Submission Guidelines and Instructions

for

New and Modified Gambling Devices and VGM Monitoring Systems

Montana Department of Justice – Gambling Control Division

10/29/2021
Version 2.2

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Revision History

Date	Version	Reason For Changes
10/29/2021	2.2	Added references to Electronic Player Rewards System, updated FTS instructions in Appendix A
6/17/2021	2.1	Expanded and clarified, added New VGM Monitoring System Checklist and Testing Flowchart
12/5/2017	2.0	Reformatted document. Updated to reflect new requirements and submission goals
12/12/2012	1.0	Initial Release

1. Introduction

1.1 Purpose

The purpose of this document is to outline requirements for a complete submission of new gambling devices or modifications to approved gambling devices. This document covers Tier I, Video Gambling Machine (VGM), Cash Ticket Validation System (CTVS), Electronic Player Rewards System (EPRS), and Live Keno/Bingo submissions for both hardware and software. An included organized checklist (Appendix **B**) is also attached to the end of this document to be followed and included with each relevant submission.

1.2 Intended Audience

The intended audience for this document is new and existing manufacturers who wish to submit Tier I, VGM, CTVS, EPRS, or Live System equipment and software for approval to operate in the State of Montana.

1.3 Overview

New gambling device and modification submissions will be accepted Monday through Friday, 8:00 a.m. to 4:00 p.m. by appointment only, excluding State holidays. All submissions must be submitted to the following address:

Location:	Gambling Control Division Technical Service Section 1805 Prospect Ave Helena, MT 59601	Mailing Address:	Gambling Control Division Technical Service Section 1805 Prospect Ave Helena, MT 59601

All submissions must be accompanied by a manufacturer's letter requesting approval, completed submission checklist, and the required initial deposit or existing account balance. Submissions will not be accepted without the required initial deposit or the equivalent amount in an existing account. The submission must be deemed complete by the Division or it will not be accepted. Make checks payable to "Gambling Control Division."

The following is a list of fees the Division assesses for testing:

Category	Initial Deposit/Existing Account Balance	Hourly Charges
New Tier I	$15,000	$130
New VGM, Live System	$10,000	$130

New CTVS, EPRS	$5,000	$130
Modifications	$1,000	$130

Each manufacturer is encouraged to work with our lab during the design and development of a new device, system, or game platform. This verbal and white paper dialog serves to alleviate re-design and speed the testing and approval process. Our lab has created a series of requirements that all submissions must meet, as well as tools for testing. These tools can be found in Appendix A.

TSS Lab Contact information:

Bob Burke, Electronics Engineer
Phone (406) 444-9107
E-Mail bburke@mt.gov

Greg Janysek, Electronics Engineer
Phone (406) 444-9149
E-Mail gjanysek@mt.gov

Matt Eckdahl, TSS Supervisor
Phone (406) 444-9152
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When the department finds that any VGM, VGM component, System or Game Title does not comply with VGM statutes and rules active at the time of approval, or its actual play differs from its intended and approved functioning, the department may require Game Title(s) to be disabled, suspend, or revoke a permit, or revoke approval of the VGM, VGM component or System. If a deficiency is found affecting device validation, meter data, payout return, or fairness to the player, the manufacturer must immediately notify GCD Technical Services of all details in writing using a Form 50A.

2. Documents Descriptions

2.1 All Documents

All documentation and source materials required for submittal must be supplied in electronic format on USB media.

2.2 Cover Letters

Every submission must be supplied with a cover letter titled with the six-digit program name, if applicable. This document should serve as a high-level overview of the submission, explaining the reason for changes where necessary as well as new features implemented. If this submission is intended to replace a program in the field that should be noted by referencing the program name. This document (or a separate signatures document) should contain a signatures table with relevant SHA-1 or Kobetron signatures for each critical component (EPROMS, FLASH, and/or logical drive partitions). The expected response for a SAS Long Poll 21 (using seed 0000) should be listed as well.

2.3 Game Listings

Each submission should be supplied with a document that lists each game title and its SAS Game ID for each separate Paytable tracked. An example format is listed below:

Game # (By Denomination)		Game Title
.05	.25	
1	2	Keno 1
3	N/A	Poker 1
4	5	Keno 2

2.4 Game Descriptions

Any new Game Titles supplied with a submission should be accompanied by a white-paper document briefly describing the features of the game and illustrating different screens. This document should identify the triggers for and possible results of any features/bonuses and winning combinations or pays that reach the $800 cap should be noted. A section should be devoted to each separate RNG pull and ranges for triggers and features. Version control should be used for these documents with subsequent submissions updating and describing changes, as necessary.

