BES Fixture Frame

Frame 01 Gen 2 (BT201)

PRODUCT INFORMATION & TECH BRIEF

TEST FIXTURE PLATFORM

Modular, robust fixture frame providing reliable programming, debugging, and testing of singular or multiple PCBA(s), or final device DUT(s) (Device Under Test).

Suitable for use in engineering development, production, failure analysis, and manufacturing environments.

CORE FEATURES

- Ergonomic press handle and rigid track system ensures repeatable linear travel and DUT retention
- Hinged chassis for easy, tool-free underside access, board debug, and component swapping
- Flexible mounting grid to accommodate a variety of boards or auxiliary testing components
- Lightweight, portable chassis; vibration-dampening feet

COMPATIBLE ACCESSORIES

- Anti-tamper panels and hardware
- Integrated chassis grounding lugs
- Signal fanout boards & ribbon cables reduce wiring
- Active cooling fan(s)

TECHNICAL SPECIFICATIONS

- Closing force (minimum): 0.52 kg (1.2 lbs)
- Rated cycles*:
  - Maintenance interval: 250,000
  - Total frame cycle life: 2,000,000+
- Linear stroke length: 14.35mm (0.56")
- Outer dimensions:
  - 300 x 270 x 254mm (11.8" x 10.63" x 10"), closed
  - 300 x 305 x 376mm (11.8" x 12" x 14.8"), open
- Weight: 5.4 kg (11.8 lbs)
- Available DUT area:
  - 230 x 140mm x 35mm (9" x 5.5" x 1.4")
- Underside supplemental board mounting area:
  - 290 x 260 x 63.5mm (11.4" x 10.2" x 2.5")

*Rating is for mechanical frame only; pin cycles will vary by component or manufacturer. Frame maintenance consists of gas strut replacement and can be accomplished in-field in <10 minutes.

Optional accessories shown

DESIGN SERVICES

While not included on a default fixture frame, the following custom components can be added. BES offers these services as part of a design package. Documentation for user customization and development is available.

INTERFACE DESIGN SERVICES

- Integrated linux-based computer eliminates additional host machines or hardware
- ADC/DAC signal and current monitoring circuitry
- Operator interface panel with buttons and configurable indicators
- Integrated switching for multi-DUT processing
- Optional connections to support screen, including power
- Internal and external USB accessory ports
- Integrated RF protocol validation, including: BT, NFC, WiFi, and Zigbee
- Additional custom circuits include: stepper motor driver, USB to UART interface, battery charging simulator, waveform injection, power loads, oscilloscopes, logic analyzers, and comm protocol modules.

POGO DESIGN SERVICES

- Highly customizable pogo pin plate stackup with direct-soldered pins eliminates wire-wrap and crimping
- 2x64 IDC ribbon cable connectors to connect to the interface or fanout boards
- Additional connectors such as SMA, HDMI, banana plugs, and RJ45 for expansion available
- Impedance controlled designs for sensitive signals

SOFTWARE & GUI DESIGN

- Test runner software framework
  - Supports mixed concurrent and sequential test flows
  - Remote updates via Docker container
  - API(s) allow for pushing data into existing ERP or database infrastructure
  - Built on extensible Python modules
  - Secure, remote-access operable
- Customizable graphical user interface
  - Simple command line interface available
  - Go/No-Go indicators and start/stop buttons available for headless (screenless) operation
- Programming
  - Supports individual, sequential, or ganged programming
  - Handles complex provisioning flows such as IoT cloud registration, OMADM/FOTA, empowering hardware security features
  - DUT test firmware development available

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PRODUCT INFORMATION & TECH BRIEF

PRODUCT NUMBERING

FIXTURES

BT201-F	☐	☐	-☐☐	☐
Frame 01 Gen 2	For PH#, Refer to Pre-Installed Hardware Table	0 - Generic 1 - Tamper Resistant Hardware	00 - Generic	A - Type A

Pre-Installed Hardware Table:

