

3) The duty cycle may not have been calculated correctly. Based on ANSI C63.4 and FCC requirements the average correction factor should be determined over one complete pulse train or 100 ms time frame if pulse train exceeds 100 ms. The information in the report would suggest that the pulse train is 32.8ms in duration (11.9ms transmission, 10ms silent time, 11.9ms transmission) with a duty cycle of about 70.4%. The duty cycle can only be determined over 100ms if there are additional transmissions after the 100ms period shown in the report. Also, is it possible for the device to send additional transmissions if no acknowledgment is received for that second pulse? **[TR>] NO, acknowledgment not used. Additional transmissions do occur after the 100ms window. Worst case is shown from T->H but typical operation has 12 minutes between transmissions.**

Also, this is the same plot as shown for the remote weather station. Is the same transmission cycle used for this controller? **[TR>] Yes.**

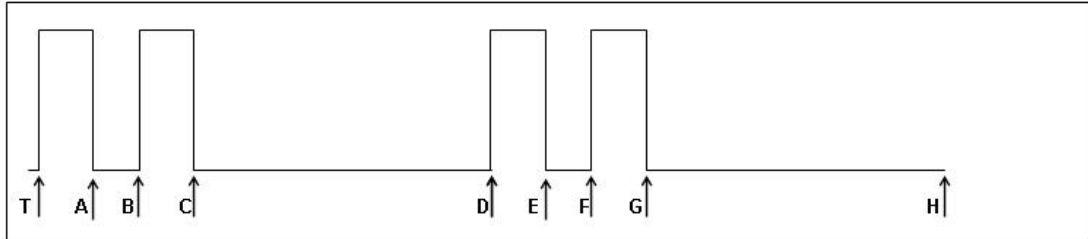
The plot for the weather station shows the same 10ms period between pulses for an acknowledgement that would, assumedly, come from the controller? **[TR>] acknowledgment not used, just fixed repeat.**

The operational description does not provide additional information to help determine if the two pulses are the worst-case or if the transmissions occur at intervals to justify use of the 100ms averaging period.

A timing diagram showing the various transmissions between the controller and the remote weather station should be provided to demonstrate that the claimed duty cycle is consistent with actual operation for each part of the system. **[TR>] see updated drawing.**

## Pulse Train and Duty Cycle Calculation over 100ms Worst Case Window

FCC: OF7CL9, OF7WS9, OF7SP9  
IC: 3575A-CL9, 3575A-WS9, 3575A-SP9



T → A (D→E) :: 11.9ms (11.9ms= max 24bytes @ 396us/byte + 2.4ms preamble)

A → B (E→F) :: 10 ms

B → C (F→G) :: 11.9ms (fixed repeat, no acknowledgement sent)

C → D (G→H) :: 66.2 ms

T → D (D→H) :: 100ms

Typical message: T→D. Repeat as needed: D→H

Duty Cycle :: 23.8% =  $(11.9 + 11.9) / 100$

There is no Acknowledgement of transmitted message but if additional data is required to be exchanged worst case it will be follow in the T→H format, waiting 66.2ms and not consisting of more then 24 bytes of data (maximum payload size), for D→E or F→G.

