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RE: White Stag LLC DBA Halo Smart Labs

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IC: *not requested*
ATCB020342

The Operational Description appears to show lower intended output levels at bandedge channels than at the midband channels for Zigbee operation (Table 3, p.16), but not for WiFi operation (Table 2, p.14). However, the test data appears to show this bandedge channel output power reduction for both Zigbee and WiFi operation (e.g., WiFi EMC report Section 9.2.1.2, p.41). Please confirm that this output power reduction is intentionally implemented in certain channels to facilitate bandedge compliance, and clarify if it is also applied to WiFi operation, as is apparently shown by the data. If it is not, then please explain the differences between WiFi midband and bandedge channel output levels shown in the report (up to a 2.5 dB difference).
The same power setting is used for all Wi-Fi channels. The Wifi chip automatically reduces the power of the edge channels.
Please clarify if spurious radiated emissions (SRE) were investigated for each transmitter with both the WiFi and Zigbee radios transmitting simultaneously, as required by Section 15.31)h). It is noted that both the Zigbee and WiFi EMC reports state, in Section 6.6, that AClc tests were performed with both transmitters emitting, but it is not clear if this was also done for SRE measurements (i.e., Section 5.6 of the reports), as required.
Yes, spurious radiated emissions were checked with both transmitters running.
In the Zigbee EMC report, the plots on pp.17 and 18 appear to show the 3rd harmonic radiated emission as being higher than the 2nd harmonic emission (on p.18, for the Halo unit, it is nearly 15 dB higher). Although this emission, at about 7230 MHz, may not be in a restricted band (hence not requiring a radiated measurement), the 3rd harmonic of channels at or above 2417 MHz would fall in a restricted band. Please confirm that these 3rd harmonic emissions were investigated and found to also be compliant.
Yes, this was investigated and found to be compliant.

In the WiFi EMC report, in the SRE data above 1 GHz shown on p.14, the emission frequencies listed for low, mid and hi channels are not the 2nd harmonics of the fundamental frequencies: instead of 4824 MHz, 4874 MHz and 4924 MHz, the listed emissions are at 4019 MHz, 4060 MHz, and 4102 MHz. Please explain.
The listed emissions were found to be consistently higher that the harmonic emissions per channel. These emissions were measured on account of their smaller margins.