PH#	BT201-ABF-00A (FR4 Blank) and BT201-ABA-00A (Acrylic Blank)	Standoffs for BT201-ABF-00A and BT201-ABA-00A	BT201-AVA-00A (Vanity Panel Set)
1	☐	☐	☐
2	☐	☐	☑
3	☐	☑	☐
4	☐	☑	☑
5	☑	☐	☐
6	☑	☐	☑
7	☑	☑	☐
8	☑	☑	☑

ACCESSORIES

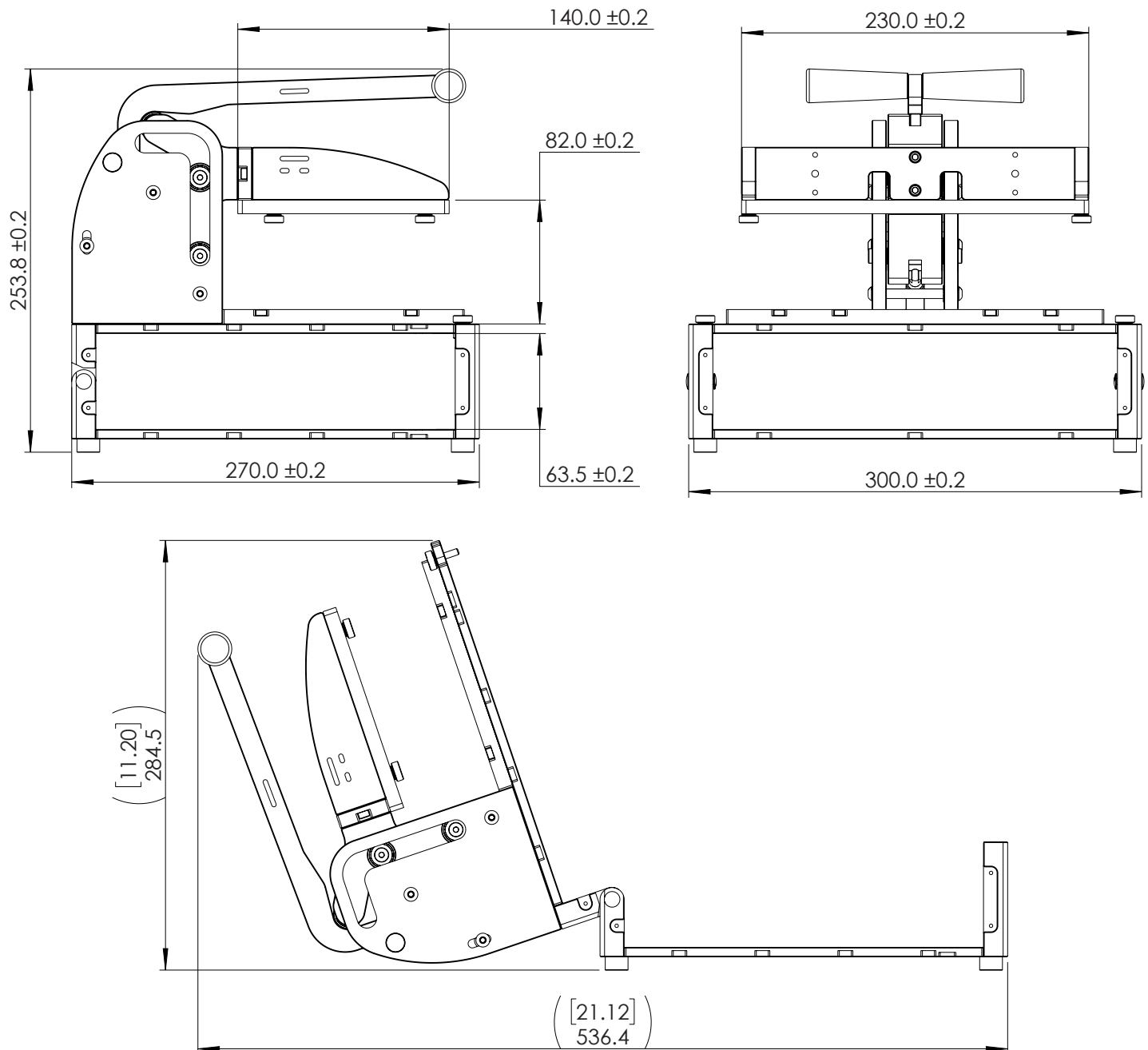| BT201-A	☐	☐	-☐☐	☐
Series 201 Accessories	B - Unmachined Plate	A - Acrylic Plate B - Acrylic Plate & Hardware F - FR4 Plate G - FR4 Plate & Hardware	00 - Generic	A - Type A
	F - Fanout Board	U - Top-Mounted Right Angle Header V - Top-Mounted Vertical Header D - Bottom-Mounted Right Angle Header E - Bottom-Mounted Vertical Header		
	V - Vanity Panels	A - No Hardware T - Tamper-Resistant Hardware		

