



Specifications

This appendix provides environmental and electrical specifications for the Odyssey slot machine.

Environmental Requirements

The slot machine has been designed to meet standard environmental and regulatory specifications.

Temperature and Humidity Specifications

The casino environment is characterized by relatively controlled temperature at very low humidity. The slot machine has been designed to operate well in this environment. The temperature and humidity specifications for the slot machine are listed in Table A-1.

Table A-1 Temperature and Humidity Specifications

Transit	Storage	Operating	NCR Humidity
-40 to 70°C	-40 to 65°C	0 to 50°C	5 to 95%

Shock and Vibration Specifications

Shock

Shock specifications for the slot machine are listed in Table A-2.

Table A-2 Shock Specifications

Drop Height	Drop Orientation	Impact Surface
6"	6 sides/4 corners	Wood

Vibration

ANSI Truck and Air Power Spectrum (random vibration) PSD (power spectral density) profiles, $0.5G_{\text{rms}}$, sustained/all axis to $2.0G_{\text{rms}}$ (10 minutes/all axis).

Altitude Specifications

The altitude specifications for the slot machine are listed below.

Operational 10,000 ft.

Nonoperational 40,000 ft.

EMI Specification

Performance of the slot machine, with respect to electromagnetic interference/ electromagnetic conductivity (EMI/EMC) meets FCC Chapter 15, Class A specifications and is also compliant with the new European Union specifications.

Reference Document: EN55022 (International)

ESD Specification

Performance of the slot machine, with respect to electrostatic discharge (ESD), meets the requirements for all US gaming regulations and is also compliant with the new European Union specifications.

Reference Document: *Silicon Gaming Compliance Report*

Reference Document: CEI/IEC 801-2

Reference Document: EN50082 (International)

Safety Specification

Performance of the slot machine, with respect to safety, meets UL (Underwriters Laboratories) and/or Inchscape requirements and is also compliant with the new European Union specifications.

Reference Document: EN60950 (International)

Atmospheric Specifications

Performance of the slot machine is compliant with the requirements for atmospheric particulates (dust, dirt, and so on) described in the following specification:

Reference Document: ASTM B117-85

Reliability

The mean time between failures (MTBF) of the slot machine is greater than 50,000 hours of continuous operation. This estimation is based on Bellcore 212 under the following operating conditions:

Voltage: 110 Vac $\pm 10\%$

Ambient Temperature: 0°C to 40°C $\pm 3^\circ\text{C}$

Humidity: 85% relative humidity, noncondensing

Electrical Specifications

Display Monitor Performance

The following basic information is provided for the performance of the 16:9 video display monitor (portrait format) used to display the game and entertainment video.

Monitor Controls

The control panel is mountable remotely from the chassis and offers the following controls: brightness, contrast, horizontal and vertical size, and position.

Color CRT

The CRT is Phillips W66ESF001X for use in a moderate resolution color monitor. The CRT is a 26-inch super flat 16/9 aspect ratio, 0.69 mm black matrix Invar slot mask type.

Monitor Interface

The monitor interface is RGB (red, green, blue) video that conforms to the guidelines set forth in EIA specifications RS-170A and RS-343.

Monitor Timing

The Stealth 64 frame buffer board is programmed in the BIOS to generate a video timing for the 16:9 CRT display. The video timing specifications are shown in Table A-3.

Table A-3 Monitor Timing Specifications

Horizontal Timing	Duration	Clocks
Resolution	856 (H) x 480 (V)	N/A
Dot Clock	36 MHz	N/A
Horizontal Frequency	31.468 KHz	N/A
Horizontal Total	31.778 μ S	1144
Horizontal Blanking	8.0 μ S	288
Horizontal Front Porch	0.666 μ S	24
Horizontal Sync	3.778 μ S	136
Horizontal Back Porch	3.556 μ S	128
Horizontal Active	23.778 μ S	856
Vertical Timing		
Vertical Total	16.68 mS	525 lines
Vertical Blanking	1.43 mS	45 lines
Vertical Front Porch	0.317 mS	10 lines
Vertical Sync	0.064 mS	2 lines
Vertical Back Porch	1.049 mS	33 lines
Vertical Active	15.253 mS	480 lines

Video Input Characteristics

The RGB video inputs have a level of $0.714 \pm 0.1V$ P-P when terminated in 75 ohms each. Polarity is bright positive. The signal contains a 54 mV pedestal (black level setup) that puts the black level at 54 mV above blanking.

Audio Specifications

Audio subsystem specifications are listed in Table A-4.

Table A-4 Audio Specifications

Frequency response	50-15 kHz ± 1 dB
Harmonic Distortion	Less than 1%
Signal-to-Noise	85 dB, C weighted

Audio Format and Rate

Audio is compressed and decompressed using an audio codec that is capable of supporting the following playback formats:

- ◆ Signed 8-or 16-bit monophonic or stereo
- ◆ Unsigned 8-or 16-bit monophonic or stereo
- ◆ 4-bit ADPCM monophonic (adaptive differential pulse code modulation)

Data rates up to 44.1 kHz (samples per second) are supported. Currently, the system uses 16-bit monophonic audio samples at a 22.05 kHz rate.

Power

Power specifications for the slot machine are provided in Table A-5.

Table A-5 Power Specifications

	Voltage	Power
Domestic	110 - 120 Vac @ 50/60 Hz	240 Watts
International	220 - 240 Vac @ 50/60Hz	240 Watts

