



**DIRECÇÃO DE INSPECÇÃO E COORDENAÇÃO DE JOGOS  
“DICJ”  
(Macau)**

**SAMPLE CERTIFICATE**

**For Software & Game of EGM / ETG / DETG**

**Macau Gaming Certificate Format Version 1.0**

*With effect from 01 January 2021*

**Notes:**

- a) Test lab may use its own cover page (FIRST PAGE only).*
- b) State “N/A” for any section which is not applicable.*
- c) All evaluation checklists must be signed and dated by the responsible test engineer(s).*

**Test Report Summary**

Issued To:	<b>Gaming Inspection &amp; Coordination Bureau (DICJ)</b> Avenida da Praia Grande, 762-804 Edf. China Plaza, 21 <sup>o</sup> andar, Macao SAR, China
Issued By:	<Approved Test Laboratory Name> <Address of Test Laboratory> < Official Website of Test Laboratory >
Test Location(s):	< _____ >
Manufacturer:	< _____ >
Supplier/Applicant:	< _____ >
Product Name:	<Product Name & Version>
Model Name/No:	
Report ID/No:	
Ref. No/File No:	
Report Issue Date:	
Dates of Evaluation:	
Conclusion:	< _____ > (e.g. The product described in this report has been found to comply with the xxx Standards or Requirements.

**Standards Tested Against and Test Results:**

Standards Tested	Test Result
Macao Special Administrative Region – Technical Standards for <u>Electronic Gaming Machines</u> Version x.x Dated dd/mm/yyyy.	<Pass/Fail>
Macao Special Administrative Region – Technical Standards for <u>Electronic Table Games</u> Version x.x Dated dd/mm/yyyy.	<Pass/Fail>
Macao Special Administrative Region – Technical Standards for <u>Dealer-Operated Electronic Table Games</u> Version x.x Dated dd/mm/yyyy.	<Pass/Fail>
Others	<Pass/Fail>

(Mr./Ms.)  <i>Test Engineering Manager</i> Authorized Signatory	(Mr./Ms.)  <i>Technical Compliance</i> Authorized Signatory
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## 1. Purpose

*<This section describes the purpose of this test>*

## 2. Product Characteristics / Description

*<This section contains a description of the product operation with its special features. e.g. free game, scatter and gamble>*

## 3. Test Laboratory Evaluation Performed

*<This section contains a description of the tests conducted by the test lab>*

**Test lab** has conducted the following tests for the evaluation of <Product Name & Version> for operation in the Macao Casino market.

### 3.1 Regression Testing of Product

*(Test lab checklist: ‘Regression Testing of Product’)*

**Test lab** has conducted a complete range of functional tests on the basic functionality of the product operations which include the following:

Game / feature / double up functionality, peripheral devices (bill acceptors / Ticket printer / buttons, etc.), game configurations (denominations, etc.) / metering / accounting / all audit functions checks, communication protocol (e.g. SAS 6.02) verification to ensure that the game is able to report correctly all the relevant significant events and meters to the host by use of the appropriate SAS protocol simulator. Testing to confirm the product’s performance to a wide range of failures and error conditions are also performed.

**Test lab** also verifies correct recording of all metering information including all money in (Bill in, Ticket in and WAT IN), all money out (Handpay, Ticket out, WAT OUT) wins and bet amounts during the above combination tests.

Checklists are designed to confirm compliance to relevant sections of the Regulation on Technical Requirements specified in all the relevant standards and the technical documentation supplied by the manufacturer.

### 3.2 Product Software Test

*(Test lab checklist: ‘Product Software Test’)*

This test has two functions as given below:

- a) Source code review of the game software supplied for evaluation – This checklist is to verify through source code review the following: Game result determination – base/features/double up etc., game fairness, game reel strips, game pay tables, RNG algorithm, use of critical memory and integrity checks, processors for peripheral devices, game metering/accounting/audit functions and checks, communication protocol (e.g. SAS 6.02), error handling, etc.

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- b) Compilation and verification of the source code and submitted storage media (e.g. Compact Flash, SSD or, Hard Disc).