BES Fixture Frame

Frame 01 Gen 2 (BT201)

Product Information & Tech Brief

BT201-F□□-□□□
Frame 01 Gen 2; Base

BT201-F50-00A shown.

General Dimensions

140.0 ±0.2

82.0 ±0.2

253.8 ±0.2

270.0 ±0.2

63.5 ±0.2

230.0 ±0.2

300.0 ±0.2

[11.20]
284.5

[21.12]
536.4

Dimensions shown in millimeters. [Brackets] indicate dimensions in inches.
(Parentheses) indicate reference dimensions.

BES Fixture Frame

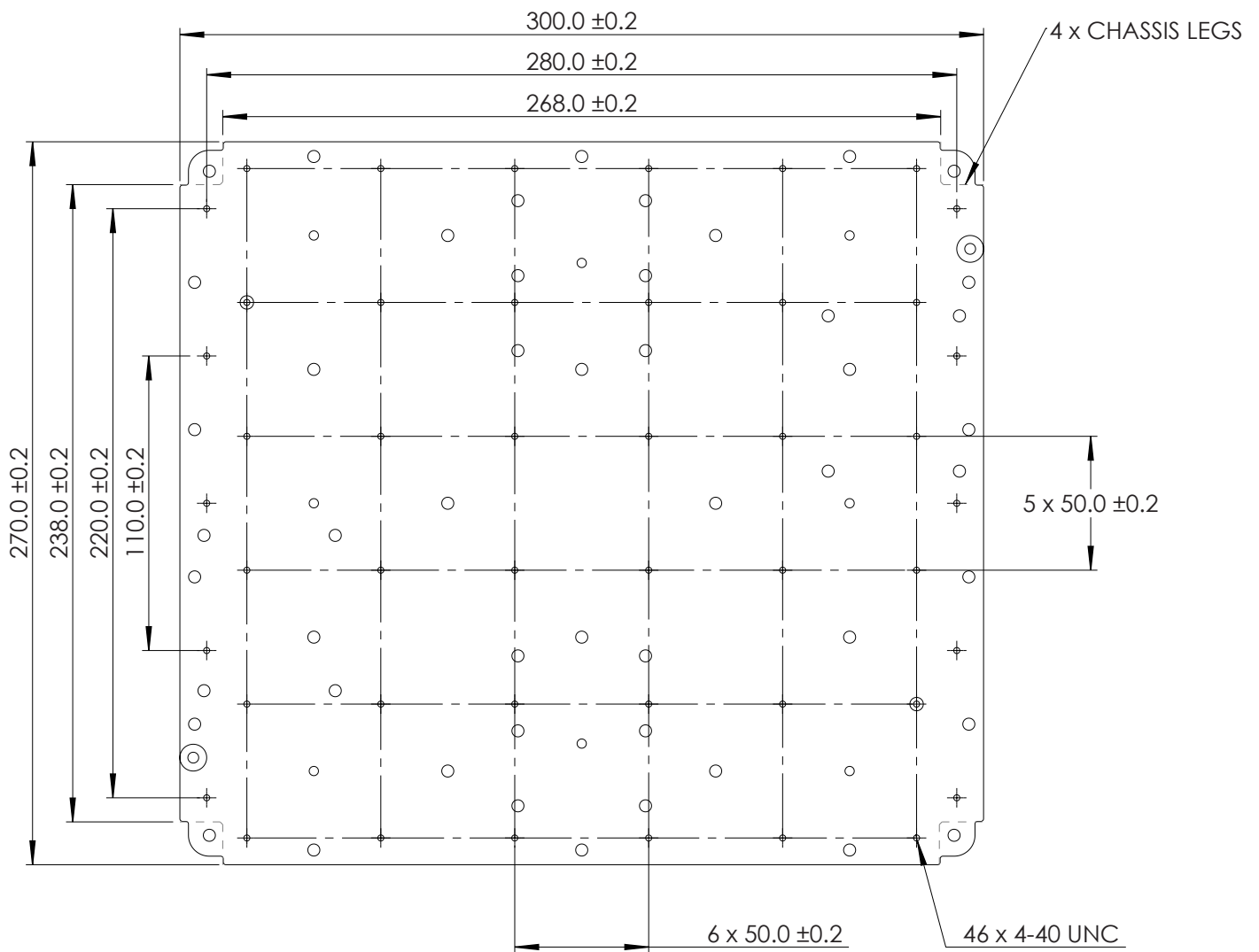*Frame 01 Gen 2 (BT201)*

Product Information & Tech Brief

Baseplate (Not Sold Separately)

