

**Minimum Technical Requirements  
for Electronic Monitoring System**

of the  
**Gambling Act (Class 4 Gambling Equipment)**  
**Minimum Standard 2004**

September 8 2005

# **Minimum Technical Requirements for Electronic Monitoring System**

## **1 Gaming Machine Communication Interface & LAN Requirements\***

- 1.1 The specification ‘**EGM Communications Interface and LAN Requirements Version 2.0 Revised 8 August 2001**’ as published by The State of Queensland, Queensland Office of Gaming Regulation, is incorporated subject to the following exclusions, amendments and additions.
- 1.2 The following are exclusions, amendments and additions to the specification described in 1.1. The exclusions, amendments and additions follow section headings reflective of those used in the incorporated document.

### **Policy**

This paragraph in the preamble is excluded.

### **Scope**

These paragraphs in the preamble are excluded.

### **Responsibilities**

This paragraph in the preamble is excluded and the following paragraph inserted:

“Gaming machines must be equipped with or modified with the approved Gaming Machine Communications Interface (including the FO Interface card) and be QCOM protocol compatible if they are to be connected to the EMS.”

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\* **Note to Standard:** Health or safety matters or legislative requirements administered by other regulatory bodies such as for electrical wiring and of radio frequency emission, etc are the domain and responsibility of the manufacturer, purchaser and operator of the equipment. Each of these parties is required to assure themselves of such matters. Particular note should be taken of any Laser/LED technology that is to be present in any gambling equipment.

Where an incorporated document uses terms and abbreviations applicable in the jurisdiction of issue then the terms and abbreviations that apply are those used in New Zealand. For example Electronic Gaming Machine (EGM) means Gaming Machine (GM) and Central Monitoring System (CMS) means Electronic Monitoring System (EMS) in accordance with the terms and abbreviations used in New Zealand.

Where an incorporated document makes reference to the authority in the jurisdiction of issue then this is to be interpreted as the Secretary for Internal Affairs. That is Queensland Office of Gaming Regulation (QOGR) is to be interpreted as the Secretary for Internal Affairs.

This Standard is unique to the New Zealand jurisdiction and the numbering system does not have cross-references to the Australian/New Zealand Gaming Machine National Standard.

## **2 Historical Information**

This section is excluded.

## **3 The EGM Protocols**

This section is excluded. The QCOM EGM Protocol is a separate standard.

## **6 The EGM 240vAC FO Interface Power Supply**

### **6.1.2**

The following is inserted at the end of this subsection:

“A gaming machine must be individually powered from a single 3 pin general power outlet located close to the gaming machine. The use of double adapters, power boards, extension leads and expandable modular power systems are not permitted.\*

This requirement is to apply to any new venue licensed after the date this standard comes into effect or for any venue licensed prior to this date for which there is substantial physical refurbishment of the gaming machine area and/or gaming machine re-location.”

## **7 EGM Fibre Optic Interface Card Specifications**

### **7.5.6**

The second paragraph of this subsection is excluded and the following paragraphs inserted in its place.

“Where a warning label is not required under provisions of an Australia/New Zealand Laser Safety standard, if applicable, it is a requirement of these minimum standards that the FO interface card must

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*\*Note to Incorporated Standard 6.1.2: Care must be exercised when switching OFF or unplugging power to a gaming machine from the external 3-pin general power outlet. The gaming machine internal FO interface card is powered internally from the same power supply. Removing power will fail the FO interface card and result in all gaming machines on the same FO cable loop disabling game play—see 8.1.5. Use the internal cabinet power switch when it is required to temporarily disable game play, as this does not remove power to the FO Interface Card.*

*A gaming machine(s) can be removed from the FO cable loop by appropriately bypassing the gaming machine FO interface card by connecting the two FO cable connectors together using standard feed through/splice connector. Depending on cable lengths between adjacent machines this may require a separately powered FO repeater to be used instead.*

have an appropriate warning label. That is, either uses the above message, an equivalent message, the appropriate symbolic laser class symbol or both; providing any message content or symbolic laser class symbol is not inconsistent with provisions of any applicable Australia/ New Zealand Laser Safety Standard.”

