the change log and that the source code inspection could not find any specific binding to those releases nor dependencies on system APIs. Same considerations apply with regards to differences between QA and Live environment.

## L) Security of the system

N.A.

## M) Critical modules

Refer to the contents of Section Q)

## N) Evaluation performed

The test evaluation was completed against the following requirements:  
*Remote Technical and Operating Standards – Version 1.1.0 20/09/2012*  
*Gibraltar Gambling Commissioner*

Refer to the Annex I for a full detailed list of requirements tested.

## O) Testing activities applied

Internal procedure followed:  
Rif. “IOP 02-02 TEST METHODS”

- Mathematical analysis for pay-out evaluation
- Fairness of the game and associated rules
- Requirements of the player’s interface
- Source code inspection

## P) Additional information

None

## Q) Product Tested

<i>SHA1:</i>	<i>Critical</i>	<i>Test Item</i>	<i>File name</i>
4e2a021dba5d46b5f08525ad6332c0b1fbcadc00	Yes	G001	gp-game-s1-g19.json
e4edd2a84961d62fc52b8bffa4ee72f79850c4e	Yes	G001	gp-game-s1-g19-core-1.0.0-RELEASE.jar
d5e01a5f41deae3b63b46b2ccb7125278e3ebc29	Yes	All (*)	MersenneTwister32.java
ea8940a1cd7d561eb944c42f101ddfd7cce2ec7	Yes	All (*)	RandomNumberGenerator.java
f2dcd4e8ed46eb5653d99ff54f60c4e4047ad4ec	Yes	All	gp-rng-3.5.0-RELEASE.jar
ea01386be069745202580bd50c3de32c33f3553f	Yes	All	gp-rng-api-3.5.0-RELEASE.jar

(\*) RNG main source code files.

## R) CERTIFICATION

Date: 17/09/2018  
Requester: Thunderkick Malta Ltd  
Level 5, The Mall Complex  
Floriana, Malta

Total Number of Pages: **10**

QUINEL Limited certifies that the games / test items identified at section E):

**“Jaguar Temple”** HTML5 (Desktop & Mobile)  
Client rev: 1.0.4, Engine vers: 1.0.0, RNG vers: 3.5.0

comply with the Gibraltar Gambling Commissioner Remote Technical and Operating Standards –  
Version 1.1.0 20/09/2012

Refer to the Annex I for the full list of requirements satisfied.

## S) CONDITIONS

None.

## T) CONCLUSIONS

QUINEL Limited certifies that the games/test items identified at section E) and integrated with the RNG certified and identified into compliance Report ID: “GIB J16030078-R001\_RNG\_V.3.5.0\_rev.1”

Date: 17/09/2018

**Signed:**



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Davide De Nobile – Laboratory Technical Director  
(QUINEL Limited)

## ANNEX I – REQUIREMENTS SATISFIED

Unless differently specified, the results are related to all the test items.

CHAPTER	SCOPE / Requirement	OUTCOME N.A./FAIL/PASS	NOTES
<b>STANDARD 2</b>	<b>REGISTRATION OF PARTICIPANTS AND ADMINISTRATION</b>	N.A.	
<b>STANDARD 3</b>	<b>PRESENTATION OF RULES AND CUSTOMER INFORMATION</b>		
	<b>3.1 General</b>	<b>PASS</b>	Limited to the game UI
	<b>3.2 Terms &amp; Conditions</b>	N.A.	
	<b>3.3 Safeguarding of information</b>	N.A.	
	<b>3.4 Game rules and information</b>		
	3	<b>PASS</b>	Limited to the game UI
	4	<b>PASS</b>	
	5	N.A.	
	6	<b>PASS</b>	
	7	<b>PASS</b>	
	8	<b>PASS</b>	
	9	N.A.	License holder's responsibility
	10	<b>PASS</b>	Limited to the game UI
	11	<b>PASS</b>	
	12	N.A.	
	13	N.A.	
	<b>3.5 Jackpots</b>	N.A.	
	<b>3.6 Multi-customer games</b>	N.A.	
	<b>3.7. Monitoring of Rules</b>	N.A.	
	<b>3.8 Licensing Information to be displayed on webpages</b>	N.A.	
<b>STANDARD 4</b>	<b>RESPONSIBLE GAMBLING AWARENESS AND PROVISION OF INFORMATION</b>	N.A.	
<b>STANDARD 5</b>	<b>GAMBLING MANAGEMENT FACILITIES</b>	N.A.	
<b>STANDARD 6</b>	<b>PREVENTING UNDERAGE GAMBLING</b>	N.A.	
<b>STANDARD 7</b>	<b>FAIR GAMBLING</b>		
	<b>7.1 Game fairness</b>		
	1	N.A.	
	2	N.A.	
	3	<b>PASS</b>	
	4	N.A.	



CHAPTER	SCOPE / Requirement	OUTCOME N.A./FAIL/PASS	NOTES
	5	PASS	
	6	N.A.	
	7	N.A.	
	8	PASS	
	<b>7.2. 'Play for Free' Games</b>		
	1	PASS	
	2	PASS	
	3	N.A.	
	4	N.A.	
	<b>7.3. Compensated or adaptive games</b>	PASS	
	<b>7.4. No forced game play</b>	PASS	
	<b>7.5. Auto-play</b>	PASS	
	<b>7.6. Game control</b>	N.A.	
	<b>7.7. Incomplete games</b>	PASS	
	<b>7.8. Game / website design</b>	PASS	The functions of all buttons are described in the rules, easily accessible from the game.
	<b>7.9. Poker / P2P Games</b>	N.A.	
	<b>7.10. Sports betting and integrity</b>	N.A.	
<b>STANDARD 8</b>	<b>INFORMATION AND DATA SECURITY</b>	N.A.	
<b>STANDARD 9</b>	<b>BUSINESS CONTINUITY</b>	N.A.	
<b>STANDARD 10</b>	<b>COMPLAINTS</b>	N.A.	
<b>STANDARD 11</b>	<b>RANDOMNESS</b>		
	<b>11.1 RNG and Game Randomness</b>	N.A.	Game logic and Entropy engine were verified against the rules provided
	<b>11.2 Mechanical RNGs</b>	N.A.	
	<b>11.3 RNG Failure</b>	N.A.	
	<b>11.4 Verifiably fair</b>		
	1	N.A.	License holder's responsibility
	2	N.A.	License holder's responsibility
<b>STANDARD 12</b>	<b>COMPLIANCE AND TESTING</b>		
	<b>12.1 Compliance</b>	N.A.	
	<b>12.2 RNG testing</b>		
	1	N.A.	
	2	N.A.	
	3	N.A.	

CHAPTER	SCOPE / Requirement	OUTCOME N.A./FAIL/PASS	NOTES
	4	N.A.	
	5	N.A.	
	<b>12.3 Game engine testing</b>		
	1	<b>PASS</b>	RNG Report ID: "GIB J16030078- R001_RNG_V.3.5.0_rev.1"
	2	N.A.	
	3	N.A.	
	4	N.A.	
	<b>12.4 Ongoing monitoring</b>	N.A.	
	<b>12.5 Further testing</b>	N.A.	
	<b>12.6 Software development and maintenance</b>	N.A.	

**END  
OF  
COMPLIANCE  
REPORT**