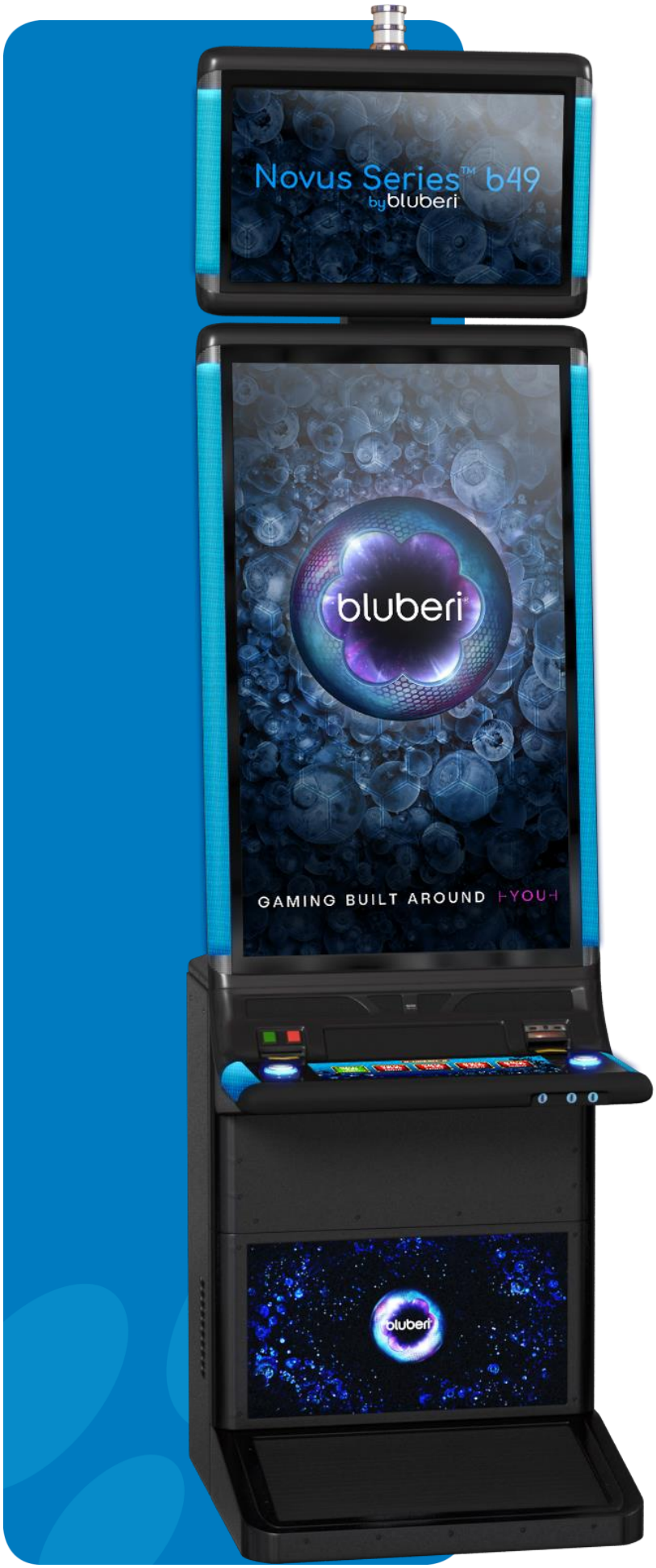


Novus-B49-003

Technical Manual

TEC-ME-04305
Version 1.0.0

2022-11-07

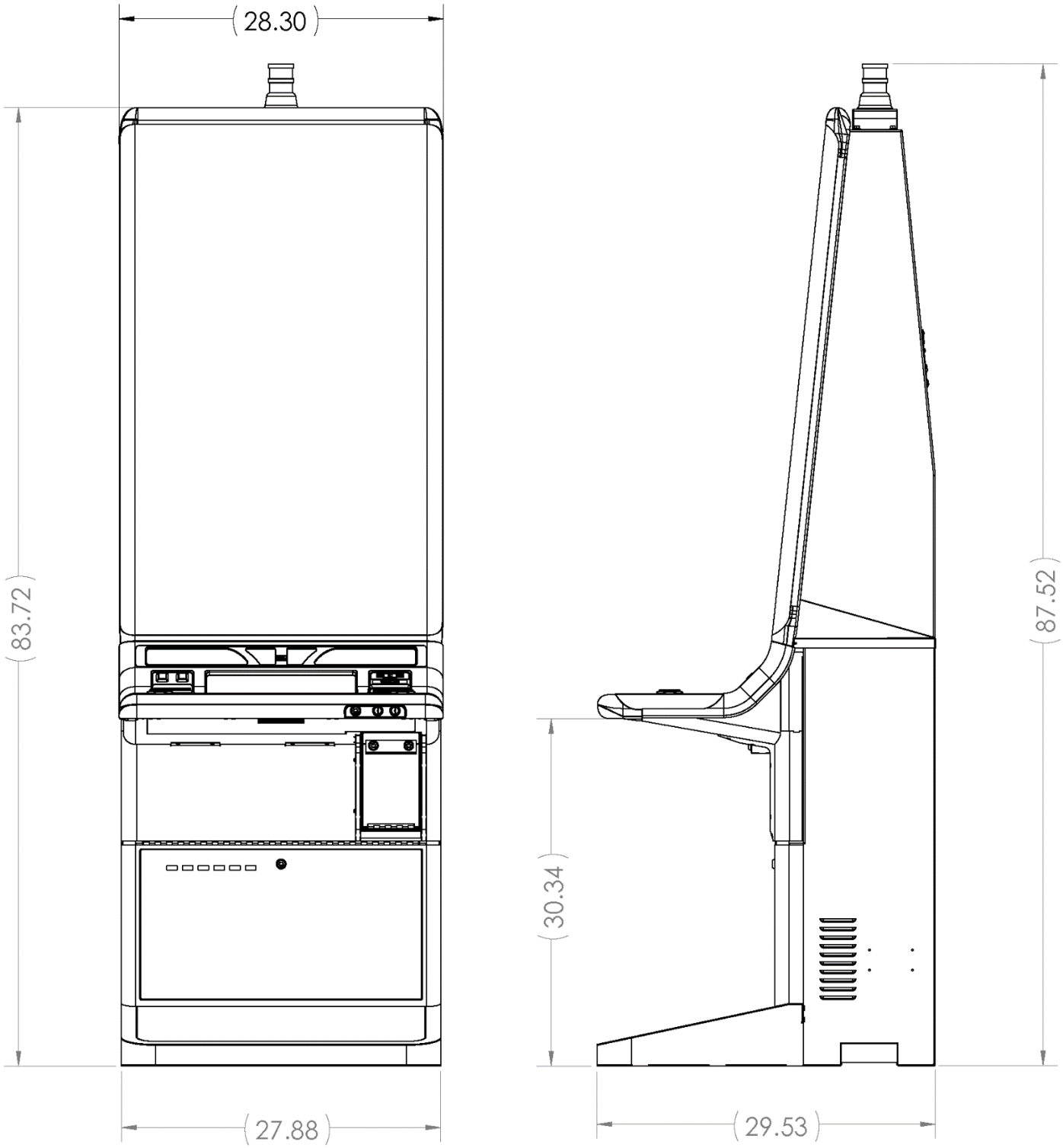
Version History

Version	Department	Initials	Date	Comments
1.0.0	Engineering		2022-11-07	- First Draft