## **8.1 The FO LAN**

### **8.1.3**

This subsection is excluded.

### **8.1.4**

This subsection is excluded.

### **8.1.5**

The second paragraph of this subsection is excluded and the following paragraph inserted in its place:

“A minimum of one FO cable loop must be used to connect a venue’s gaming machines to the site controller.\*

## **8.2 Fibre Optic Cable types**

### **8.2.1**

The following subsection is inserted following this subsection:

“**8.2.2** FO cabling must be installed to a high standard of workmanship so there is no adverse effect to data transmission.

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*\*Note to Incorporated Standard 8.1.5: Where a venue has nine or more gaming machines in total, consideration should be given to distributing gaming machines over two FO cable loops for reasons of fault tolerance. With this type of LAN if one FO interface card fails or there is a FO cable fault, then all gaming machines connected on the same FO cable loop will disable.*

*It is expected that the site controller will be able to run 2 FO loops but details of provision and cost are still to be confirmed. If it is intended for the venue to have two FO loops these can be installed and operated as one loop by joining a cable of one loop to a cable of the other loop together at the cable ends terminating at the site controller location. A standard feed through/splice connector can be used. The total length of the 2 loop ends joined plus the feed through/splice connector loss should not exceed the maximum length restrictions for the type of cable used.*

There must be no exposed FO cable. The FO cable must be enclosed in conduit when not routed through a secure locked area such as a gaming machine base.

All FO cable must be mechanically supported and have sufficient excess left at either end such that there is no strain on the FO cable. The radius of curvature on all cabling, including any excess, must be at least 10cm.

Where FO cable is routed within a gaming machine base that has a cashbox, the cable must not be subject to any damage or disconnection due to normal cashbox activity.

If a gaming machine base is adjacent to or between 2 other gaming machine bases, the FO cable is to enter and exit the cabinet(s) via a 40-50mm diameter hole centered 75mm from the rear wall of the cabinet and 35mm from the top of the console top (these measurements refer to the internal area of the cabinet left and right sides as appropriate). Where an existing cabinet has holes predrilled, these may be used providing cable length is sufficient. Holes must not be present in the publicly exposed sides of a cabinet. It must not be possible to separate cabinets and expose either the hole or the cable.\*

Cable runs terminating at the site controller location must allow for 1 metre of cable length, including the FO cable connector, to be available for site controller connection.

If 2 loops have been pre-installed and joined together by means of a feed through/splice connector, then this connector should be of a bulkhead type and suitably secured by means of the locking nut to a permanently affixed bracket.

Before plugging a FO cable into a FO card for the first time, each terminated end of the cable must be inspected as follows:

1. Check that the clear plastic FO cable end is clearly visible and perfectly flush with the terminating connector end face. That is, the clear plastic FO core should not be sticking out, or sunken inside of the terminating connector.
2. While holding the end connector, give the FO cable a gentle push/pull and feel for any movement. Then recheck 1 above.

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\***Note to Additional Standard 8.2.2:** *It is recommended that the minimum cable run length be 3 metres in length between a FO transmitter and the connected FO receiver (including FO cable connectors and any excess). This ensures the FO receiver is not overloaded by high signal strength from the preceding FO transmitter.*

3. Check that the actual clear plastic FO cable core, visible at the terminating connector end, is polished. This is easy to check by reflecting light off it.”\*

### **8.3 Site Cabling Diagrams**

This section is renamed “Venue Cabling Diagrams”.

#### **8.3.1**

This subsection is excluded.

#### **8.3.2**

This subsection is excluded and the following inserted in its place:

“An up to date, hard copy of the Venue Cabling Diagram must be lodged with the venue at all times and stored with the site controller.

The Venue Cabling Diagram is also to be stored electronically either in Microsoft Word (DOC) or Portable Document Format (PDF) and available for download. The downloadable electronic version is to be available on request by the monitor, society authorised service persons or the Department of Internal Affairs.”

