

How does the system communicate?

Communication protocol

The Genius Hub system uses a Z-Wave wireless mesh network protocol to 'talk' to the devices that are placed around your property.

This is an open wireless system which is much better at penetrating the walls of UK homes than Wi-Fi and uses a lot less power. Being an 'open system' it will allow it to work with other technologies in the future when they are included into the Heat Genius list of compatible components.

A mesh network is one that is robust as it can use 'listening' devices (i.e. devices that are always powered on) to relay messages around the network. The listening devices essentially act as signal boosters.

The more listening devices that are present on the network, the 'stronger' and more resilient it becomes. If one listening device gets switched off, then an alternative nearby device can be used to relay messages instead.

Mains powered devices

All mains powered devices are always awake and act as listening devices, which repeat and boost the signal of any nearby devices. The system also uses 'Genius Smart Plugs' and 'Genius Range Extenders' as listening devices to ensure good communication around larger properties. Genius Smart Plugs can also be controlled from the Genius Hub system on a timer schedule or overridden 'on-demand'.

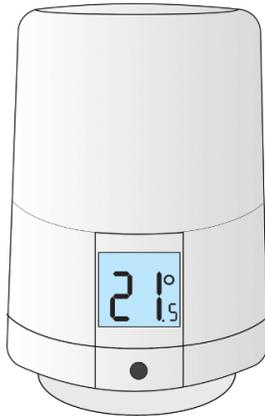
On very large systems that have many listening devices the hub does dial back how often it communicates with the listening devices to reduce the network traffic, but you can expect that on most systems the Genius Hub will communicate with a listening device (when sending a command) within a couple of seconds maximum.

Battery powered devices

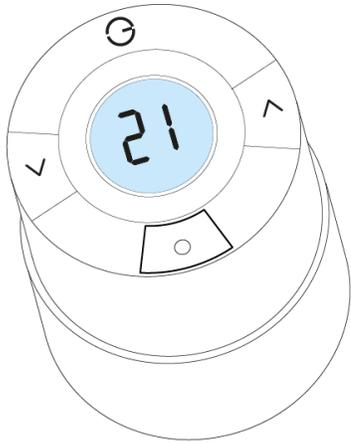
The battery powered devices are 'asleep' most of the time, so they only communicate when they wake up and talk to the Genius Hub, they then immediately go back to sleep when the hub tells them to.

The time interval for each device to check into the Genius Hub is:

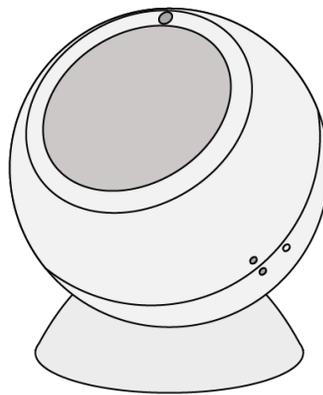
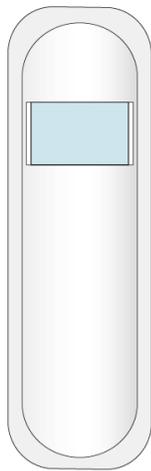
- Genius Radiator Valve (DA-WRV-E) = 10 min



- Genius Radiator Valve = 7.5 min



- Genius Room Sensor / Genius Motion Sensor = 30 min

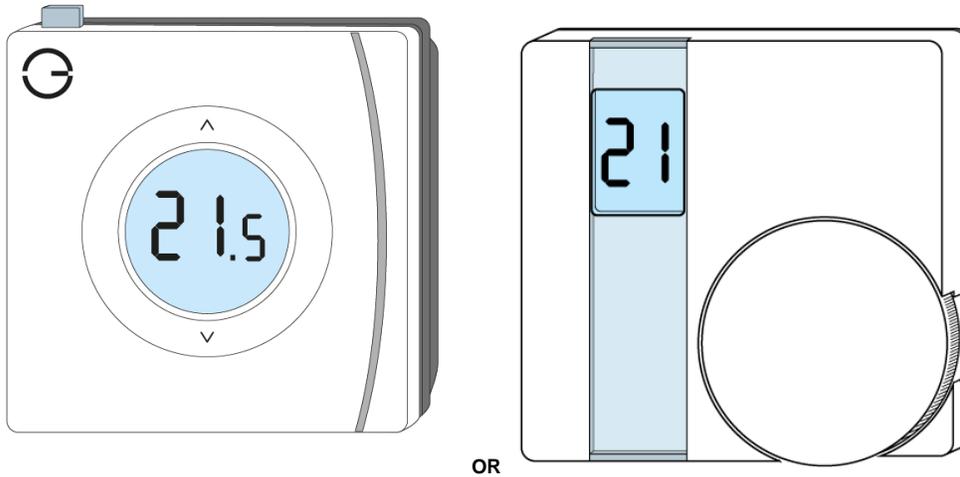


OR

- Wireless Room Thermostat = 30 minutes



- Genius Room Thermostat = 10 min



OR

The communication range

In a perfect world with line of sight the range is 100 metres. Inside a building, this reduces to around 30 metres. Solid walls do reduce the strength of the signal but the signal can be boosted in larger properties with the use of [Genius Smart Plugs](#).

The Genius Smart Plugs (and any mains-powered devices) boost the signal in the property and the range of the system can be extended to fit any circumstances. These act as 'repeaters' on the mesh network which create a very strong and stable network in the property. During the '[Create Your System](#)' process we recommend a number of Smart Plugs based upon the design of your system, to help you get a stable communications network in your property.

Related Questions:

- [Differences between the Genius Smart Plug](#)
- [Differences between the Genius Radiator Valves](#)
- [How does the system communicate?](#)
- [Device communication time](#)
- [FAQs of battery-powered devices](#)