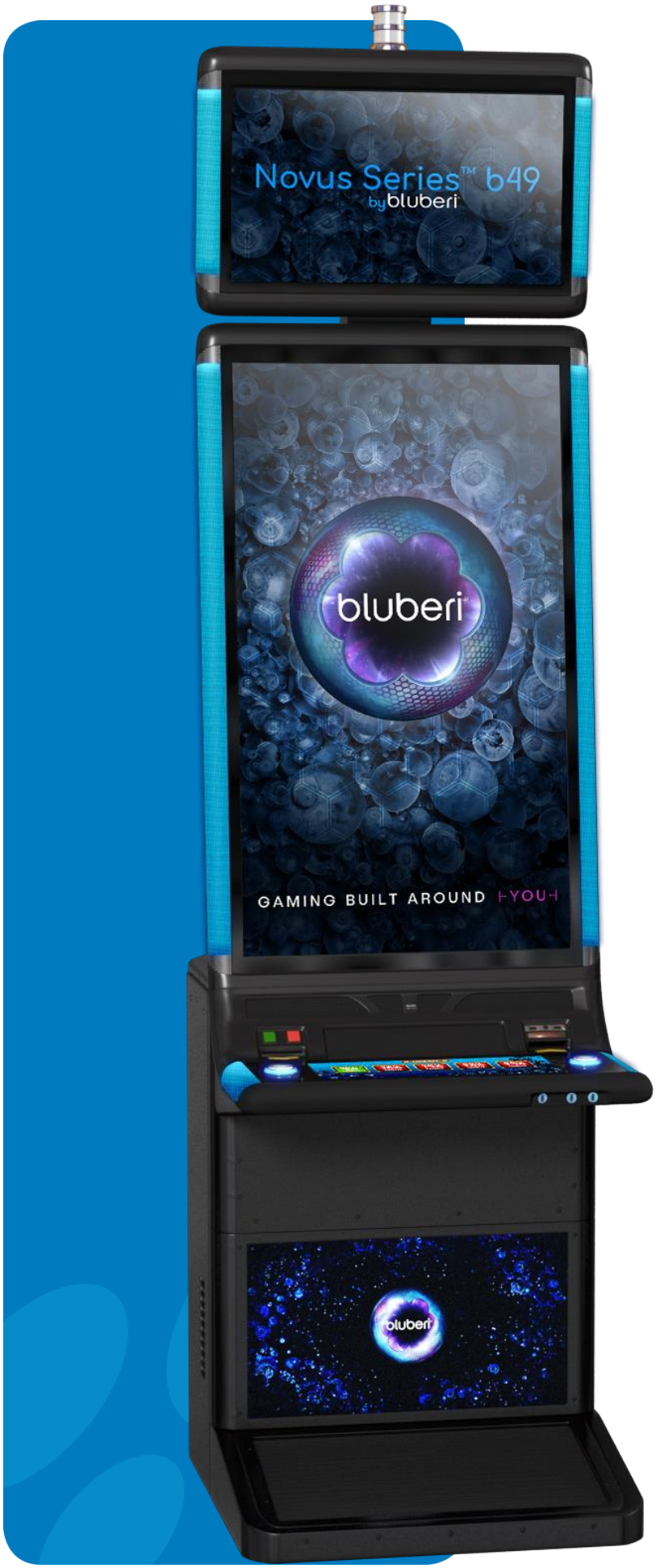


Novus-B49-002

Technical Manual

TEC-EL-04196
Version 1.0.1

2021-02-15

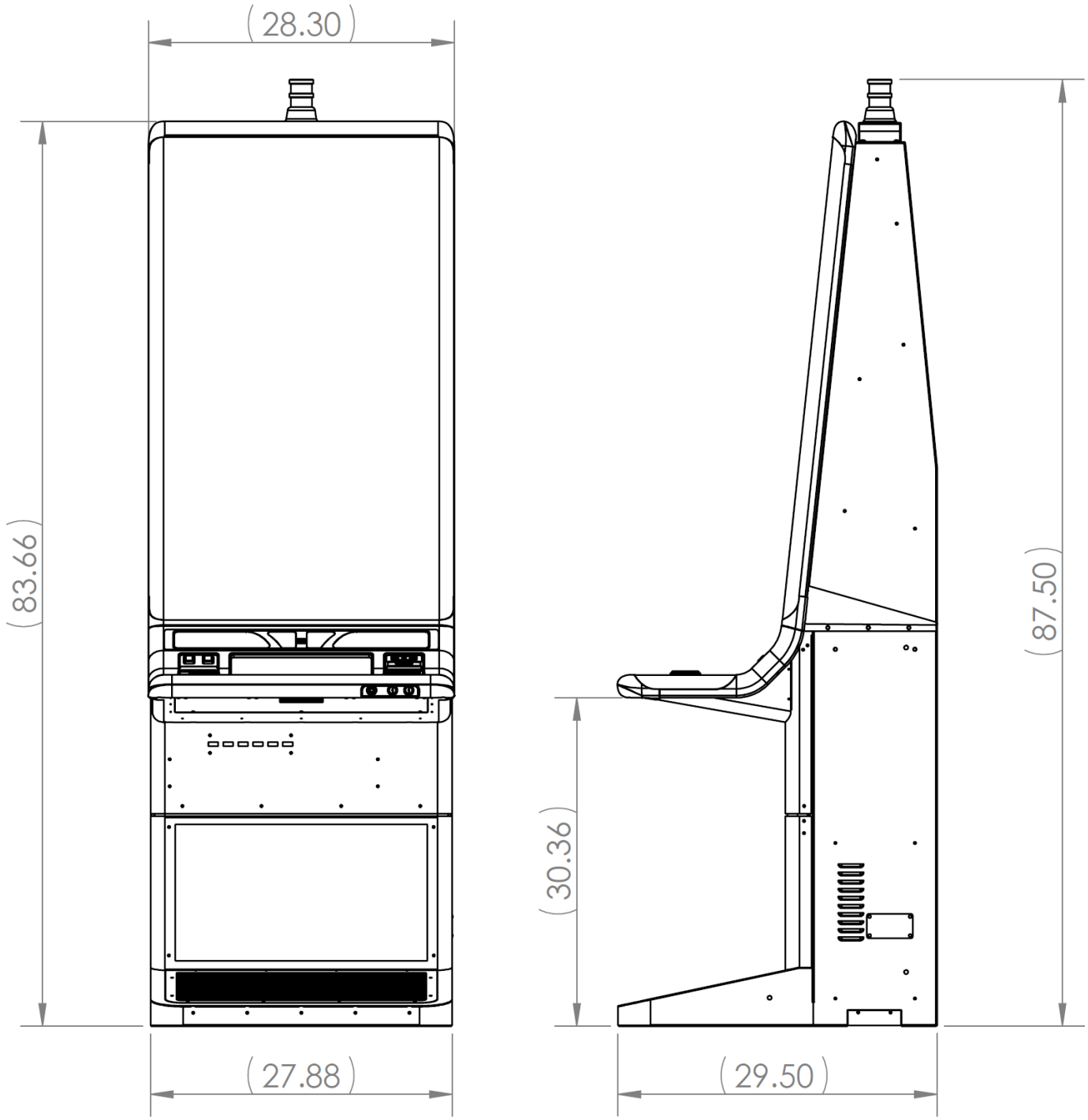
Version History

Version	Department	Initials	Date	Comments
1.0.0	Engineering		2020-11-16	- Original version
1.0.1	Engineering		2021-02-15	- Safety Agency Approval - Environmental and Power rating - Miscellaneous

Contents

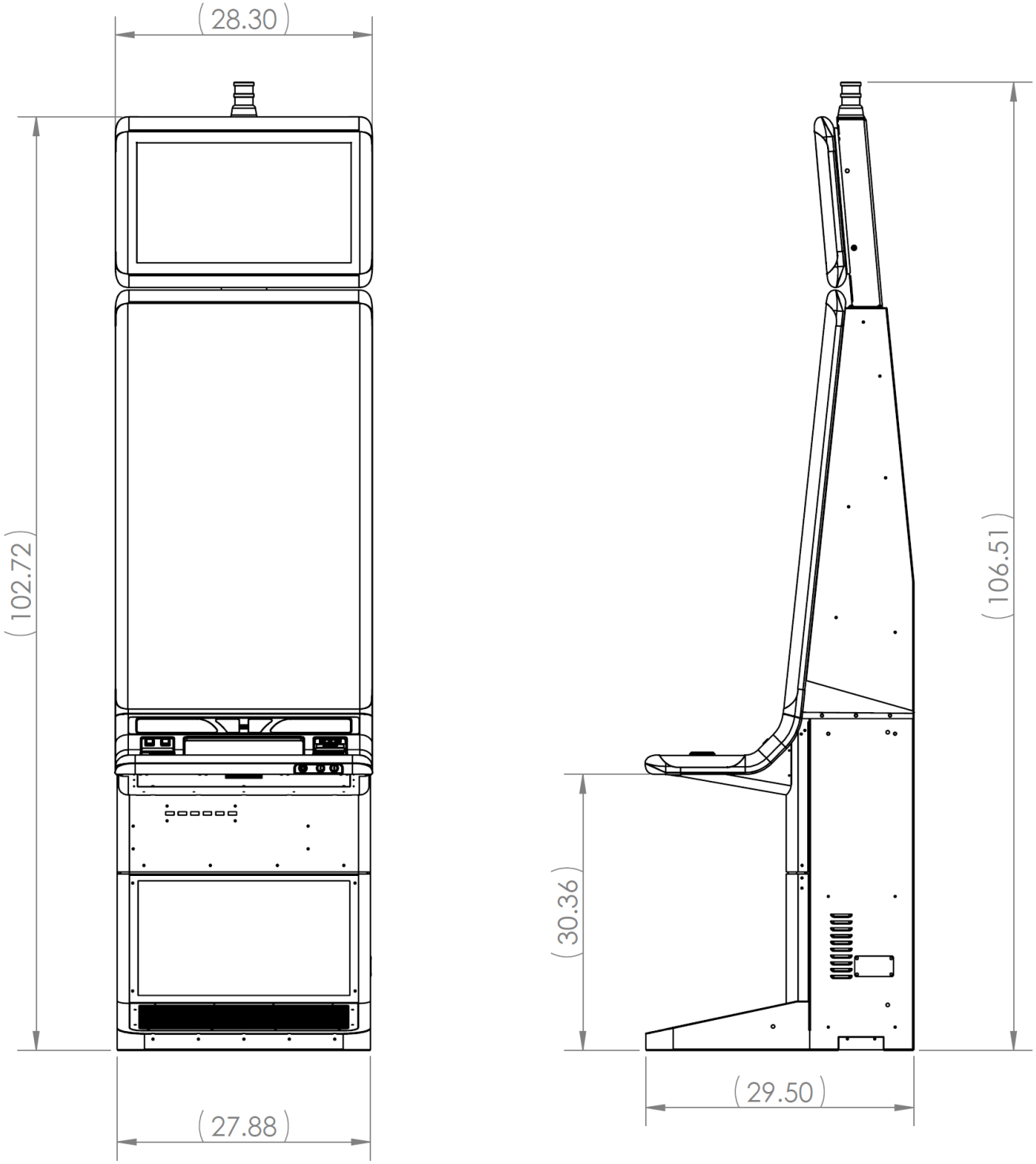
Physical Components

Cabinet Dimensions



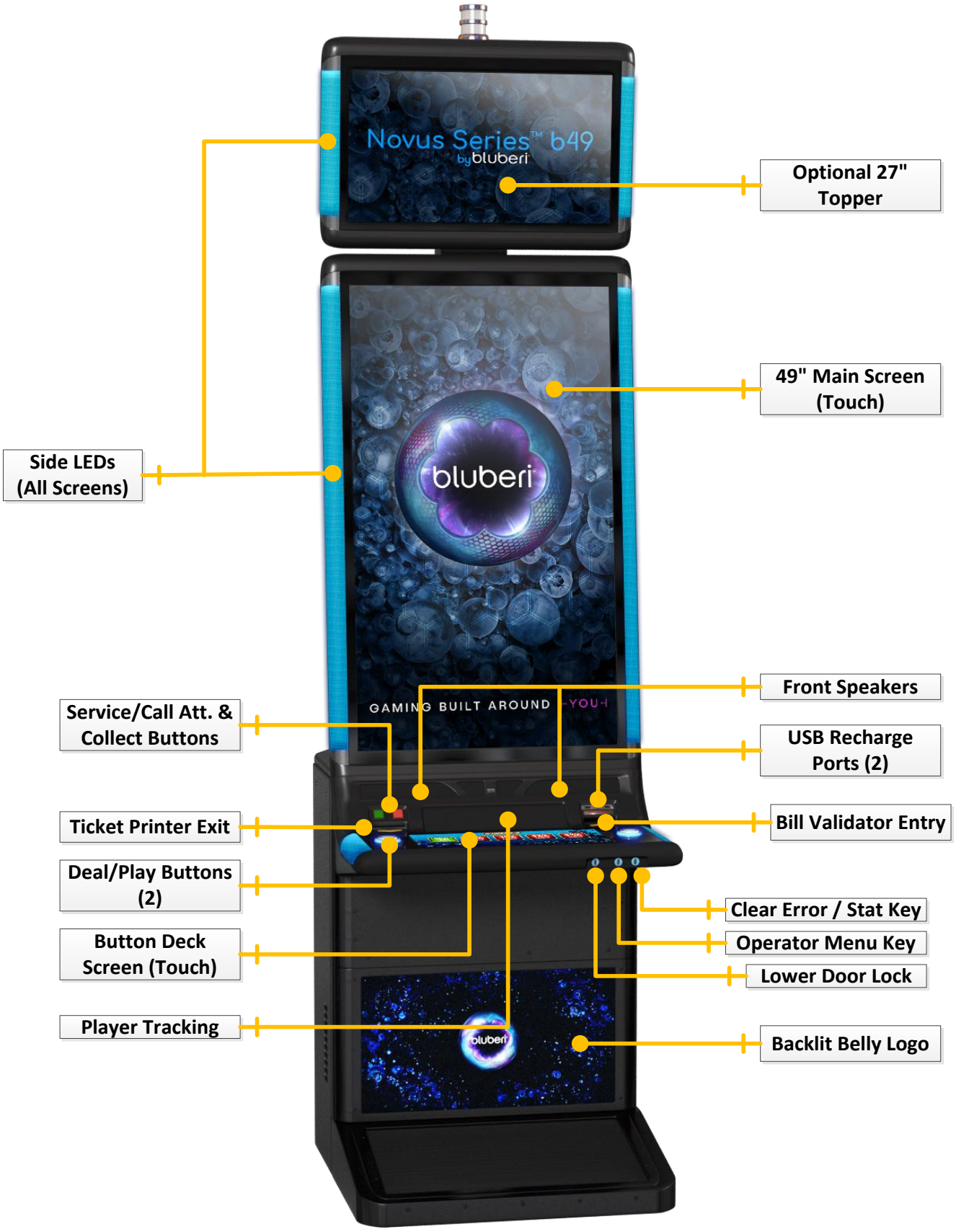
Weight = 196 kg (431 lbs)

Cabinet Dimensions with 27” Topper



Weight = 215 kg (473 lbs)

Exterior View of the Machine



Tower light

Available in 2 or 3 levels, the tower light signals different events, such as a door opening, an attendant call or a jackpot win.