Contents

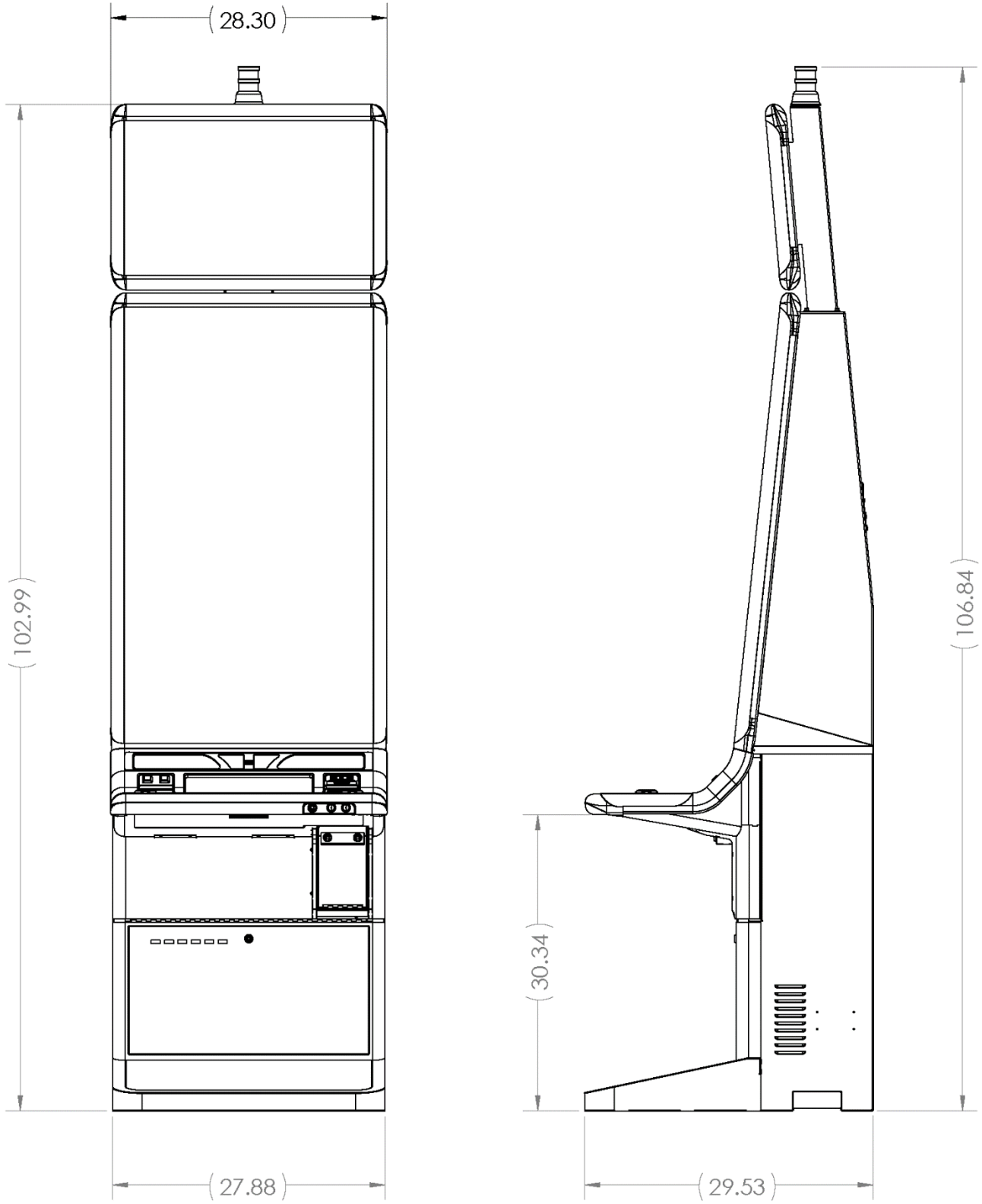
Physical Components

Cabinet Dimensions



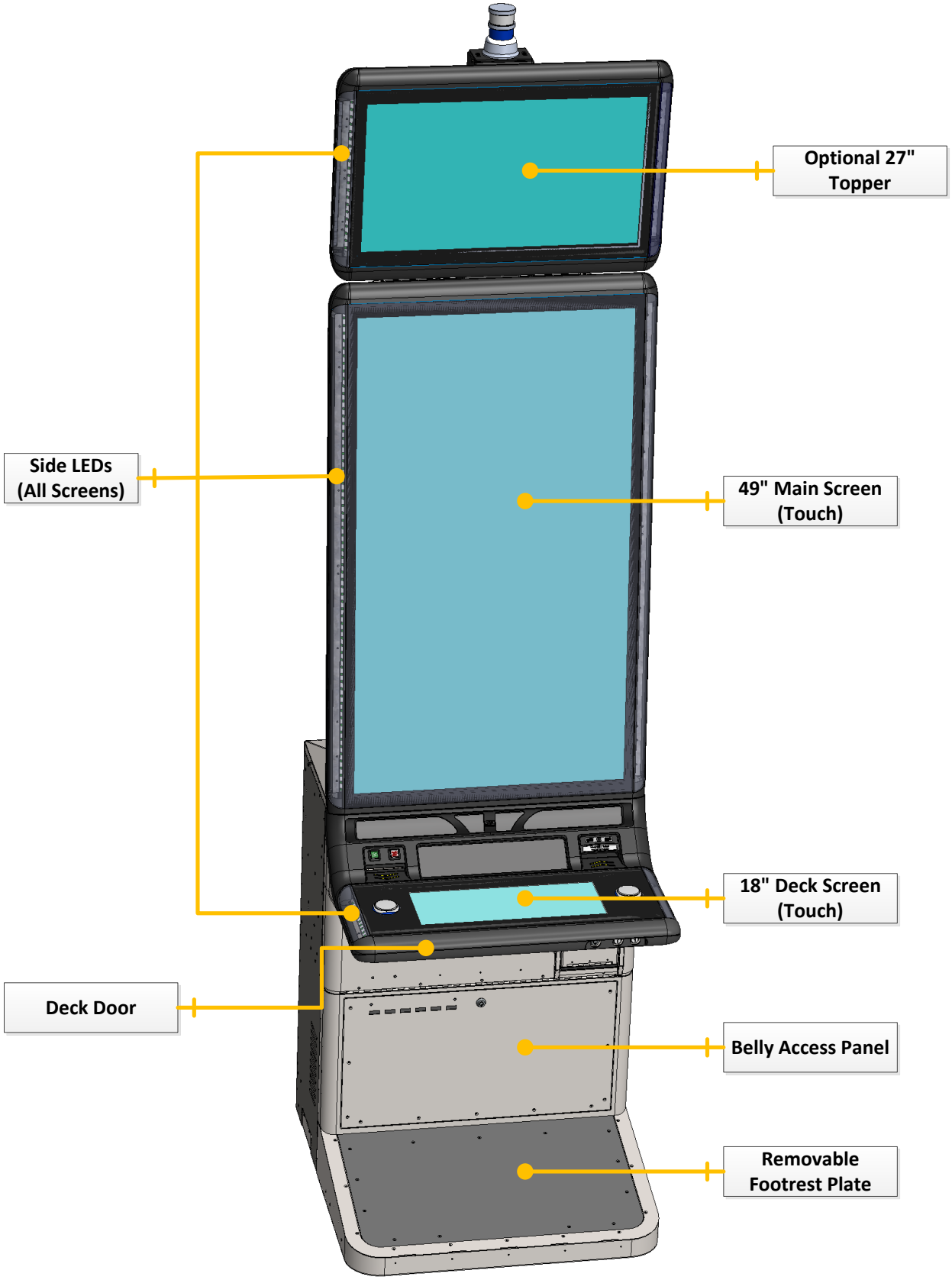
Weight = 164.2 kg (362 lbs)

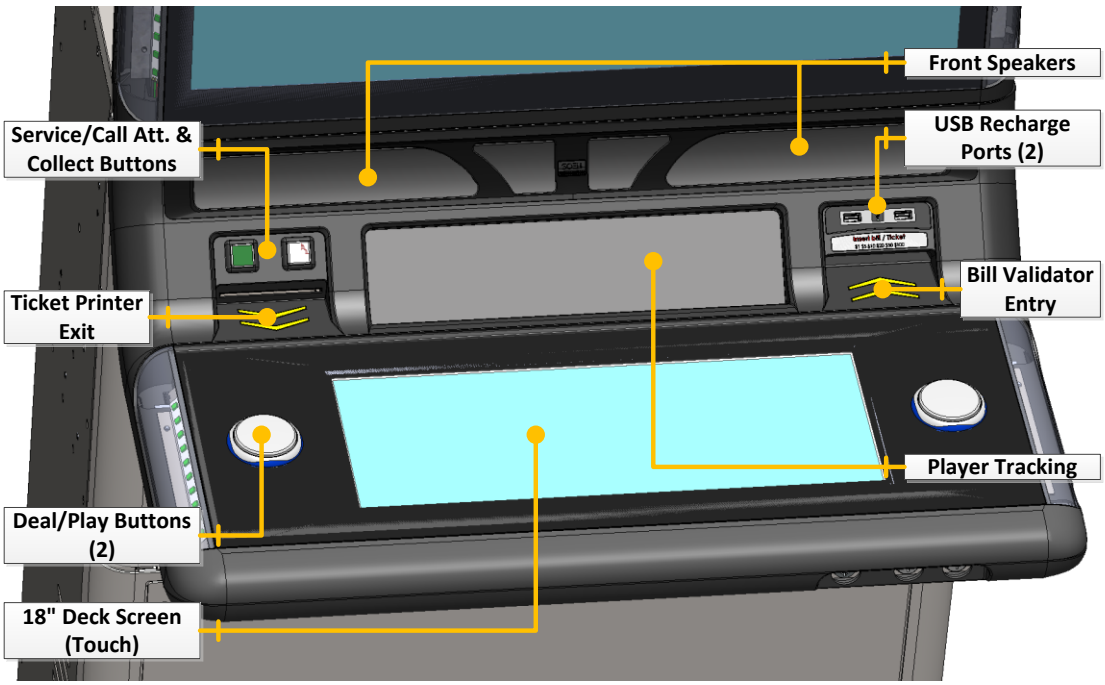
Cabinet Dimensions with 27” Topper

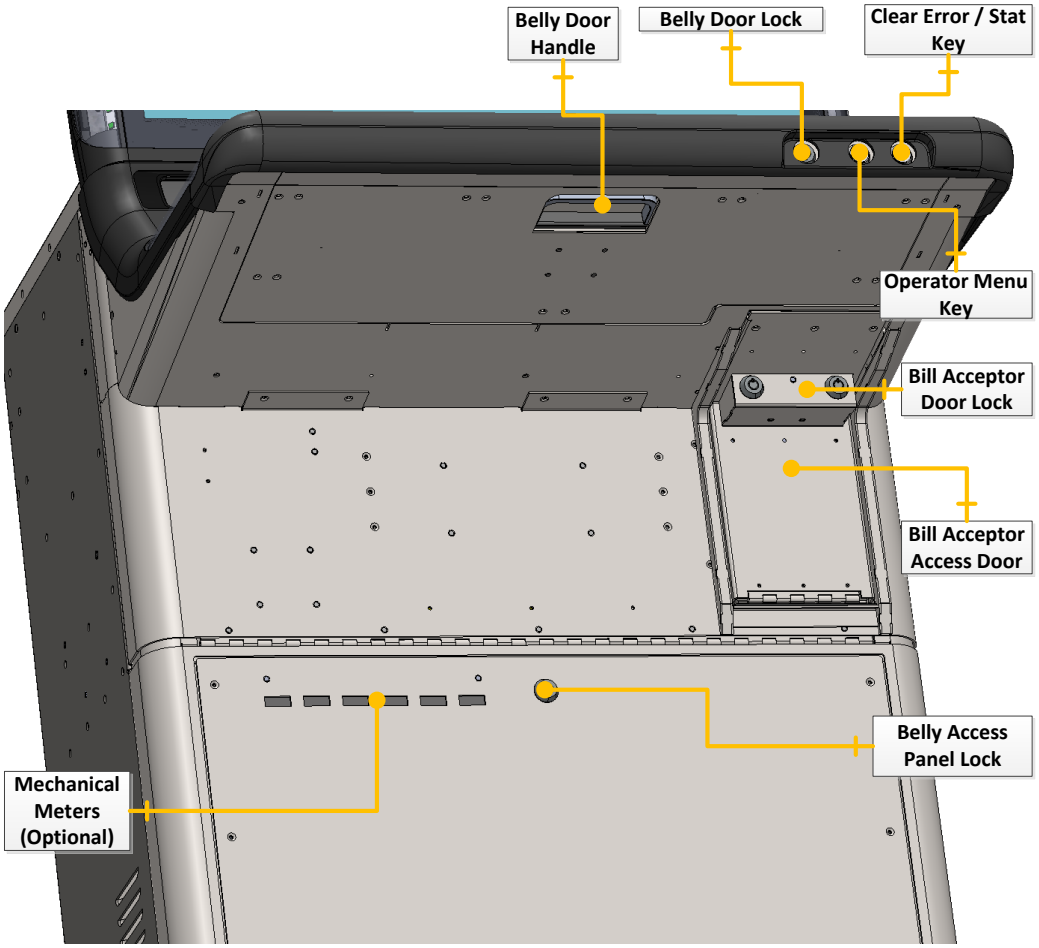


Weight = 183.3 kg (404 lbs)

