

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.
	Please refer to M2005002-4 DTS test report section 6.9 Power spectral density
2.	The transmission must comply with a 0.4 second/channel maximum dwell time when the hopping function is turned on.
	Please refer to M2005002-5 FHSS test report section 6.7 Number of channels and time of occupancy
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.
	Noted
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).
	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.
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; 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.
	ii) pseudo-random hop sequence; 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.
	iii) equal use of each frequency; and

	Yes
	iv) receiver matching bandwidth and synchronization. Yes