SW-XXX Product Change Notification

This PCN applies to all products in the SW-XXX Range

Following the release of a product to market, Brainboxes are committed to ongoing improvements in functionality, manufacturing, environmental and availability. As part of this commitment, our products may need to be modified or updated.

Contact Information

For any enquiries or issues regarding information detailed in this PCN, please contact:

Brainboxes Accreditations: Accreditations@brainboxes.com
Phone: 0151 220 2500
Address: 18 Hurricane Drive,
Liverpool International Business Park,
Speke, Liverpool,
L24 8RL, UK

Identifying Product PCB Revision

When required, the PCB revision of a product can be located on both the front and rear of the PCB, printed into the silkscreen. The PCB revision will use the following format: **90<PartNumber>Rx** (Where <PartNumber> is your product (e.g. SW-005 or SW-571) and 'x' is the PCB revision) – For example: **90SW008R2b**

Note: *Multiple products may be based on the same PCB. Product codes and PCB part number may not always match.*

Where to Locate a Products Serial Number?

For the SW-005/008/015/084 specifically, the serial number is printed onto a label stuck to the bottom of the product. For all other products, the serial number is printed onto a label on the rear of the PCB. To expose the PCB from an enclosure, power down the device and gently press the self-locking tabs, this will separate the upper and lower enclosure parts, exposing the full PCB and the label will be visible on the rear.

For all serial numbers (reading left to right), the first 8 digits are the build date of your product:

YYYY/MM/DD – 20240806 – August 6th 2024

Products

Description of Changes:

For each product within the SW-XXX range, the following changes have been made:

10/100 Fast Ethernet Switches

SW-005:

Note 1: *Due to worldwide supply issues with crystals, Brainboxes will be switching between Rev 4B & Rev 4D as required according to availability of crystals.*

Note 2: *Due to the environmental requirement to use up stock of existing PCB's & components, the dates of supersession may not be linear.*

- **Rev 4:** Standard revision – Superseded by Rev 4B on August 23rd, 2021.

- **Rev 4B:** The following changes have been made **(Rev 4B & 4D are still in operation due to *Note 1* above):**
  - **Environmental & Manufacturing Improvements:** Brainboxes is an ISO9001/14001 accredited company and we're dedicated to making improvements that help the environment. A design decision to move the LED to the top right, removes the requirement for a plastic pipe reducing environmental impact. This would also allow us in the future to print the case label, to make a further environmental improvement.
  - **Design Improvement:** Added extra filtering components to improve EMC performance in harsh industrial environments.
  - **Manufacturing Improvement:** Updated footprint for large inductor (L3) so Production can see solder each side.
  - **Customer & Manufacturing Improvements:** Added a tooling hole (as highlighted in white, middle-left on board below). This allows Brainboxes to get a custom base which avoids the lug needing to be manually removed by Production, giving robust case/PCB stability for customers:

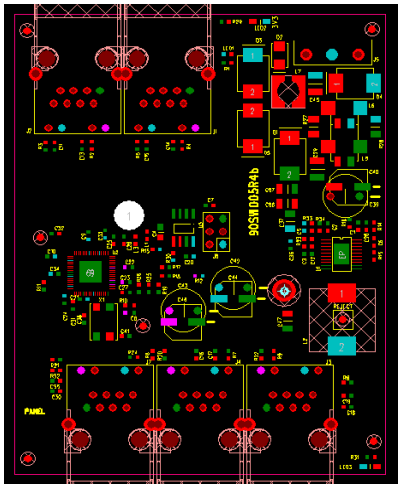

FIGURE 1 - SW-005 REV 4B PCB

- **Rev 4C:** The following changes have been made **(Rev 4C superseded by Rev 4D on August 8th, 2022):**
  - **Supply:** Due to sudden worldwide obsolescence of the 25MHz crystal in the current 7x5mm package used on the design, we redesigned for a more widely available 3x2 crystal package. This crystal package is expected to be widely available for 10+ years. The functional performance of the Ethernet switch product remains the same.

- **Rev 4D:** The following changes have been made **(Rev 4B & 4D are still in operation due to *Note 1* above):**
  - **Customer Improvement:** Added a third mounting hole (as highlighted in white, middle-left on board below) to give more mounting choice to embedded customers:

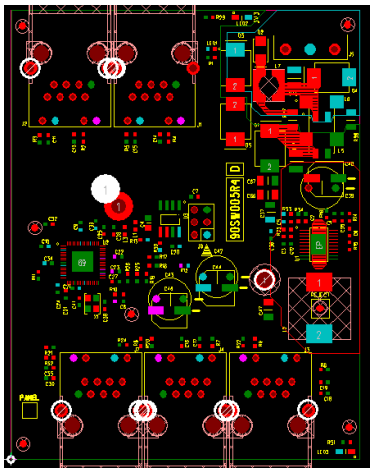

FIGURE 2 – SW-005 REV 4D PCB

SW-008:

- **Rev 2:** Standard revision – Superseded by Rev 2B on July 7th, 2022.

