



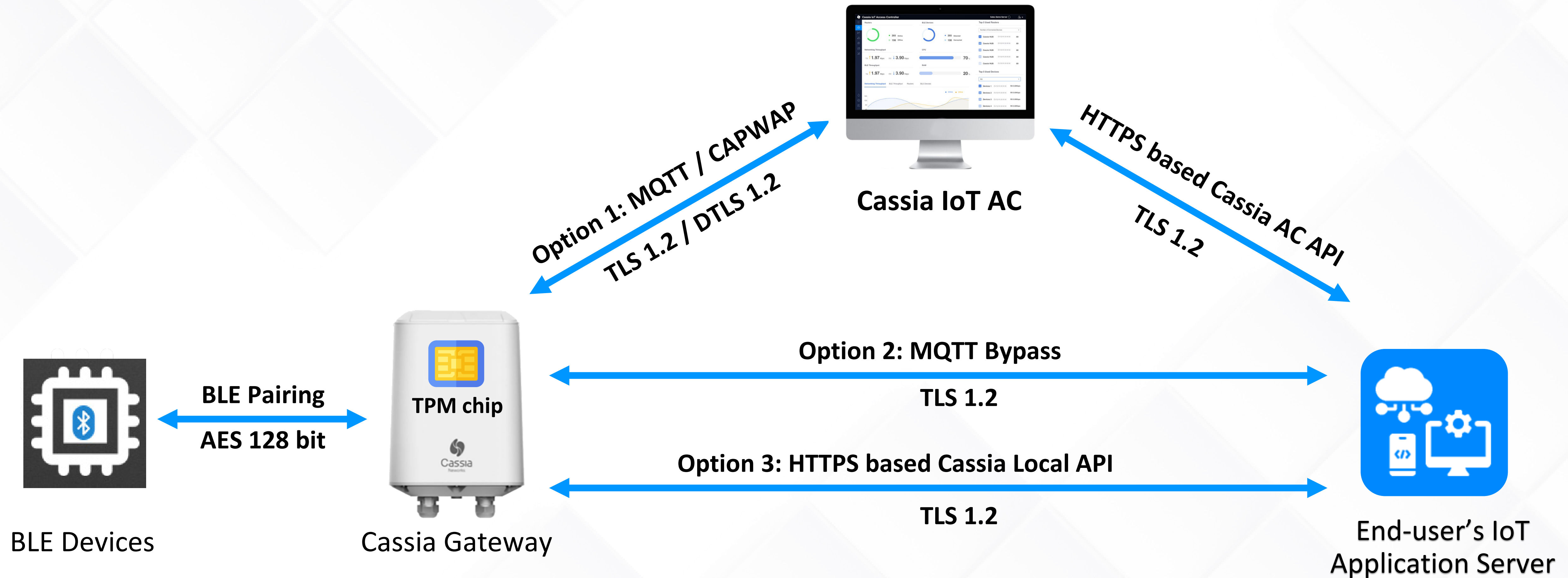
**Cassia**  
Networks

# Cassia's Security Overview

Making Bluetooth IoT Easy. Scalable. Secure.

