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This report was sent to the Macau Gaming Control Board

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Certification of: One New Casino Game Maker, Inc. THOR Machine, One New "8 Baccarat" Main Program and New Associated Software

GLI File Number: PA-158-CGK-15-01

Standards Tested Against and the Test Results:

Standards Tested Against	Test Results
Macau EGM Technical Standards Version 1.1	Pass

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**Product Certification Summary:**

Product ID
THOR
83Y520037263
GURMACHW0
CGM Ram Clear
CGM SATADOM

HARDWARE**Device Certification Description:**

The Casino Game Maker, Inc. THOR machine is an upright video cabinet which supports three LCD monitors. The 21.5" LCD monitor is used as the player game interface and navigating through the attendant menu features. The 55" curved LCD monitor is used for displaying game outcomes and attendant menu features. The 27" LCD monitor is housed in the topper and is used for displaying the game name. The exterior of the cabinet has two key switches. One key switch is used to access the attendant menu and reset jackpots, while the other is used for resetting W2G jackpots. On the front of the cabinet on both sides of the player interface monitor is a "SPIN" button. Also on the front of the cabinet are dual USB ports rated at 5V, 1A and 5V, 2.1A.

The cabinet contains a logic board, amplifier board, I/O board, bill validator and printer. The candle is placed above the topper of the cabinet and illuminates for certain events controlled by the main program. The interior of the machine can only be accessed through the slot door and belly doors. The drop door allows access to the bill stacker. The drop door and bill stacker each has its own separate lock.



The logic board is contained in a separate locked compartment inside of the main cabinet monitored by a mechanical switch. The main and personality programs are stored on a single SATA Disk on Module (DOM) device that is connected to the SATA connection slot of the logic board. Access to the logic compartment is required to clear NVRAM and to configure the gaming machine for play.

Device Being Certified:

MODEL NUMBER	DESCRIPTION
THOR	THOR Cabinet

The above listed device utilizes the following hardware components:

HARDWARE COMPONENT	PART NUMBER
Coin Acceptors	N/A
Bill Validators (Software Dependent)	MEI: SC8307
Hopper	N/A
Printers (Software Dependent)	FutureLogic Gen2 Universal: PSA-66-ST2RU
Video Processor Boards	N/A
Mother/Backplane/Interface Boards	NF9QU-Q87
Logic/CPU/MPU Boards	N/A
Communication/I/O Board	I/O Board v2.1
Touchscreen Boards	N/A
Sound/Graphic Boards	New Sun Yu: AMP-2.1-RA400
Other Boards:	N/A
OTHER HARDWARE	
21.5" Touch Screen Player Interface	EFL-2102H
27" Topper Display Monitor	MT27W-X6322
55" Main Game Display	WW-F001

**Device Notes:**

This certification is not intended to state that the components being certified in this report are RoHS compliant.

The above devices' electrical and mechanical parts and design principles have been tested and verified to not subject a player to any physical hazards. The Laboratory has reviewed the electronic principles upon which the game is built. Please take note that the above devices have an EMC, certificate # 11091250, dated January 26, 2016. The certificate is on file at **Gaming Laboratories International, LLC**.

SOFTWARE**Game Description:****"8 Baccarat"**

"8 Baccarat" is a card game comprised of 8 individual tables, where each table has a shoe made up of eight (8) fifty-two (52) card decks. The shoe will be reshuffled at the completion of the game after two thirds of the shoe has been dealt out. Wagers may be placed on any of the tables and all wagers may be in the form of five (5) options: Player, Banker, Tie, Player Pair, or Banker Pair.

If a wager is made on any table, that table will be displayed as active. Tables that have no wagers will be displayed as inactive. Cards will still be dealt to inactive tables, but no wins or losses will be applied. Each table will draw cards from its shoe and will update the roadmap trends accordingly. The roadmap trend information for a table will be cleared when the shoe of the table is shuffled.



Two (2) cards are dealt to each side. The total points dealt to each side will determine if the side receives a third card. Points are based on the rank of the card with the "A" being one point up to "9" being nine points. Any "10", "J", "Q", or "K" is worth zero points. The Player is dealt to first. As cards are dealt, ten (10) points will be subtracted from any combination greater than nine (9). A natural is when the Player's or Banker's score from the first two (2) cards is eight (8) or nine (9). When a natural occurs, neither hand will draw a third card.