2.5 Manufacturer's Access List

A current Manufacturer's Access List must be filed with the Gambling Control Division prior to the manufacturer's first submission of a new device. The Manufacturer's Access List provides names and positions of people who are authorized to discuss devices and/or modifications with the lab. The lab will communicate only with those people listed on the access list. It is the responsibility of the manufacturer to remit an updated Manufacturer's Access List when any changes occur. This document is available on our website listed in Appendix A.

2.6 Modification Document

Each modification submission must be accompanied by a Modification Document. Software submissions must be submitted separately for each unique software set. A modification is not considered approved by the Division until the manufacturer receives an approval letter from the Division and complies with any immediate conditions contained in the letter. New VGM submissions must be submitted with no more than one set of new software. This document is available on our website listed in Appendix A.

2.7 Changelist

Every software submission should include a document describing the changes in source code between this submittal and the last approved submittal. In the case of resubmissions, only changes since the last submission in the series should be documented. The changelist should describe what

two versions of software are being compared. Source files changed should be included with their reason for change, if possible, including the related Requirement or Test ID associated with this change. This document should be split into two sections. Part 1 will include code changes affecting the control program. Part 2 will cover changes affecting anything else in the submission. Some examples are included below:

Issue 7: The credit balance display sometimes briefly showed incorrect value when playing on lightning speed. Cosmetic problem only. File(s): Src/Games/Keno/Ui/EventTimer.cpp, Src/Games/Keno/ Ui/EventTimer.h Solution: Changed the EventTimer class to prevent any cases of timer rollover. This will prevent the racking values from showing incorrectly if the system has been running for extended time frames.

SUMMARY	DESCRIPTION	RESOLUTION DESCRIPTION	MODULES AFFECTED
Chooser - Attract mode Crash with only Poker games on VLT	When there are only poker games installed, Chooser will crash because the attract mode sequence is null. Only kenos and line games are added to the attract mode sequence.	The attract sequence will not start if there are no games in the attract list. Poker games aren't in the attract mode list.	AttractModeGameChooserState.cpp

2.8 Chain of Trust Document

Initial, and any subsequent, submissions that affect the security of the VGM must include a Chain of Trust document with an appropriate revision number, date and revision change list. This document shall contain Flowcharts and Descriptions of how control is passed from one component to the next until full bootup. Special attention should be paid to the location of secure signatures/manifests and security algorithms. A section of this document should describe how the GAT and SAS LP21 signatures are calculated. If licensing dongles are used to unlock features of the game/software that interface should be described as well. All components should be listed with manufacturer and model and if they are re-writable or not. If a component is “off-the-shelf” or generic, this should be documented. For requirements on the Chain of Trust please see the Requirements Specifications for New Gambling Device REQ-VGM-SOURCE-07, REQ-VGM-SASLONGPOLL-01, and REQ-VGM-VAL-02.

2.9 Random Number Generator Document

Documentation should be supplied that describes the function of the RNG as well as its design, including seeds, inputs, and frequency of RNG cycles. Documents should outline which source files and lines are relevant, with each function clearly explained. Flowcharts may be helpful in illustrating these functions.

2.10 Emulation Guides/Scripts

VGM submissions must be accompanied with an appropriate emulation setup that allows the TSS lab to facilitate our completion of the Test Plan. This emulation should allow us to force all draws, stops and bonus features in any game easily and repeatedly. Useful scripts should also be included that allow us to immediately end a session of Free Game play as well as to freeze/pause an auto-play game for evaluation. Each submission should include an up-to-date guide on how to set-up and use the emulation hardware/software to send scripts/commands to the VGM.

2.11 Other Documents

Wiring diagrams, schematics for all circuit boards, User Manuals and data sheets for all hardware components should be included in new submissions. Line game return verification must be sent to the TSS lab directly from an employee of the independent test lab using the MT File Transfer Service site EPASS. See Appendix A

3. Submission Types

3.1 New Submissions

Any VGM or System new to the state of Montana is considered a new submission. This requires documentation for all aspects of the device as well as extra components necessary to facilitate the TSS Lab's testing of the device. Please follow the appropriate section on the checklist document to ensure a complete submission.