Topper (optional)

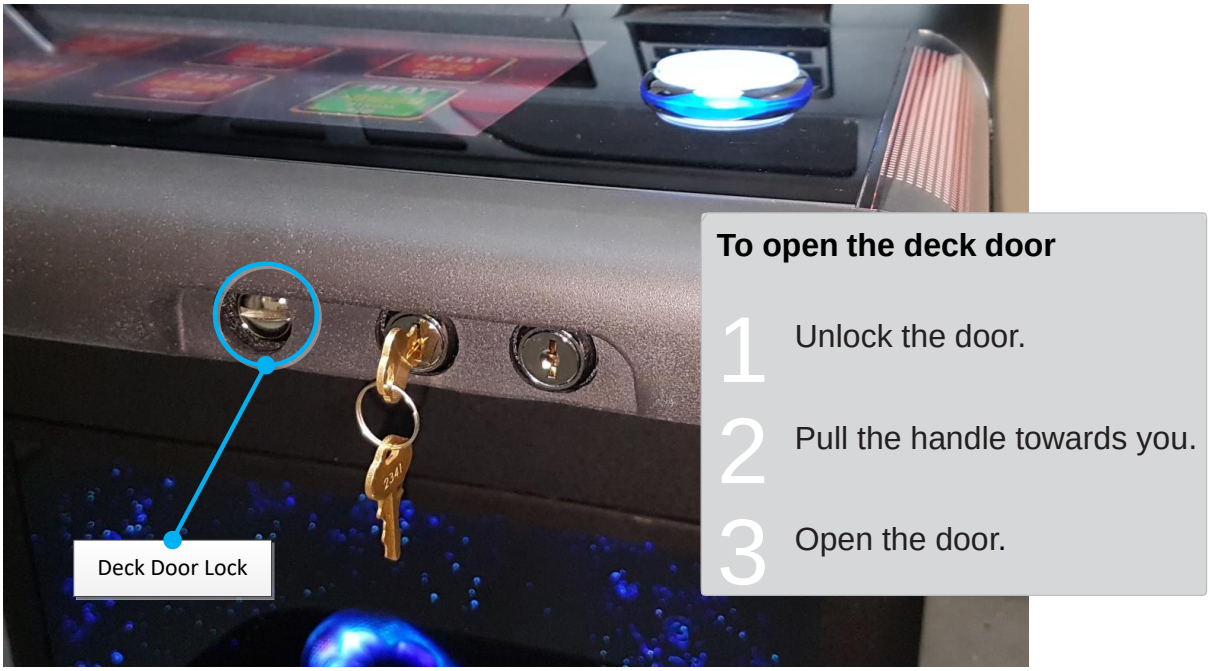
The Novus cabinets come with an optional 27” Topper custom built for the Novus series.

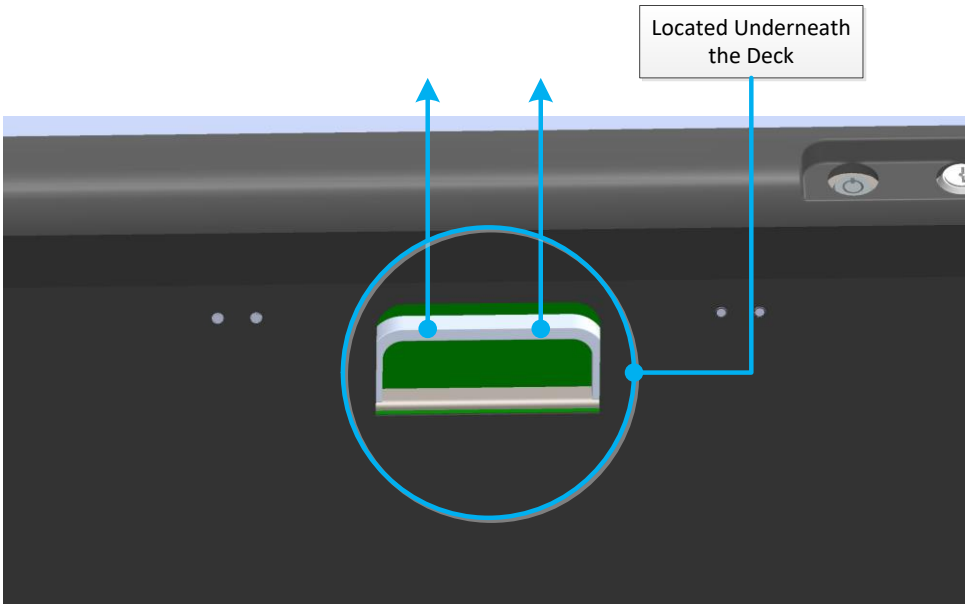
Doors

Whenever a door is opened, the tower light flashes. You can open a door safely without losing statistics or interrupting the game in progress.

Keys are provided to unlock various parts of the gaming machine: the deck door, the logic box door and the bill validator door. On the Novus cabinet series, unlocking and opening the deck door gives access to the upper door and footrest area.

NOTE: All keylocks use standard 5/8" locks.

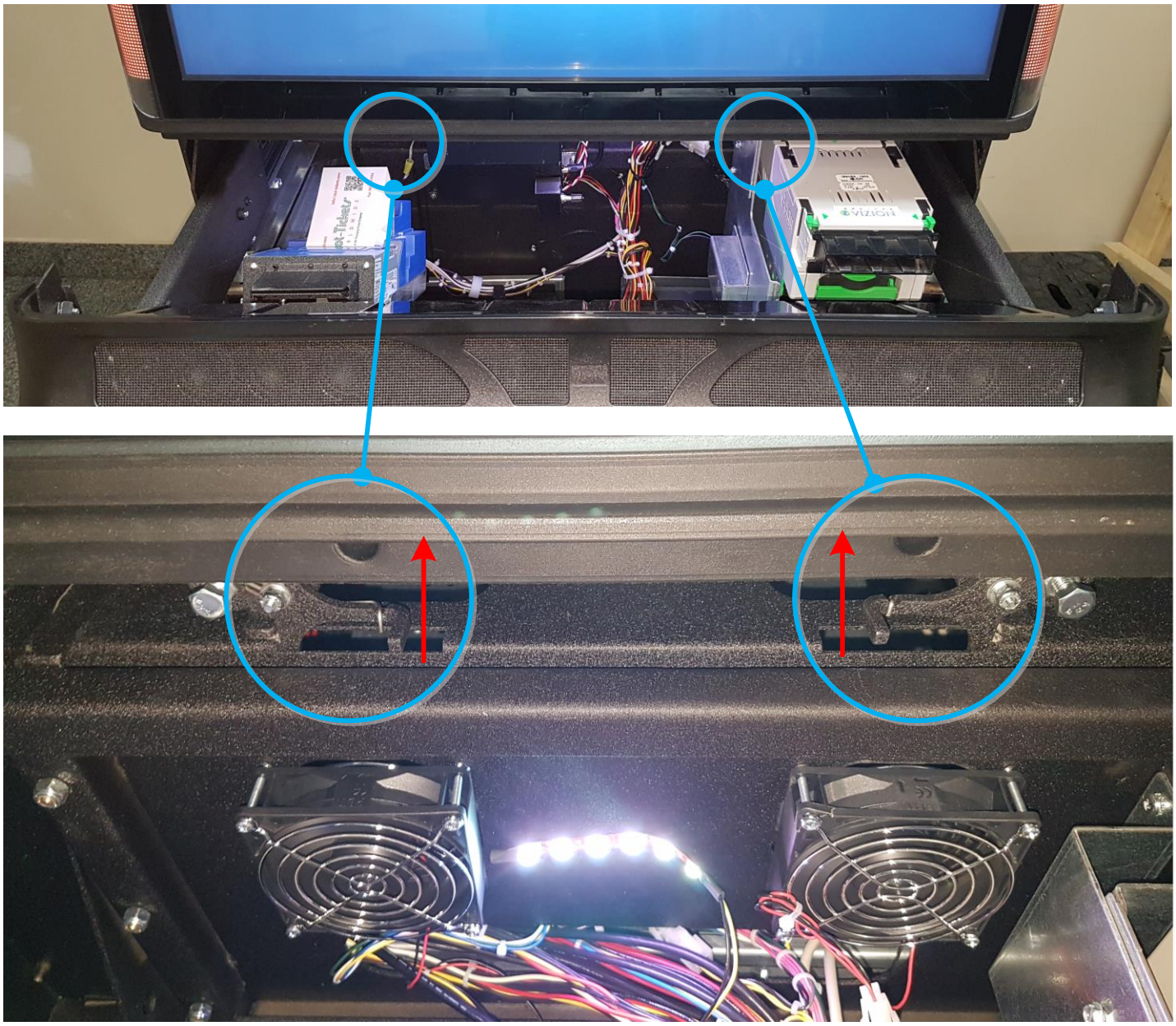


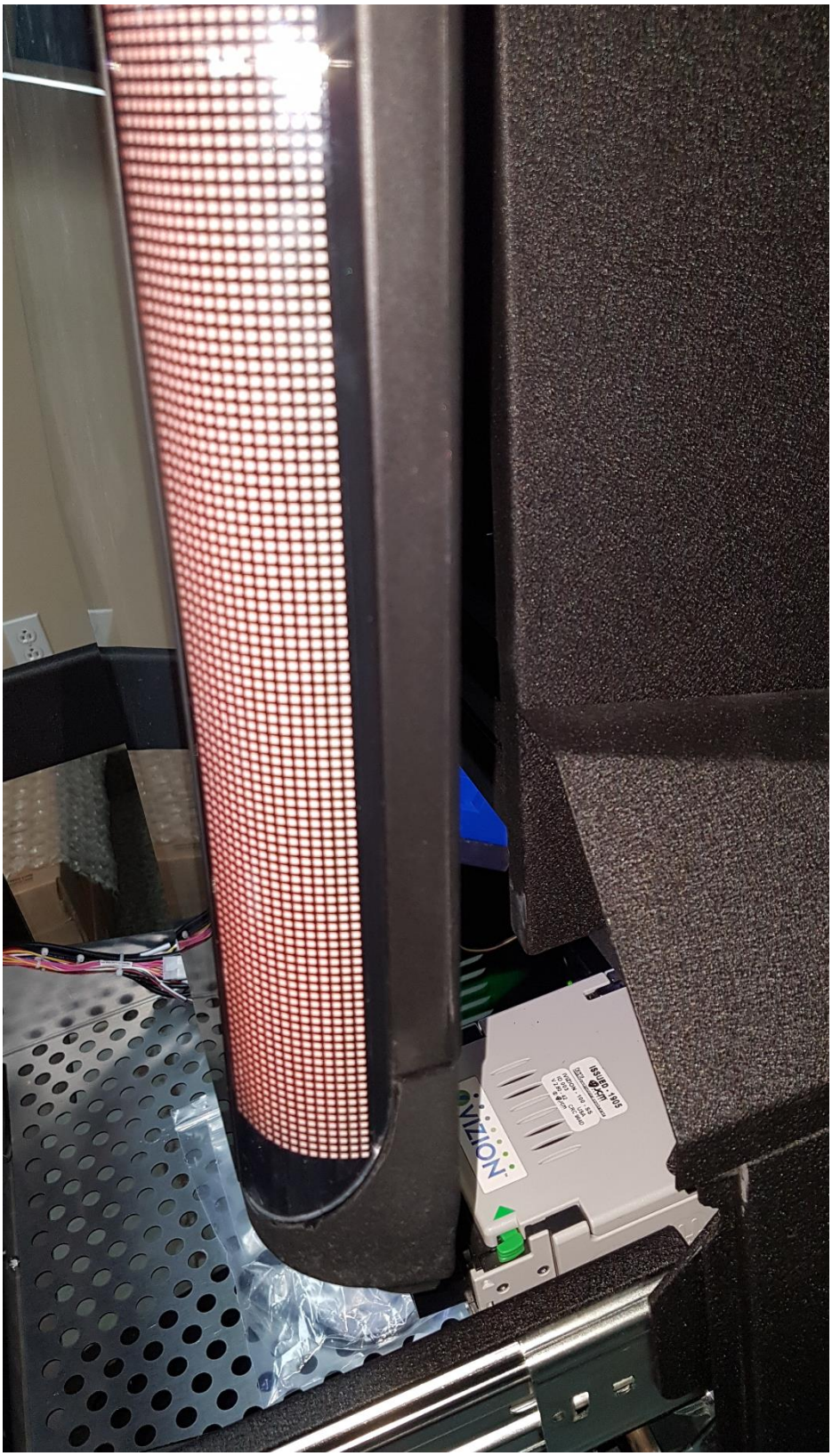


To open the upper door, you need to open the deck door first.

Pull on both locking latches located below the upper door urethane trim using left and right hands at the same time.

While holding both locking latches, pull the upper door toward you. The upper door will swing up with a unique scissor hinge and gives you access to the space behind the upper door.



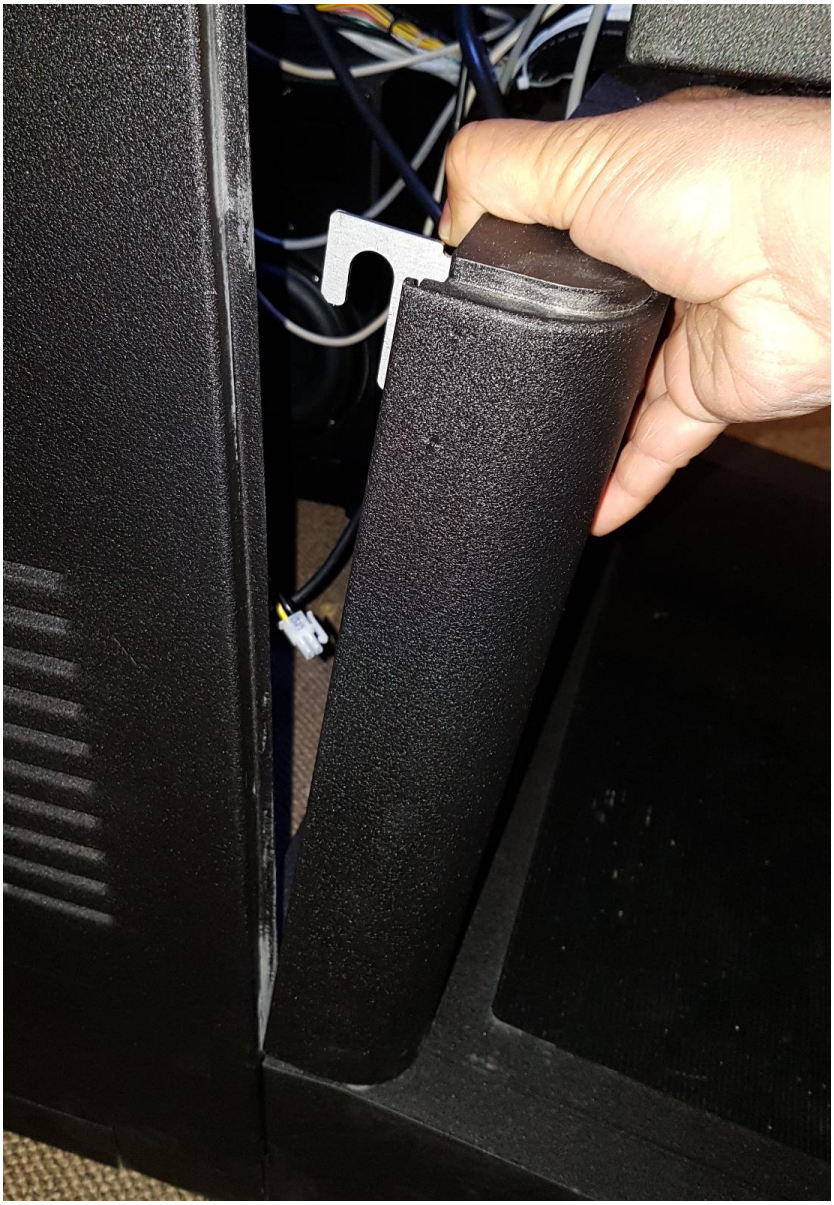

VIZIO

To gain access to the lower section of the cabinet and footrest area, you can easily remove both the belly panel and the footrest plate.

To remove the belly panel, you first need to open the deck door.

Disconnect the power cable going to the backlit belly panel. The connector is located on the left side.