Drawing rules for Player Hand

When Player's first two cards total:	0, 1, 2, 3, 4, or 5	Draws
	6 or 7	Stands
	8 or 9	Natural

Drawing rules of Banker Hand

When the Player stands on 6 or 7, the Banker will always draw on totals of 0, 1, 2, 3, 4, and 5, and stand on 6, 7, 8, and 9.

When the Player does not have a natural, the Banker shall draw on the totals of 0, 1, or 2, and then observe the following rules:

When the Banker's first two cards total:	Draws when Player's third card value is:	Does not draw when Player's third card value is:
3	1, 2, 3, 4, 5, 6, 7, 9, or 10	8
4	2, 3, 4, 5, 6, or 7	1, 8, 9, or 10
5	4, 5, 6, or 7	1, 2, 3, 8, 9, or 10
6	6 or 7	1, 2, 3, 4, 5, 8, 9, or 10
7	Stands	Stands
8 or 9	Natural	Natural



If the Player does not take a third card, The Banker stands on 6. Player and Banker Bet(s) are pushed back on Tie.

The hand closes to nine (9) wins.

Bet Type	Payout
Player bet	1 to 1
Banker bet	0.95 to 1
Tie bet	8 to 1
Pair bet	11 to 1

Main Program Being Certified:

ID Number	Datecode	Version	Position	Type
CGM SATADOM	12/07/2015	CGM1-1r1	Partition 0	SATA

ID Number	Kobe4 Signature	SHA-1 Signature	CDCK Signature
CGM SATADOM	96HF	789995036042797A844E0DBE 413140164CEE00F9	0C66

Please refer to the attached Main Program Specification sheet.

**Game Information:**

Available Paytables	Game Name	Hardcoded Denom.	Max Bet	Manufacturer Min. - Max. Percentage
85.64	8 Baccarat	\$0.01	800,000	85.64-98.94

GAMING LABORATORIES INTERNATIONAL, LLC.'S INDEPENDENT MATH EVALUATION CAN BE PROVIDED UPON REQUEST**Main Program Notes:**

The communications are performed by the main program. Please see the attached Information and Testing Results for each protocol.

GLI Verify® and Verify+ by Kobetron™ - Verification Procedure (CGM SATADOM):

1. Open Verify+ by Kobetron™ or GLI Verify®.
2. Select the 'Device' radio button and click the 'Browse' button.
3. From the 'Browse' window, expand the 'Partitions' list and determine what hard disks and partitions already exist on the PC being used to perform the verification.
4. Click the 'Cancel' button on the 'Browse' window.
5. Insert the SATADOM device in the SATA reader.
6. Select the 'Device' radio button and click the 'Browse' button.
7. From the 'Browse' window, expand the 'Partitions' list and select the new Disk partition that appeared.
8. Click on the 'Verify' button.
9. The program will generate the aforementioned signatures and display the results.



Please note that the Game Recall functionality of the CGM SATADOM CGM1-1r1 does not include the Coin In, Coin Out, Coin Drop, Attendant Paid Jackpots, Attendant Paid Cancelled Credits, Bill In, Voucher In, Voucher Out, Electronic Funds Transfer In (EFT In), Wagering Account Transfer in (WAT in), Wagering Account Transfer Out (WAT Out), Non-Cashable Electronic Promotion In, Cashable Electronic Promotion In, Non-Cashable Electronic Promotion Out, Cashable Electronic Promotion Out, Coupon Promotion In, Coupon Promotion Out, Machine Paid External Bonus Payout and Attendant Paid External Bonus Payout meters required; however, GLI has confirmed that aforementioned information can be derived accurately from the "Event Logs" in the Attendant/Audit Menu. GLI is providing the aforementioned information regarding this issue concurrent to its approval. Upon review, should the regulatory agency deem this as unacceptable, please contact our office and we will rescind the certification.

Associated Software Description:

Ram Clear

The RAM Clear will clear all memory stored on the NVRAM device. Using this RAM Clear will allow the operator to configure settings relating to limits (credit, jackpot, ticket, max and min bets, etc) and communication settings.