3.2 Modifications

The most common type of submission is a change or changes to previously approved gambling devices. These could include new game title(s), features, components, or software sets for existing hardware. Any change to an approved VGM or System needs to get approved by the TSS Lab. Please follow the appropriate section on the checklist document to ensure a complete submission.

3.3 Retrofit Kits

A substantial hardware modification intended for field installation is considered a retrofit kit. These kits will additionally require documentation that contains: kit number, tools required, parts list with part numbers, step-by-step installation instructions and illustrations if necessary. In cases where the incorporation of the modification may affect the accounting, the installation instructions must include steps to file a "Video Gambling Machine Service Form." Please follow the appropriate section on the checklist document to ensure a complete submission.

3.4 Game Concept

It is highly recommended that questionable game concepts be submitted to the Division for preliminary approval based on a white paper document. This process should be followed when exploring new ideas or twists on existing game designs. Feedback will be given about legality of the game/feature as well as advice for proper accounting. Please submit game concepts to Matt Eckdahl, meckdahl@mt.gov

Appendix A: Resources

- The TSS website: https://dojmt.gov/gaming/vgm-tier1-testing/
  This webpage has three main sections:
  1. General Resources: Covers implementation guides, the required submittal documents and this instruction manual.
  2. Requirements Specifications: Describes the requirements for each type of gambling device and system in Montana.
  3. Test Plans: These are the test items associated with the Requirements Specifications documents. These represent the minimum testing a submission must pass before approval will be granted.

- Utilities (Contact a TSS employee to obtain one of the following):
  1. Simple GAT: A command line utility to test the performance of GAT signatures on VGMs.
  2. ASD Utility: An executable that will run a battery of tests on the files for an Audit Storage Device (ASD).

- MT State File Transfer Service (FTS): https://app.mt.gov/epass/Authn/selectIDP.html
  This weblink will allow you to send files or packages larger than 10 MB to TSS employees. Users will need to create an EPASS account, and all communications should be addressed to the state group: DOJ GCDHLNTSS. For more information, please contact GCDLab@mt.gov.

Appendix B: Submission Checklist

*All documents should be included in digital format. Please submit source and documents on USB media.

New VGM or Electronic Gambling Device

Yes	N/A	Description
☐	☐	Modification Document
☐	☐	Cover Letter
☐	☐	Change List (if applicable)
☐	☐	Signatures Document, containing Kobetron or SHA-1 signatures for all media (partitions, chips, etc.) and SAS Long Poll 21 expected response.
☐	☐	Manufactures Access List
☐	☐	A Chain of Trust document
☐	☐	Game Description Document(s) for any new games
☐	☐	Game Title List (SAS Game ID's)
☐	☐	Documentation describing source build directory structure
☐	☐	Documentation describing paytable location in the source and how it is built and configured
☐	☐	Documentation of the Random Number Generator Algorithm
☐	☐	Documentation of how any dip switches and jumpers (logic boards, bill acceptor, printer etc.) will be configured
☐	☐	VGM or Electronic Gambling Device with thumb turn locks in place of keyed locks (once approved this will remain in the lab for future updates or testing required). Buttons to replace keyed switches are preferred. The VGM must also have casters mounted to the bottom of the cabinet to allow for ease of moving within the lab
☐	☐	Schematics for all circuit boards and hardware block diagrams
☐	☐	User Manuals (operator, printer, touch screen, electronic coin acceptor, bill acceptor, special purpose integrated circuits)
☐	☐	Excel spreadsheet containing schedule of payouts, percentages and odds determinations for each game. The return % must breakout the main and bonus portion of the game (if applicable). Spreadsheets should have a unique version in the filename to identify paytable changes. Each spreadsheet should include a sheet describing full game functionality with all assumptions used to model the game behavior. If simulation results are provided without a full theoretical math description, reasonable justification should be provided to demonstrate the necessity of simulations. Provide verification from a qualified independent testing service that the theoretical return for each bet increment in each Line Game does not exceed 92%; all Line Game math must be provided directly from the independent testing service.
☐	☐	"Master Reset" media or any tool used to clear the memory
☐	☐	Build PC containing the compiler and all tools to build the VGM binary from source and documentation to rebuild environment on the PC
☐	☐	Source code for all VGM binaries (game, OS, bios, etc.) and documentation instructions to build on USB.
☐	☐	Emulator/debugger hardware, software, and scripts as well as documentation describing usage
☐	☐	Twelve rolls/stacks of printer paper
☐	☐	Labeled serial cables to be connected and left in the device allowing for SAS and GAT communication