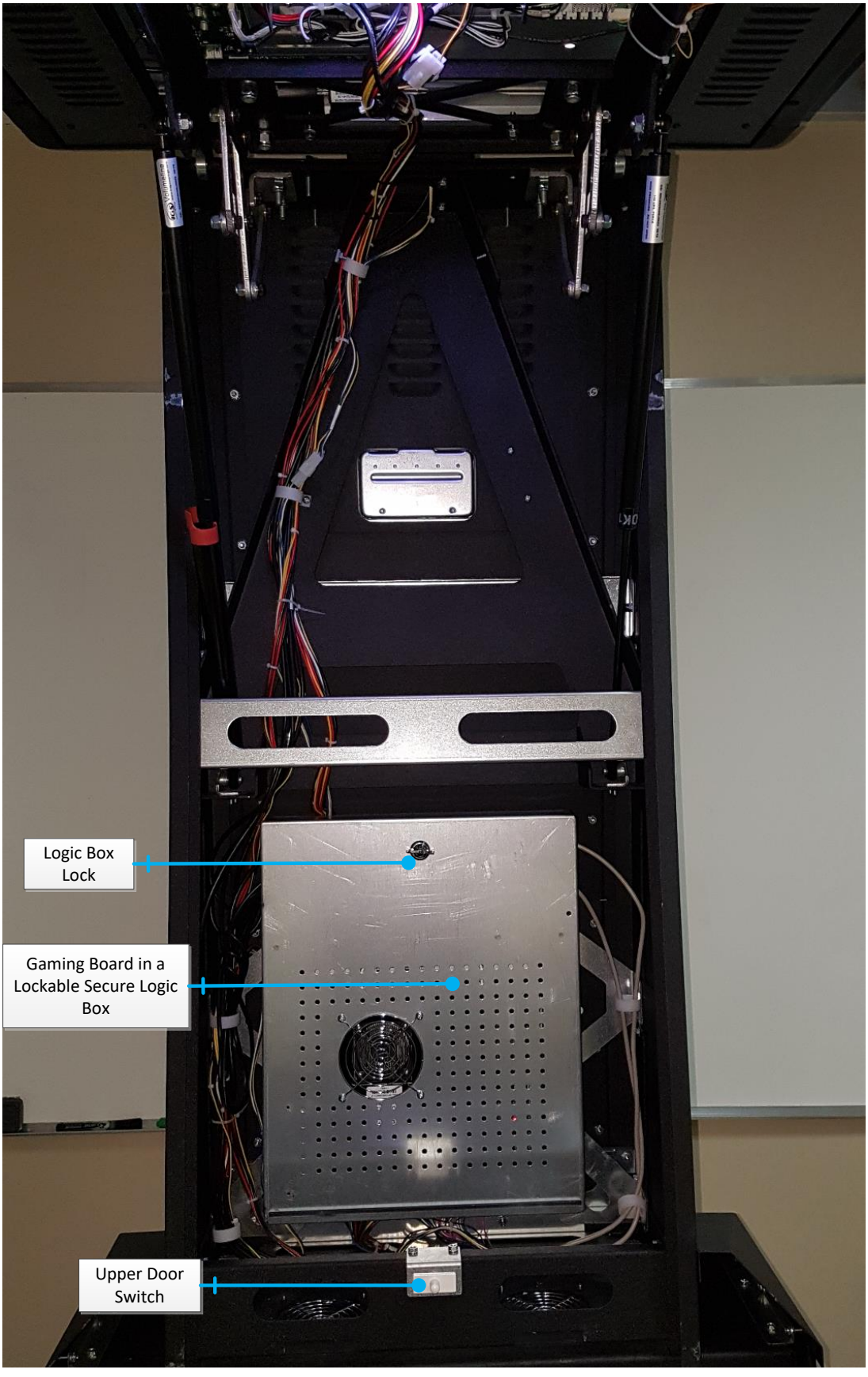
From the top, grab the belly panel assembly using both hands and pull up to release hooks located on both sides.

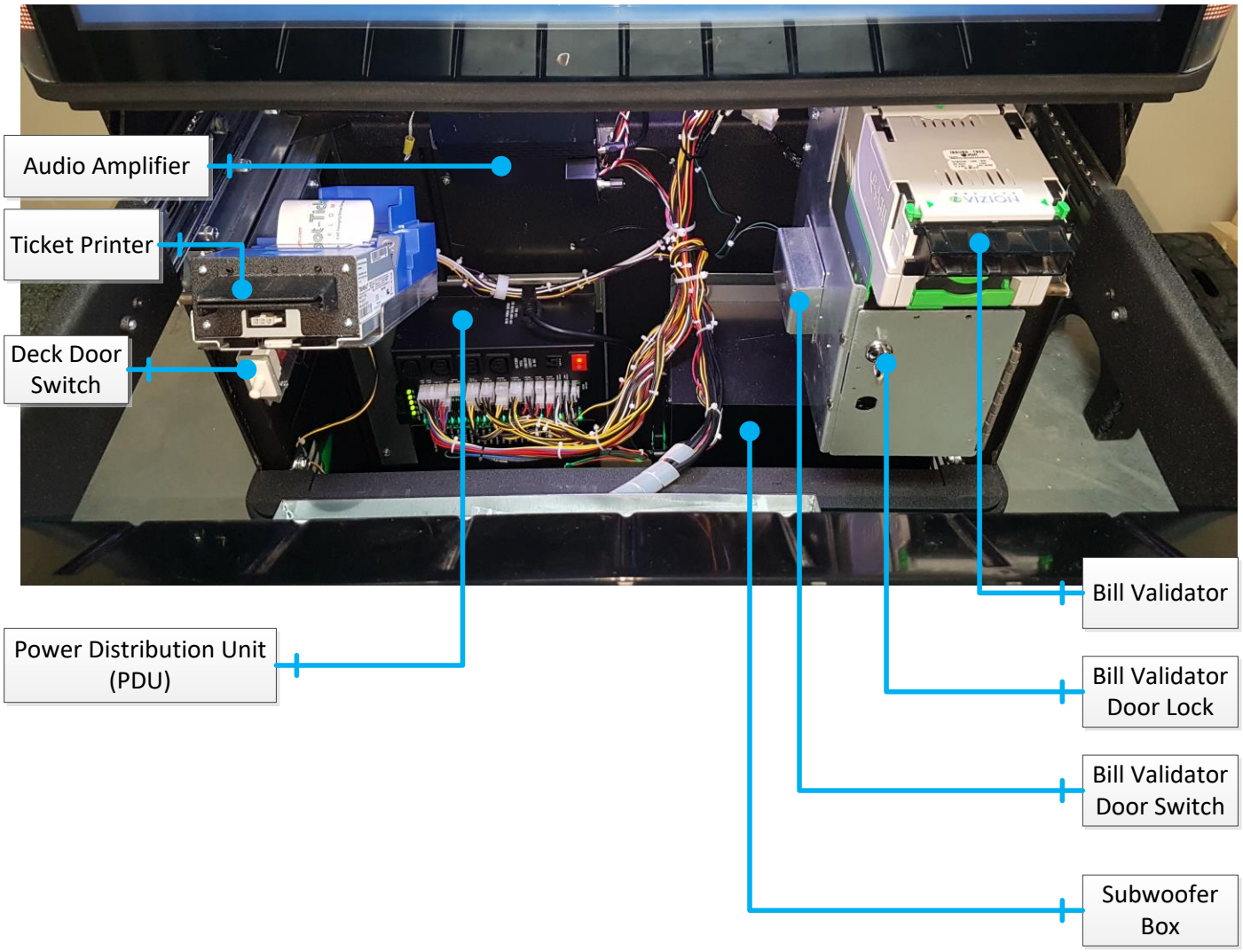


You can then remove the belly panel assembly from underneath the deck. You now have access to the space behind the belly panel (power distribution unit, subwoofer, etc…).

Removing of the footrest panel will give you access to all the space inside the footrest area.

Inside View of the Machine



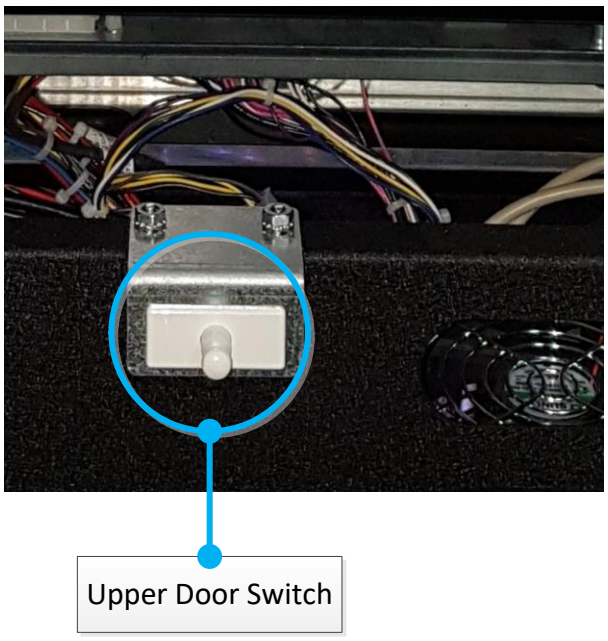

Audio Amplifier
Ticket Printer
Deck Door Switch
Power Distribution Unit (PDU)
Bill Validator
Bill Validator Door Lock
Bill Validator Door Switch
Subwoofer Box

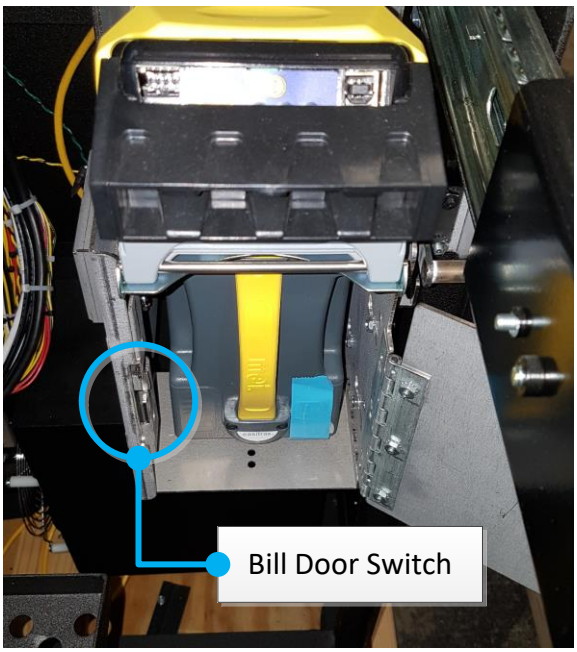
Door Switches

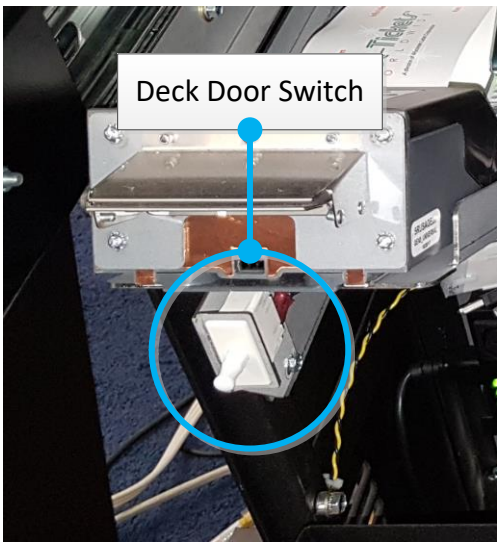
Four switches detect door opening and closing:

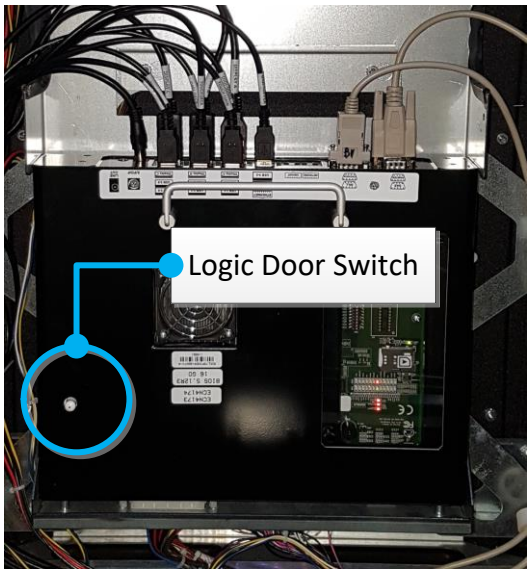
- the upper door switch
- the deck door switch
- the bill door switch
- the logic door switch

All switches operate in a “normally closed” mode. Each time a door is opened, its switch closes the electronic circuit, and this event is created and recorded in the event log kept in the gaming board memory.





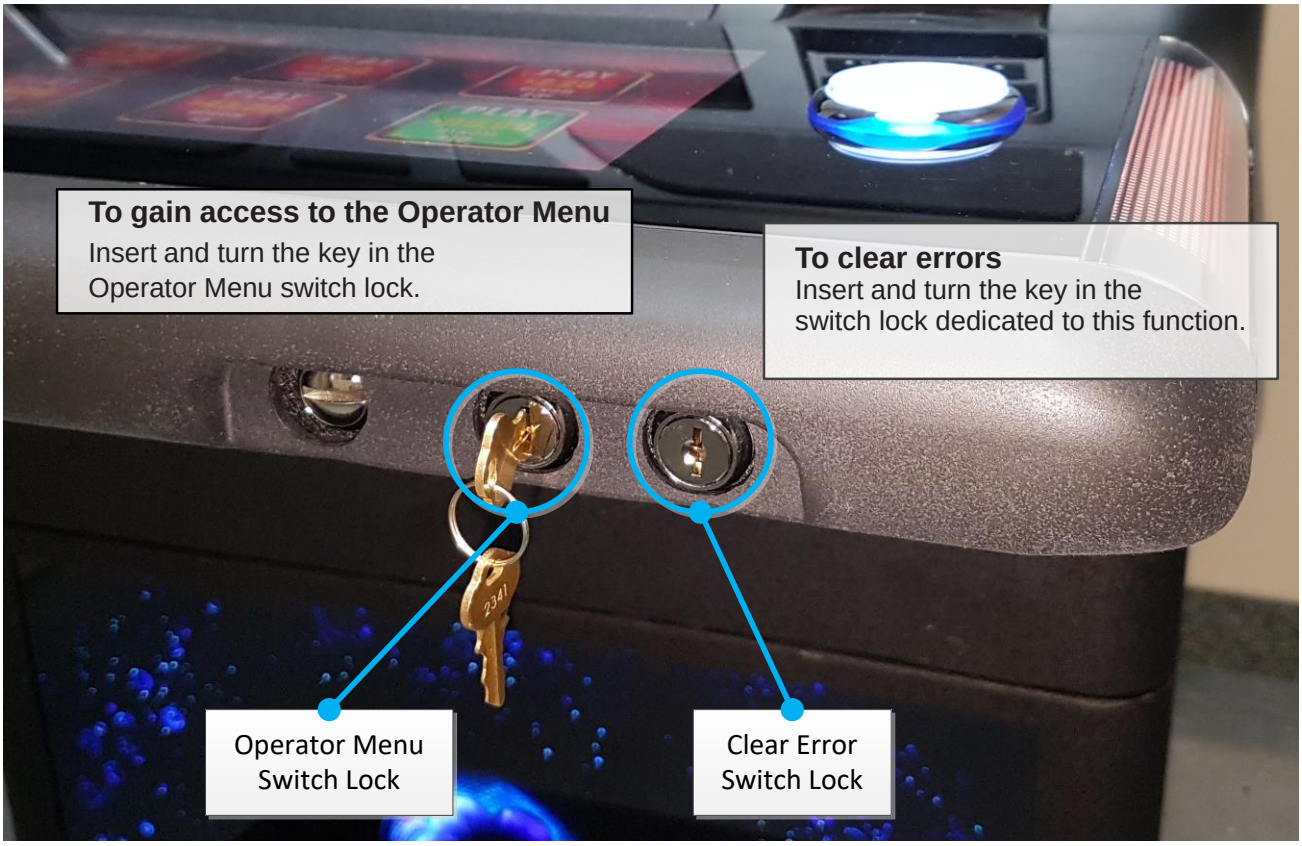




Switch Locks

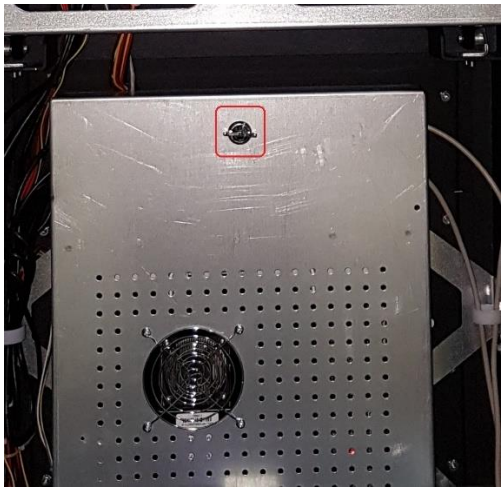
A single key either provides access to the Operator Menu or is used to clear errors, depending on the switch lock it is inserted into.

