

**Ref: FAQ0077****Version: 1.0****Title – How RadioTech repeaters work****Made By: AB 22/01/15****(Issue 1)**

RadioTech repeaters – how do they work?

Repeaters are basically range extenders, they receive transmissions from individual transmitters and re-transmit the data at a higher power. The result is that (for example) a pulse transmitter can be placed much further away from a Wi5 hub than would be possible without the use of a repeater.

The Repeater is intelligent to a degree;

- 1) It will only recognise Radio Tech transmitters on its own frequency. It will ignore non Radio-Tech devices and/or transmitters not on its frequency.
- 2) It will check that an incoming transmission is not corrupted, if it is then it will not re-transmit it.
- 3) If it receives duplicate data (same time/Tx ID etc) from (example) two other repeaters, then it will only re-transmit one data packet (not both).

The Repeater will only accept and repeat valid RadioTech transmissions, and it will not retransmit 'duplicate' data.

However, it will do this for any and all transmitters in range.

In a larger radio network consisting of multiple Transmitter, Repeaters and Hubs, it is likely that different hubs will capture data from the same transmitter, either directly or via a Repeater(s). This can be minimised by careful site survey/planning and programming of the hub.

This can be an advantage as this provides a measure of redundancy – if a hub goes out of service, then data from a transmitter can still be uploaded to Datagate via a nearby hub.

However, there may be a concern that 'duplicate' data will adversely affect the cost of transferring data from the hub to Datagate via GPRS (This is not a concern for Ethernet Wi5 hubs).

In realistic terms, this additional data is not likely to impact significantly on cost of data transfer.

With careful site planning and hub (whitelist) programming, duplicate data can be minimised, however it is unlikely (or possibly undesirable if a measure of redundancy is required) that duplicate data can be eliminated from large installations.

Duplicate data arriving at Datagate would have little impact on the data viewed via HWMOnline.

Duplicate data is not actually 'duplicate', it is the same Tx data (Pulse value etc) but with (possibly) a slightly different timestamp.

This Timestamp difference comes from the differences between the time held on each hub.

Even though the hubs synchronise themselves once per day, some drift will occur between hubs.

The result is the same Pulse value being plotted 1~2 secs apart.

This has no real bearing on the accuracy of the presented data.

Document History:

Edition	Date of Issue	Modification	Notes
1st	22/01/15	Release	