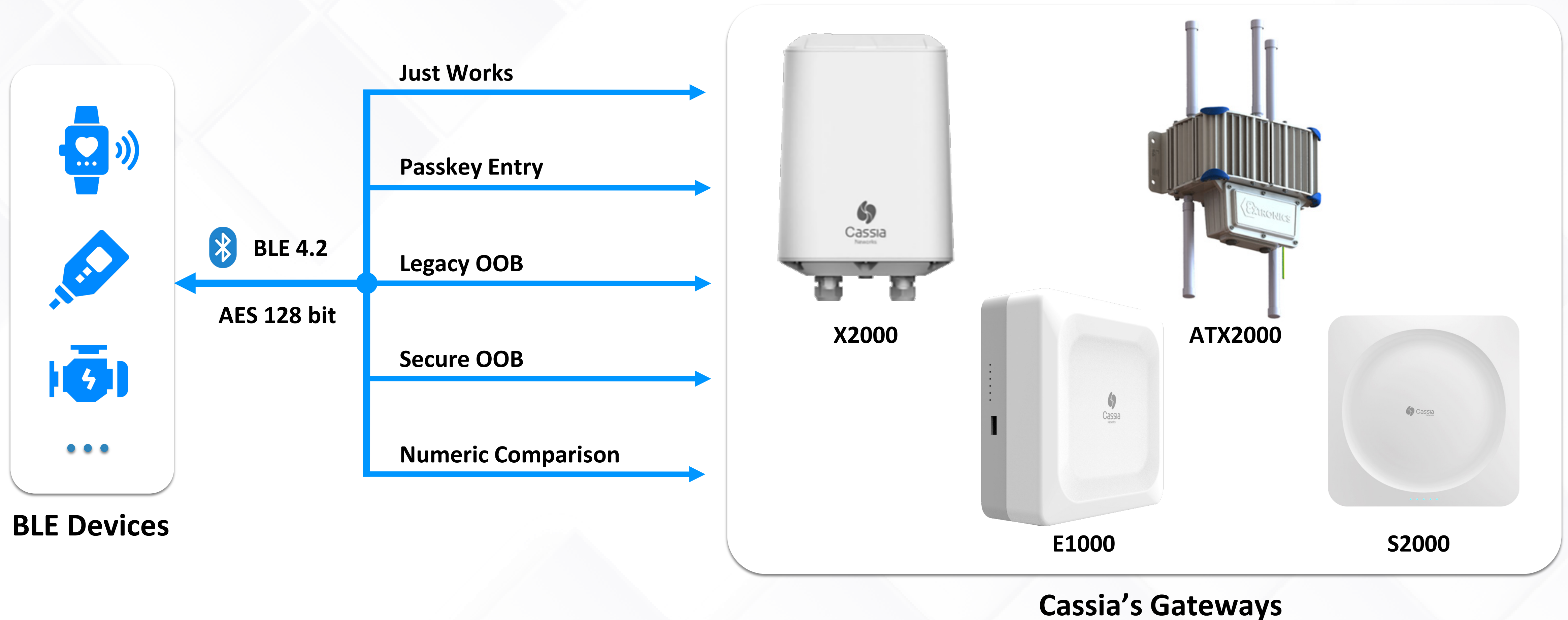


# End-to-End Encryption





# \*Bluetooth 4.2 Secure Pairing



\* All Cassia gateways support Bluetooth 4.2 pairing except for the X1000 gateway which only supports Bluetooth 4.1 pairing