The Operator Menu switch lock gives access to the Operator Menu that allows the configuration of the game, self-diagnostic, statistics, and other options. The Clear Error switch lock allows the operator to clear errors once the problem has been solved.

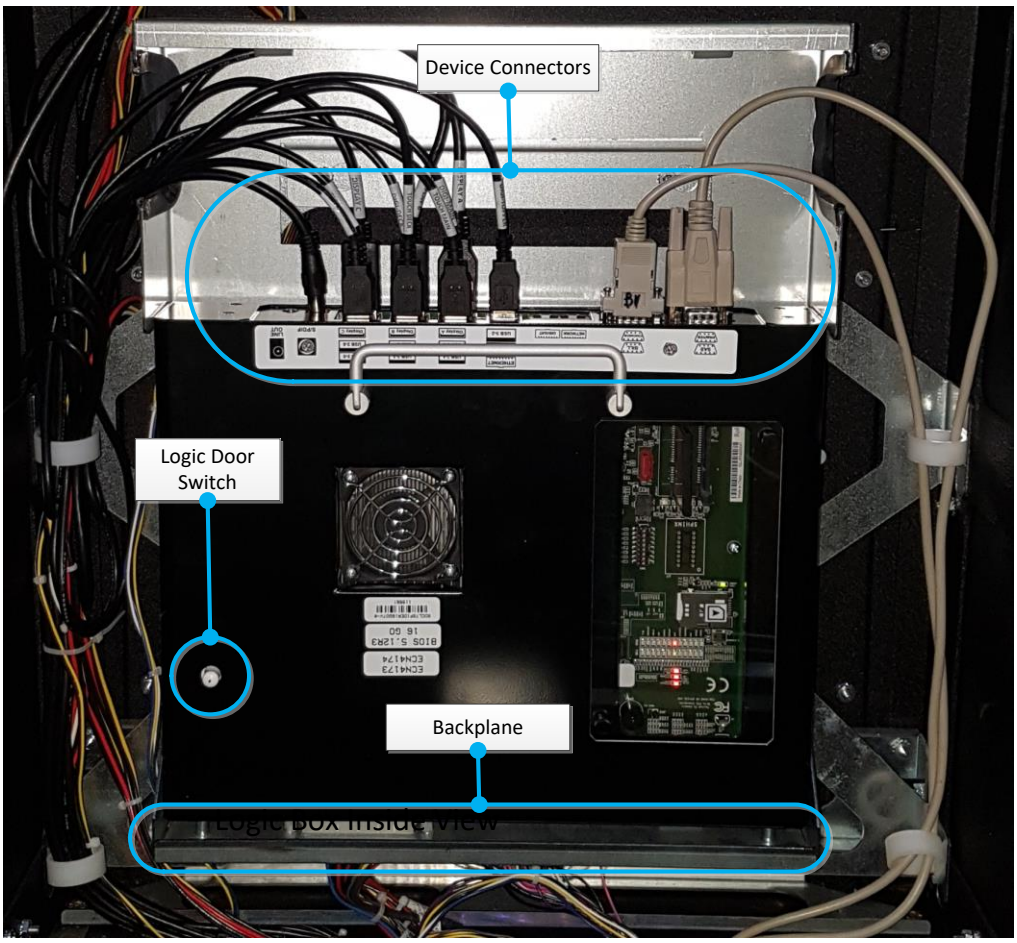


Logic Box

The logic box is a covered metal box housing the gaming board. A door switch detects the opening of the logic box cover. The gaming board reads the state of the logic door switch even when the power is off. The logic box is located at the back of the gaming machine, locked with a key and linked to the machine I/Os through the backplane or through the device connectors.



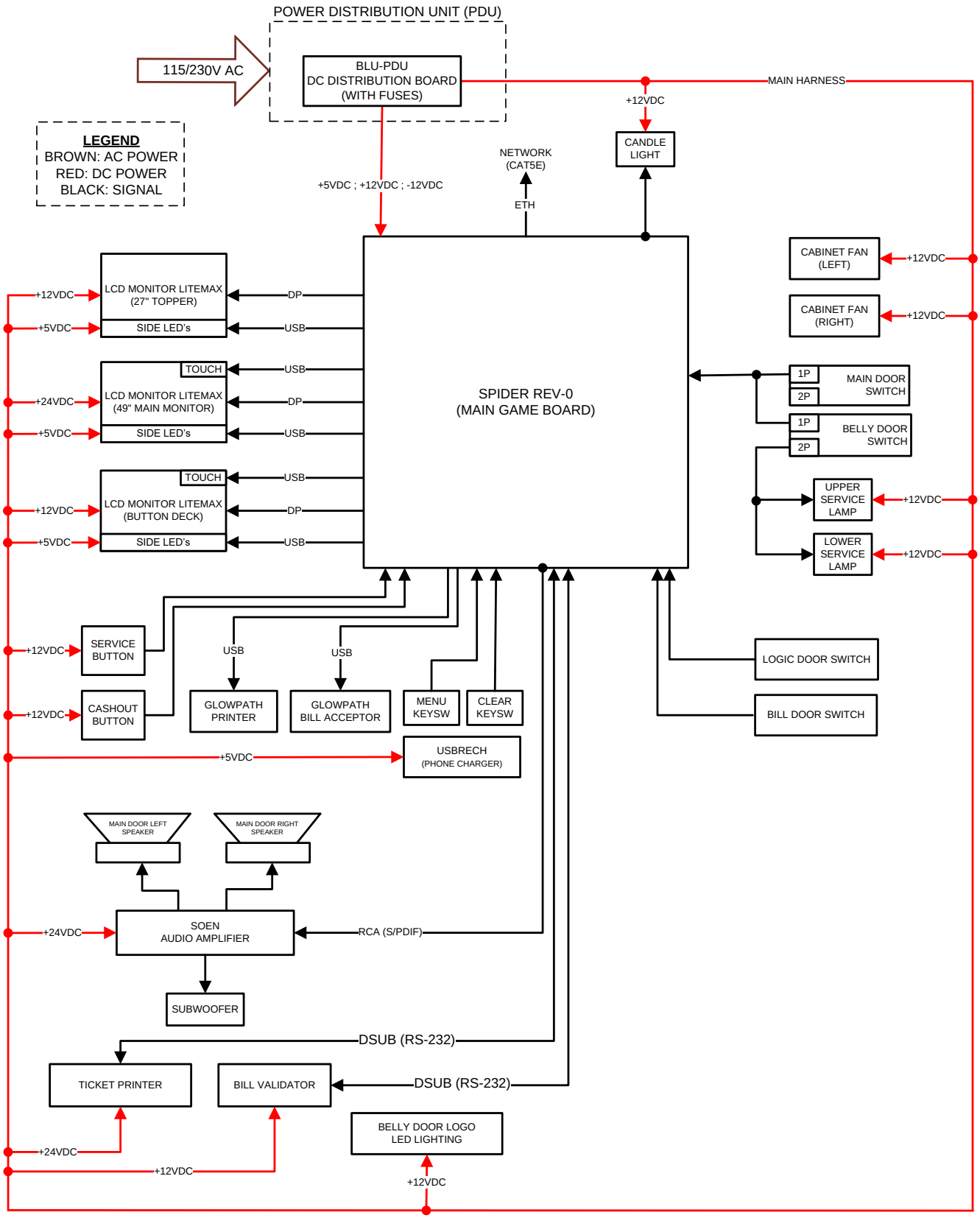
Logic Box Cover Lock Location



Logic Box Inside View

Electrical Components

Powering Diagram


POWER DISTRIBUTION UNIT (PDU)
115/230V AC
BLU-PDU
DC DISTRIBUTION BOARD
(WITH FUSES)
MAIN HARNESS
+12VDC
CANDLE LIGHT
LEGEND
BROWN: AC POWER
RED: DC POWER
BLACK: SIGNAL
+5VDC ; +12VDC ; -12VDC
NETWORK
(CAT5E)
ETH
SPIDER REV-0
(MAIN GAME BOARD)
CABINET FAN
(LEFT)
CABINET FAN
(RIGHT)
LCD MONITOR LITEMAX
(27" TOPPER)
SIDE LED's
TOUCH
LCD MONITOR LITEMAX
(49" MAIN MONITOR)
SIDE LED's
TOUCH
LCD MONITOR LITEMAX
(BUTTON DECK)
SIDE LED's
DP
USB
+12VDC
+5VDC
+24VDC
1P
2P
MAIN DOOR
SWITCH
BELLY DOOR
SWITCH
UPPER
SERVICE
LAMP
LOWER
SERVICE
LAMP
SERVICE
BUTTON
CASHOUT
BUTTON
GLOWPATH
PRINTER
GLOWPATH
BILL ACCEPTOR
MENU
KEYSW
CLEAR
KEYSW
LOGIC DOOR SWITCH
BILL DOOR SWITCH
USBRECH
(PHONE CHARGER)
MAIN DOOR LEFT
SPEAKER
MAIN DOOR RIGHT
SPEAKER
SOEN
AUDIO AMPLIFIER
RCA (S/PDIF)
SUBWOOFER
DSUB (RS-232)
TICKET PRINTER
BILL VALIDATOR
BELLY DOOR LOGO
LED LIGHTING

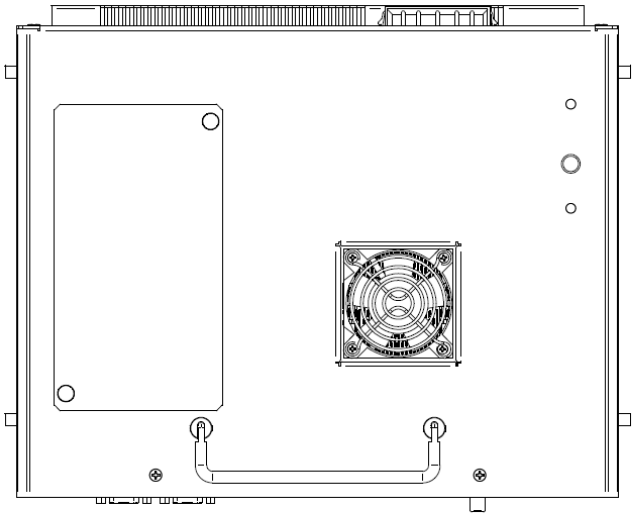
List of Electrical Components

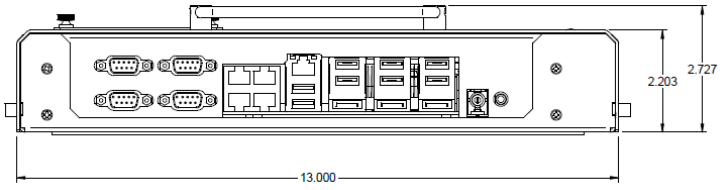
Component		Quantity	Manufacturer	Model
Power Distribution Unit		1	Agape Technology ACPC Group	ATEC-24V750-PDB
Fan		2	Delta Products Corp.	AUB0912VH-CIT
Gaming board		1	Bluberi Gaming Canada Inc.	SPIDER Rev-0
LCD Monitor (Main Door)		1	Litemax	DPD4903-LTQ-N01
LCD Monitor (Topper - Optional))		1	Litemax	DPD2705-BGQ-I01
LCD Monitor (Deck)		1	Litemax	SDP1714-TTQ-Q01
Service & Cashout Buttons		2	Gamesman	GPB1105-AHQCBAZPLA
Deal Buttons (Deck)		2	Gamesman	GPB1290-TPHQZLBBZ
Door switch	Deck Door	1	ZF Electronics	E79-30A0
			C&K	DS2D6CQ1
	Upper Door	1	ZF Electronics	E79-30A0
			C&K	DS2D6CQ1
	Bill Door	1	ZF Electronics	E79-30A0
			C&K	DS2D6CQ1
	Logic Door (cover)	1	ZF Electronics	E69-30A0
			C&K	DS1D6CQ1
Key Switch	Operator Menu	1	Suzo	30-1086-01 (Constant)
	Clear Error (Stat)	1	Suzo	30-1086-00 (Momentary)
Mechanical meter (optional)		5	Suzo	42-08012-07
Candle light		1	Suzo	11-1882
Side LED Controller		3	Bluberi Gaming Canada Inc.	DigiLED-CTRL
Sound System		1	Soen Audio	NOVUS Series System

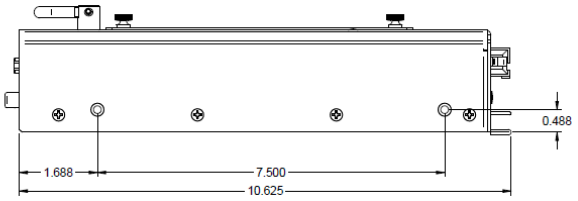
Gaming Board (Spider)