### 3.3 Product Hardware Test

***(Test lab checklist: ‘Product Hardware Test’)***

Perform all tests necessary to confirm that every input button (both Static and Dynamic) and touch screen button function correctly. Every game program should be verified with the approved machine models. List all approved models/types of the gaming cabinets and compatible hardware which have been tested with the software programs.

### 3.4 Mathematical Evaluation Test

***(Test lab checklist: ‘Mathematical Evaluation Test’)***

Verification of the theoretical return of the game is as specified in the technical documentation supplied by the manufacturer. This is performed using **Test lab**’s proprietary mathematical analysis software.

### 3.5 Game Combination Test

***(Test lab checklist: ‘Game Combination Test’)***

This testing is basically confirming at least all possible winning payouts. **Test lab** verifies that all game payout amounts are correct for all winning combinations specified in the game rules and that all reel symbols are in the correct reel position when shown on the game screen. **Test lab** also verifies that the game pays correctly on all winning playlines and for at least all scatter winning payouts. All combinations and pays for the gamble option, win and lost are also verified.

### 3.6 Artwork Test

***(Test lab checklist: ‘Artwork Test’)***

Artworks are evaluated to ensure that they explain correctly the game rules and payouts as specified in the technical documentation supplied by the manufacturer.

### 3.7 Macao Compliance Verification Test

***(Test lab checklist: ‘Macao Compliance Verification Test’)***

Perform all tests necessary to confirm that the product complies with all requirements for the Macao Casino market, as detailed in the Macao Special Administrative Region – Technical Standards for XXXXXXXXXXXX Version x.x dated dd/mm/yyyy & ...

### 3.8 Other(s)

<Additional information the test lab wants to include in this section>

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## 4. Compliance Verification

<This section contains a description of the product verification.>

### 4.1 Verification Procedure

<This section describes the method of verification the test lab has used for the product program signatures>

- List of verification tools needed
- Details of verification procedure

### 4.2 Test Software / Firmware Identification - With Program Signature(s)

(Please Choose either Option A or Option B to present information of the Test Software / Firmware Identification.) The test should cover an environment of all software being certificated within the test and any associated or compatible software that was used during testing. If there are more than one type of cabinets, separate them for each cabinet type.

#### Option A - Test Software / Firmware Identification

Programmable Storage Device (PSD) Functional Description	Program Identifier
MBR & Boot Loader (if applicable)	
Linux OS (if applicable)	
Platform / Market (if applicable)	
Game	

PSD Details:	
Manufacturer's Part Number	(e.g. Sandisk Extreme III 1.0GB, APRO Industrial Standard 1GB)
PSD Type	(e.g. CFII 1GB)
PCB Position	(e.g. CF/MPU)
Filename of Compiled and verified binary image	<b>&lt;Product Name&gt; PSD consists of:</b> <_____.bin> <_____.bz2> <_____.bz2> <_____.bz2>

Firmware	Program ID	Position	HMAC-SHA1/MD5
game00	<_____>	CF Partition <_>	<_____>
System (Platform / Market) (if applicable)	<_____>	CF Partition <_>	<_____>
Linux OS (if applicable)	<_____>	CF Partition <_>	<_____>
MBR (if applicable)	<_____>	CF Partition <_>	<_____>
Bootldr (if applicable)	<_____>	CF Partition <_>	<_____>

**Option B - Test Software / Firmware Identification Main Program Being Certified:**

ID Number	Datecode	O/S Version	Platform (if applicable)	PSD Position	PSD Type
<_____>	dd/mm/yyyy	<_____>	<_____>	<_____>	<_____>

ID Number	* Signature Type <Type 1>	* Signature Type <Type 2>	* Signature Type <Type 3>	* Signature Type <Type 4>
<_____>	<_____>	<_____>	<_____>	<_____>

Details of the Main Program Specification sheet and Supported SAS Protocol are provided at Appendix 1.