Exterior View of the Machine




Front Speakers
Service/Call Att. & Collect Buttons
USB Recharge Ports (2)
Bill Validator Entry
Ticket Printer Exit
Player Tracking
Deal/Play Buttons (2)
18" Deck Screen (Touch)


Belly Door Handle
Belly Door Lock
Clear Error / Stat Key
Operator Menu Key
Bill Acceptor Door Lock
Bill Acceptor Access Door
Belly Access Panel Lock
Mechanical Meters (Optional)

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)

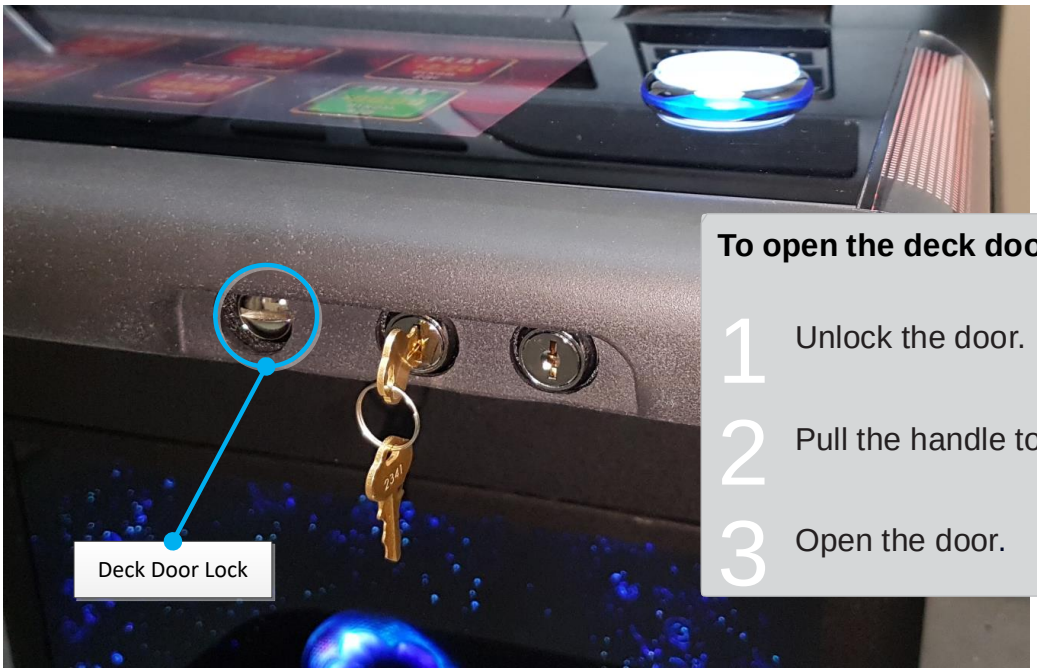
The Novus cabinets come with an optional 27” Topper custom built for the Novus series.

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.

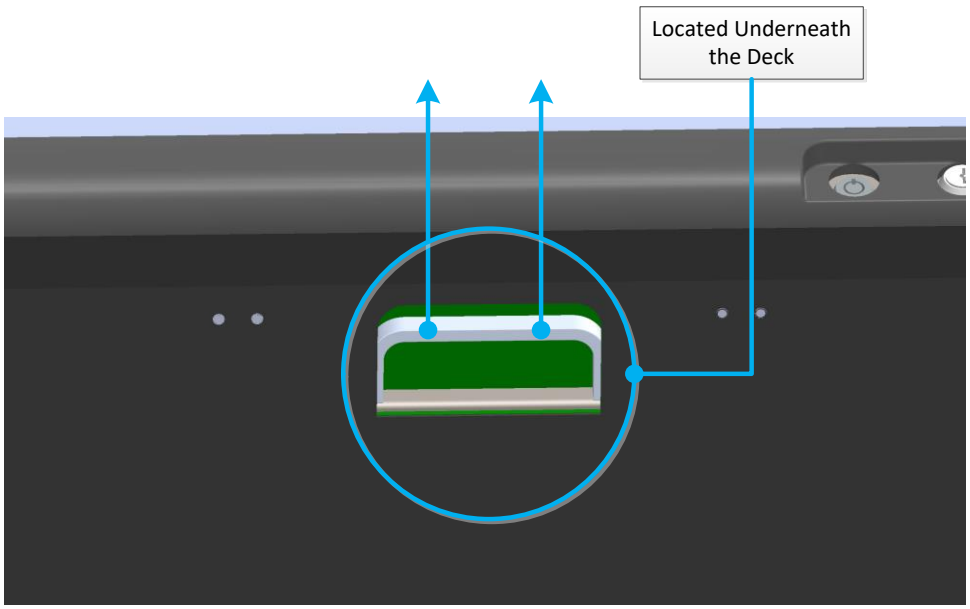
Keys are provided to unlock various parts of the gaming machine: the deck door, the logic box door, the bill validator door and the belly access door.

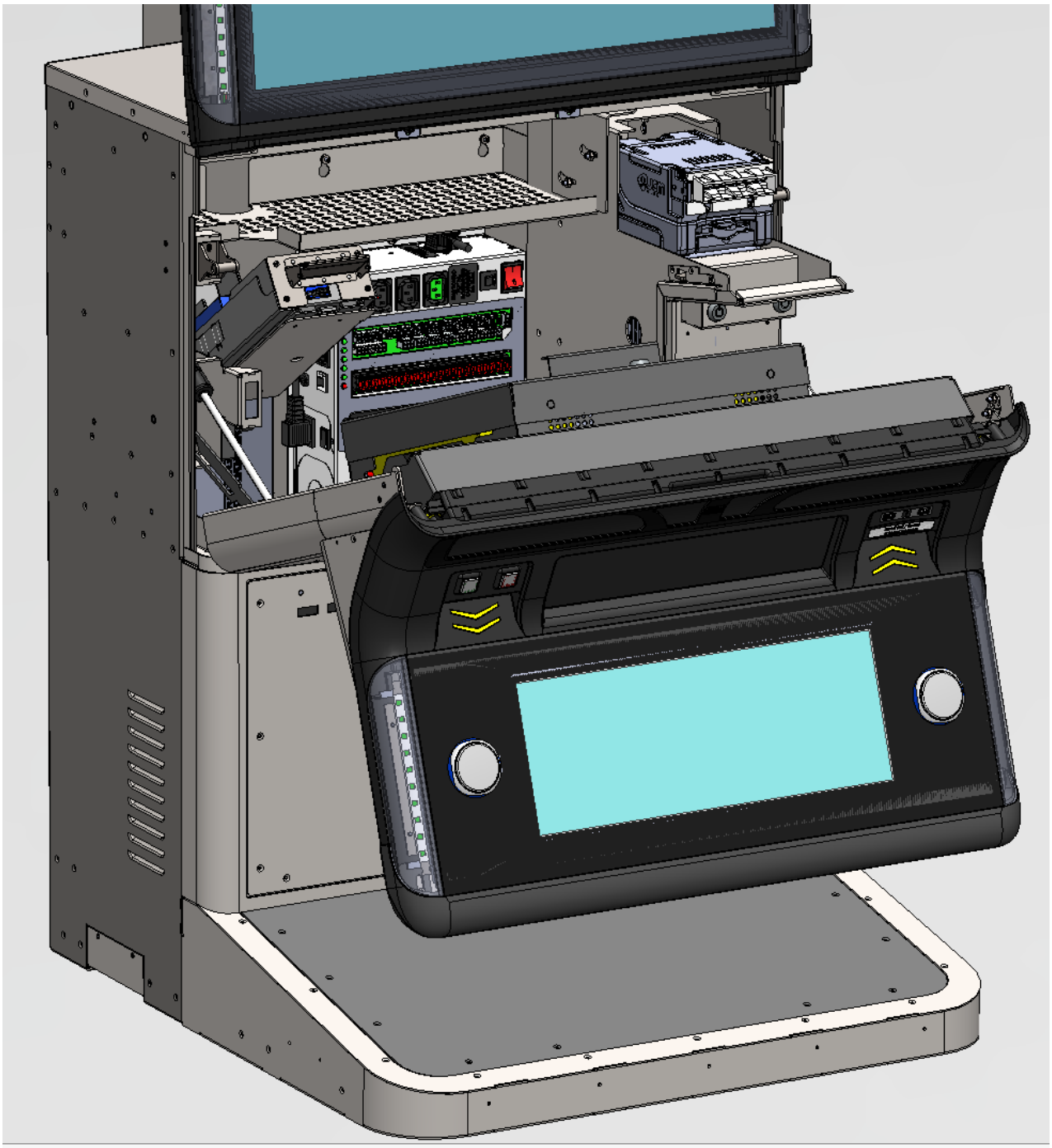
NOTE: All keylocks use standard 5/8" locks.



To open the deck door

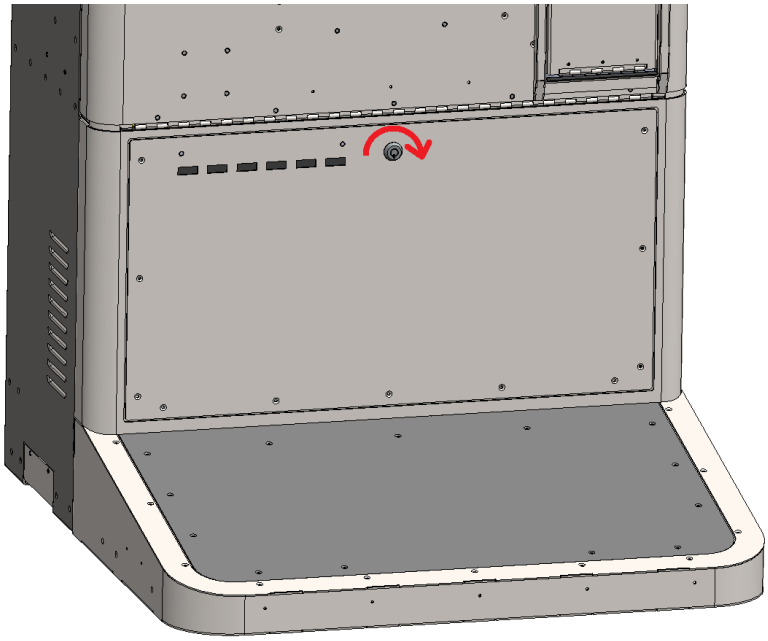
1. Unlock the door.
2. Pull the handle towards you.
3. Open the door.