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*\*Note to Additional Standard 8.2.2: It will usually be found that with pre-terminated cable lengths, bought direct from a reputable supplier, that they are of a high quality in regard to the above three checks.*

*It is recommended that prior to connecting up the FO cable loop sections and just before the output end of the FO cable is plugged into the FO interface card, that a test signal be transmitted from the site controller FO cable end or the input of the preceding FO card interface.*

*Point the output FO cable signal onto the palm of your hand and observe the brightness of the light output. DO NOT look directly at the FO cable end. This provides a simple visual check of the quality of the signal from the preceding FO interface card including the FO cable and connector. A poor visual indication may indicate a problem in the FO cable connector, the FO cable or preceding FO interface card. Some experience would be necessary to gauge likely brightness of the output light. A long length of cable may attenuate the brightness, but still be satisfactory.*

*When plugging or unplugging a FO cable, e.g. from the FO interface card, it must only be done by direct push/pull on the FO cable connector itself and not the FO cable. Failure to handle the FO cable by the connectors, will eventually cause the FO cable core to slip back inside the connector or poke out, significantly degrading the signal. The FO cable must remain perfectly flush with the terminating connector end for a high quality signal.*

### 8.3.3

This subsection is excluded and the following inserted in its place:

“A Venue Cabling Diagram must display at least the following information:

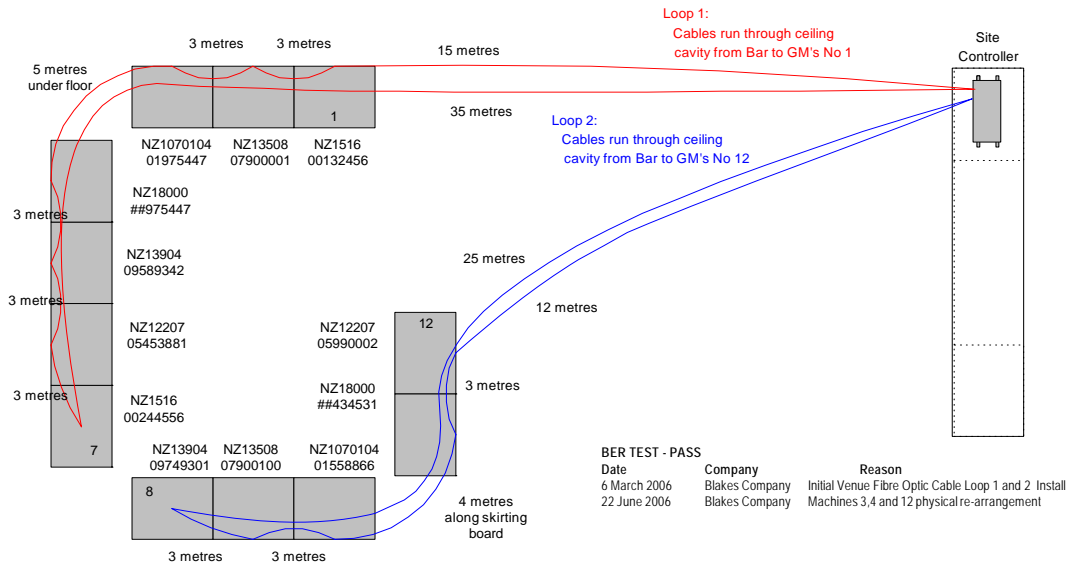
1. Venue name and address.
2. Class 4 Operator name.
3. WAN communication device network access address/number.
4. Telecommunications Network Operator Help Desk contact number.
5. EMS Help Desk contact number.
6. Show all gaming machines in their respective location with their Gaming Machine Model Number and Serial Number.
7. If more than one FO loop is installed, show all gaming machines in their respective location on each loop with their Gaming Machine Model Number and Serial Number.
8. Location of Site Controller.
9. Location of any FO repeaters.
- 9.a Location and identification of any Third Party EGM Communication Tap-In Gambling Technology.
10. All LAN cabling including lengths in metres of each cable section between gaming machine and site controller; including description of cable run locations if other than between adjacent gaming machine bases.
11. Loop/cabling I.D. numbers.
12. BER completed. – See 1.3, date and name of testing organisation.”