Dimensions are shown for engineering reference. The part shown on this page is contained in all BT201-F□□-□□□ fixture frames.

Rendering uses alternate color scheme for visual clarity.

Mounting Features

300.0 ±0.2
280.0 ±0.2
268.0 ±0.2
4 x CHASSIS LEGS
270.0 ±0.2
238.0 ±0.2
220.0 ±0.2
110.0 ±0.2
5 x 50.0 ±0.2
6 x 50.0 ±0.2
46 x 4-40 UNC

Dimensions shown in millimeters. [Brackets] indicate dimensions in inches.

BES Fixture Frame

Frame 01 Gen 2 (BT201)
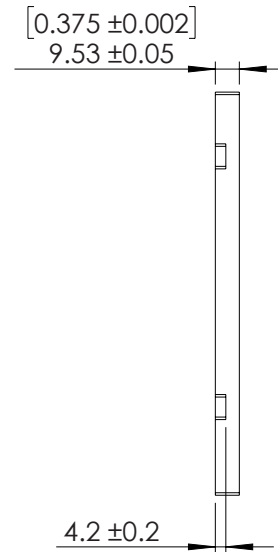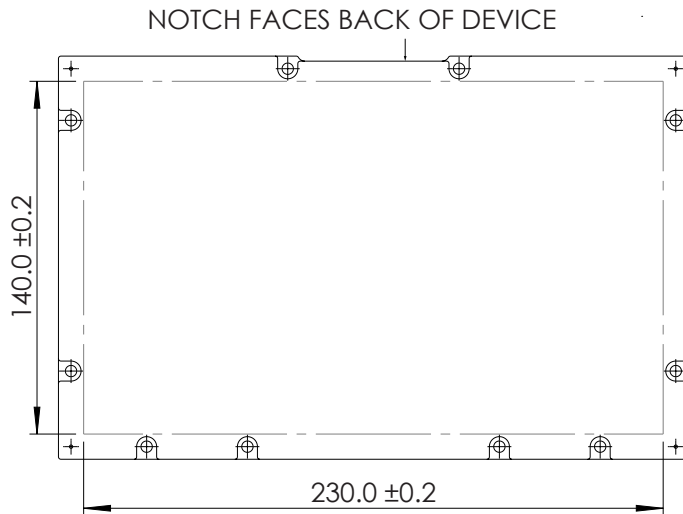
PRODUCT INFORMATION & TECH BRIEF