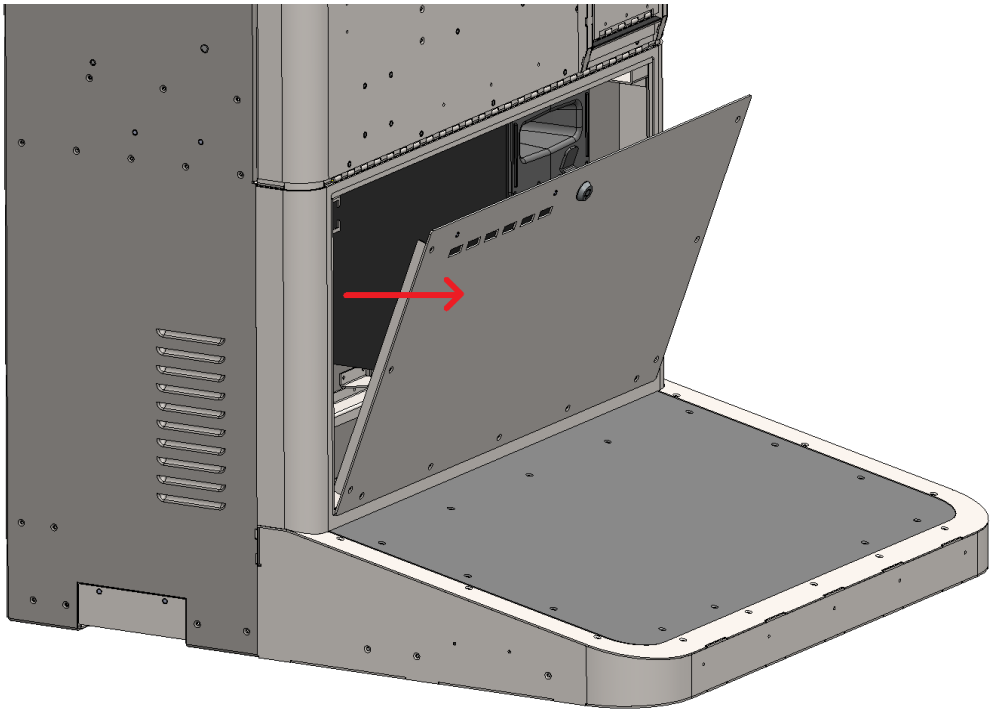


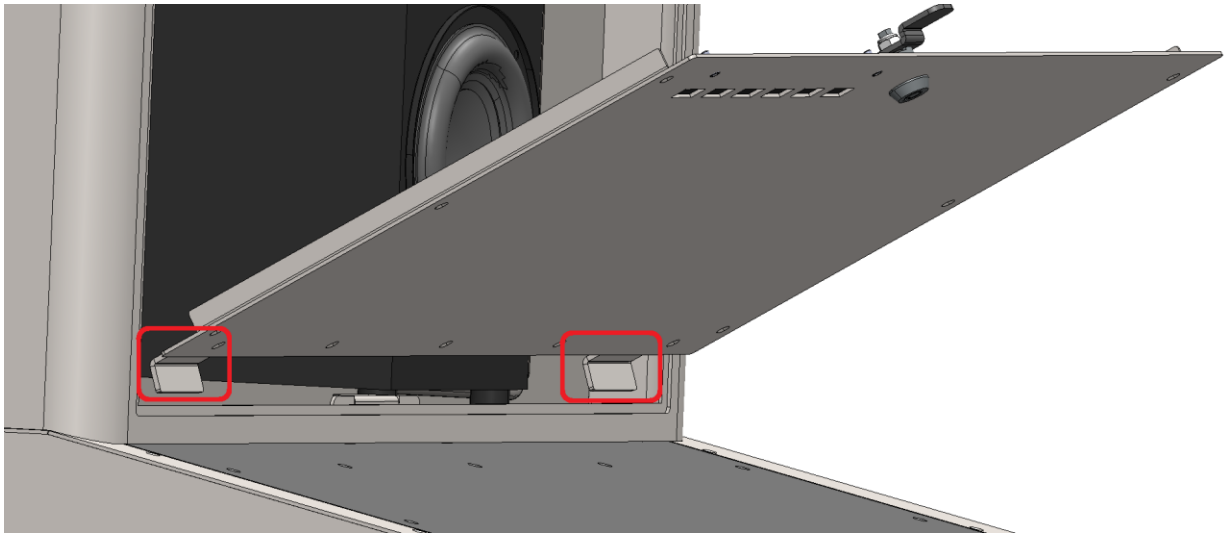
To gain access to the lower section of the cabinet and footrest area, you can easily remove both the belly access panel and the footrest plate.

To remove the belly panel, first unlock it.



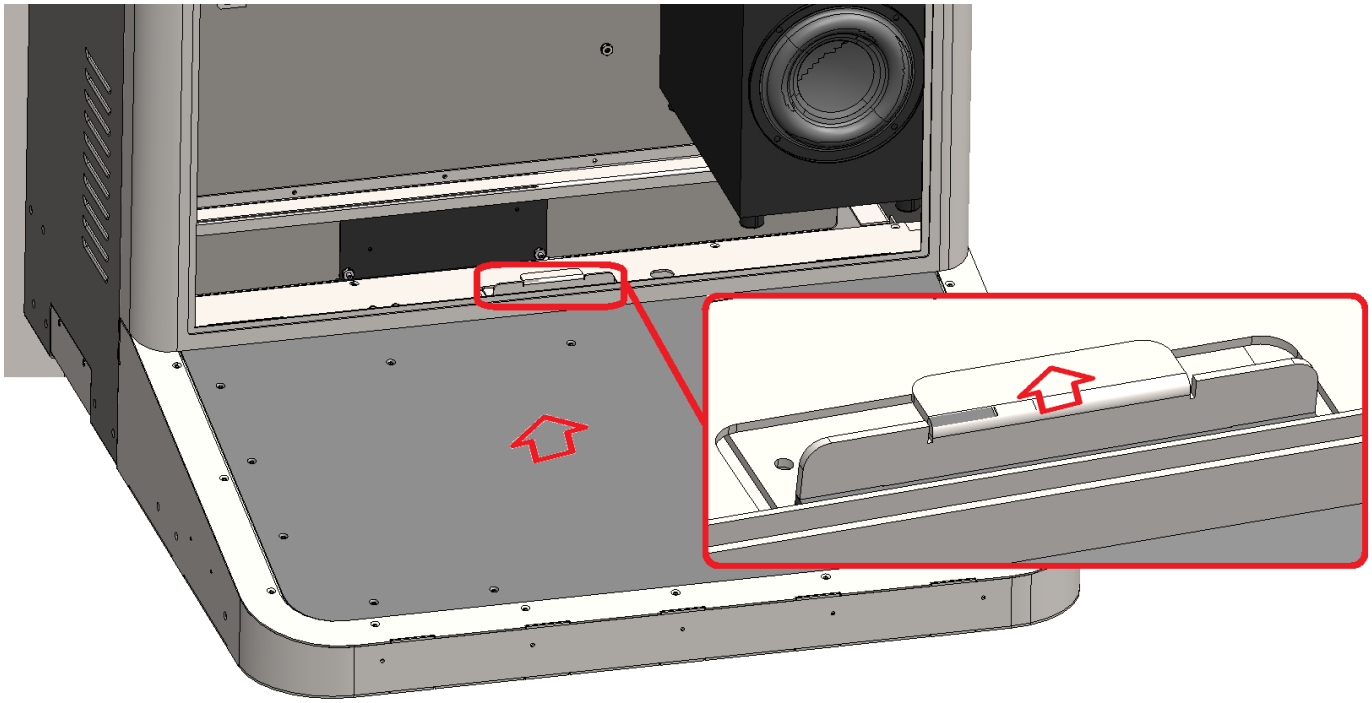
Tilt the panel as shown until you can disengage the tabs at the bottom.