## Venue Cabling Diagram Example

Venue Name: Test Venue  
 Venue Address: 41 Lucky Street, Lower Hutt  
 Class 4 Corporate Society: Test Society  
 WAN Modem Line Number: 064 123 4567  
 Site Controller Location: R/H end of bar

EMS Help Desk: 0800 123 4567  
 Telecom Help Desk: 0800 123 8996

Number of FO Loops: 2  
 GM's on Fibre Optic Cable Loop 1: 7  
 GM's on Fibre Optic Cable Loop 2: 5



## 9 Snooping the Loops

This section is included.

The last 2 paragraphs of the preamble are excluded and the following inserted:

“Any approval for third party systems listening of EGM communications will only apply to the actual connection to gambling equipment and venue LAN e.g. third party tap (sniffer) gambling equipment and not the functionality or operation of the third party system unless this is covered by an additional separate standard such as for a jackpot system. Performance and management type systems are not required to be approved under an additional standard.”

### 9.1 General Requirements for Methods of Tapping EGM Communications

The first 2 paragraphs of this subsection are excluded and the following is inserted.

“An approved third party tap gambling equipment and/or associated third party system must have no physical connection to be able to transmit data

direct onto an EGM loop or to disrupt EGM/SC communications in any way.

No approved third party tap and/or associated third party system is to cause any problems or degradation of the existing EGM LAN in a venue and must be immediately removed if found to do so.

Any change to the venue fibre loop cabling to allow insertion of an approved third party sniffer gambling equipment and/or associated third party system is to be regarded as a significant gaming machine physical re-arrangement as described under section 10 LAN Testing.

Any change to the venue fibre loop cabling to allow insertion of an approved third party tap gambling equipment and/or associated third party system must be able to be undone and permit normal loop cable reconnection and operation.

There must be clear instructions and any necessary equipment kept with the 'sniffer' gambling equipment to allow venue or other authorised personnel to disable and remove this equipment and reconnect the venue loop.

All sniffer gambling equipment must be located in a suitable secured location within a venue in accordance with requirements detailed in '2. Site Controller Minimum Technical Requirements'. The sniffer gambling technology must not be co-located with site controller and associated equipment when this equipment is located in a secure cabinet."

Cabling between third party tap, sniffer, and associated third party system must as applicable meet requirements detailed for FO cable in terms of security and enclosure as contained in these standards.

1.3 The following section is inserted following section 9.

**“10 LAN Testing**

At the completion of initial FO cable install or significant gaming machine physical re-arrangement, a Bit Error Rate (BER) test must be conducted. The BER test is a test of the installed completed FO cable loop.

The BER test includes all cable sections in total from the site controller Transmit and Receive ends of the FO cable loop. It is recommended that individual cable sections be subject to a BER test before connection to the FO cable loop.

The BER test must be conducted at 115.2k baud. The BER output should be 0 errors over the test period. At the completion of this test, a final test must be done. During the time of measurement of BER for the final test, then for each gaming connected on the FO cable loop under test, the FO cable connector and associated FO cable should be gently shaken. The BER output should again be 0 errors.

If the BER output is not 0 each cable section and FO interface card must be checked and the faulty FO cable, connector or FO interface card replaced.

For FO cable replacement or a minor physical gaming machine re-arrangement (that is, one or two gaming machine physical rearrangements or replacements) the BER test need only be done on the affected FO loop cable section.

A final BER test with 0 errors is considered a PASS. The Venue Cabling Diagram must be updated with the date and the company name of the organisation completing the BER test. It is recommended that the reason for the test also be recorded (for example, initial cable install, gaming machine re-arrangement).”

- 1.4 All references in the incorporated specification to the IGT Communications Protocol are not applicable

## **2 Site Controller Minimum Technical Requirements\***

- 2.1 The specification ‘**Site Controller Minimum Technical Requirements Version 2.0 Revised 23 June 2003**’ as published by The State of Queensland, Queensland

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\* **Note to Standard:** *Health or safety matters or legislative requirements administered by other regulatory bodies such as for electrical wiring and of radio frequency emission, etc are the domain and responsibility of the manufacturer, purchaser and operator of the equipment. Each of these parties is required to assure themselves of such matters. Particular note should be taken of any Laser/LED technology that is to be present in any gambling equipment.*

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*This Standard is unique to the New Zealand jurisdiction and the numbering system does not have cross-references to the Australian/New Zealand Gaming Machine National Standard.*

Office of Gaming Regulation, is incorporated subject to the following exclusions, amendments and additions.