Board Dimensions

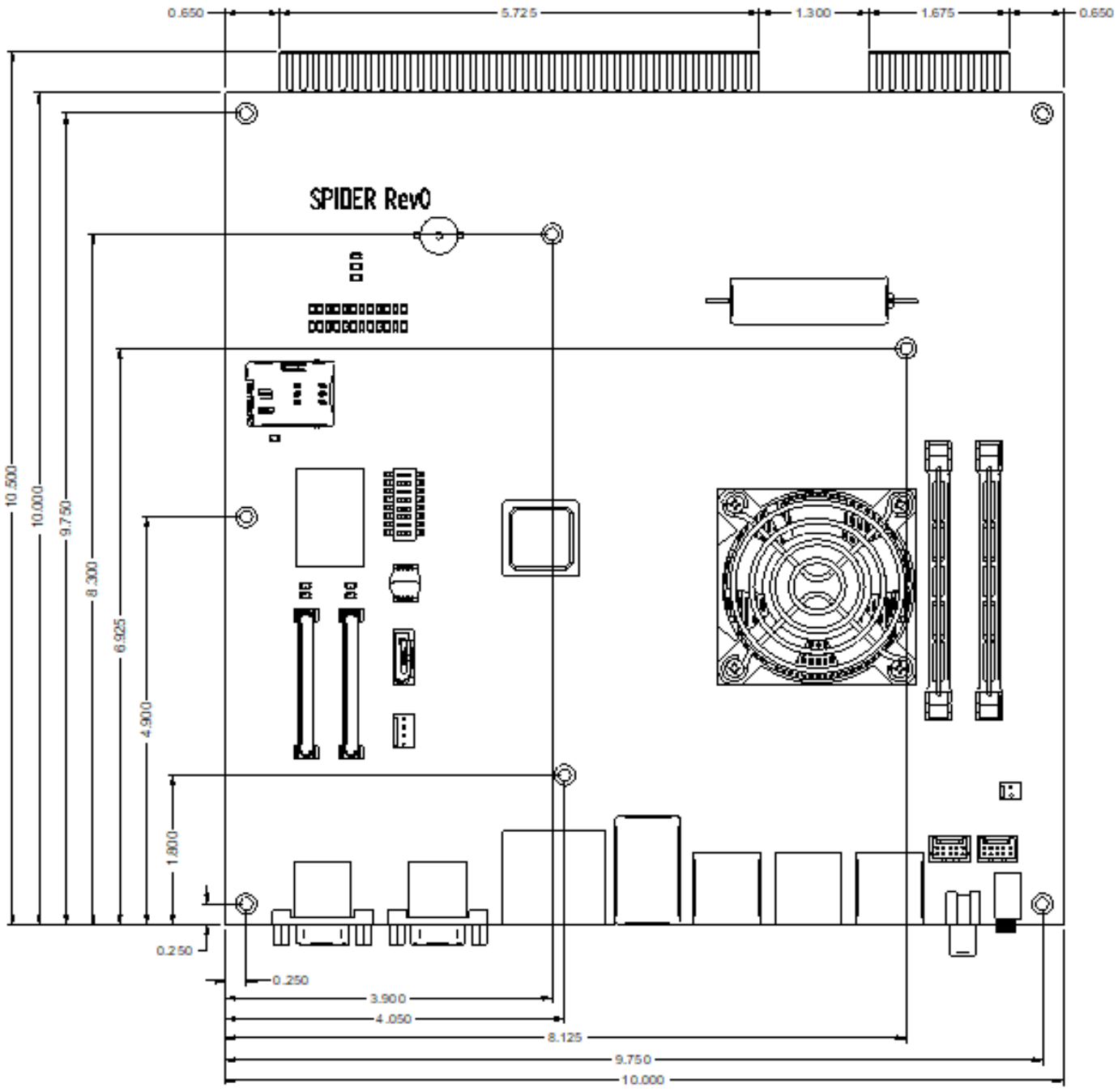
With Enclosure



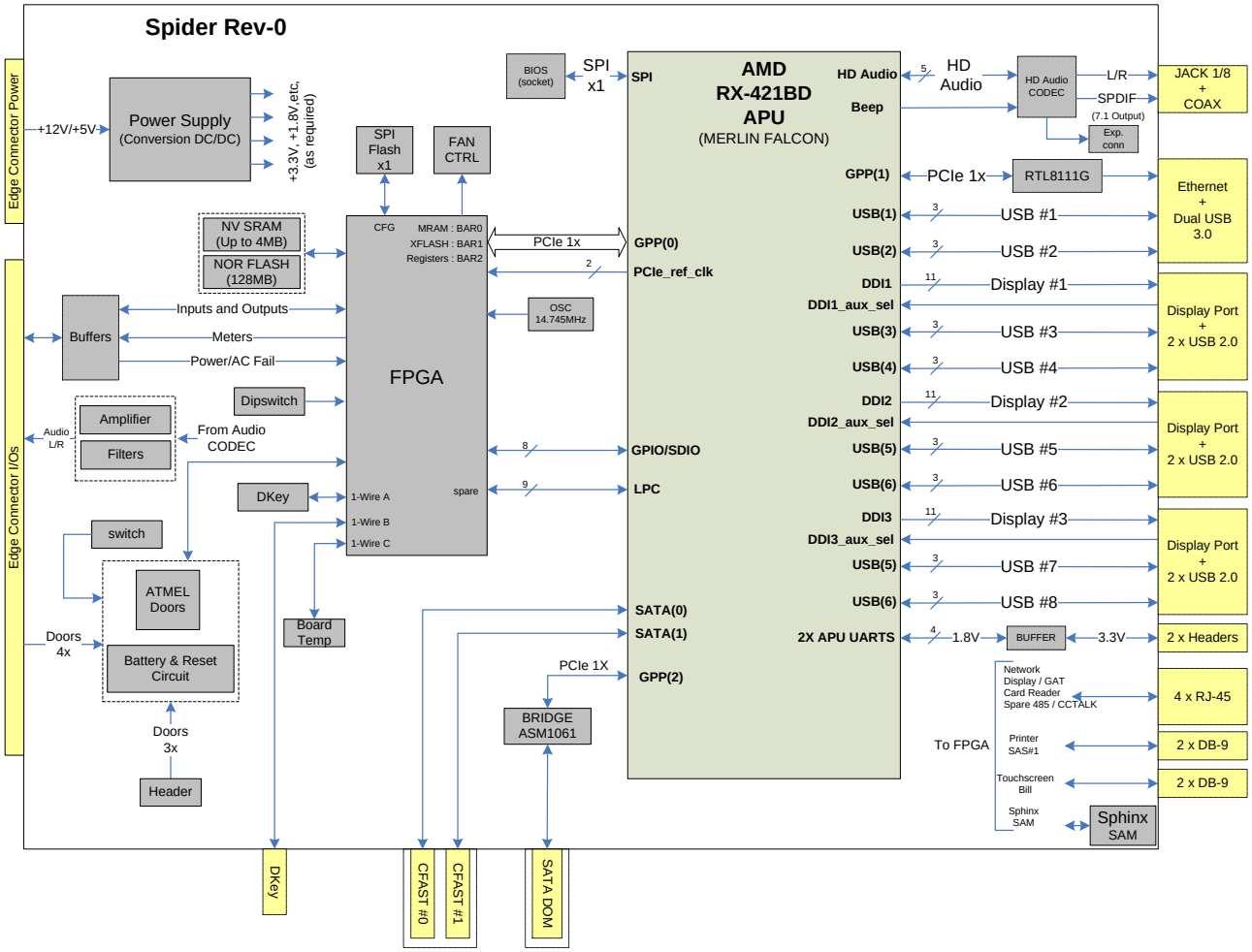




Without Enclosure



Block Diagram



General Description

Chipset
- AMD embedded APU Merlin Falcon R-Series RX-421BD (Excavator Quad cores, 2.1-3.4GHz, R7 GPU with 8x GCN cores @ 800MHz, 12-35W TDP).

Display
- 3x Digital Display Interface (DDI) on Display Port connector. Each DDI supports the Dual-Mode Implementation (also called DP++). This feature gives the option to link the monitor with a Display Port cable or a passive Display Port to DVI cable/adapter.

Sound
- ALC888 HD Audio CODEC linked to the APU.
- PC speaker (buzzer).
- Digital interface (S/PDIF).
- Jack 1/8 plug for the analog interface.
- Onboard expansion connector for the HD Audio interface (7.1) and microphone input.
- Onboard audio amplifier providing at least 20W/channel for 2 channels (left/right). The amplified output goes to the edge connector.

USB
- 2x USB 3.0 ports available on the front panel. The maximum allowable current to be drained from the USB 3.0 ports is limited to 1.1A.
- 6x USB 2.0 ports available on the front panel. The maximum allowable current to be drained from the USB 2.0 ports is limited to 500mA.

Ethernet
- 1x 10/100/1000 MBPS Integrated Ethernet Controller (front panel connector RJ45).
- Fully compliant with IEEE 802.3, 802.3u and 802.3ab

Serial ATA
- 2x CFAST sockets supporting SATA 3.0 (data transfer up to 6GB/s)
- 1x On-board SATA connector using SATA 3.0 with optional +5V power on pin #7 for SATA DOM.

APU Memory (DDR4)
- Dual channel DDR4-2133MHz SODIMM Sockets (up to 2x32GB memory theoretical with 2GB of GPU shared memory).

BIOS
- AMI BIOS.
- A Coreboot BIOS will be developed later to enable security features required in jurisdiction such as Nevada state.
- The BIOS is programmed into an SPI flash installed on a Zero Insertion Force (ZIF) SOIC-8 socket. This is a requirement for some jurisdictions.

Serial Ports
- 4x RS232 on male DB9 connector (Printer, SAS, Touchscreen and Bill*).
- 3x RS232 on modular jack connector (Display**, GAT** and Spare232).
- 2x RS485 on modular jack connector (Network and Spare485***).
- 1x CCTALK*** on modular jack connector.
- 1x CCTALK on 4 pins connector.

* Can be configured as TTL or RS232 simulated.
** Shares the same modular jack.
*** Shares the same modular jack.

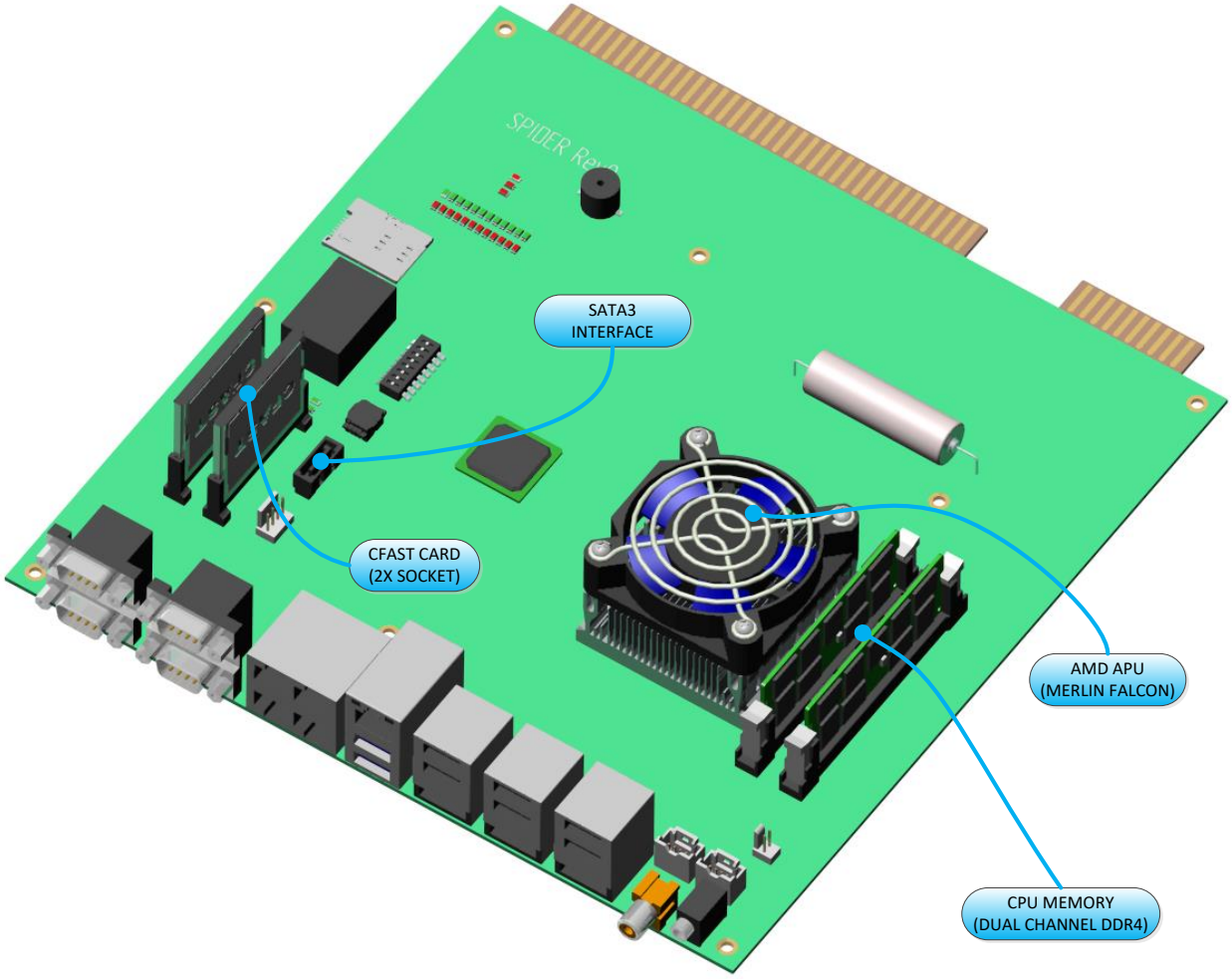
DOOR Controller
- The system is responsible to monitor up to 8 different doors events.
- Real Time Clock chip.
- Lithium AA Battery, 3.6V, 1900mA.

Memories
- 4MBytes of Non-volatile SRAM with hardware lock. The approved technologies are Everspin MRAM and Cypress nvSRAM.
- 128MBytes of NOR flash (can be used to store logs or any game operation information).

Security
- 16-pin machined socket to host a proprietary security device (SPHINX).
- 8-pin SIM card connector (push in/push out) to host a proprietary security card (SAM).

Miscellaneous
- 1-wire DS2502 Dallas key (holds Spider board unique serial number and IEEE OUI MAC address.
- External 1-wire interface on a 2-pin header.
- 1-wire temperature sensor for ambient.
- Fan control with PWM and sensing of the fan speed. Fan power is selectable between +5V and +12V.
- Pack of 8 dip switches.
- Power loss detection (AC-FAIL et POK).

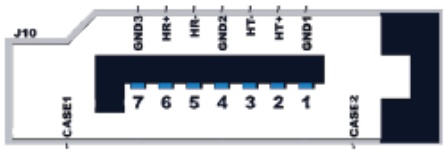
Processor and Memory



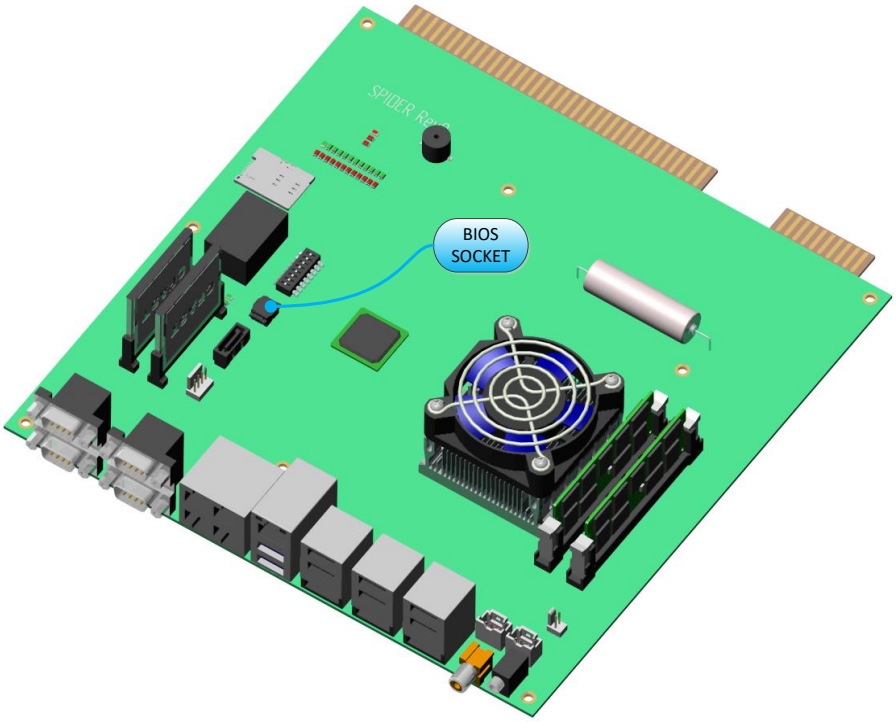
Serial ATA Connector

PIN	FUNCTION
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND*

*Optional +5VDC power according to assembly option (contact vendor)



BIOS



Features an AMI BIOS or Coreboot BIOS. SPI flash (SOIC 8-pins) installed on a clamshell socket to allow easy removal and verification (signature) from required jurisdictions.