MEI Cashflow Bill Validator Software with Easitrax SC Implementation

The MEI Cashflow bill validator software supports the Easitrax feature. Easitrax is a feature that stores the asset number of the bill validator in the cashbox (usually the asset number of the gaming machine). This directly ties the cashbox, and its contents, to the gaming machine from which it originated. The Easitrax system consists of an antenna board which connects to the interface board, a Radio Frequency Identification (RFID) tag located on the top of the cashbox and an Easitrax docking port.



The asset number can be assigned to the bill validator in one of two ways. The first way is to assign the asset number via the MEI Cashflow STS Program. The second way is for the bill validator to automatically obtain the RFID's current asset number. (Note: The bill validator must be programmed with "BLANK" as its asset number for this method to work. This method is only used in the event of a bill validator malfunction, where the bill validator head needs to be replaced.) This asset number will then be communicated to the antenna board, which in turn reports the same information to the RFID tag.

To read the asset number of a cashbox, simply place the cashbox on the Easitrax docking port (with the RFID tag facing down). The asset number will then be displayed on the Easitrax docking port screen. Clearing the asset number can be achieved automatically by placing the cashbox on the Easitrax docking port (with the RFID tag facing down). In addition to asset number allocation, the Easitrax feature can also track performance, acceptance rate and note acceptor software revisions by machine.

Associated Software Being Certified:

ID Number	Version	Function	Type	Start Address	Seed	CRC Signature
83Y520037263	5.20/2.63	Bill Validator Software (Flash Version)	FILE(S)	0000	1234	8B47

ID Number	Kobe4 Signature	SHA-1 Signature	CDCK Signature
83Y520037263	UC5U	46C569B6CF25527432F136BF69 7ACF510E36C77E	20AB



ID Number	Function	Type	Kobe4 Signature	SHA-1 Signature	CDCK Signature	Seed	CRC Signature
GURMACHW0	FutureLogic Gen2 Universal Printer Software	FILE(S)	4389	B39089BA6 8D378A825 8D217D4E6 92B6E19FD DB55	B955	0000	C382A2C0

ID Number	Version	Function	Type	Kobe4 Signature	SHA-1 Signature	CDCK Signature
CGM Ram Clear	1.0	Ram Clear	FILE(S)	58F5	8E66ECA2ABD0755 DE7C4AAD42C86BA 63660B2510	CB4F

Associated Software Notes:

The scope of this approval does not include the MEI Easitrax System itself as this device does not affect game play or revenue reporting.

Please note that the use of vouchers is only permitted in jurisdictions that allow for voucher acceptance.

Please note an observation was made during testing when forcing a unique ticket jam. In some instances a ticket was able to be redeemed prior to being fully stacked; however, the ticket was properly recorded as redeemed at both the gaming device and the accounting system. If this condition should occur in the field, local internal controls for the handling of earlier redeemed tickets should be utilized.



The bill validator software approved in this letter, 83Y520037263 Version 5.20/2.63 corresponds to MEI Application Part Number 285336520 and Variant Part Number 490373263. This supplemental information is being provided for possible use with the MEI Easitrax system.

The 83Y520037263 Version 5.20/2.63 bill validator software program accepts HKD10, HKD20, HKD50, HKD100, HKD500 and HKD1000 Hong Kong Dollars with four-way acceptance, as well as vouchers.

For the 83Y520037263 Version 5.20/2.63 bill validator software, the 'Standard Chartered Bank', 'The Hong Kong Shanghai Banking Corporation' and 'The Bank of China', all bank notes prior to the year 2003 are considered old and all bank notes from the year 2003 to present are considered new.

The previously listed 83Y520037263 v5.20/2.63 bill validator software is to be used in conjunction with the currently approved MEI: SC8307 bill validator hardware resident on THOR machine model.

The GURMACHW0 printer software is to be used in conjunction with the currently approved and compatible FutureLogic GEN2 Universal Printer, part number PSA-66-ST2RU.



GLI Verify® and Verify+ by Kobetron™ - Verification Procedure (CGM Ram Clear):

1. Open Verify+ by Kobetron™ or GLI Verify®.
2. Select the 'Directory' radio button and click the 'Browse' button.
3. From the 'Browse' window.
4. With 'Windows Filesystem' as the Directory Method, click the 'Browse' button.
5. From the 'Browse' window, determine what hard disks and partitions already exist on the PC being used to perform the verification.
6. Click the 'Cancel' button on the 'Browse' window.
7. Insert the USB EDC (Embedded Disk Card) device into the reader.
8. Select the 'Directory' radio button and using 'Windows Filesystem' as the Directory Method, click the 'Browse' button.
9. Select the newly added device and navigate into it until you reach the directory 'CGM'.
10. Select 'CGM' and click on the 'Verify' button.
11. The program will generate the aforementioned signatures and display the results.

