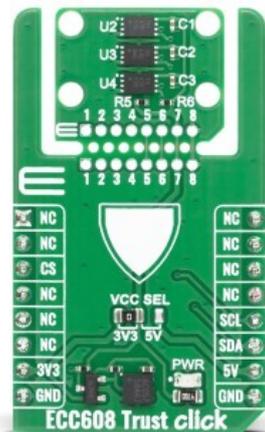


ECC608 Trust Click



PID: MIKROE-6774

ECC608 Trust Click is a compact add-on board that demonstrates multiple approaches to secure identity management, hardware-based key protection, and authenticated cloud connectivity. It is based on the [ATECC608C-TNGTLS](#), [ATECC608C-TFLXTLS](#), and [ECC608-TMNGTLS](#) devices from [Microchip](#), allowing designers to evaluate [Trust&GO](#), [TrustFLEX](#), and [TrustMANAGER](#) security models within the same hardware environment. The board uses I2C communication with individually assigned slave addresses, a dual-voltage option, and supports the innovative MIKROE Click Snap feature, allowing the main IC area to be detached and used independently through direct pin access. Together, these capabilities enable practical evaluation of fixed-credential authentication, customizable PKI implementations, and cloud-managed certificate lifecycle models. This Click board is well suited for IoT nodes, industrial equipment, connected consumer devices, and long-lifecycle systems requiring reliable hardware-rooted security.

For more information about **ECC608 Trust Click** visit the official [product page](#).

How does it work?

ECC608 Trust Click is an authentication add-on board designed to showcase and evaluate three different secure elements from Microchip's Trust Platform family. It integrates the ATECC608C-TNGTLS Trust&GO IC, the ATECC608C-TFLXTLS TrustFLEX IC, and the ECC608-TMNGTLS TrustMANAGER IC, giving engineers a practical way to explore three distinct approaches to secure identity, key storage, and certificate management in IoT and connected embedded systems. By combining these devices on one board, it becomes a flexible tool for prototyping hardware root-of-trust implementations, secure cloud connectivity, and device authentication

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.

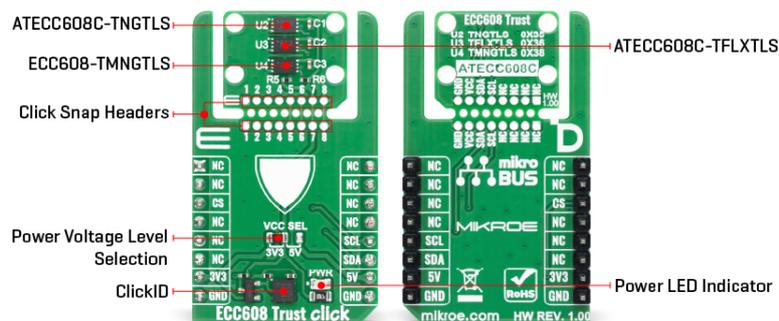


ISO 27001: 2013 certification of informational security management system.
 ISO 14001: 2015 certification of environmental management system.
 OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).

schemes across many applications such as smart home, industrial automation, medical devices, and connected consumer products.



All three secure elements share a common I2C interface and are connected to the mikroBUS I2C lines (SCL/SDA), while remaining individually addressable through distinct slave addresses: the ATECC608C-TNGTLS (0x35), the ATECC608C-TFLXTLS (0x36), and the ECC608-TMNGTLS TrustMANAGER (0x38). This approach allows the host MCU to communicate with each secure element independently over the same bus, making it possible to test and compare different authentication flows, provisioning strategies, and cloud integration models.

This Click board™ is designed in a unique format supporting the newly introduced MIKROE feature called "Click Snap." Unlike the standardized version of Click boards, this feature allows the main IC area to become movable by breaking the PCB, opening up many new possibilities for implementation. Thanks to the Snap feature, the secure elements can operate autonomously by accessing its signals directly on the pins marked 1-8. Additionally, the Snap part includes a specified and fixed screw hole position, enabling users to secure the Snap board in their desired location.

The **ATECC608C-TNGTLS** Trust&GO device comes pre-configured and pre-provisioned at the factory with fixed keys and default thumbprint certificates that are permanently locked in the device. This eliminates the need for the user to manage a certificate authority or perform complex device personalization steps, enabling a near plug-and-play secure authentication experience. The cloud infrastructure only needs to validate the device using its pre-loaded thumbprint certificate, which greatly simplifies onboarding and is ideal for high-volume products that require secure TLS client authentication but do not need custom certificate chains or in-field changes to credentials.