Security

Door Tracking Controller:

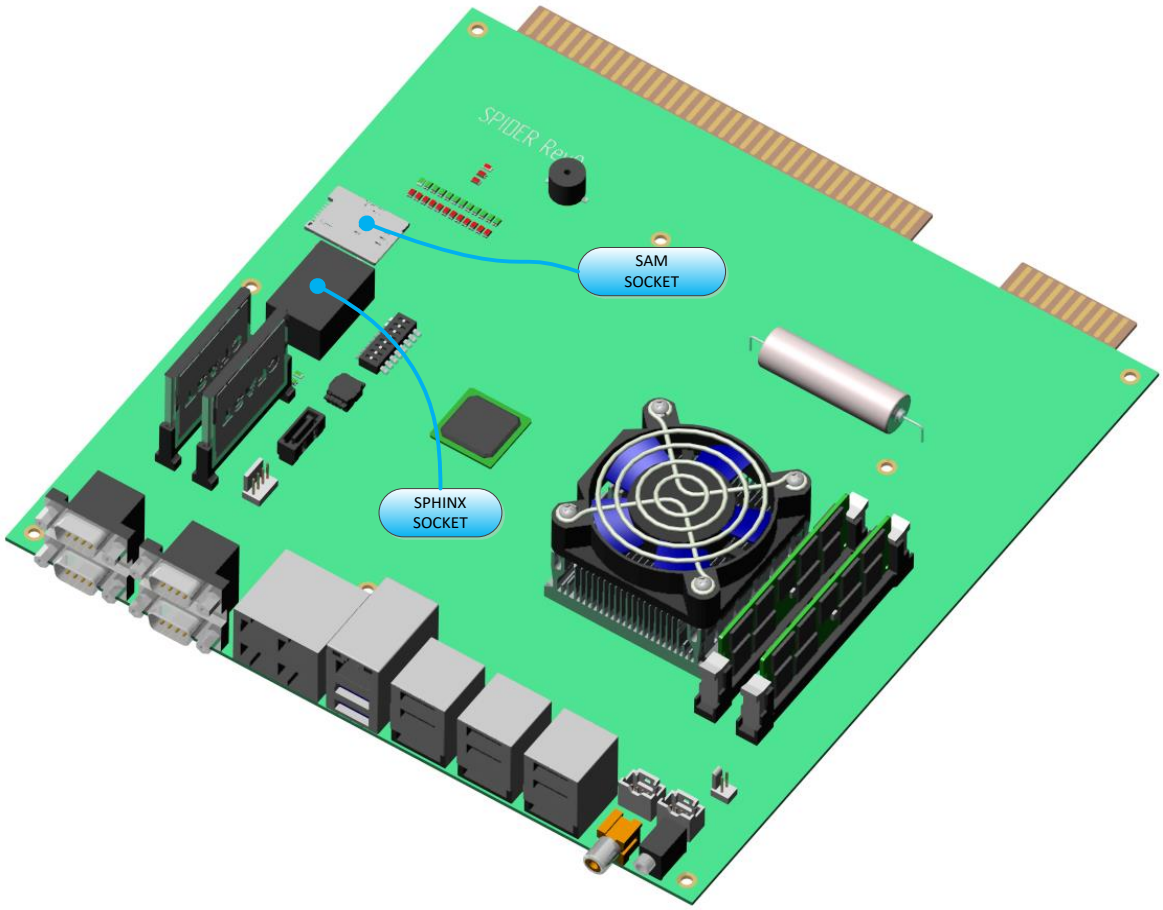
Up to eight (8) door access monitoring inputs even when power is off and keeping track of the date and time (four available from edge connector and four from 24-pin drawer connector).

SAM Card:

Software protection against piracy and software modification

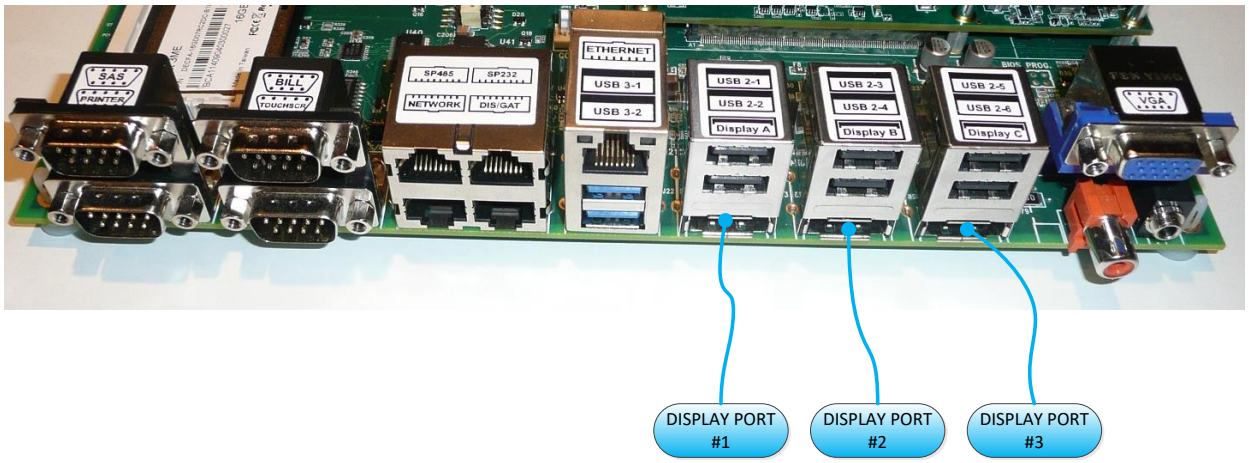
SPHINX:

Software protection against piracy and software modification



Sound and Video

Spider CPU comes with three native DP++ (Display Port) digital interfaces. DP++ interface can be used with an appropriate passive adaptor cable to get DVI or HDMI. An active adaptor is also available on the market to convert display port signal to VGA (HD15).

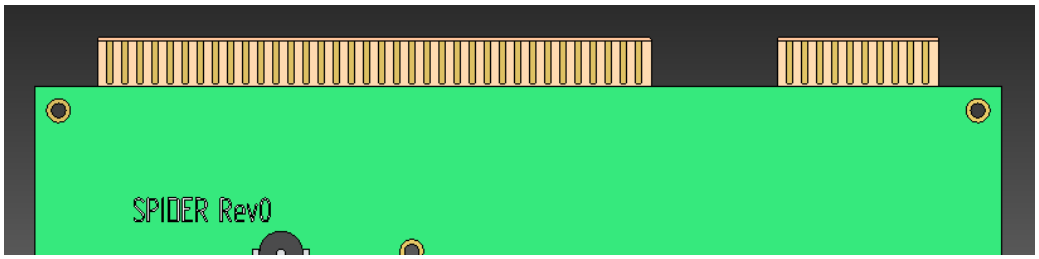


Sounds on the Spider CPU are generated from a Realtek ALC888S HD audio codec. A 1/8” jack and S/PDIF RCA are available in the front panel. It is also possible to have access to additional audio channels and microphone inputs from an expansion front panel connector. The Spider supports up to 7.1 audio channels using S/PDIF digital interface.

An amplified stereo output (2x20W) is also available from the edge connector. See edge connector section for pinout.

Inputs and Outputs

Edge connector

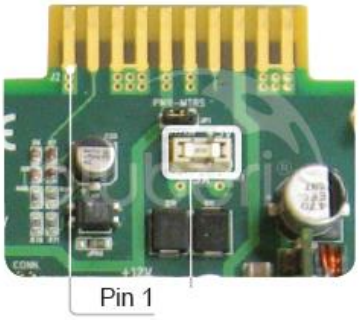


Available from edge connector:

- 31x digital inputs and 31x digital outputs (500mA, 50V max);
- 4x door monitoring inputs (4 additional available on drawer connector);
- Amplified stereo output for speakers;
- 6x dedicated mechanical meter outputs;
- Power output for mechanical meters;
- AC monitoring circuit (early power failure detection).

20-PIN EDGE (POWER)

Part Side	Pin	Solder Side
GND*	1	GND*
AC+	2	AC-
+5VDC*	3	+5VDC*
+5VDC*	4	+5VDC*
+12VDC*	5	+12VDC*
PWR_METERS**	6	PWR_METERS**
POK	7	HOPPER ENABLE
-	8	TICKET
GND*	9	GND*
GND*	10	GND*



* These pins require an independent wire coming directly from the cabinet power supply or PDU. We recommend using 18Ga wire.

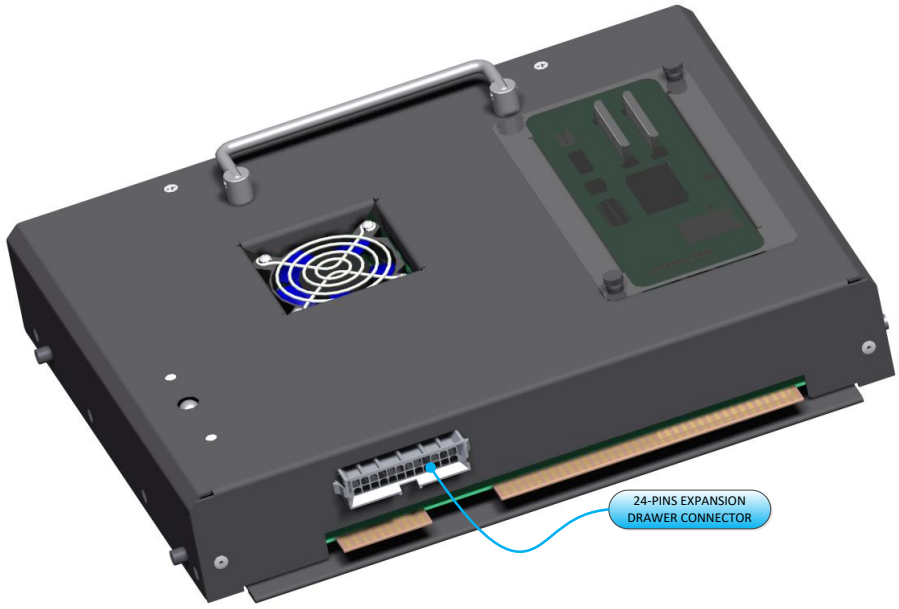
** Do not use to power peripherals other than meters.

72-PIN EDGE (FULL PINOUT)

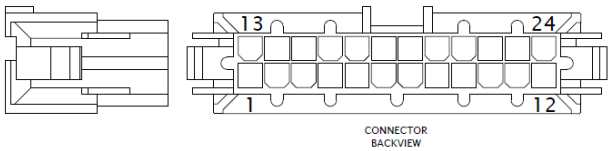
Part Side	Pin	Solder Side
SPARE METER #2	1	OUT1S
OUT2P	2	OUT2S
LEFT SPEAKER+	3	OUT3S
IN4P	4	LEFT SPEAKER-
SW HOPPER SENSE	5	RIGHT SPEAKER-
IN6P	6	IN6S
IN7P	7	IN7S
IN8P	8	IN8S
IN9P	9	IN9S
IN10P	10	IN10S
IN11P	11	IN11S
IN12P	12	RIGHT SPEAKER+
IN13P	13	SW CASH DOOR
IN14P	14	SW LOGIC DOOR
SW BILL DOOR	15	SW MAIN DOOR
IN16P	16	OUT16S
+5VDC (OUT)*	17	HOPPER DIVERTER
SW SLOT #1	18	SW SLOT #3
SW SLOT #2	19	COIN ENABLE
KEYSW CLEAR ERROR	20	KEYSW OPERATOR MENU
IN21P	21	IN21S
SW HOPPER FULL	22	SW HOPPER COIN
CASH IN METER	23	GND
CASH PLAYED METER	24	OUT24S
SPARE METER #1	25	IN25S
CASH WON METER	26	IN26S
IN27P	27	OUT27S
CASH PAID METER	28	OUT28S
OUT29P	29	OUT29S
OUT30P	30	OUT30S
OUT31P	31	OUT31S
OUT32P	32	OUT32S
OUT33P	33	CANDLE 3H/2L
CANDLE 3M/2H	34	CANDLE 3L
OUT35P	35	IN35S
GND	36	GND

* Do not use to power peripherals.

Expansion Drawer Connector



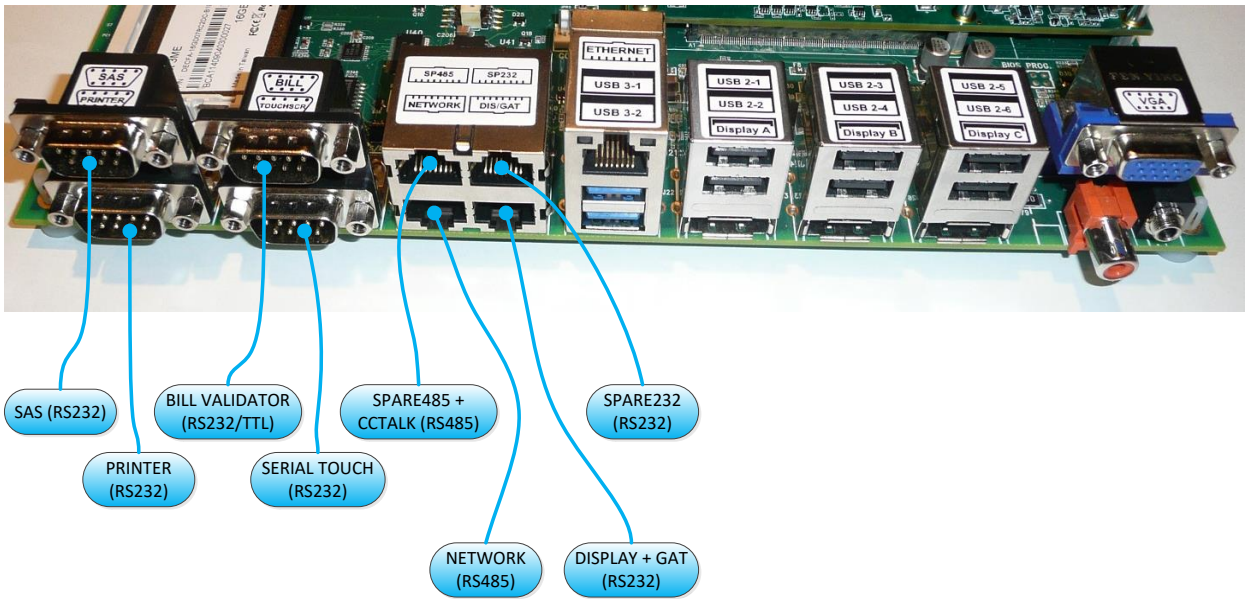
24-PIN DRAWER CONNECTOR



PIN	FUNCTION
1	GND
2	+12VDC
3	GND
4	+5VDC
5	GND
6	+5VDC
7	GND
8	-
9	+5VSB PSU
10	+12V
11	SW DOOR5
12	DKEY+
13	GND
14	-12VDC
15	GND
16	SW DOOR6
17	SW DOOR7
18	GND (LOGIC)
19	GND
20	SW DOOR8
21	+5VDC
22	+5VDC
23	SW LOGIC DOOR (LOOP)
24	DKEY-

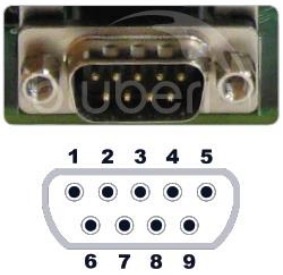
Front Panel Connections

Serial Ports (RS232 & RS485)



SAS DB-9 Connector

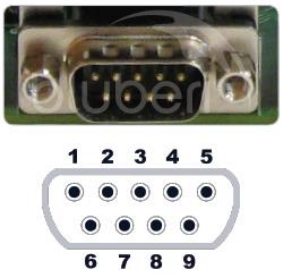
PIN	FUNCTION
1	NC
2	RXD
3	TXD
4	DTR
5	GND
6	DSR*
7	RTS
8	CTS*
9	NC



* According to JP1 (handshake signal jumper)

Printer DB-9 Connector

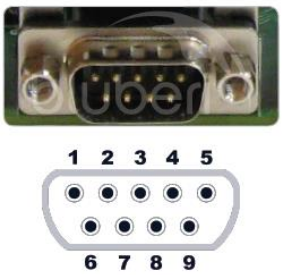
PIN	FUNCTION
1	NC
2	RXD
3	TXD
4	DTR
5	GND
6	DSR*
7	RTS
8	CTS*
9	NC



* According to JP2 (handshake signal jumper)

Bill Validator DB-9 Connector

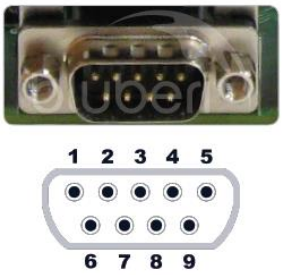
PIN	FUNCTION
1	NC
2	RXD
3	TXD
4	BILL ENABLE
5	GND
6	NC
7	RTS
8	CTS
9	NC



Can be configured as TTL or RS232 simulated

Serial Touch DB-9 Connector

PIN	FUNCTION
1	NC
2	RXD
3	TXD
4	DTR
5	GND
6	DSR*
7	RTS
8	CTS*
9	NC



* According to JP4 (handshake signal jumper)

Spare485 + CCTALK RJ-45 Connector (RS485 + CCTALK)

PIN	FUNCTION
1	CCTALK RJ45
2	DOUT-
3	DOUT+
4	GND
5	GND
6	DIN+
7	DIN-
8	NC

Network RJ-45 Connector (RS485)

