Wise | Wise Pro

GATEWAY SECURITY

The WISE Ethernet Gateway 4 has been designed and built to securely manage data from sensors monitoring your environment and equipment. Hacking from botnets are in the headlines, Bz-com Corporation has taken strong measures to ensure your data security is handled with the utmost care and attention to detail. The same methods utilized by financial institutions to transmit data are also used in Bz-com security infrastructure. Security features of the gateway include purpose built operating system, data encryption, and bank-grade security. Bz-com's proprietary sensor protocol uses low transmit power and specialized radio equipment to transmit application data. Wireless devices listening on open communication protocols cannot eavesdrop on sensors. Packet level encryption and verification is key to ensuring traffic isn't altered between sensors and gateways. Paired with best -in-class range and power consumption protocol, all data is transmitted securely from your devices. Thereby ensuring a smooth, worry-free, experience.

SENSOR COMMUNICATION SECURITY

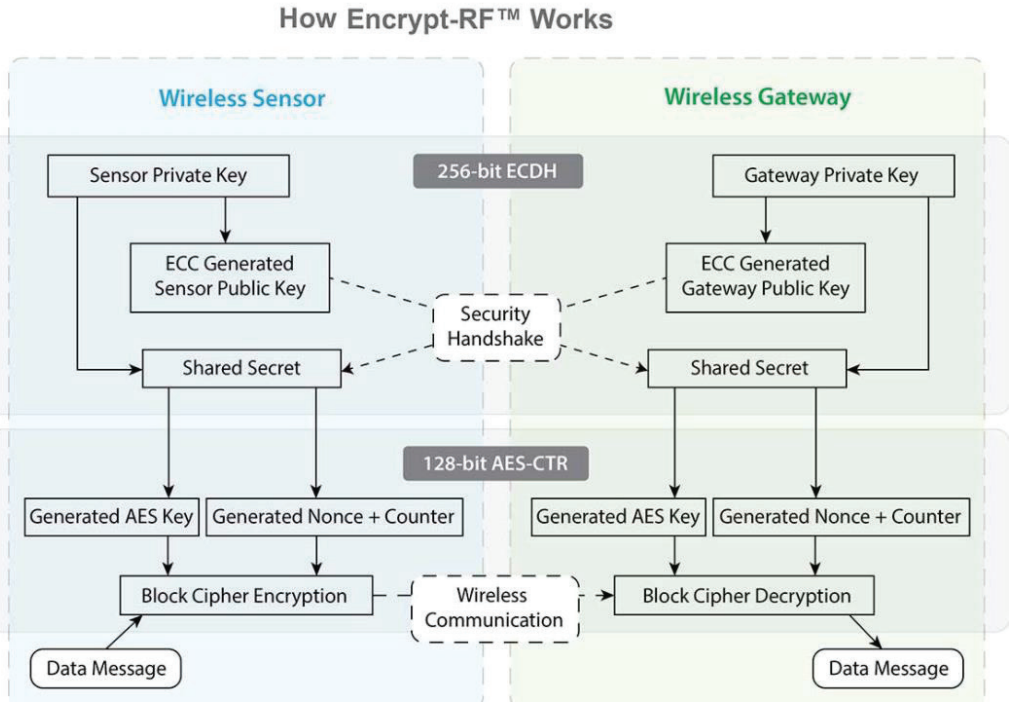
Bz-com sensor to gateway secure wireless tunnel is generated using ECDH-256 (Elliptic Curve Diffie-Hellman) public key exchange to generate a unique symmetric key between each pair of devices. Sensors and gateways use this link specific key to process packet level data with hardware accelerated 128-bit AES encryption which minimizes power consumption to provide industry best battery life. Thanks to this combination, Bz-com proudly offers robust bank-grade security at every level.

DATA SECURITY ON THE GATEWAY

The WISE Ethernet Gateway 4 is designed to prevent prying eyes from accessing the data that is stored on the sensors and on Bz-com PORTAL. The WISE Ethernet Gateway 4 does not run on an off the shelf multi-function OS (operating system). Instead it runs a purpose specific real-time embedded state machine that cannot be hacked to run malicious processes. When fully secured after initial configuration steps, the gateway provides no active interface that can be used to gain access. The fortified gateway prevents snooping of sensor traffic, keeping your sensitive data from malicious parties and secures the gateway from becoming a relay for malicious programs.

SERVER COMMUNICATION SECURITY

Communication between your WISE Ethernet Gateway 4 and Bz-com PORTAL is secured by packet level encryption. Similar to the security between the sensors and gateway, the gateway and server also establish a unique key using ECDH-256 for encrypting data. The packet level data is encrypted end to end removing additional requirements to configure specialized VPN's. The gateway can still operate within a VPN if it is present.


How Encrypt-RF™ Works
Wireless Sensor
Wireless Gateway
Sensor Private Key
256-bit ECDH
Gateway Private Key
ECC Generated Sensor Public Key
ECC Generated Gateway Public Key
Security Handshake
Shared Secret
Shared Secret
128-bit AES-CTR
Generated AES Key
Generated Nonce + Counter
Generated AES Key
Generated Nonce + Counter
Block Cipher Encryption
Wireless Communication
Block Cipher Decryption
Data Message
Data Message