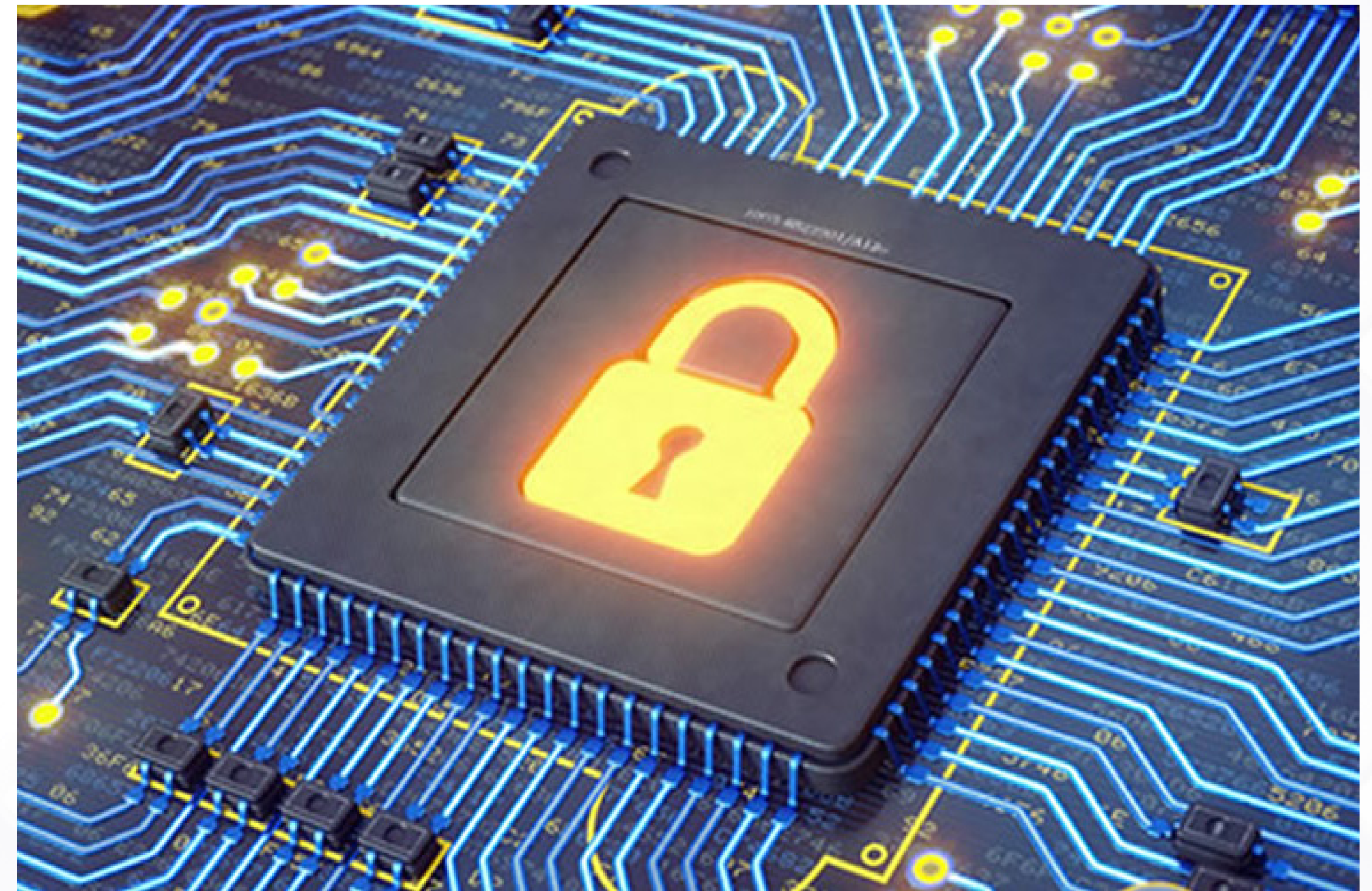




# \*Embedded TPM Chip

- The **X2000** and **ATX2000** are Cassia's new long-range Bluetooth gateways optimized for IIoT
- Both the X2000 and ATX2000 gateways have a **TPM** (Trusted Platform Module) chip that supports secure boot, trust boot, secure storage, and other crypto-chip based security functions

\* Only the X2000 and ATX2000 offer a dedicated crypto-chip, TPM solution





# Gateway to AC Communication



- The communication between Cassia's Bluetooth gateways and Cassia IoT Access Controller (AC) is always encrypted - for both MQTT and CAPWAP
- **CAPWAP**: Uses Cassia's default SSL certificate
- **MQTT**: By default, uses Cassia's default SSL certificate. The end-user can also use their own SSL certificate, if desired



# API and Webpage Access



## HTTPS

- By default, the end-user uses HTTP (port 80) when calling Cassia API or when accessing Cassia's AC & gateway webpages
- The end-user can also use HTTPS (port 443), if desired



## API authorization

- OAuth is used to authorize Cassia AC and local API calls



## Webpage access

- Webpages are password protected
- Different authority levels are available for different users
- Auto logout and auto termination of web sessions are supported





# Wi-Fi Backhaul Security

- Cassia's Bluetooth gateways can connect to the Internet by using the WPA2-Enterprise (802.1x) enabled Wi-Fi AP
- Supported Wi-Fi safe mode and EAP types are shown in the figure below

Supported Safe Mode	Supported EAP Type
<ul style="list-style-type: none"><li>[Enterprise] WPA2</li><li>[Enterprise] WPA[TKIP]+WPA2[AES]</li><li>WPA2-PSK</li><li>WPA[TKIP]+WPA2[AES]</li></ul>	<ul style="list-style-type: none"><li>PEAP-MSCHAPv2</li><li>EAP-TLS</li><li>EAP-TTLS</li></ul>



# And Much More...

- Firmware is signed by certificate to ensure authenticity
- Support for white-listing of gateway registrations to AC
- Periodic third party software security patch updates (as needed)
- Cassia co-operated with security partner to perform Pen Tests

**Security Goal: To Support Industry Standard Best Practices**





# \*Key Differences between Gateways

	S2000	E1000	X1000	X2000/ATX2000
Embedded TPM Chip	No	No	No	Yes
Bluetooth Secure Pairing	4.2	4.2	4.1	4.2

\*All other security functions are the same





Cassia  
Networks

Imagine The Possibilities!

[www.cassianetworks.com](http://www.cassianetworks.com) | [sales@cassianetworks.com](mailto:sales@cassianetworks.com)