BT201-ABF-□□□
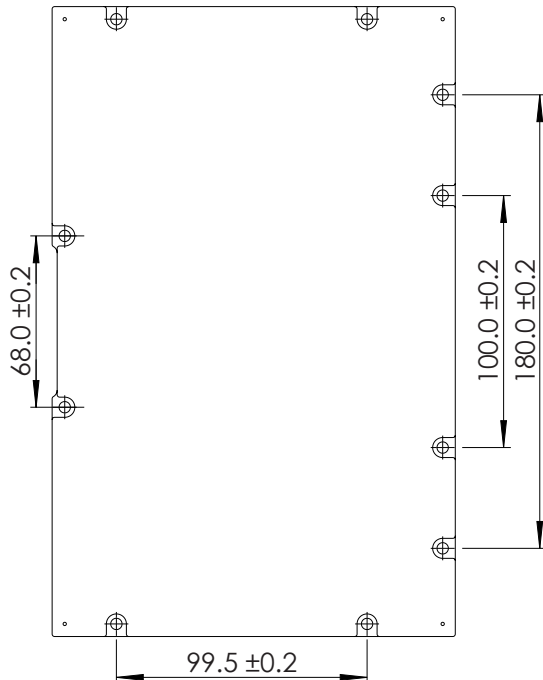## POGO PLATE BLANK; FR4

BT201-ABF-00A shown.

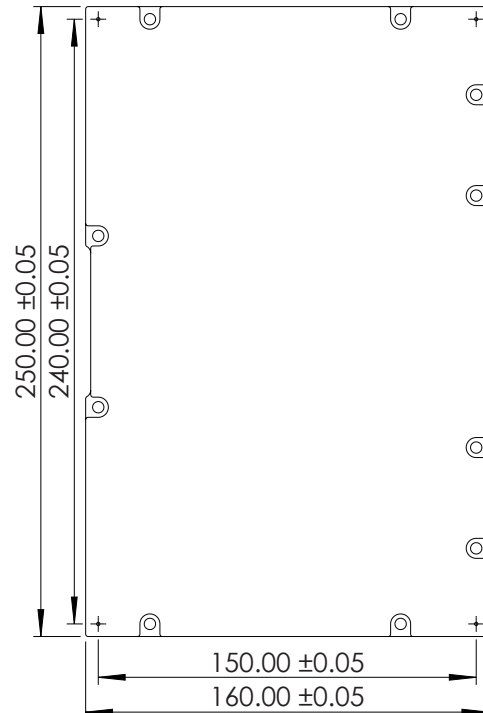**Rendering uses alternate color scheme for visual clarity.*

AVAILABLE MOUNTING AREA

NOTCH FACES BACK OF DEVICE

140.0 ±0.2

230.0 ±0.2

[0.375 ±0.002]
9.53 ±0.05

4.2 ±0.2

LOCATING AND MOUNTING

10x 4.50mm OD thru holes for #8-32 hardware

68.0 ±0.2

100.0 ±0.2

180.0 ±0.2

99.5 ±0.2

4x 1.30mm OD Machining Locating Marks

250.00 ±0.05

240.00 ±0.05

150.00 ±0.05

160.00 ±0.05

Dimensions shown in millimeters. [Brackets] indicate dimensions in inches.

BES Fixture Frame

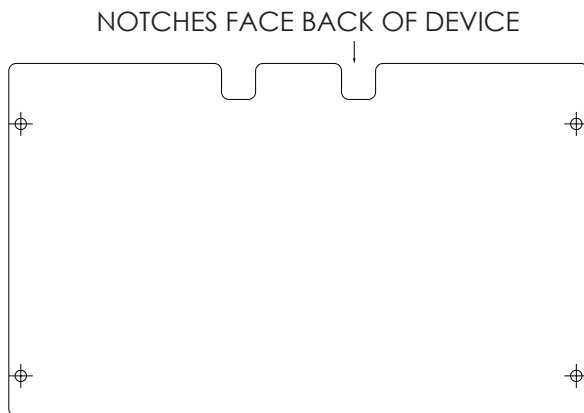*Frame 01 Gen 2 (BT201)*

PRODUCT INFORMATION & TECH BRIEF

BT201-ABA-□□□
ACRYLIC PLATE

BT201-ABA-00A shown.