**Personality Program Being Certified:**

ID Number	Datecode	Product Version	PSD Position	PSD Type	*Signature Type <Type 1>	*Signature Type <Type 2>
<_____>	dd/mm/yyyy	<_____>			<_____>	<_____>

**Associated Software Being Certified:**

ID Number	Datecode	PSD Position	PSD Type	*Signature Type <Type 1>	*Signature Type <Type 2>
<_____>	dd/mm/yyyy	<_____>	<_____>	<_____>	<_____>

\*Signature Type can be more than one. (e.g. SHA-1, MD5, HMAC-SHA1 and On Screen Signature)

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### 4.3 Machine Type and Hardware Identification

#### Cabinet & Hardware Details:

Gaming Platforms	Description
<_____> (e.g. Gen 8 Helix, Gen 9 MARSX )	<_____> (e.g. Casino Top, Chop Top, Round Top)

### 4.4 Compatible Platforms

<Product Name & Version> is tested for the use of the following Platforms (If applicable):

Gaming Platforms	Models/Types	Approved Report ID/No. of the Platform
<xxx, Gen 8 Helix, Gen 9 MARSX >	<_____> (e.g. Casino Top, Chop Top, Round Top)	<Test Lab Name, Report ID/No >

### 4.5 Associated Components

(If the layouts below are dynamic, provide them in screenshots)

**Button Panel Layouts: (for example)**

A Button 1	B Button 2	C Button 3	D Button 4	E Button 5		Button 14 (Gamble / Reserve)	Button 15 (Rules)
F Button 6	G Button 7	H Button 8	I Button 9	J Button 10	Button 11 (Play (repeat Bet) / Start Feature)	Button 12 (T/Win/ S/ Feature)	Button 13 (Collect/ Menu)

**Button Panel Layout: (for example)**

No. Of Lines: 25 Lines			Bets per Line					Play Lines				
Max Bet (cr)	BCVs	Max Bet (\$)	A	B	C	D	E	F	G	H	I	J
250	2¢	5.00	1	2	3	5	10	1	5	10	20	25
500	1¢	5.00	1	2	5	10	20	1	5	10	20	25

### 4.6 Game Rules and Artworks

If the game rules and artworks are dynamic, provide them in screenshots and attached them in the Appendix 3.

**Casino Top Configuration:**

Artwork Type	Casino Top
Casino Belly Panel	<_____>
Oval Topper (Optional)	<_____>
Casino Top Virtual Artwork	<_____>
Special Button ( Button Panel)	<_____>



**Chop Top Configuration:**

Artwork Type	Casino Top
Chop Top Belly Panel	<_____>
Chop Top Panel	<_____>
Special Button ( Button Panel)	<_____>

**Round Top Configuration:**

Artwork Type	Round Top
Slant Round Top	<_____>
Special Button	<_____>

**4.7 Product Details - With RTPs**

The Product details with the maximum denomination should be shown in the following table. Button panel layouts can be provided by the end of this section if there are more than 1 denomination.

Game Name	**Game Var / Paytable ID	Max Bet(s)	Max-Min RTP%	Std Dev	Denominations Available	Double Up Type (If applicable)
<_____>	<_____> (e.g. V01)	<_____>	<_____> _>	<_____> (e.g. 9.52)	<_____> (e.g. 10¢, 20¢, 25¢, 50¢, HKD1, HKD2, HKD5, HKD10, HKD50, HKD100)	<_____> (e.g. Suit or Red / Black)
<_____>	<_____> (e.g. V02)	<_____>	<_____> _>	<_____> (e.g. 10.03)	<_____> (e.g. 10¢, 20¢, 25¢, 50¢, HKD1, HKD2, HKD5, HKD10, HKD50, HKD100)	<_____> (e.g. Suit or Red / Black)

Game Name	**Game Var / Paytable ID	Max Bet(s)	Max-Min RTP%	Std Dev	Denominations Available	Double Up Type (If applicable)
< >	< > (e.g. V03)	< >	< > >	< > (e.g. 10.04)	< > (e.g. 10¢, 20¢, 25¢, 50¢, HKD1, HKD2, HKD5, HKD10, HKD50, HKD100)	< > (e.g. Suit or Red / Black)
< >	< > (e.g. V04)	< >	< > >	< > (e.g. 10.07)	< > (e.g. 10¢, 20¢, 25¢, 50¢, HKD1, HKD2, HKD5, HKD10, HKD50, HKD100)	< > (e.g. Suit or Red / Black)

\*\* Game Variation / Paytable ID can be more than one.