PIN	FUNCTION
1	DOUT+
2	DOUT-
3	DIN+
4	GND
5	GND
6	DIN-
7	NC
8	NC

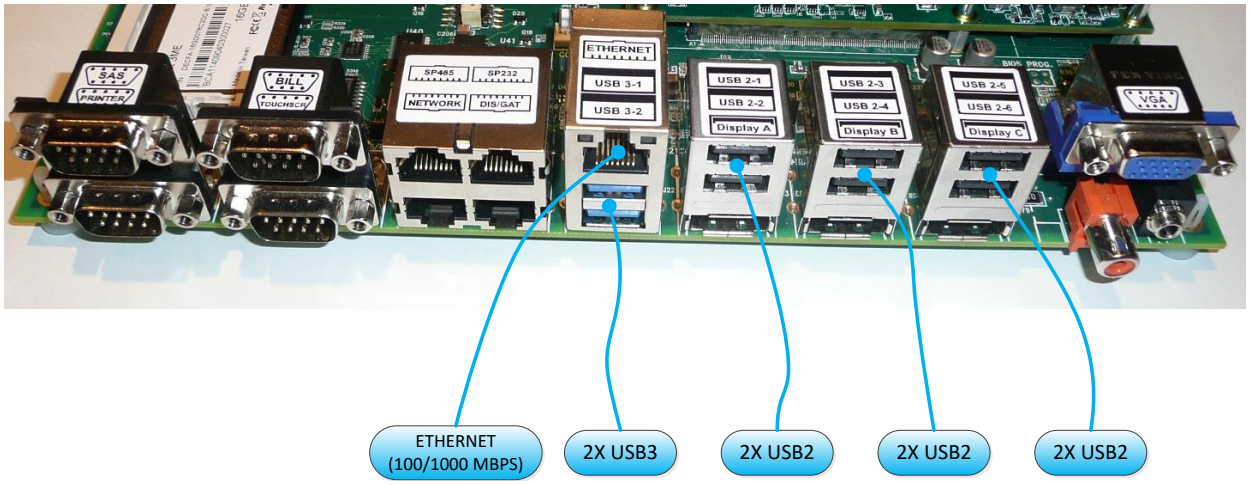
Spare232 RJ-45 Connector (RS232)

PIN	FUNCTION
1	NC
2	RTS
3	TXD
4	GND
5	GND
6	RXD
7	CTS
8	NC

Display + GAT RJ-45 Connector (RS232)

PIN	FUNCTION
1	RXD GAT
2	TXD GAT
3	TXD DISP.
4	NC
5	RXD DISP.
6	NC
7	GND
8	GND

Ethernet and USB



Ethernet RJ-45 Connector (10/100/1000 MBPS)

PIN	FUNCTION
1	TXRX A+
2	TXRX A-
3	TXRX B+
4	TXRX C+
5	TXRX C-
6	TXRX B-
7	TXRX D+
8	TXRX D-

USB2 Connector

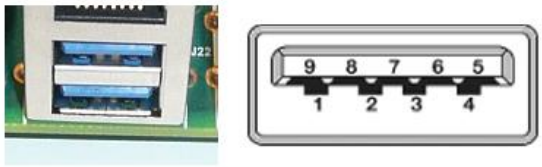
PIN	FUNCTION
1	+5VDC*
2	DAT-
3	DAT+
4	GND

*+5VDC current limited to 500mA for USB2

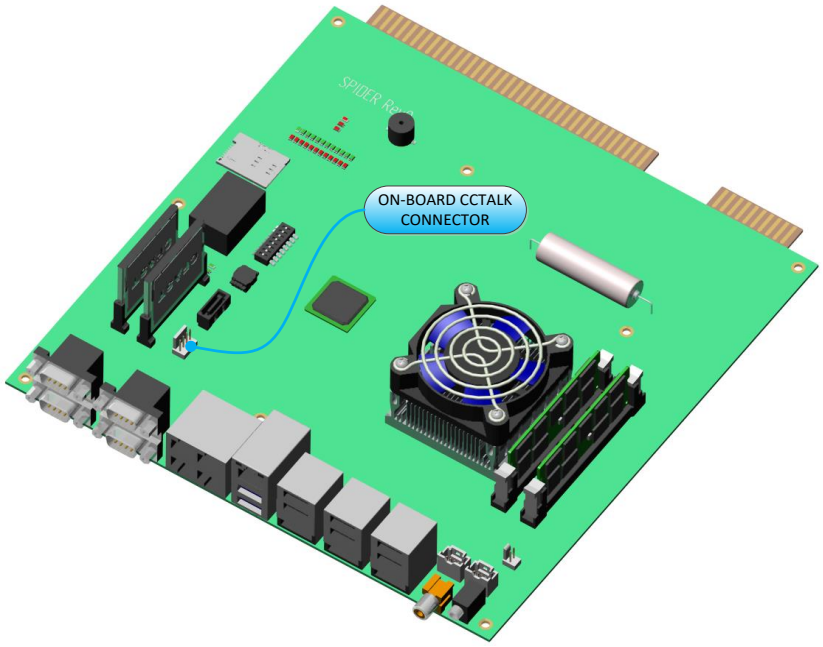
USB3 Connector

PIN	FUNCTION
1	+5VDC*
2	DAT-
3	DAT+
4	GND
5	STDA_SSRX-
6	STDA_SSRX+
7	GND DRAIN
8	STDA_SSTX-
9	STDA_SSTX+

*+5VDC power limited to 1.1A for USB3



CCTALK



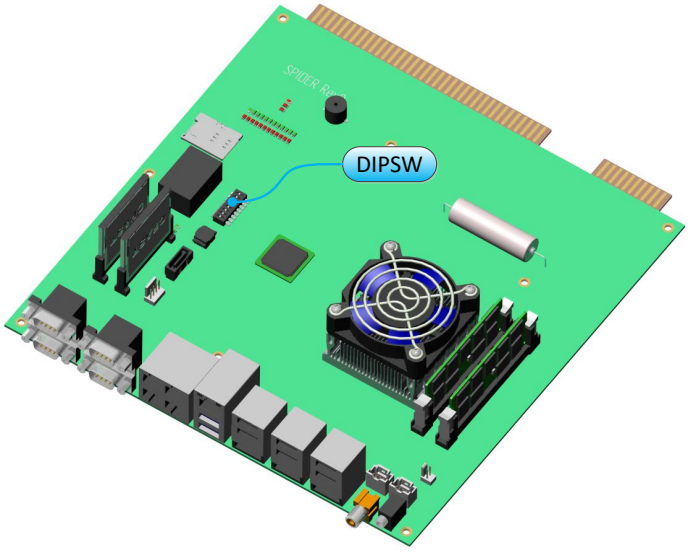
CCTALK Connector

PIN	FUNCTION
1	CCTALK DATA
2	GND
3	NC
4	+12VDC

Miscellaneous

DIP Switch

An 8-position DIP switch is available on the Spider CPU for software configuration.

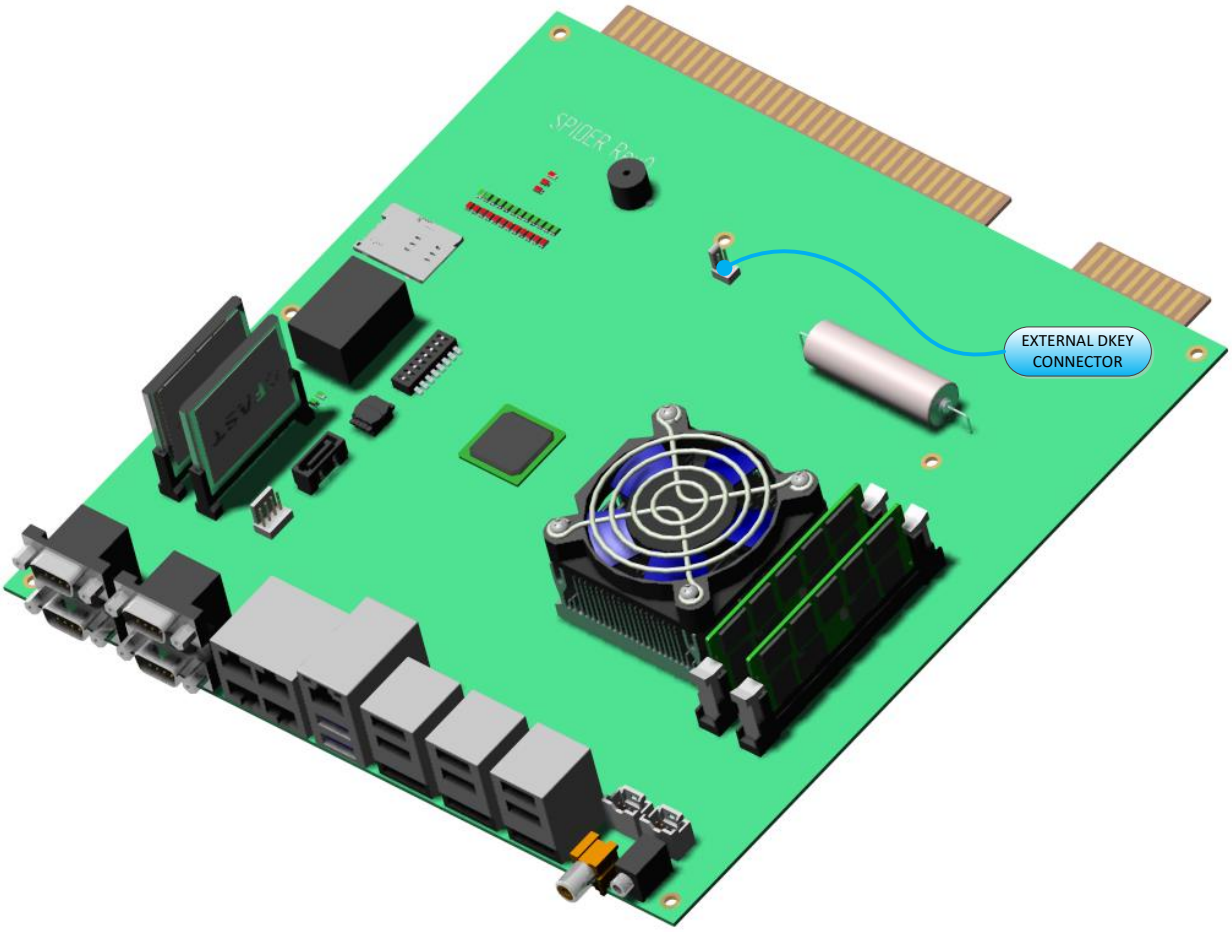


DIPSW#	POS	FUNCTION
DIP SWITCH #1	OFF	NORMAL START-UP (LOAD CFAST GAME)
	ON	REMAINS IN APPLICATION LOADER APP.
DIP SWITCH #2	OFF	IP ADDRESS REQUESTED FROM DHCP
	ON	DISABLES ETHERNET
DIP SWITCH #3	OFF	RESERVED
	ON	RESERVED
DIP SWITCH #4	OFF	DISABLES SERIAL TOUCHSCREEN SUPPORT
	ON	ENABLES SERIAL TOUCHSCREEN SUPPORT
DIP SWITCH #5	OFF	RESERVED
	ON	RESERVED
DIP SWITCH #6	OFF	NOT USED
	ON	NOT USED
DIP SWITCH #7	OFF	NOT USED
	ON	NOT USED
DIP SWITCH #8	OFF	NORMAL RESET
	ON	HARD RESET*

* Only available on request for specific games.

On-board and external DKEY

An external identification key connector is available providing the cabinet's unique serial number.



An on-board identification key is available providing the Spider's CPU board unique serial number.

Peripherals

Bill Acceptor (Optional)

The bill acceptor communicates with the gaming board through an RS-232 link.

Manufacturer	Model	Nominal Voltage
JCM	UBA (UBA-10-SS)	12 VDC
JCM	iVIZION	12 VDC
MEI	SC Advance SCN6607E	12 VDC

Printer (Optional)

The ticket printer communicates with the gaming board through an RS-232 link.

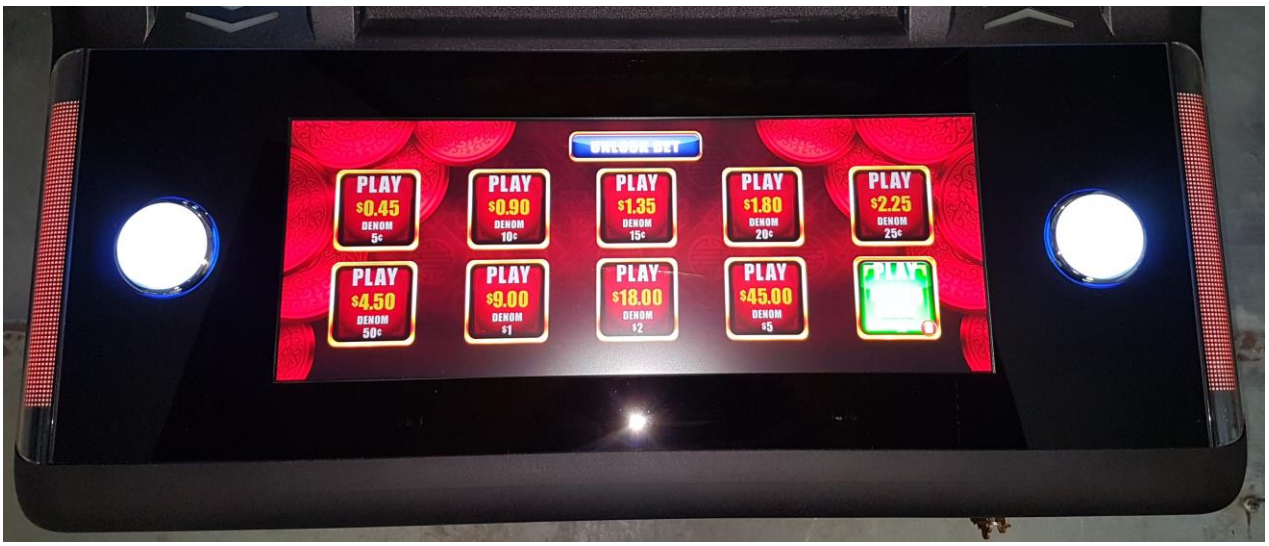
Manufacturer	Model	Nominal Voltage
Nanoptix	Paycheck 4	24 VDC
JCM	GEN 5	24 VDC
Transact	Epic 950L	24 VDC
Transact	Epic Edge	24 VDC

Deck LCD Panel

The deck door LCD monitor screen is cut (2/3) from a 16:9 aspect ratio 18.5” LCD. It measures approximately 17 1/8” in diagonal and gives an aspect ratio of 16:6. It is controlled by a DP interface, thus maximizing the visual quality.

Input Power	Video Signal	Aspect Ratio
+12VDC @ 1.5A	1920 × 714 pixels	16:6

The monitor is equipped with a touchscreen communicating with the gaming board through a USB link.



Upper Door LCD Monitor

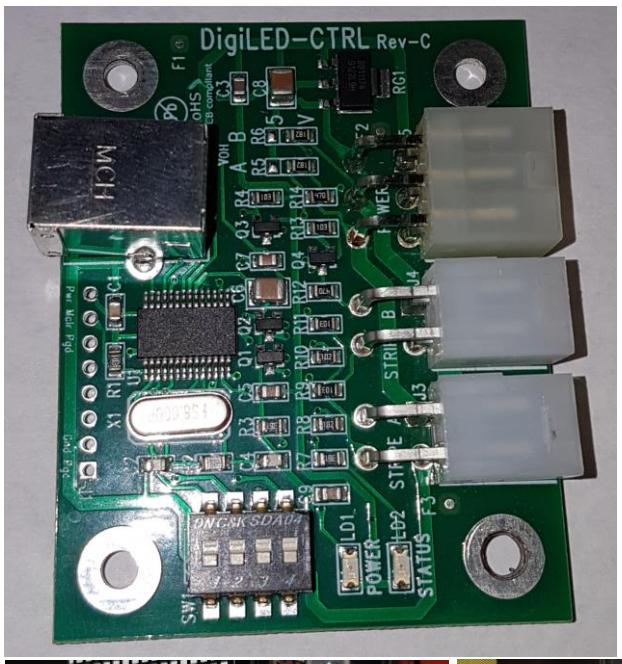
The upper door LCD monitor screen measures 49” in diagonal with 16:9 aspect ratio. It is controlled by a DisplayPort interface, thus maximizing the visual quality.

