

HomePlug Security Considerations

Overview

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Some eGauge models have integrated powerline communication, commonly known as "HomePlug communication" or just "HomePlug". These eGauge models inject a signal into the conductor connected to the L1 terminal of the eGauge and attempt to communicate with other powerline communication devices that are within range connected to the same power line using the HomePlug standard. This effectively acts as a powerline-Ethernet bridge when used to connect an eGauge to a network with a HomePlug adapter.

eGauge2 model units utilize the "HomePlug 1.0" protocol, while newer model eGauges (EG31xx, EG41xx) utilize the newer "HomePlug AV" protocol. "HomePlug AV" is not backwards compatible with "HomePlug 1.0", and the devices will not see each other or communicate. The HomePlug 1.0 standard is no longer in common use, and HomePlug 1.0 adapters [may not be readily available](#).

The HomePlug signal's reach is limited to about 100ft of wiring and does not extend beyond transformers or cross phases. Thus, for most single-family homes, the HomePlug signal will be contained to within the home itself. This is in contrast to a WiFi signal, for example, which usually can be picked up easily outside a home.

Security Considerations

All HomePlug devices have a "password" or "encryption key" assigned to them. Any HomePlug devices with the same encryption key can communicate to each-other and form a "HomePlug network". By default, the HomePlug 1.0 encryption key is "HomePlug" (case sensitive, without quotes) while the HomePlug AV default encryption key is "HomePlugAV" (case sensitive, without quotes).

Because the HomePlug devices come with default encryption keys, buildings that share electrical services (e.g., possibly duplexes, apartment buildings) may have the HomePlug signal extended into neighboring units which could then allow an individual to obtain someone else's network access via a HomePlug adapter if both are using the default encryption keys. Therefore, it is important to set a unique encryption key on any HomePlug networks that may share a power line with another unit.

HomePlug AV (models EG31xx, EG41xx) utilize the HomePlug Green PHY specification and are compatible with HomePlug AV using 128-bit AES encryption.

HomePlug 1.0 (model eGauge2) utilize a HomePlug 1.0-compatible link and are encrypted with 56-bit Data Encryption Standard (DES).

It is best practice to utilize a unique and secure HomePlug encryption password, but in many private residences it is unlikely to be an issue because of the limitations of powerline communication (specifically, it is unlikely the HomePlug signal will propagate beyond the building's electrical wiring).

More information can be found on the HomePlug Alliance website at <http://www.homeplug.org/>.

Related Articles

[Pairing an eGauge with a HomePlug adapter](#)

[What do the different LEDs on the HomePlug adapter mean?](#)

[What are some common causes of HomePlug communication issues?](#)

Please visit kb.egauge.net for the most up-to-date documentation.