

a	Use Form-731 equipment-class code DSS. Form 731 – equipment class code DSS provided.
b	Hybrid system device measurement guidelines are as follows.
1.	As specified in Section 15.247(f), a hybrid system must comply with the power density standard of 8 dBm in any 3 kHz band when the frequency hopping function is turned off. <a href="#">Please refer to M2005002-4 DTS test report section 6.9 Power spectral density</a>
2.	The transmission must comply with a 0.4 second/channel maximum dwell time when the hopping function is turned on. <a href="#">Please refer to M2005002-5 FHSS test report section 6.7 Number of channels and time of occupancy</a>
3.	There is no requirement for this type of hybrid system to comply with the 500 kHz minimum bandwidth normally associated with a DTS device. <a href="#">Noted</a>
4.	There is no minimum number of hopping channels associated with this type of hybrid system. While there is not a specific minimum limit, the hop sequence is required to appear as pseudorandom per Section 15.247(a)(1) (see Section 3 of this document). <a href="#">LoRaWAN requires the end-device to pseudo-randomly choose the next uplink channel regardless of mode. Single channel operation is only permissible (via our reading of 15.247) with 500kHz (DTS) channels.</a>
5.	The hopping function must be a true frequency hopping system, as described in Section 15.247(a)(1). The specific requirements in Section 15.247(a)(1) are: a minimum channel separation; <a href="#">LoRaWAN™ is defined with more than 50 channels to take advantage of the available spectrum and allow maximum output power. US902-928 defines 64 125kHz uplink channels spaced at 200kHz and 8 500kHz uplink channels spaced at 1600kHz.</a>
	ii) pseudo-random hop sequence; <a href="#">LoRa® modulation qualifies as a digital modulation technique so it is exempt from having to comply with all the frequency hopping requirements specified by FCC under a Hybrid mode of operation. In Hybrid mode, the maximum output power is limited to +21dBm and only a subset of eight channels out of the 64 uplink channels is utilized under Hybrid mode. LoRaWAN requires the end-device to pseudo-randomly choose the next uplink channel regardless of mode. Single channel operation is only permissible (via our reading of 15.247) with 500kHz (DTS) channels.</a>
	iii) equal use of each frequency; and

	<b>Yes</b>
	iv) receiver matching bandwidth and synchronization. <b>Yes</b>