☐	☐	Two complete sets of all programmable read-only memory and/or storage media for each version of machine software labeled ready for field use
☐	☐	$10,000 submission fee if not already on account

Modification (Hardware or Software)

Yes	N/A	Description
☐	☐	Modification Document
☐	☐	Cover Letter
☐	☐	Change List
☐	☐	Signatures Document, containing Kobetron or SHA-1 signatures for all media (partitions, chips, etc.) and SAS Long Poll 21 expected response.
☐	☐	Manufactures Access List (if updated)
☐	☐	A Chain of Trust document (if updated)
☐	☐	Game Description Document(s) for any new games
☐	☐	Game Title List (SAS Game ID's)
☐	☐	New or modified hardware
☐	☐	New software with two complete sets of all programmable read-only memory and/or storage media for each version of machine software labeled ready for field use. Source code for all VGM binaries (game, OS, bios, etc.) and documentation instructions to build on USB.
☐	☐	Any modified or updated documentation, manuals, schematics, spreadsheets, data sheets, or images
☐	☐	Field installation kits must include: Kit number, tools required, parts list with part numbers and step by step instructions including illustrations if necessary. In cases where installation may affect the accounting, include steps to file a VGM Machine Service Form; include steps to record before and after hard and soft meters.
☐	☐	Excel spreadsheet containing schedule of payouts, percentages, and odds determinations for each new game. The return % must breakout the main and bonus portion of the game (if applicable). Spreadsheets should have a unique version in the filename to identify paytable changes. Each spreadsheet should include a sheet describing full game functionality with all assumptions used to model the game behavior. If simulation results are provided without a full theoretical math description, reasonable justification should be provided to demonstrate the necessity of simulations. Provide verification from a qualified independent testing service that the theoretical return for each bet increment in each new Line Game does not exceed 92%; all Line Game math must be provided directly from the independent testing service.
☐	☐	$1,000 submission fee if not already on account

Retrofit Kit

Yes	N/A	Description
☐	☐	Modification Document
☐	☐	Cover Letter
☐	☐	Change List (if applicable)
☐	☐	Manufactures Access List
☐	☐	A Chain of Trust document (if updated)
☐	☐	Schematics for all circuit boards and hardware block diagrams

☐	☐	User Manuals (operator, printer, touch screen, electronic coin acceptor, bill acceptor, special purpose integrated circuits)
☐	☐	Manufactures Access List (if updated)
☐	☐	New or modified hardware
☐	☐	New software with two complete sets of all programmable read-only memory and/or storage media for each version of machine software labeled ready for field use. Source code for all VGM binaries (game, OS, bios, etc.) and documentation instructions to build on USB.
☐	☐	Any modified or updated documentation, manuals, schematics, spreadsheets, data sheets, or images.
☐	☐	$3,000 submission fee if not already on account.

Game Concept

Yes	N/A	Description
☐	☐	Cover Letter
☐	☐	Game White Paper
☐	☐	Manufactures Access List (if updated)

New VGM Monitoring System

Yes	N/A	Description
☐	☐	Cover Letter
☐	☐	Signatures Document, containing Kobetron or SHA-1 signatures for all media (partitions, chips, etc.)
☐	☐	Manufactures Access List (if updated)
☐	☐	Schematics for all circuit boards and hardware block diagrams
☐	☐	User Manuals (operator, printer, touch screen, scanning hardware, SMIB(s), special purpose integrated circuits)
☐	☐	Documentation of how any dip switches and jumpers (logic boards, SMIB, printer etc.) will be configured
☐	☐	Build PC containing the compiler and all tools to build the System binary from source and documentation to rebuild environment on the PC
☐	☐	Source code for all System binaries (SMIB, Site Controller, Scanning Apps) and documentation instructions to build on USB
☐	☐	Documentation describing source build directory structure
☐	☐	All associated hardware to simulate a full installation in the field (sufficient number of SMIBs, attendant interfaces, printers, etc; Contact GCD for details)
☐	☐	$15,000 (Tier I) or $5,000 (CTVS or EPRS) submission fee if not already on account

Appendix C: Testing Flowchart