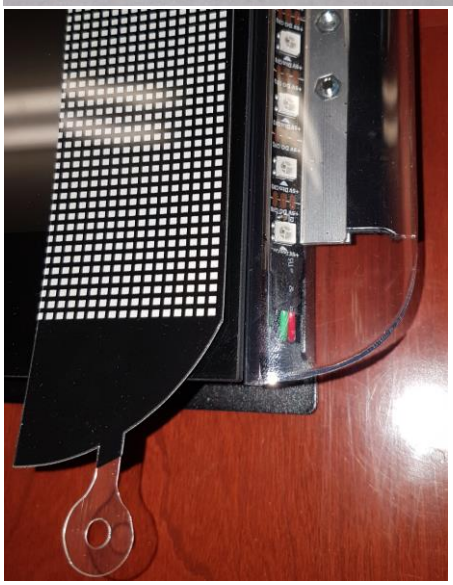
Input Power	Video Signal	Aspect Ratio
+24VDC @ 4A	3840 × 2160 pixels (4K)	16:9

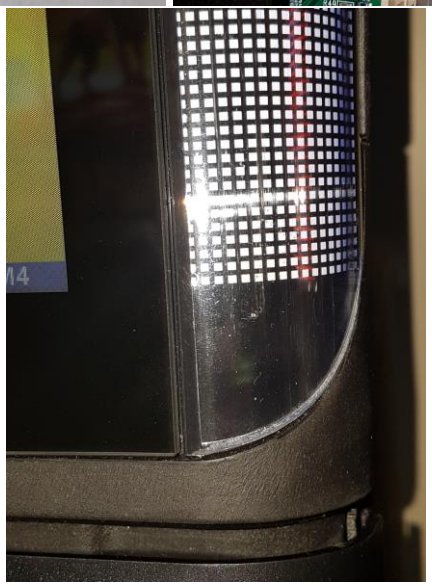
The monitor is equipped with a touchscreen communicating with the gaming board through a USB or serial RS-232 link.

Curved Side LED Lighting

The cabinet features side mounted digital LED lighting underneath curved plastic extrusions. These digital LED are controlled using Bluberi proprietary DigiLED-CTRL controller. This controller is integrated inside each screen subassemblies (there is one controller per screen) and is communicating with the CPU board through an USB link.







Mechanical Meters

Mechanical meters display game data using seven digits:

- Cash IN 1
- Cash Paid 2
- Cash Drop 3
- Cash Won 4
- Cash Played 5

These meters, which cannot be reset, confirm data contained in the gaming board memory. They increment each time a 12 VDC pulse is registered. The hard meters are visible underneath the deck panel.

** An optional Jackpot meter (sixth meter) is available upon request.

Network

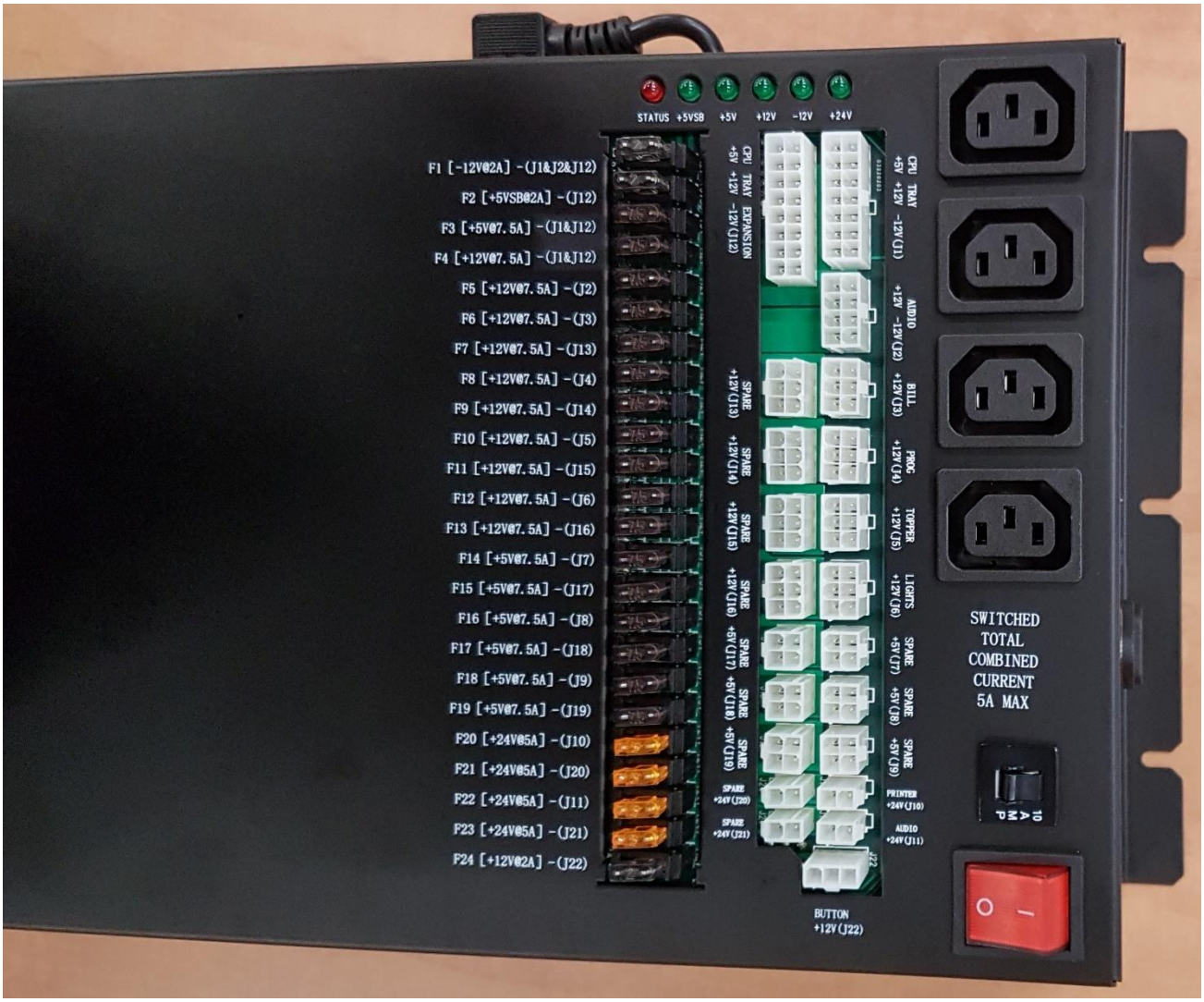
The network connects gaming machines to a server through a Gigabit Ethernet link, making it possible to manage progressives as well as cashless and accounting systems.

Power Distribution Unit

The cabinet is powered using a power distribution unit (PDU) for both AC and DC voltages.
PDU integrates the main AC power inlet with an EMI filter, a thermal breaker and the main switch. It also integrates an ATX-style power supply for DC rails power.

Parameter	Min.	Nom.	Max	Unit
Vin (115 VAC)	100	115	132	VACrms
Vin (230 VAC)	200	230	240	VACrms
Vin Frequency	47	-	63	HZ

Output Voltage	Min. Load	Max. Load	Load Reg.	Cross Reg.	Line Reg.	Ripple & Noise
+5V	0.3A	24A	±5%	±5%	±1%	50mVp.p
+12V	0.2A	50A	±5%	±5%	±1%	120mVp.p
+24V	0.2A	15A	±5%	±5%	±1%	160mVp.p
-12V	0A	1A	±10%	±10%	±2%	120mVp.p
+5VSB	0A	3A	±5%	±5%	±1%	50mVp.p



Each component inside the cabinet is powered independently from the power distribution unit. Each segment is fuse protected. To quickly determine whether a fuse is blown, check the LED under it.

LED ON: Fuse is OK
LED OFF: Fuse is blown

Input current is limited to 15A. **Use of an IEC C13 16AWG (SJT) detachable power cord is mandatory for the application.**

PDU DC Section	
CPU Tray (J1)	This output supplies power to the CPU enclosure (CPU board).
Audio (J2)	This output supplies power to the CPU enclosure (expansion power).
Bill +12V (J3)	This output supplies power to the bill acceptor.
Prog. +12V (J4)	This output supplies power to the deck door section (LCD panel, left & right deal push buttons lamp).
Topper +12V (J5)	-- Unsused --
Lights +12V (J6)	This output supplies power to the chassis fans, the belly logo, service/collect buttons lamp & candle light.
Spare +5V (J7)	This output supplies power to the deck door section (USB charger & deck DigiLED-CTRL).
Spare +5V (J8)	-- Unsused --
Spare +5V (J9)	-- Unsused --
Printer +24V (J10)	This output supplies power to the ticket printer.
Audio +24V (J11)	This output supplies +24V power to the audio amplifier board.
CPU Expansion (J12)	This output supplies power to the CPU enclosure (expansion power).
Spare +12V (J13)	This output supplies power to the optional TouchBro (main screen).
Spare +12V (J14)	-- Unsused --
Spare +12V (J15)	This output supplies power to the optional topper LCD panel.
Spare +12V (J16)	-- Unsused --
Spare +5V (J17)	This output supplies power to main screen DigiLED-CTRL, main screen left side LED strip & main screen EETI touch controller.
Spare +5V (J18)	This output supplies power to main screen right side LED strip.
Spare +5V (J19)	This output supplies power to optional topper DigiLED-CTRL & LED strips.
Spare +24V (J20)	This output supplies power to the main screen LCD panel (49”).
Spare +24V (J21)	-- Unsused --
Button +12V (J22)	This output supplies power to the upper & lower service lamp.

Switched AC Outlets

The power distribution unit (PDU) features four (4) switched AC outputs on IEC 320 C14 outlets. The total combined current for those four outlets is 5A. They will be cycled with the rocker switch.

❖ **<u>These outlets should only be used by service personnel (max 5A).</u>**

Unswitched AC Outlets

The power distribution unit (PDU) features two (2) unswitched AC outputs on IEC 320 C14 outlets. The total combined current for those two outlets is 5A (5A thermal breaker). Power will be available on those outlets even if the main rocker switch is in off position.

❖ **<u>These outlets should only be used by service personnel (max 5A).</u>**

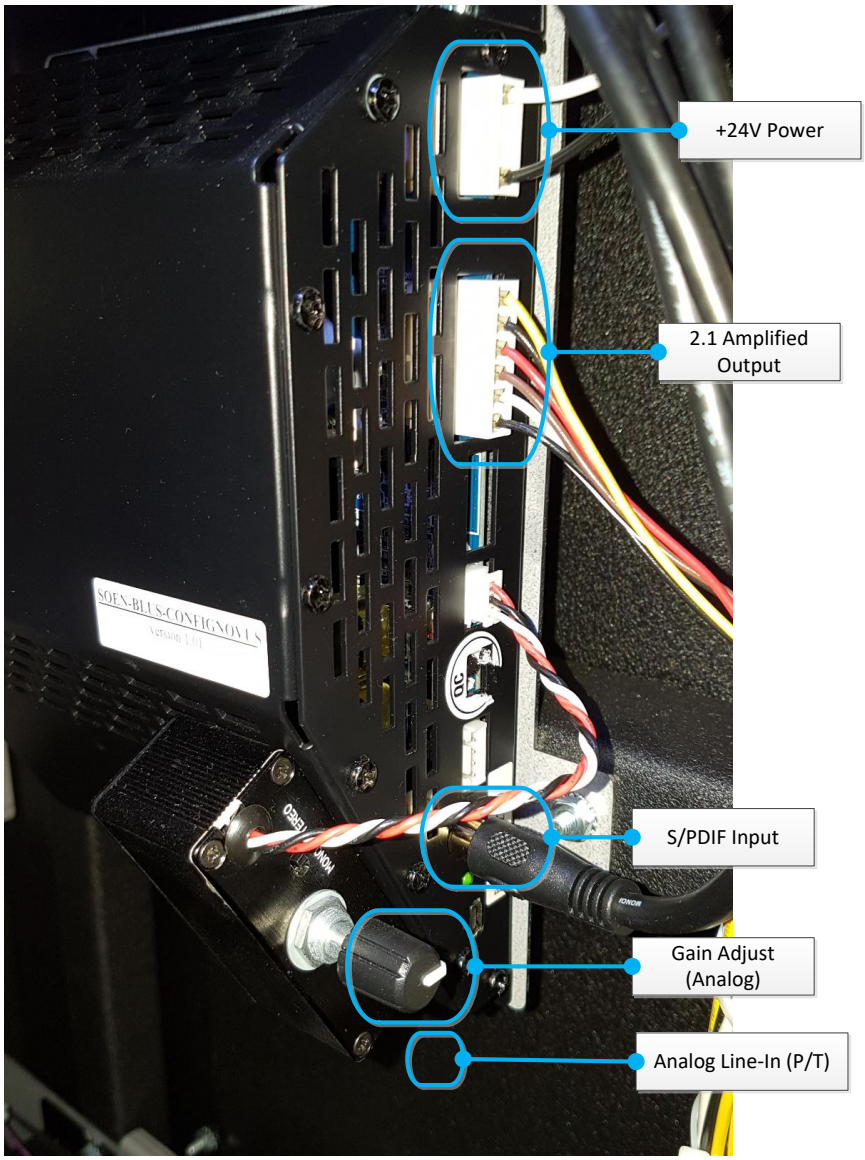
AC Fault Condition

If a fault condition (excessive current) has been detected on one or many AC outlets, the corresponding AC outlets group (switched or unswitched) will be disabled (tripped thermal breaker). Fix faulty condition on AC outlets and push thermal breaker actuator back in.

Sound Amplifier, Subwoofer and Speakers

The subwoofer and speakers are driven by a SOEN 2.1 audio amplifier (2x50W + 100W), a dedicated board amplifying the left and right outputs of the gaming board and adding a special output for a loudspeaker.

An analog audio input with adjustable level (potentiometer) is also available to connect player tracking sound to the main speakers.




SOEN
CASH OUT
Insert bill / Ticket

Power Rating

Voltage: 100-240 VAC
Frequency: 50/60 Hz
Power: 350 Watts

Use of an IEC C13 16AWG (SJT) detachable power cord is mandatory for the application. Suitable for Indoor Use Only.

Environmental

Operating

Temperature: 5°C to 40°C
Humidity: 10% to 90% relative humidity (non-condensing)
Altitude: 2,000 meters (6560 ft) max.

Non-operating

Temperature: -25°C to 65°C
Humidity: 0% to 95% relative humidity (non-condensing)
Altitude: 10,670 meters (35,000 ft) max.

Safety / Agency Approval

- cETLus listed with control number 5019806
- Conforms to UL Std. 22
- Certified to CSA Std. C22.2 No. 60335-1
- Certified to CSA Std. E60335-2-82

Electromagnetic Compatibility Compliance (EMC)

- Radiated Emissions FCC part 15 (2019) subpart B, Class A -> 30MHz-18GHz
- Conducted Emissions FCC part 15 (2019) subpart B, Class A -> 150kHz-30MHz
- Electrostatic Discharge Immunity (ESD) IEC61000-4-2 (2008) -> **Level 1**
  +/-4kV Contact
  +/-8kV Air
  Level 2
  +/-8kV Contact
  +/-15kV Air
  Level 3
  +/-10kV Contact
  +/-27kV Air
- Radiated Electromagnetic Field Immunity IEC61000-4-3 (2006) A1 (2007) A2 (2010) -> 80MHz-3000MHz: 3V/m
- Electrical Fast Transient Immunity IEC61000-4-4 (2012) -> +/-1kV / 5kHz
- Surge Immunity IEC61000-4-5 (2014) -> +/-2kV L-PE / +/-1kV L-L
- Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields IEC61000-4-6 (2013) -> 3V
- Voltage Dips, Short Interruptions and Voltage Variation Immunity on AC Input IEC61000-4-11 (2004) A1 (2017)

Contact Us

If you have any question, comment or feedback, please use the contact details provided below.

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