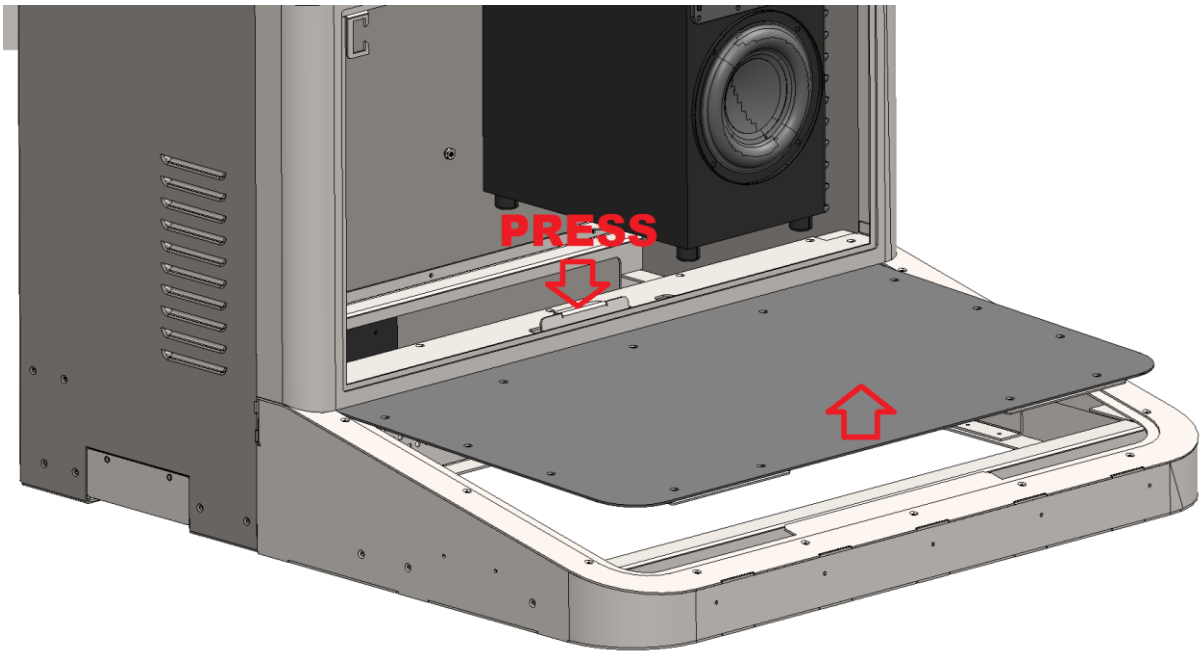


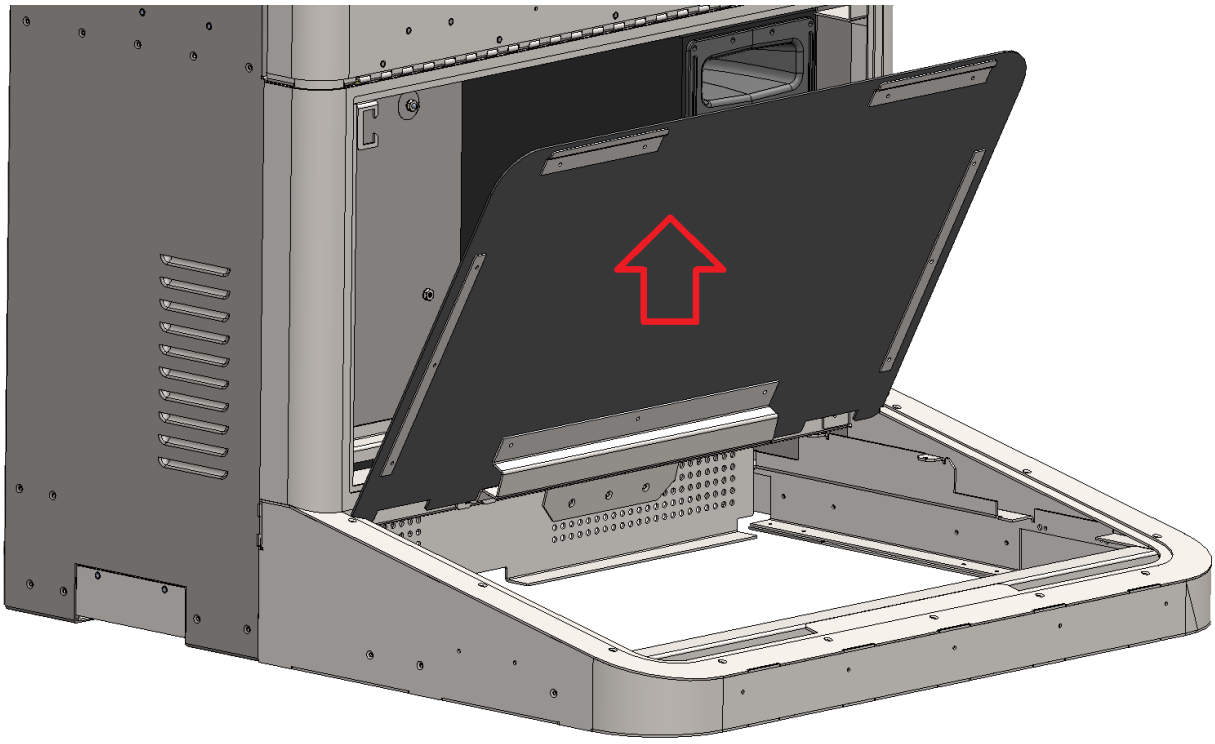
Removing of the footrest panel will give you access to all the space inside the footrest area.

To remove it, push on the tab toward inside of the cabinet.

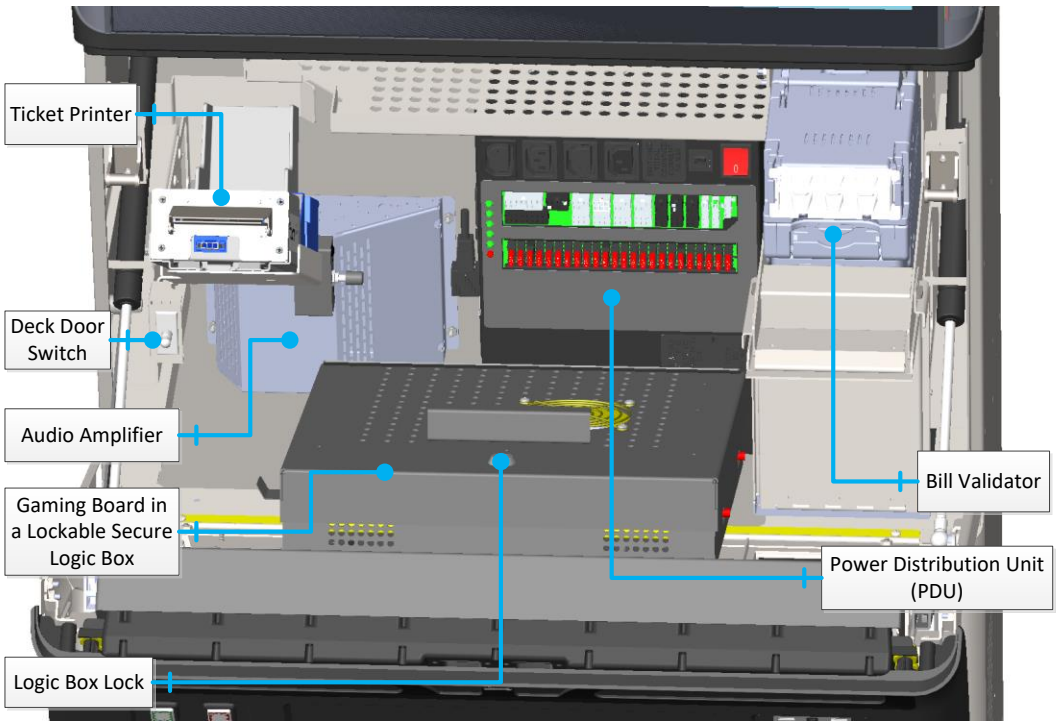


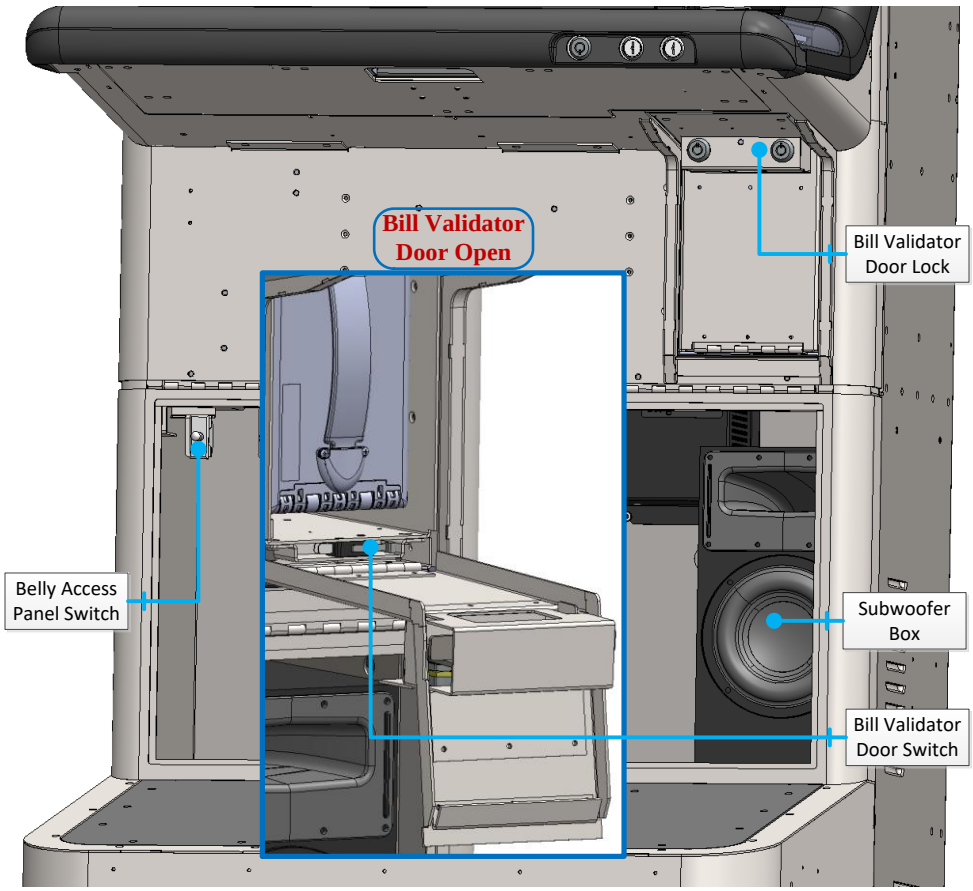
Firmly press on top of the tab as shown until the footrest plate lift up at the other end. Grab to other end, lift and remove the footrest plate.