- 2.2 The following are exclusions, amendments and additions to the specification described in 2.1. The exclusions, amendments and additions follow section headings reflective of those used in the incorporated document.

## **1 Introduction**

### **1.3**

The last sentence of this subsection is excluded.

## **2 General**

### **2.4**

This subsection is excluded and the following paragraphs inserted:

“The site controller and associated equipment such as external site controller peripherals (for example, an external FO Interface card or Wide Area Network (WAN) communication device such as a Router/Network Terminating Unit) must be located in a suitable location within a venue.

The general public must not be able to access this location. The location must afford sufficient space for ease of access to enable site controller seal inspection, maintenance of the site controller and access to associated equipment.

If WAN connection by wireless technology is implemented, consideration must be given to the site controller location to ensure wireless signal strength is satisfactory for reliable and fault free communication.

If located in a position accessible by the general public, the site controller and any associated equipment must be in a securely locked holding cabinet and any exposed cable must be enclosed in conduit

A gaming machine base is not suitable as a securely locked cabinet.\*

The securely locked holding cabinet must be made of a material that does not degrade wireless signal strength reception. A wireless aerial may,

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\* **Note to Standard 2.4:** *It is strongly recommended that a securely locked cabinet be provided even when the site controller and associated equipment are located in an area not accessible by the public. This provides additional security, and continuity of service by preventing the equipment from inadvertently being disconnected, knocked about, or damaged.*

depending on received signal strength, need to be located on the outside of the securely locked cabinet. Consideration should be given to location of cabinet to ensure security of aerial from malicious or unintentional damage by members of the public.

The site controller must be stored in a manner that provides clean airflow for ventilation. If stored in a securely locked holding cabinet, ventilation holes are to be provided. Where holes, gaps, or slots exist in the exterior of the holding cabinet (on the outside of the cabinet), there must be sufficient protection to ensure that the insertion of foreign objects will not compromise the security or safety of the cabinet.

Providing the security of the holding cabinet is not compromised, provision may be made for a viewing window, using some suitable strengthened transparent material, to allow viewing of site controller and associated equipment status displays and indicators.

Other cabling, such as that between the external Telecommunications Carrier demarcation point to the site controller location or to venue PC, must meet requirements detailed for FO cable in terms of security and enclosure as contained in these standards.

## 4 Electrical

### 4.6

The following is inserted at the end of this subsection:

“The site controller must be on a separate switchboard supply circuit to other equipment within the venue that may cause power fluctuations, line transients, power spikes etc.

The site controller switchboard supply must be able to be left switched on permanently. It must not be possible to switch off this supply when power to gaming machines is switched off when the venue is closed.

The site controller switchboard supply must provide a minimum of three separately switched 3 pin general power outlets. These outlets are to be provided where the site controller and associated equipment is located.

The supply circuit should include additional surge filter protection. If the additional surge protection is provided as part of the supply from the 230V wall power outlet, it must be sufficient to also provide power to all associated equipment.”\*

2.3 The following section is inserted following section 7:

#### “7A Site Controller WAN Communication Interface

The site controller requires connection to the EMS Wide Area Network (WAN) for connection to the EMS host computer. This connection will require the installation of a Router/Network Terminating Unit (NTU) dedicated solely for site controller communication.

Requisite communication interface equipment must be suitable for connection to the site controller serial port.

The WAN connection, if wireless, should be in place and tested prior to site controller installation. This may not always be possible and appropriate tests should be done to ensure the site controller location is the best possible for wireless signal strength reception.

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\* **Note to Incorporated Standard 4.6:** *Where a venue is located in an industrial locality (for example where there are nearby light or heavy manufacturing premises or other industries that have heavy electricity demand) the local electrical supply provider should be consulted for advice on venue power supply quality regulation.*

2.4 The following is inserted at the end of this incorporated specification:

**“Disclaimer**

All references to value added services in this document should not be taken to mean that these are available or can be connected to gambling equipment including the site controller.

Any value added service that requires connection to an item of gambling equipment requires the approval of the Secretary for Internal Affairs against approved minimum equipment standards.”