Paging

Page scan (slave)

An unconnected Bluetooth device must periodically enter the **page scan** state; in this state, the device activates its receiver and listens for a master device that might be trying to page it. A device operates in one of three page SR (Scan Repetition) modes:

R0: the device listens continuously for a master paging it.
R1: the device listens at least every 1.28 seconds (2048 slots).
R2: the device listens at least every 2.56 seconds (4096 slots).

During the page scan state, the unconnected device listens on one of 32 channels, for at least 10ms (16 slots). A different channel is selected every 1.28 seconds (2048 slots). The channels and the hopping sequence are calculated from the device's BD_ADDR (Bluetooth Device Address).

Page (master)

When commanded to enter the **page** state, the master device starts to transmit, using 16 of the 32 channels being used by the paged device. During every even numbered slot it transmits two ID packets on two different channels, and during the following slot it listens on two different channels for the slave's response (also an ID packet). In the next two slots it uses the next two channels, so the hopping sequence (of 16 channels) repeats every 10ms (16 slots).

The master repeats the 16 slot sequence for at least long enough for the paged device to enter the page scan state:

R0: at least once.
R1: at least 128 times (i.e. for at least 1.28 seconds).
R2: at least 256 times (i.e. for at least 2.56 seconds).

If the master doesn't receive a response, it will then try the other 16 channels.

Page sequence

- Slot n+0: The master transmits one ID packet in the first half slot, then a second ID packet (on a different frequency) in the second half slot.
- Slot n+1: The slave responds with an ID packet, in either the first half or second half of the slot.
- Slot n+2: The master transmits an FHS packet.
- Slot n+3: The slave responds with an ID packet, in the first half of the slot.
- Slot n+4: The master switches to the normal hopping scheme. The first packet it transmits is a POLL packet.

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