Inside View of the Machine



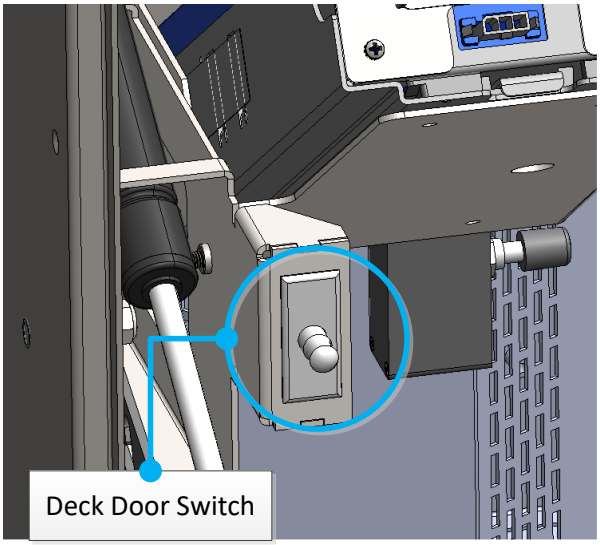


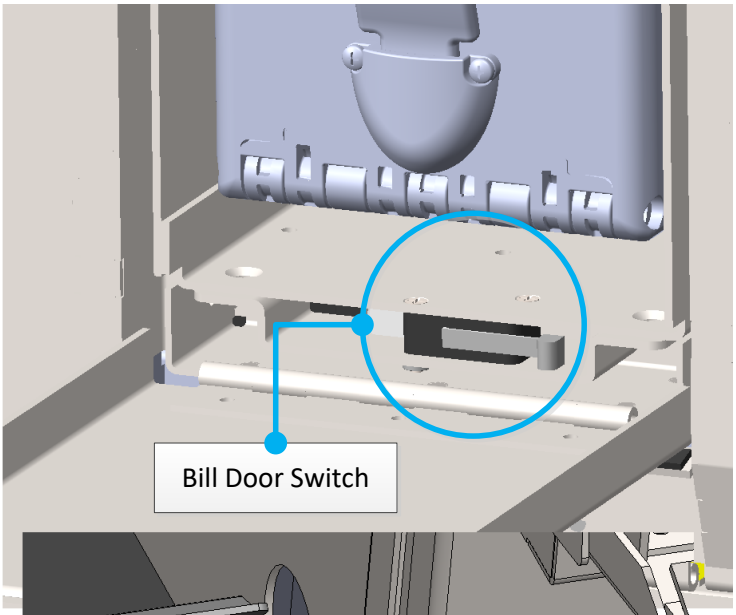
Door Switches

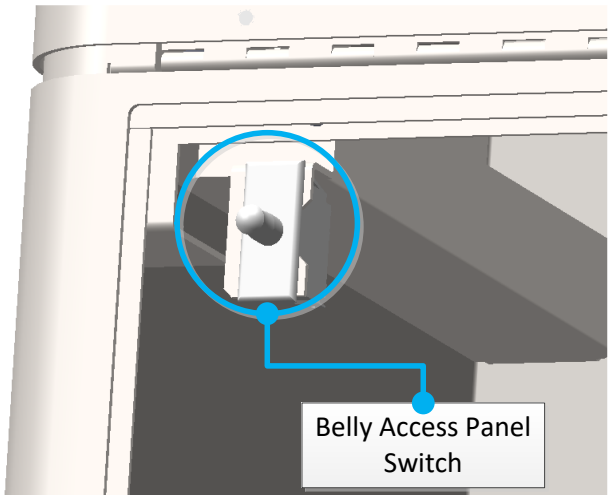
Four switches detect door opening and closing:

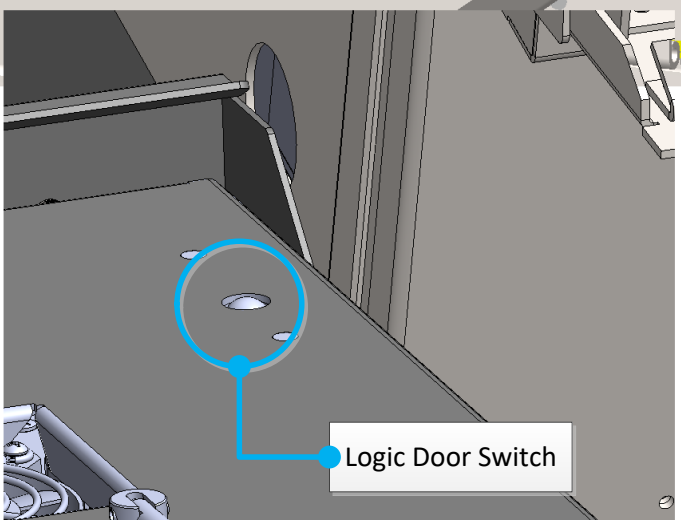
- the deck door switch
- the belly access door switch
- the bill door switch
- the logic door switch

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.





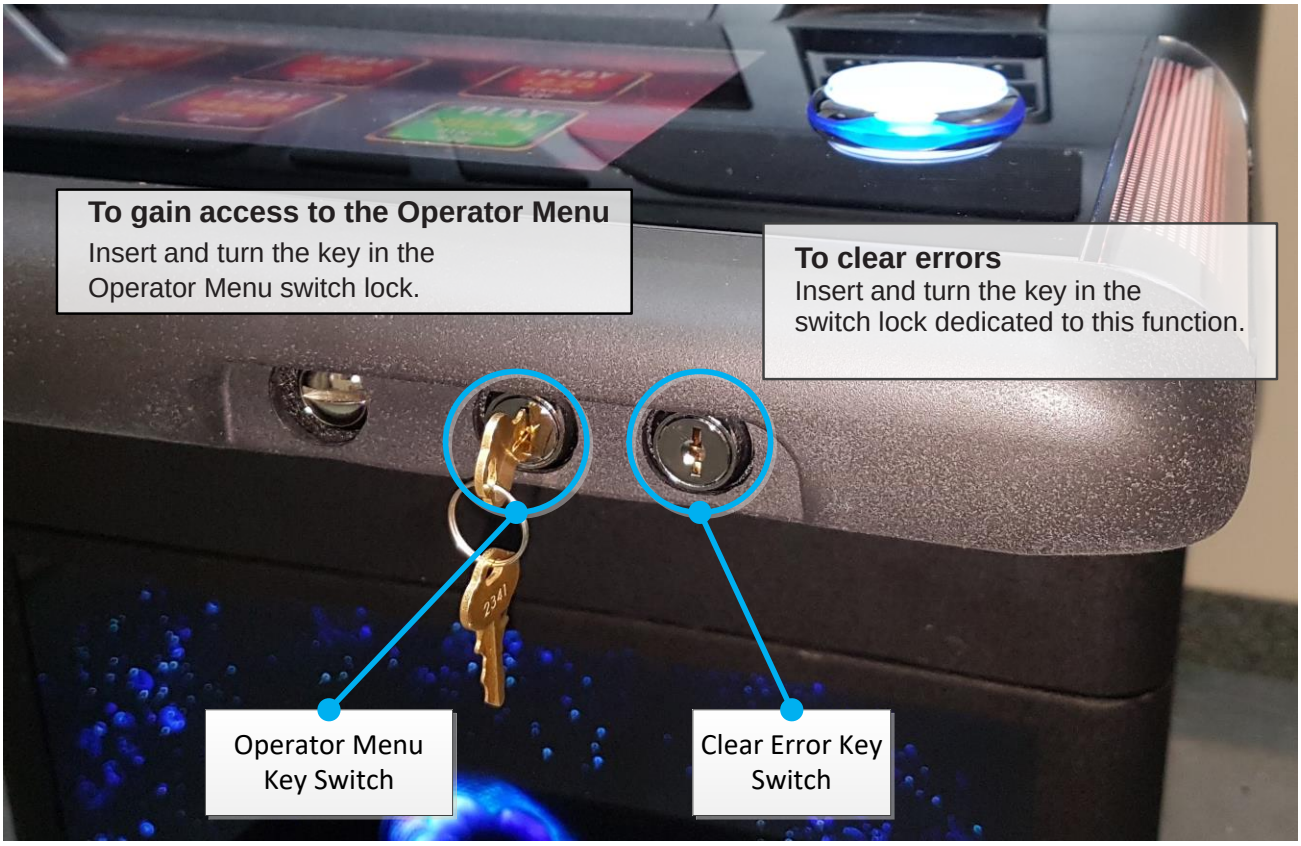




Key Switches

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

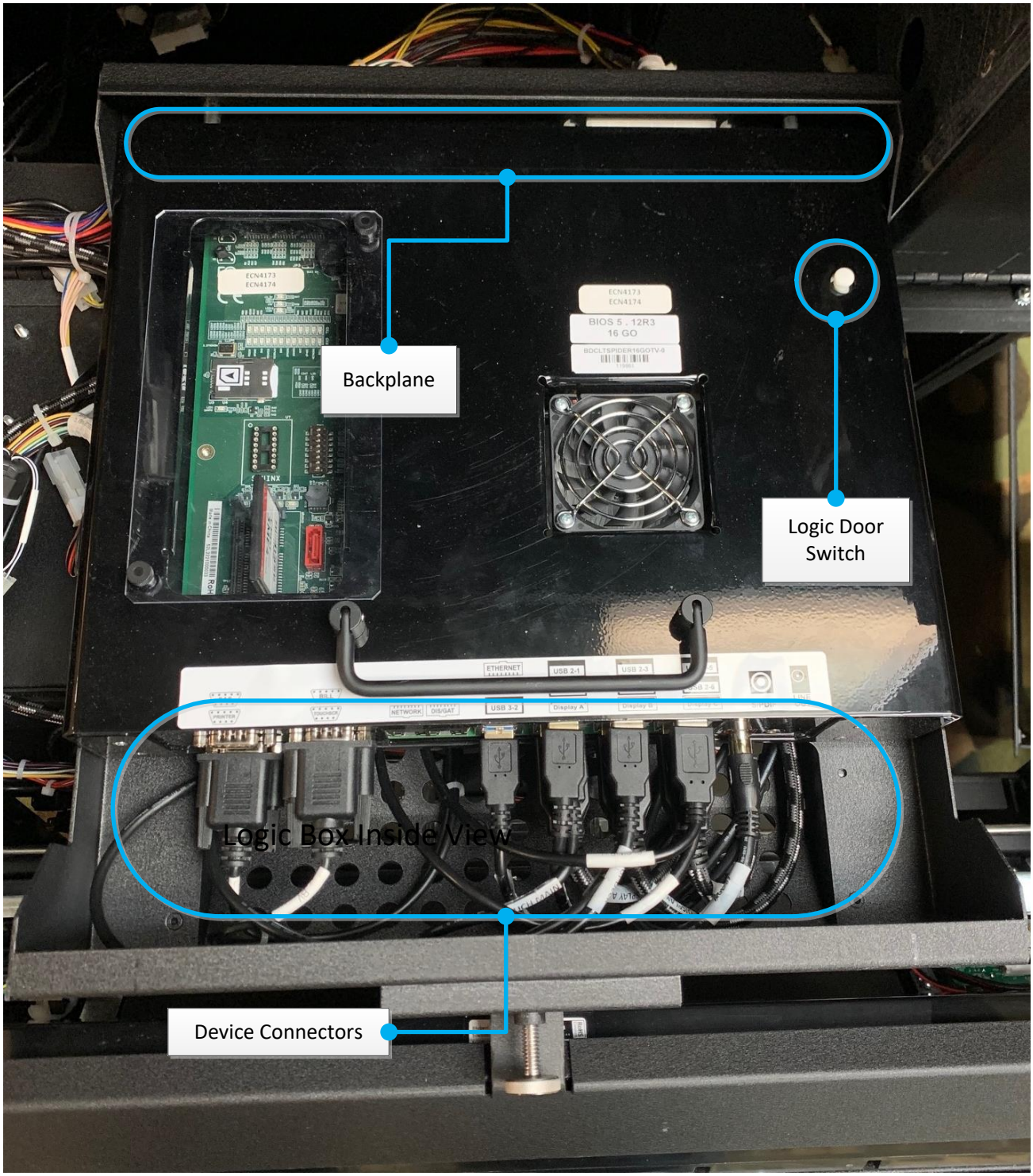
The Operator Menu switch lock gives access to the Operator Menu that allows the configuration of the game, self-diagnostic, statistics, and other options. The Clear Error switch lock allows the operator to clear errors once the problem has been solved.