The **ATECC608C-TFLXTLS** TrustFLEX device offers more flexibility for designs that require a custom public key infrastructure. While it is also pre-configured to support the most common authentication use cases, its default thumbprint certificates and keys are changeable, allowing users to overwrite them with their own credentials. This enables traditional PKI flows with customer-specific root and leaf certificates, as well as token-based authentication schemes where appropriate. TrustFLEX therefore provides a balance between ease-of-use and configurability, helping to shorten development time while still giving full control over the certificate hierarchy and identity model deployed in the field.

The **ECC608-TMNGTLS** TrustMANAGER device targets the most advanced scenarios where

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



ISO 27001: 2013 certification of informational security management system.
 ISO 14001: 2015 certification of environmental management system.
 OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).

certificate lifecycle management must be handled at scale. It is pre-provisioned with birth credentials required to establish a first secure connection to the Kudelski IoT keySTREAM SaaS platform. Once this initial connection is made, keySTREAM performs in-field provisioning of the final custom certificates directly into the secure element and then continuously manages the full certificate chain over the device lifetime, including renewal, rotation, revocation, and potential refurbish flows. This cloud-managed approach removes much of the operational complexity associated with long-term PKI management in large IoT setups and is especially valuable for devices expected to operate securely for many years.

All three secure elements integrate strong modern cryptography, including an Elliptic Curve Diffie-Hellman (ECDH) engine for secure key agreement, Elliptic Curve Digital Signature Algorithm (ECDSA) support for signing and verification, and an AES-128 hardware accelerator for fast symmetric encryption and decryption. Sensitive keys are stored only inside the secure elements in tamper-resistant memory, and hardware-based cryptographic countermeasures protect against a wide range of side-channel and fault injection attacks.

This Click board™ can operate with either 3.3V or 5V logic voltage levels selected via the VCC SEL jumper. This way, both 3.3V and 5V capable MCUs can use the communication lines properly.

Click Snap

Click Snap is an innovative feature of our standardized Click add-on boards, designed to bring greater flexibility and optimize your prototypes. By simply snapping the PCB along predefined lines, you can easily detach the main sensor/IC/module area, reducing the overall size, weight, and power consumption - ideal for the final phase of prototyping. For more details about Click Snap, visit the [official page](#) dedicated to this feature.

Specifications

Type	Encryption
Applications	Ideal for IoT nodes, industrial equipment, connected consumer devices, and long-lifecycle systems requiring reliable hardware-rooted security
On-board modules	ATECC608C-TNGTLS - Trust&GO secure element from Microchip ; ATECC608C-TFLXTLS - TrustFLEX secure element from Microchip ; ECC608-TMNGTLS - TrustMANAGER secure authentication device from Microchip
Key Features	Secure elements from Microchip's Trust Platform family, support for Trust&GO fixed-credential authentication, support for TrustFLEX customizable PKI workflows, support for TrustMANAGER cloud-managed certificate lifecycle, hardware-based key storage with tamper-resistant protection, integrated ECDH key agreement, integrated ECDSA sign and verify engine, AES-128 hardware accelerator, ultra-low power operation, Click Snap format, and more

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



ISO 27001: 2013 certification of informational security management system.
 ISO 14001: 2015 certification of environmental management system.
 OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).

Interface	I2C
Feature	Click Snap, ClickID
Compatibility	mikroBUS™
Click board size	M (42.9 x 25.4 mm)
Input Voltage	3.3V or 5V

Pinout diagram

This table shows how the pinout on ECC608 Trust Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin	mikro™ BUS				Pin	Notes
	NC	1	AN	PWM	16	NC	
	NC	2	RST	INT	15	NC	
ID COMM	CS	3	CS	RX	14	NC	
	NC	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	SCL	I2C Clock
	NC	6	MOSI	SDA	11	SDA	I2C Data
Power Supply	3.3V	7	3.3V	5V	10	5V	Power Supply
Ground	GND	8	GND	GND	9	GND	Ground

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
JP1	VCC SEL	Left	Power Voltage Level Selection 3V3/5V: Left position 3V3, Right position 5V

ECC608 Trust Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V

SOFTWARE SUPPORT

This Click board™ currently comes without dedicated MIKROE mikroSDK support in the form of libraries, functions, or example code.

For Technical support questions, the customers can submit a support case to Microchip by following the [procedure](#).

Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



ISO 27001: 2013 certification of informational security management system.
 ISO 14001: 2015 certification of environmental management system.
 OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).

[Click boards™](#)

[ClickID](#)

Downloads

[ECC608 Trust click 2D and 3D files v100](#)

[ECC608 Trust click schematic v100](#)

[ATECC608C-TNGTLS datasheet](#)

[ECC608-TMNGTLS datasheet](#)

[ATECC608C-TFLXTLS datasheet](#)

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



ISO 27001: 2013 certification of informational security management system.
ISO 14001: 2015 certification of environmental management system.
OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).