

March 18, 2013

RE: ATCB013644 – Original Equipment & Single Certification Applications - Models: 681575688AA, 68185575AA & 68186572AA

FCC ID: GQ4-61T & IC: 1470A-42T for TRW Inc.

The following is in response to the comments made on the above referenced application.

1. The exhibit entitled "modes of operation" make statements in the Park mode that make no sense to me. Under Frequency of Transmission this mode states in the second bullet that the device will "transmit 4 words when delta Pressure is seen. 5 ASK words followed by 2 FSK words." $5 + 2 = 7$. Where do the 4 words come from? Or does each word contain 5 ASK frames followed by 2 FSK frames. Perhaps a definition of "word" versus "frame" is needed. If it is 4 words consisting of 5 + 2 frames, how often are the words transmitted? Please elaborate on the operation under Park mode to show compliance with Section 15.231(e) of the FCC Rules. Park mode transmissions do not fall under "alarm mode transmissions" elsewhere in 15.231.

The manufacturer refers to "frames" as "words". Each Park Mode transmission contains 7 frames, 5 of which are ASK and 2 of which are FSK in Park Mode. Positive pressure changes in Park Mode would be considered manually actuated, as the user must be manually adding air to the tire for these transmissions to occur. Negative changes in pressure fall under an alarm condition, as the tire is losing air and presents a safety hazard to the user.

2. The following issues need clarification in the submitted test report:
 - (a) In Section 6.1.1 of the test report, the words for duty cycle correction factor say that two 10.5 mS ASK frames occur within 100 mS but the calculations below show only one 10.5 mS frame within the 100 mS window. Please address this discrepancy.
 - (b) On page 11 the Park mode transmissions at the top of the page show all 7 frames within a 50 mS window (sweep) but the delta for one transmission shows a duration of that transmission as being 25 mS. These two pieces of information do not agree. A transmission of 25 mS duration would take up half of the screen of a 50 mS window (sweep). Please address this discrepancy. (If all 7 transmissions occur within a 50 mS window, the duty cycle correction factor in Section 6.1.1 needs justification as to why this duty factor, which is much lower than -19.1 dB, was not used in this test report.) Please address.

Per (a), as explained in the paragraph above the calculations, there are two scenarios where ASK frames occur, either "one 22.25 ms ASK frame, or two 10.5 ms ASK frames within any given 100 ms window". As both sets of ASK frames are Manchester encoded at 50% duty, the worst case is the 22.25 ms ASK frame because $2 \times 10.5\text{ms} = 21\text{ ms}$ results in less on time. Thus, duty is computed using the 22.25 ms ASK frame.

Per (b), it appears that the plots reported sweep time in error. Note that the delta-marker used in the plot shows 25ms as the length of the frame being measured. The total sweep time in this plot is 1 second.