

**Thomas N. Cokenias**      *EMC & Radio Approvals*  
*Test & Consulting Services for Commercial, Military, International Compliance*  
*P.O. Box 1086*  
*El Granada, CA 94018*      *email: tom@tncokenias.org*

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**Re: class 2 permissive change for circuit modification**  
**Equipment: 15.247 Frequency hopping transmitter (RFID) 902-928 MHz**

**Inquiry:**

A client would like to make a modification to the ASK modulator circuit on a currently certified device. The new proposed version of the product has the same VCO, power amplifier chain, power control circuit, harmonic filtering, frequency range and output power as the current product. Data input are identical 40 kHz signals into the modulators.

The main difference is that the new version has the option to use PR-ASK. The PR-ASK for a given data rate cuts the spectrum bandwidth in half compared to ASK because there are half the number of transitions. So the 40 KHz signal using PR-ASK looks like an ASK signal at 20 KHz. In addition the filter has been improved from 3rd to 8th order, which also greatly improves the spectral output.

The current and proposed block diagrams are shown on the following pages, accompanied by spectrum analyzer plots.

Is this change an acceptable class 2 permissive change? It appears that this modification would be acceptable under 2.1043(a) since the “basic modulator circuit” is still ASK.

Sincerely,

T.N. Cokenias  
Consultant, EMC/Radio Device Regulatory Approvals