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|Wireless Lan Apps                                           |
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|Subject:|
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|Re: FCC Questions on MAC protocol                          |
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Dear Beck,
I will try to help you address some of the questions raised by the FCC with
regard to the frequency hopping operation of our MAC protocol. It appears
that the questions may have arisen because the FCC have made an incorrect
assumption about the way the protocol operates. First of all, re-stating
some fundemental statements may help:

1. The protocol relies on one or more stations/nodes in the network group
being a 'master'. A master changes frequency at a fixed rate, and
periodically transmits timing information to the other stations in the
group. In this way, a 'slave' node knows when to change frequency, and also
knows which frequency to change to. This operation of the different types
of station is described in more detail in section 8.5 of the Application
Programmer's Interface specification, which is supplied as part of the
Binary MAC package. This information may be added to your submitted
material, but the FCC MUST be requested to hold it confidential, as with
the schematic, theory of operation etc. I have also attached this
information to this message.

2. The time spent on each frequency (the 'dwell time') is fixed (80mS).
Stations always change channels every 80mS, irrespective of whether any
transmissions have taken place. There is NO synchronisation between the
frequency used and the occurence of a transmission.

3. Each transmission takes place on only ONE frequency - a single
transmission is NOT spread across different frequencies.

The report from the FCC states "each new transmission must start at a
different point in the sequence". Please consider the following scenario: a
station has just changed frequency and immediately transmits a short
packet. If, immediately after this first transmission, the station then has
another short packet to transmit, it will attempt to transmit the packet on
the SAME frequency, because the 80mS dwell time has not yet elapsed.
However, we would argue that this IS "a different point in the sequence" -
because the sequence is time-based, and this timing is not altered as a
result of the transmissions occuring.

As stated above, there is no synchronisation between the time at which the frequency is changed and the transmission of data packets. Therefore each transmitter WILL, on average, use each frequency equally. I believe that the FCC may be assuming that the protocol operates by changing frequency prior to each and every transmission - this is not the case.

Best Regards,
    Colin

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