#### 4.8 Progressive Jackpot Details

Qualifying Bets			N/A	
Progressive Jackpot Functionality			As below	
a) Progressive Type			iSAP	
b) Jackpot Configuration			Cash Fortune	
c) Number of levels supported			3	
d) Jackpot Hit Probability (For EGM BCV: 1¢)				
Jackpot Probability ID	Variations	Level 1 - Grand	Level 2 - Major	Level 3 - Maxi
JHP1	99, 01	0.00000002156070	0.00000012766417	0.00000042554724
JHP2	02	0.00000001540050	0.00000012766417	0.00000042554724

#### Var: V99, V01

e) Setting table – EGM BCV: 1¢				iSAP
SAP Level	Level 1 - Grand	Level 2 - Major	Level 3 - Maxi	Total RTP
Reset Value	\$5,000.00	\$1,000.00	\$500.00	N/A
Jackpot Limit	\$8,888.88	\$2,000.00	\$1,500.00	N/A
Reset Percentage	1.078035%	1.276642%	2.127736%	4.482413%
Set Increment Percentage	0.100000%	0.300000%	0.500000%	0.900000%
Set Hidden Increment Percentage	N/A	N/A	N/A	N/A

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e) Setting table – EGM BCV: 1¢				iSAP
SAP Level	Level 1 - Grand	Level 2 - Major	Level 3 - Maxi	Total RTP
Total iSAP PRTP per Jackpot Level	1.178035%	1.576642%	2.627736%	5.382413%
Expected Average Turnover per Jackpot Hit	\$463,806.79	\$78,330.51	\$23,499.15	N/A
Expected Average Jackpot	\$5,463.81	\$1,234.99	\$617.50	N/A

**Var: V02**

Setting table – EGM BCV: 1¢				iSAP
SAP Level	Level 1 - Grand	Level 2 - Major	Level 3 - Maxi	Total RTP
Reset Value	\$7,000.00	\$1,000.00	\$500.00	N/A
Jackpot Limit	\$8,888.88	\$2,000.00	\$1,500.00	N/A
Reset Percentage	1.078035%	1.276642%	2.127736%	4.482413%
Set Increment Percentage	0.100000%	0.300000%	0.500000%	0.900000%
Set Hidden Increment Percentage	N/A	N/A	N/A	N/A
Total iSAP PRTP per Jackpot Level	1.178035%	1.576642%	2.627736%	5.382413%
Expected Average Turnover per Jackpot Hit	\$649,329.50	\$78,330.51	\$23,499.15	N/A
Expected Average Jackpot	\$7,649.33	\$1,234.99	\$617.50	N/A

f) Jackpot wins are transferred to credit meter and total wins meter	Yes
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**4.9 Maximum Win**

Game Var / Paytable ID	Winning Condition	Maximum Advertised Prize	Hit Probability	Hit Rate
		10000 X	<__> (e.g. 0.0000018395)	<__> (e.g. 1 in 543,635)

**4.10 Other(s)**

<Additional information the test lab wants to include in this section>

## 5. AUDIT SCREEN

*<This section contains details of the DICJ AUDIT SCREEN together with the Screenshots>*

SAMPLE

## 6. Conditions Attached to the Report

*<This section provides details of any restrictions or conditions that must comply with the correct operation of this product>*

## 7. Non-conformances

*<This section provides any non-compliance issue against the relevant Standards>*

## 8. Notes

*<If the game MUST be configured a certain way to be compliant, test lab could release the certification report for Macao as long as the test lab has already included a clear note in this section stating how it is needed to be configured>*

**End of the Report**

**Appendix 1: Main Program Specifications**

	Progressive					Features				Payout Medium			Valid Credit Issuance			
Main Program	Standalone (internal)	Link (internal)	Link (external)	Multi Site	Mystery (internal)	Mystery (external)	Multi-denom (more than 1 denom)	Tokenization	Double Up	Tournament	Coin (or token) Hopper	Printer Ticket Out	US Issued Currency out (Bill hopper)	Coin (or token) Comparator	Currency (via Bill Acceptor)	Printer Ticket In (via Bill Acceptor)
<Product Name>	X		X	X		X	X				X	X		X	X	X

**X = Supported****Protocol Information and Testing Results: (for example)**

The main program is compatible with the following Protocol:

1. (e.g. SAS 6.X)