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 inside the deck door, locked with a key and linked to the machine I/Os through the backplane or through the device connectors.

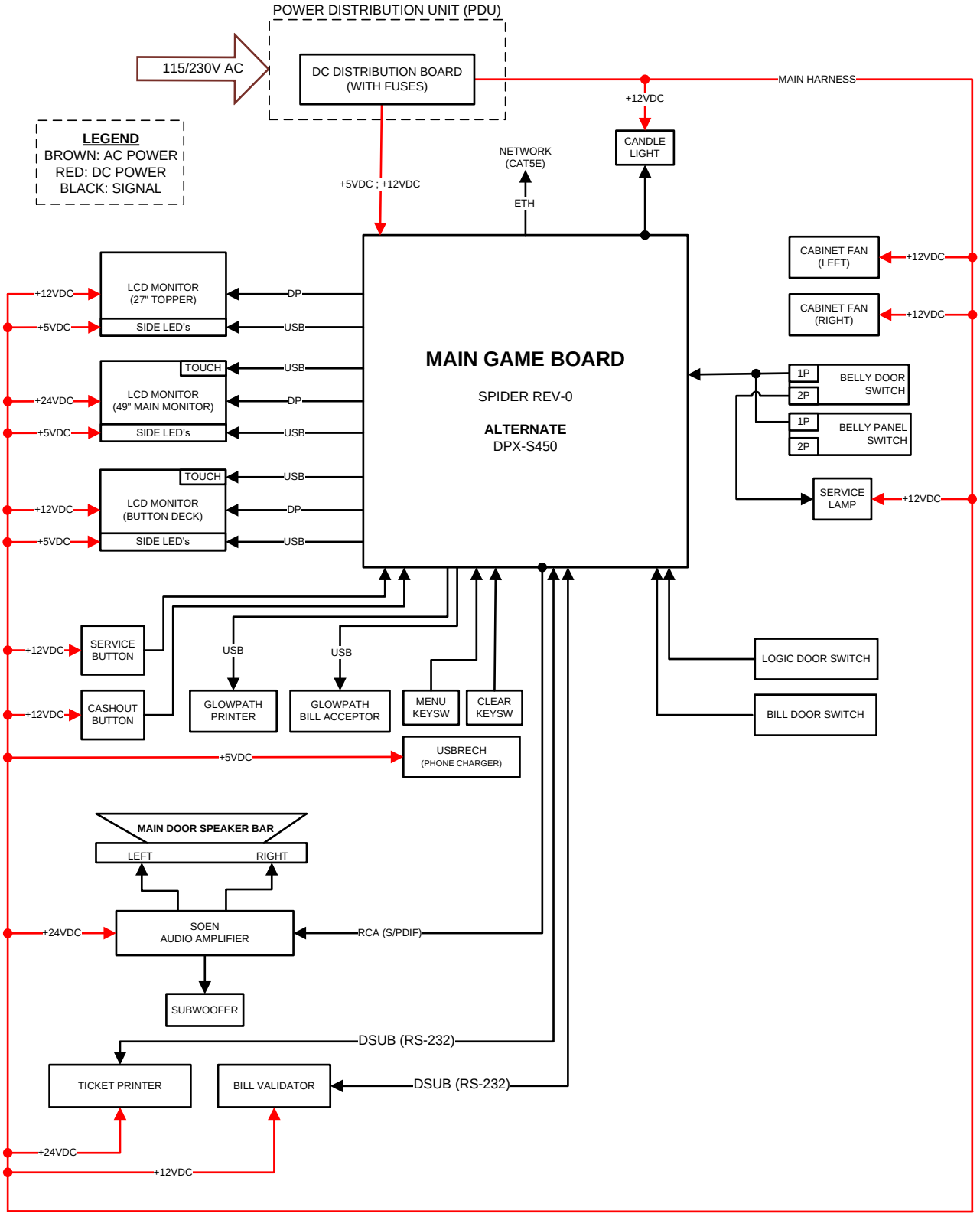
Logic Box Cover Lock Location



Logic Box Inside View

Electrical Components

Powering Diagram



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
			Mechatronics Fan Group	G9225X12B-FGR
Gaming board		1	Bluberi Gaming	SPIDER Rev-0
			Bluberi Gaming	DPX-S450
LCD Monitor (Main Door)		1	Tech Global	TGGT4901
LCD Monitor (Topper - Optional)		1	Tech Global	TGGN2701
LCD Monitor (Deck)		1	Tech Global	TGGT1721
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
	Belly Access Panel	1	ZF Electronics	E79-30A0
			C&K	DS2D6CQ1
	Bill Door	1	E-Switch	LS0851506F120C2A
	Logic Door	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	DigiLED-CTRL
Sound System		1	Soen Audio	NOVUS Series System

Gaming Board

The cabinet support two versions of CPU gaming board. The Spider CPU and the Advantech DPX-S450 CPU.

➔ For detailed information on the Spider CPU board, please refer to document “TEC-EL-04103”.

➔ For detailed information on the Advantech DPX-S450 CPU board, please refer to document “TEC-EL-04290”.

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	UBA PRO (UBA-510-SS)	12 VDC
JCM	iVIZION (iVIZION-100-SS)	12 VDC
MEI	SC ADVANCE SCN6607E	12 VDC

Printer (Optional)

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

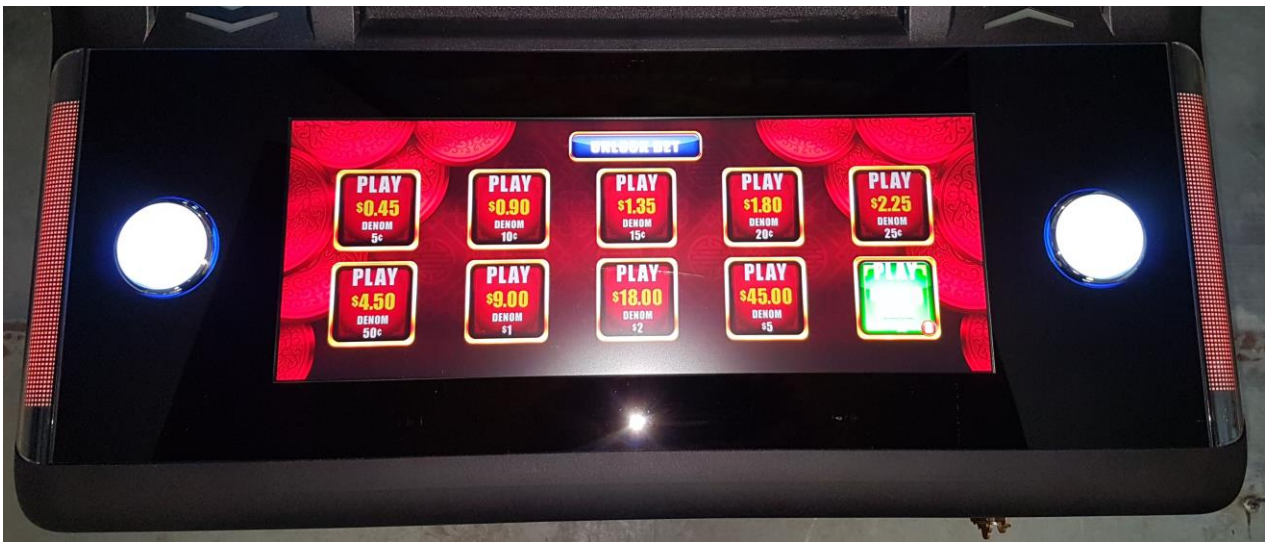
Manufacturer	Model	Nominal Voltage
Nanoptix	Paycheck 4	24 VDC
JCM	GEN 5	24 VDC
Transact	Epic 950L	24 VDC
Transact	Epic Edge	24 VDC

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

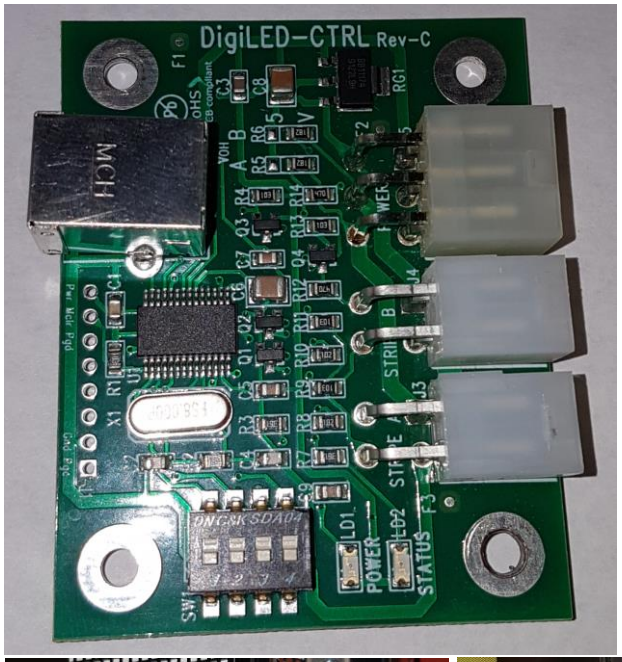
The upper door LCD monitor screen measures 49” in diagonal with 16:9 aspect ratio. It is controlled by a DisplayPort interface, thus maximizing the visual quality.