MOUNTING FEATURES

*Rendering uses alternate color scheme for visual clarity.

220.5 ±0.2
61.2 ±0.2
140.0 ±0.2
14.3 ±0.2
24.0 ±0.2
100.0 ±0.2
230.0 ±0.2

4x 4.50mm OD thru holes, for #8-32 hardware

NOTCHES FACE BACK OF DEVICE

Dimensions shown in millimeters. [Brackets] indicate dimensions in inches.

BES Fixture Frame
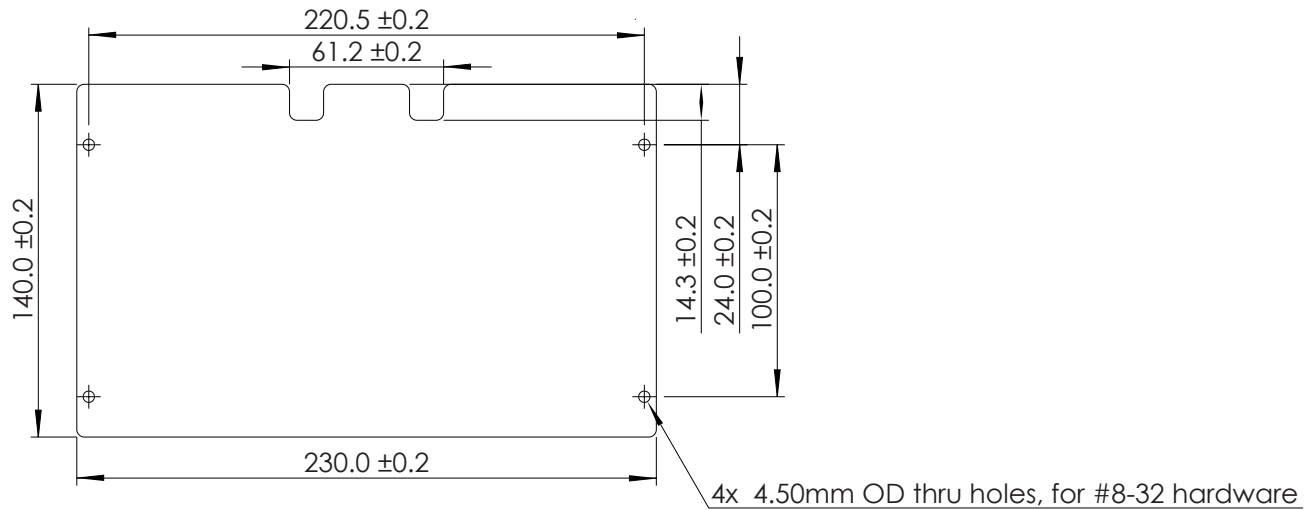
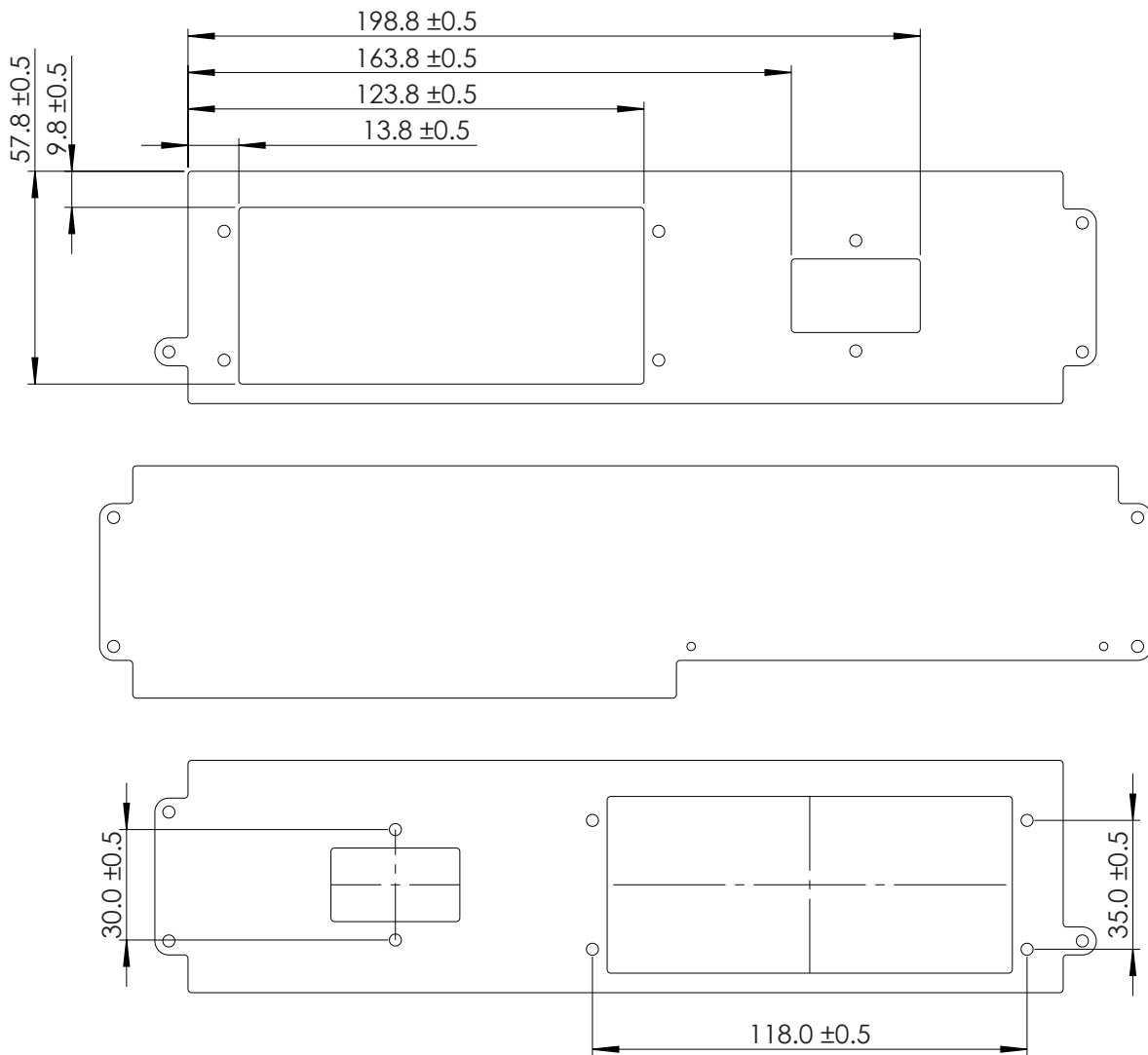*Frame 01 Gen 2 (BT201)*