- **Rev 2B:** The following changes have been made **(Rev 2B to become the standard revision for all affected products. The functional performance of the Ethernet switch product remains the same):**
  - **Supply:** Due to sudden worldwide obsolescence of the 25MHz crystal in the current 7x5mm package used on the design, we redesigned for a more widely available 3x2 crystal package. This crystal package is expected to be widely available for 10+ years. The functional performance of the Ethernet switch product remains the same.
  - **Environmental & Manufacturing Improvements:** In July 2024, Brainboxes overhauled the product enclosure and moved tooling to the UK, improving Brainboxes supply lead times and improving supply to customers. Additionally, this has reduced the environmental impact and improved manufacturing assembly. This enclosure is easily identifiable by the logo emboss on the rear of the product.
  - **Enclosure Dimension Change: 'Z'** (Depth) dimension has been reduced from 27.5mm to 25.8mm (±0.5mm) – See dimensioned drawing below for updated enclosure. No change to 'X' (Width) or 'Y' (Length) dimensions. Datasheet dimensioned drawing updated on: 09/06/25

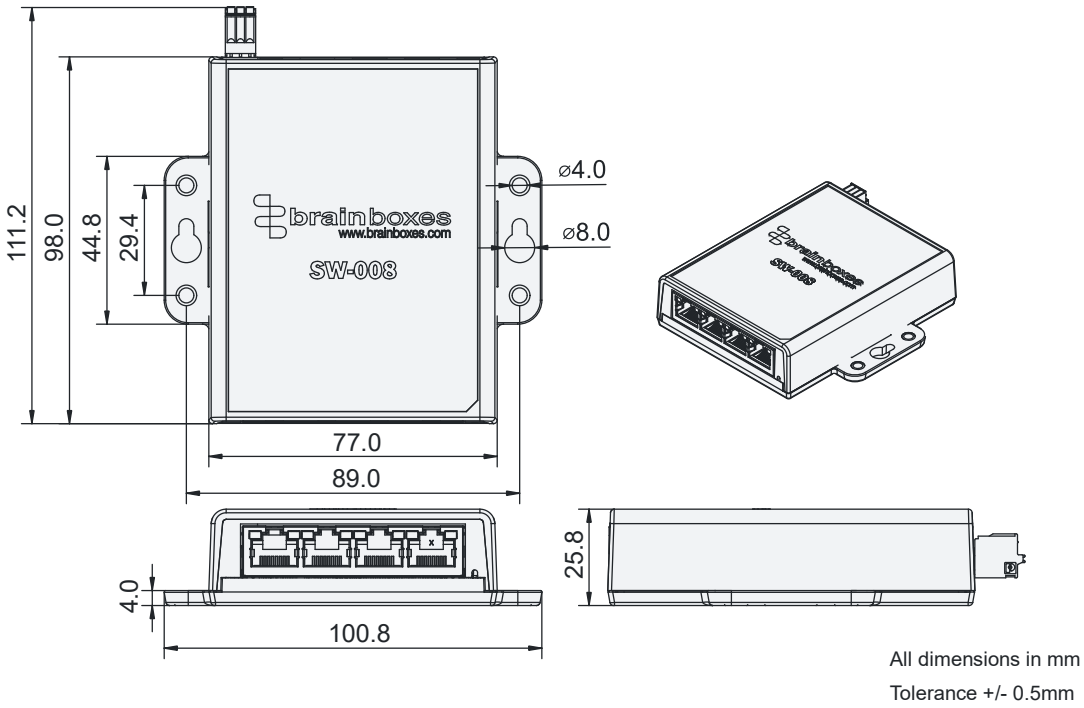

FIGURE 3 - SW-008 2D DIMENSIONED DRAWING

SW-504:

- **Rev 3:** Standard revision – Superseded by Rev 3B on March 3rd, 2022.

- **Rev 3B:** Temporary change to Rev 3 as follows – Issued between April 9th & June 21st, 2021.
  - This was a temporary change due to the sudden unavailability of the Ethernet Switch IC+ IP178GI chipset for several months, which would have meant not being able to ship any Ethernet Switch products to any customers. PCB was redesigned to take the then available Ethernet Switch chipset KSZ8895.