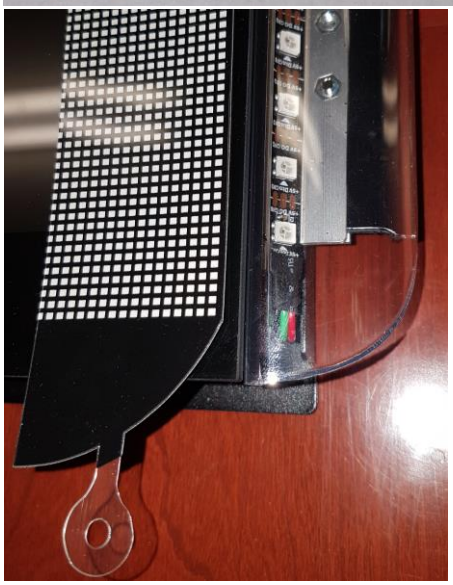
Input Power	Video Signal	Aspect Ratio
+24VDC @ 4A	3840 × 2160 pixels (4K)	16:9

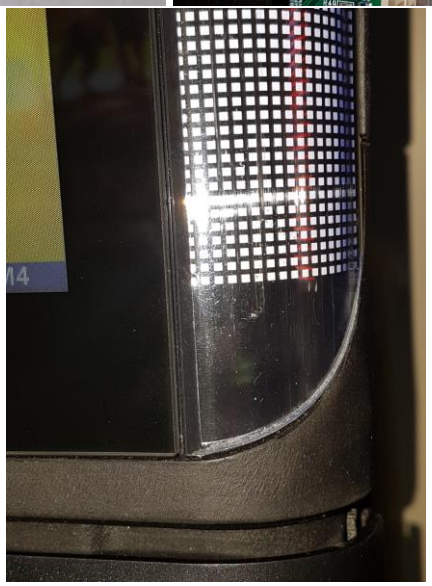
The monitor is equipped with a touchscreen communicating with the gaming board through a USB or serial RS-232 link.

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

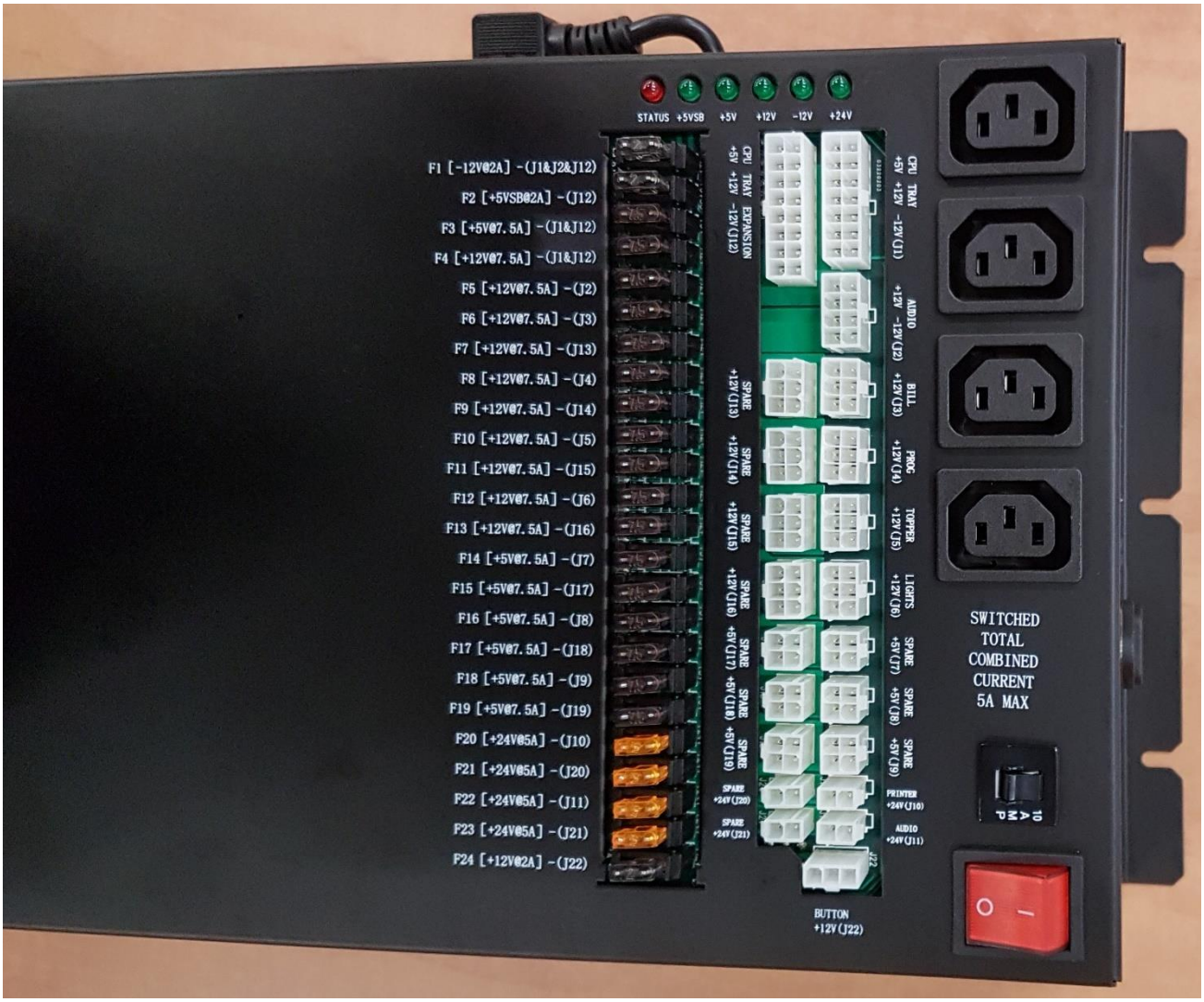
The network connects gaming machines to a server through a Gigabit Ethernet link, making it possible to manage progressives as well as cashless and accounting systems.

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, 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>**

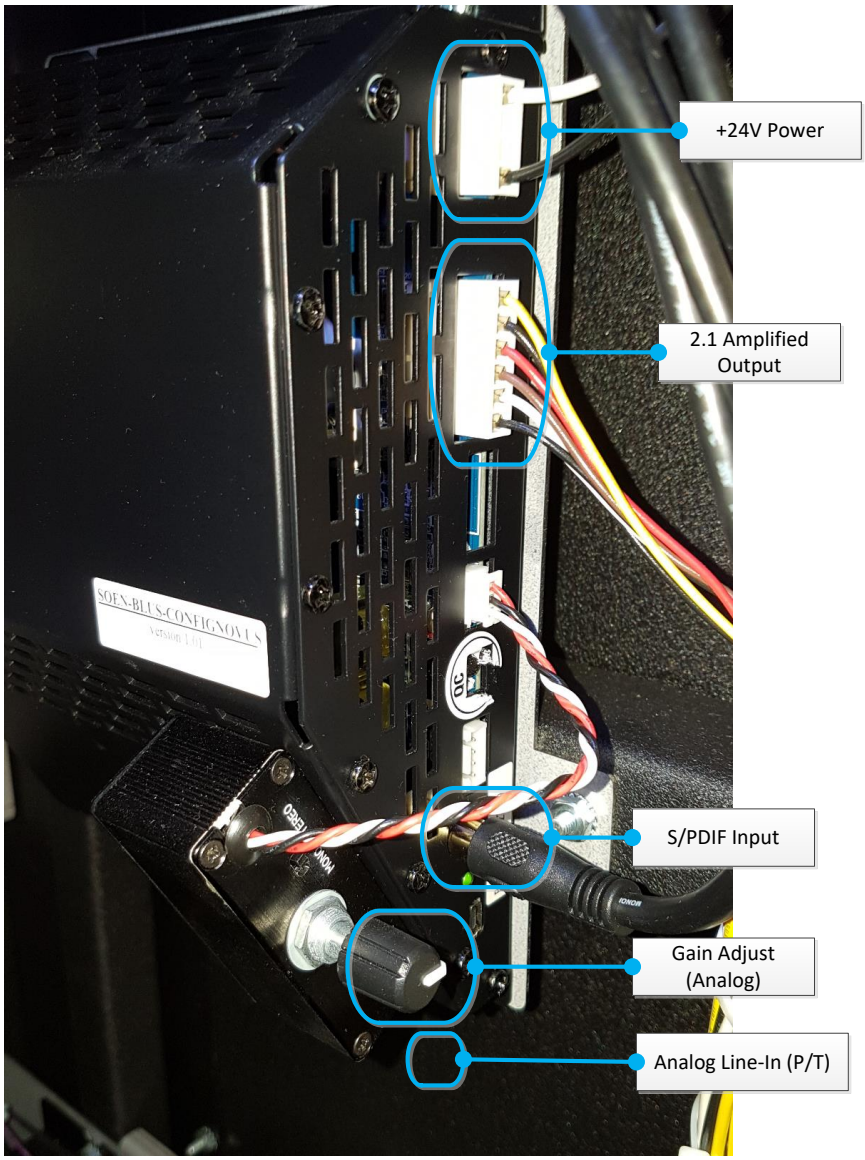
AC Fault Condition

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


SOEN

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 (2021) subpart B, Class A -> 30MHz-18GHz
- Conducted Emissions FCC part 15 (2021) subpart B, Class A -> 150kHz-30MHz
- Electrostatic Discharge Immunity (ESD) IEC61000-4-2 (2008) ->

	Level 1	Level 2	Level 3
Contact Discharge	+/-4kV	+/-8kV	+/-10kV
Air Discharge	+/-8kV	+/-15kV	+/-27kV

- Radiated Electromagnetic Field Immunity IEC61000-4-3 (2020) -> 80MHz-3000MHz: 3V/m
- Electrical Fast Transient Immunity IEC61000-4-4 (2012) -> +/-1kV / 5kHz & 100kHz
- Surge Immunity IEC61000-4-5 (2014) A1 (2017) -> +/-2kV L-PE / +/-2kV 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 (2020) ->
  Voltage Dips (at 60Hz)
  0%Un during half cycle
  70%Un during 30 cycles
  Short Interruptions (at 60Hz)
  0%Un during 300 cycles

Contact Us

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

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