**SAS Information and Testing Results (for example)**

<b>General Functional Groups:</b>	<b>Specific Functional Group</b>	<b>Supported</b>	<b>Tested</b>	<b>Failed</b>
<b>Section 1: Minimum Required Accounting and Security</b>	<b>1.1</b> - Required General Exception Reporting	X	X	
	<b>1.2</b> – Required Hardware Status and Tilt Reporting	X	X	
	<b>1.3</b> – Required Information and Control Long Polls	X	X	
	<b>1.4</b> – Required Basic Metering	X	X	
<b>Section 2: Advanced Accounting</b>	<b>2.1</b> - Multi-Game Extensions	X	X	
	<b>2.2</b> – Multi-Denomination Extensions	X	X	
	<b>2.3</b> – Wager Category			
	<b>2.4</b> – Bill Hopper Meters			
<b>Section 3: Ticketing</b>	<b>3.1</b> – Standard Validation	X	X	
	<b>3.2</b> – Secure Enhanced Validation	X	X	
	<b>3.3</b> – System Validation	X	X	
<b>Section 4: Real Time Event</b>	<b>4.1</b> – Real Time Events	X	X	
<b>Section 5: Progressives</b>	<b>5.1</b> – Non-SAS Progressive	X	X	
	<b>5.2</b> – SAS Progressive			
<b>Section 6: Bonus</b>	<b>6.1</b> – AFT Bonus	X	X	
	<b>6.2</b> – Legacy Bonus	X	X	
<b>Section 7: Cashless</b>	<b>7.1</b> – Advanced Funds Transfer – In-house Transfers	X	X	
	<b>7.2</b> – Custom Ticket Extensions	X	X	
	<b>7.3</b> – Advanced Funds Transfer - Debit Transfer	X	X	
	<b>7.4</b> – EFT 3.06 (Cash based)			
	<b>7.5</b> – EFT 3.11 (Credit based)			
<b>Section 8: Tournament Support</b>	<b>8.1</b> – SAS-Controlled Tournament			
<b>Section 9: Authentication</b>	<b>9.1</b> – Component Authentication			
<b>Section 10: Miscellaneous</b>	<b>10.1</b> – Miscellaneous Gaming Machine Control	X	X	
	<b>10.2</b> – Miscellaneous Legacy SAS Support	X	X	
	<b>10.3</b> – Legacy Meter Support	X	X	
	<b>10.4</b> – Multiplied Jackpot Bonus (MJT)			
	<b>10.5</b> – Meter Change Notification Support			

**SAS Communication Testing Deficiencies (for example)**

<b>Critical (Y/N)</b>	<b>Section</b>	<b>Long Poll</b>	<b>General Poll</b>	<b>Poll Name or Requirement</b>	<b>Description of Deficiencies</b>
N	3	3D		Send Cashout Information	The game does not respond to Long Poll 3D with all 0's when sent the second time. Instead, it responds with the same ticket information that was reported the first time Long Poll 3D was sent (Standard Validation).
N	2		8C	Game Selected	When the game is returned back to the main menu or the game selection menu on a multi-game gaming machine, the gaming machine does not report a single byte exception 8C (game selected) in response to host general poll.



## Appendix 2: Paytable Screenshots

< Screenshots in both Chinese and English>

SAMPLE

### Appendix 3: Game Rules & Features Screenshots

< Screenshots in both Chinese and English>

SAMPLE

## Appendix 4: Evaluation Checklist Tables

*All evaluation checklists must be signed and dated by the responsible test engineer(s). The checklists may not be included as part of this evaluation report, but instead they can be either emailed to the DICJ at: [egm@service.dicj.gov.mo](mailto:egm@service.dicj.gov.mo) or accessible by the DICJ via a secure web interface.*

*Checklists used for evaluation*

1. Test lab checklist: 'Regression Testing of Product';
2. Test lab checklist: 'Product Software Test';
3. Test lab checklist: 'Product Hardware Test';
4. Test lab checklist: 'Mathematical Evaluation Test';
5. Test lab checklist: 'Game Combination Test';
6. Test lab checklist: 'Artwork Test';
7. Test lab checklist: 'Macao Compliance Verification Test';
8. And so on...