    Rev 3B was discontinued on June 21st, 2021. The functional performance of the Ethernet switch product remains the same.

- **Rev 3C:** The following changes have been made **(Rev 3C to become the standard revision for all affected products from March 3rd, 2022. The functional performance of the Ethernet switch product remains the same):**
  - **Supply:** Due to sudden worldwide obsolescence of the 25MHz crystal in the current 7x5mm package used on the design, we redesigned for a more widely available 3x2 crystal package. This crystal package is expected to be widely available for 10+ years. The functional performance of the Ethernet switch product remains the same.

- **Design Improvement:** Added extra filtering components to improve EMC performance in harsh industrial environments.
- **Manufacturing Improvement:** Updated footprint for large inductor (L3) so Production can see solder each side.
- **Customer Improvement:** Added a third mounting hole to give more mounting choice to embedded customers.

SW-104, SW-105, SW-108, SW-505, SW-605XX & SW-705:

- **Rev 4:** Standard revision – Superseded by Rev 4B on March 1st, 2021.

- **Rev 4B:** The following changes have been made **(Rev 4B is expected to be superseded by Rev 4D on May 1st, 2022. The functional performance of the Ethernet switch product remains the same):**
  - **Design Improvement:** Added extra filtering components to improve EMC performance in harsh industrial environments.
  - **Manufacturing Improvement:** Added a notch in lower board outline for metal case.
  - **Manufacturing Improvement:** Updated footprint for large inductor (L3) so Production can see solder each side.
  - **Customer Improvement:** Added a third mounting hole to give more mounting choice to embedded customers.

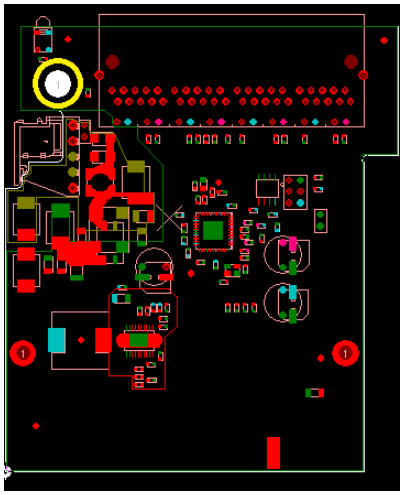

FIGURE 4 - SW-504 REV 4B PCB

- **Rev 4C:** Temporary change to Rev 4C as follows:
  - This was a temporary change due to the sudden unavailability of the Ethernet Switch IC+ IP178GI chipset for several months, which would have meant not being able to ship any Ethernet Switch products to any customers. PCB was redesigned to take the then available Ethernet Switch chipset KSZ8895.

    Rev 4C was discontinued on July 1st, 2021. The functional performance of the Ethernet switch product remains the same.

- **Rev 4D:** The following changes have been made **(Rev 4D to become the standard revision for all affected products from May 1st, 2022. The functional performance of the Ethernet switch product remains the same):**
    - **Supply:** Due to sudden worldwide obsolescence of the 25MHz crystal in the current 7x5mm package used on the design, we redesigned for a more widely available 3x2 crystal package. This crystal package is expected to be widely available for 10+ years. The functional performance of the Ethernet switch product remains the same.

SW-508, SW-608XX & SW-708:

- **Rev 3:** Standard revision – Superseded by Rev 3B on July 7th, 2022.

- **Rev 3B:** The following changes have been made **(Rev 3B to become the standard revision for all affected products from July 7th, 2022. The functional performance of the Ethernet switch product remains the same):**
    - **Supply:** Due to sudden worldwide obsolescence of the 25MHz crystal in the current 7x5mm package used on the design, we redesigned for a more widely available 3x2 crystal package. This crystal package is expected to be widely available for 10+ years. The functional performance of the Ethernet switch product remains the same.
    - **Design Improvement:** Added extra filtering components to improve EMC performance in harsh industrial environments.
    - **Manufacturing Improvement:** Updated footprint for large inductor (L3) so Production can see solder each side.

10/100/1000 Gigabit Switches

SW-015:

- **Rev 3:** Standard revision – Superseded by Rev 3B on February 25th, 2022.