Product Information & Tech Brief

BT201-AV☐-☐☐☐
Vanity Plate Set (3-Side); Black

BT201-AVA-00A shown.

Mounting Features ❯❯

*Rendering uses alternate color scheme for visual clarity.

198.8 ±0.5
163.8 ±0.5
123.8 ±0.5
13.8 ±0.5

57.8 ±0.5
9.8 ±0.5

30.0 ±0.5

35.0 ±0.5

118.0 ±0.5

Dimensions shown in millimeters. [Brackets] indicate dimensions in inches.

BES Fixture Frame
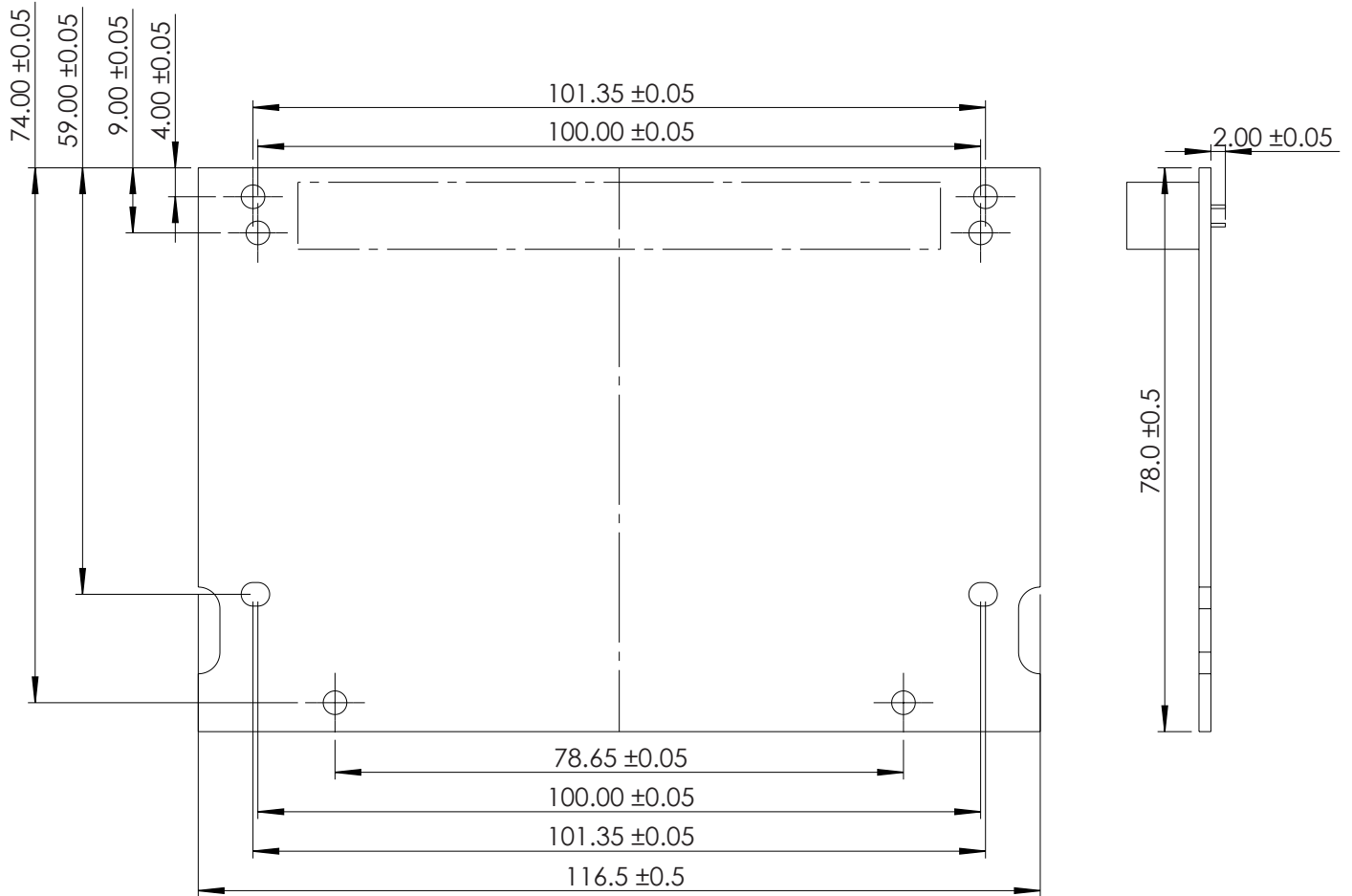
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PRODUCT INFORMATION & TECH BRIEF

BT201-AF☐-☐☐☐
64-PIN FANOUT BOARD

BT201-AFV-00A (64-Pin Fanout Board; Vert) shown.

MOUNTING FEATURES

Fanout PCBA designed for a variety of mounting orientations, including on top of, beneath, and off-board BT201-F frames.

Dimensions shown in millimeters. [Brackets] indicate dimensions in inches.