March 2nd, 2005

In response to your comments dated February 17th, 2005 regarding the application for FCC ID: IR2DWW6345, please find our responses below:

1) System receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted
signals (15.247(a)(1)). Please provide information that shows this device complies with this.

> The device is a transmit-only device. It is used with a transceiver (FCC IR2DWW6312) that has the same channel spacing and that meets the input bandwidth requirements of 15.247 (a)(1).

2) This device shall use a pseudo-randomly ordered list of hopping frequencies. Please explain how this device accomplishes this and also provide sample hopping tables (minimum of 2 if the device is capable of having multiple hopping tables.

> The Operational Description has been updated with the hopping table (there is only one).

3) Please provide information showing compliance with 15.247(g)/(h).

> The Operational Description has been updated to explain that the device hops through the hopset without deviation and does not incorporate any intelligence to synchronize its hopset with other devices. The device will hop through the entire table continuously until powered off. When first powered on it starts at the first frequency in the hop table, but as this reset will occur infrequently, on average all channels are used equally.

4) The test report mentions a normal transmission only occurs every 2.5 seconds. Please provide theory of operation to confirm worse case timing and design of the system. Note the test report mentions 7.5 ms TX period per channel.

> The Operational Description has been updated to describe the 7.5ms transmission on a channel every 2.5 seconds, with plots attached.

5) The averaging duty factor is states as 7.5 ms TX period, however other test data (equal use on the average) shows the device can transmit up to 465 mS per hop. This would not allow any duty cycle correction and would cause many of the results show to be in excess of the limits for average emissions. Please explain/correct as necessary. Additionally, it is expected that the worse case theory support the measurements as well.

> For FCC test purposes the device was configured to transmit in a hopping mode at a faster rate that the actual once every 2.5 seconds and for longer than the actual 7.5ms per transmission period to allow the channels to be easily identified. The channel occupancy data has been removed form the test report and replaced by plots and more detailed information in the revised Operational Description.

6) Please include a tunable list of frequencies. The user manual appears to state only 8 channels are used but this appears different in the report.

> The ID refers to codes that are used to identify a particular sensor station and that the ID code should not be confused with the number of channels, which is 51.

7) It appears from the users manual (page 5) that the device uses only one channel at a time. If so, how is this considered to be FH?

> Again IDs and Channels are being confused – the device will always hop through all 51 channels.

8) How does the test mode comply with the FHSS requirements?

> The test mode described in the user's manual enables an LED to flash whenever the device transmits. The device continues to transmit in its usual hopping mode during the "test mode". Hopefully the more recent version of the user manual (uploaded to the TCB website) will also help to clarify this.

9) Please consider adding a statement to the users manual to explain to the user that the device has been evaluated to meet the FCC RF exposure requirements.

> Davis Instruments will consider adding the statement on the next revision of the manual.

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The following documents have been uploaded to the ATCB website to support the responses above:

- 07395.267 Manual Leaf and Soil Moisture Temp Station Manual revised.pdf
- Expository Statement revised.doc
- R58565 Revised.pdf

Regards,

Mark Briggs