GLI Verify® and Verify+ by Kobetron™ - Verification Procedure (Bill Validator and Printer Software)

1. Open Verify+ by Kobetron™ or GLI Verify®
2. Select the 'File' radio button
3. Click "Browse", specify the file you wish to signature and click the "Open" button
4. If a different seed is needed, click the 'Options', then 'General Options' and enter a new seed
5. If needed, other File options can be found by clicking 'Options' then 'File Options'
6. Click the "Verify" button
7. The current file being checked will be displayed in the window
8. The program will generate the aforementioned signatures and display the results

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If you should have any questions regarding this information, please feel free to contact our office.

Sincerely,

GAMING LABORATORIES INTERNATIONAL, LLC

Christine M. Gallo

Vice President of Technical Compliance and Quality Assurance

c: Mr. Andrzej Surmacz, President, Casino Game Maker, Inc.

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Main Program Specification:

	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 Voucher Out	US Issued Currency out (Bill hopper)	Coin (or token) Comparator	Currency (via Bill validator)	Printer Voucher In (via Bill validator)
								X				X			X	X
CGM SATADOM v CGM1-1r1																

X = Supported

Please note that the ‘supported’ features may or may not have been tested within the laboratory setting. **Gaming Laboratories International, LLC** recommends phase II communication testing to be conducted by regulatory personnel with all associated equipment and/or systems. This will ensure proper game operation in the specific casino environment this program is being installed in.

Protocol Information and Testing Results:

The Main Program is compatible with the following Protocol:

- SAS 6.X

Please refer to the attached Information and Testing Results for this protocol.



SAS INFORMATION AND TESTING RESULTS

General Functional Groups:	Specific Functional Group	Supported	Tested	Compliant (Yes or No)
Section 1: Minimum Required Accounting and Security	1.1 - Required General Exception Reporting	X	X	Yes
	1.2 - Required Hardware Status and Tilt Reporting	X	X	Yes
	1.3 - Required Information and Control Long Polls	X	X	Yes
	1.4 - Required Basic Metering	X	X	Yes
Section 2: Advanced Accounting	2.1 - Multi-Game Extensions			
	2.2 - Multi-Denomination Extensions			
	2.3 - Wager Category	X	X	Yes
	2.4 - Bill Hopper Meters			
Section 3: Ticketing	3.1 - Standard Validation			
	3.2 - Secure Enhanced Validation	X	X	Yes
	3.3 - System Validation	X	X	Yes
Section 4: Real Time Event	4.1 - Real Time Events	X	X	Yes
Section 5: Progressives	5.1 - Non-SAS Progressive			
	5.2 - SAS Progressive			
Section 6: Bonus	6.1 - AFT Bonus	X	X	Yes
	6.2 - Legacy Bonus	X	X	Yes
Section 7: Cashless	7.1 - Advanced Funds Transfer - In-house Transfers	X	X	Yes
	7.2 - Custom Ticket Extensions			
	7.3 - Advanced Funds Transfer - Debit Transfer			
	7.4 - EFT 3.06 (Cash Based)			
	7.5 - EFT 3.11 (Credit Based)	X	X	Yes
Section 8: Tournament Support	8.1 - SAS-Controlled Tournament			



General Functional Groups:	Specific Functional Group	Supported	Tested	Compliant (Yes or No)
Section 9: Authentication	9.1 - Component Authentication			
Section 10: Miscellaneous	10.1 - Miscellaneous Gaming Machine Control	X	X	Yes
	10.2 - Miscellaneous Legacy SAS Support	X	X	Yes
	10.3 - Legacy Meter Support	X	X	Yes
	10.4 - Multiplied Jackpot Bonus (MJT)			
Section 11: Addenda to SAS 6.02	11.1 - Miscellaneous New Functionality			
	11.2 - Meter Change Notification			
	11.3 - Player Denom Reporting			
	11.4 - Session Play			
	11.5 - Tip Money Meter			
	11.6 - Keyed Credits			

SAS Communication Testing Deficiencies: NONE