- **Rev 3B:** The following changes have been made **(Rev 3B to become the standard revision for all affected products going forward from February 25th, 2022:**
    - **Bug Fix:** The Ethernet switch chipset, KSZ9897, has a bug whereby in some scenarios when large amount of traffic is passed between 2 connected Ethernet switches, the switch drops the link and fails to re-establish the lost connection. Rev 3B resolves this issue.
    - **Manufacturing Improvement:** Magjack PCB vias have been increased in size to allow for better production.
    - **Customer Improvement:** Added a small microprocessor, which can enable Jumbo Packet support if required.
    - **Supply:** Due to sudden worldwide obsolescence of the 25MHz crystal in the current 7x5mm package used on the design, we redesigned for a more widely available 3x2 crystal package. This crystal package is expected to be widely available for 10+ years. The functional performance of the Ethernet switch product remains the same.

SW-514:

- **Rev 2:** Internal Prototypes Only
- **Rev 3:** Standard Revision

SW-115, SW-515, SW-615XX & SW-715:

- **Rev 3:** Standard revision – Superseded by Rev 3C on February 24th, 2022.
- **Rev 3B:** Internal change, never publicly released
- **Rev 3C: (Rev 3C to become the standard revision for all affected products from February 24th, 2022. The functional performance of the Ethernet switch product remains the same).**
    - **Bug Fix:** The Ethernet switch chipset, KSZ9897, has a bug whereby in some scenarios when large amount of traffic is passed between 2 connected Ethernet switches, the switch drops the link and fails to re-establish the lost connection. Rev 3B resolves this issue.
    - **Manufacturing Improvement:** Magjack PCB vias have been increased in size to allow for better production.
    - **Customer Improvement:** Added a small microprocessor, which can enable Jumbo Packet support if required.
    - **Supply:** Due to sudden worldwide obsolescence of the 25MHz crystal in the current 7x5mm package used on the design, we redesigned for a more widely available 3x2 crystal package. This crystal package is expected to be widely available for 10+ years. The functional performance of the Ethernet switch product remains the same.
    - **Customer Improvement:** Added a third mounting hole to give more mounting choice to embedded customers.

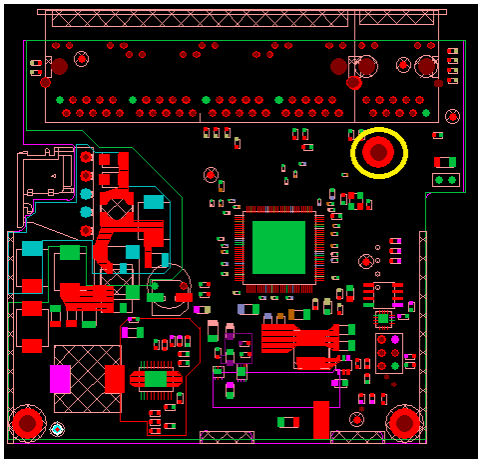

FIGURE 5 - SW-115/515/615XX/715 REV 3C PCB

PoE Switches

SW-135/535/735

- **Rev 3:** Standard Revision
  - **Customer Improvement:** Added a third mounting hole to give more mounting choice to embedded customers. As of 1st January 2025, all products will feature the 3rd mounting hole.

SW-195 & SW-595

- **Rev 2:** Standard Revision
  - **Customer Improvement:** Added a third mounting hole to give more mounting choice to embedded customers. As of 1st January 2025, all products will feature the 3rd mounting hole.

SFP Switches

SW-084, SW-195, SW-581, SW-584, SW-595 & OEM Variants

- **Rev 2:** Standard Revision (SW-084, SW-195, SW-581, SW-584 & SW-595)
- **Rev 3:** Standard Revision (SW-584 Only)
  - **Customer Improvement:** As of August 6th 2024, the SFP LED behavior has been updated to be more predictable and informative (as outlined below). This applies to all SFP capable devices:

Green	Power On
Amber	SFP Plugged In
Flashing Amber	SFP Link / Activity
Flashing Green/Amber	SFP Error / Incompatible

  - **Customer Improvement:** Brainboxes identified an issue with auto-negotiation on the 1000BASE-X port of the above products, impacting compatibility with some devices. As of August 6th 2024, a firmware update has been provided to address compatibility with 3rd party devices, which may affect functionality in specific circumstances.

    If you experience any unexpected behavior with any of the above products, please contact: support@brainboxes.com with your products serial number and details of your issue/query.

SW-7016:

- **Rev 2:** Standard Revision

SW-7416, SW-7617 & SW-7717

- **Rev 2:** Standard Revision

PCN Revision History			
PCN Update	**Date**	**Author**	**Approved By**
Source PCN Documents	01/01/22	DR	DR
Created Combined PCN	09/06/25	JM	DR