

	Discussion of Issue(s)	AT&T/NCR recommended wording
(8) The monitoring system shall operate via the transmitting antenna, or an antenna with the same coverage area as the transmitting antenna, and shall be capable of measuring the power level of the monitored signal with an accuracy of +/- 3 dB.	this is inconsistent with section 15.321.c.5	Recommend changing "3" to "6"
(9) Devices that have a power output lower than the maximum permitted under the rules may increase their monitoring detection threshold by one decibel for each one decibel that the transmitter power is below the maximum permitted.		
(10) NEW SUGGESTED PARAGRAPH	The current UPCS Part 15 rules do not appear to allow for media access techniques used by duplex operations common to FDMA/TDMA/CDMA and some WLAN devices. The suggested wording both corrects this potential problem, while strengthening both spectrum efficiency and the LBT rules for such systems.	"An initiating isochronous device may attempt to establish a duplex connection by monitoring both its intended transmit and receive time and spectrum windows in accordance with 15.321(c). Time and Spectrum window access selection for initiating device shall be based on the higher measured power of the intended transmit or receive time and spectrum windows. If the power detected by the responding device can be decoded as a duplex connection signal from an interoperable device (the initiating device), then the responding device may immediately begin transmitting on the receive time and spectrum window of the initiating device."
(d) Emissions shall be attenuated below a reference power of 112 milliwatts as follows: 40 dB between the channel edges and 1.25 MHz above or below the channel; 50 dB between 1.25 and 2.5 MHz above or below the channel; and 60 dB at 2.5 MHz or greater above or below the channel.		
For systems which further sub-divide a 1.25 MHz channel into X sub-channels, the following emission mask shall be followed: in the bands between 1B and 2B measured from the center of the emission bandwidth the total power emitted by the device shall be at least 40 dB below the transmit power permitted for that device; in the bands between 2B and 3B measured from the center of the emission bandwidth the total power emitted by an intentional radiator shall be at least 50 dB below the transmit power permitted for that radiator; in the bands between 3B and the 1.25 MHz channel edge the total power emitted by an intentional radiator in the measurement bandwidth shall be at least 60 dB below the transmit power permitted for that radiator.	The use of 1 percent in the measurement has had the affect of creating 20 dB interpretation differences between different analysts. The suggested wording is one possible solution to this issue. (similar issue at 15.323)	Replace "Emissions" in the first sentence with "Total Power Emitted". After 60 dB in the first sentence add "in a measurement bandwidth equal to the emission bandwidth"
"B" is defined as the emission bandwidth of the device in hertz.		

	Discussion of Issue(s)	AT&T/NCR recommended wording
	Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.	delete
	(e) The frame period (a set of consecutive time slots in which the position of each time slot can be identified by reference to a synchronizing source) of an intentional radiator operating in these sub-bands shall be 10 milliseconds/X where X is a positive whole number.	Move the parenthetical definition of frame, with some modification, to the definitions section. Suggestion appears in Section 303 above.
	Each device that implements time division for the purposes of maintaining a duplex connection on a given frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 50 parts per millions (ppm).	
	Each device which further divides access in time in order to support multiple communication links on a given frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 10 ppm.	
	The jitter (time-related, abrupt, spurious variations in the duration of the frame interval) introduced at the two ends of such a communication link shall not exceed 25 microseconds for any two consecutive transmissions.	
	Transmission shall be continuous during the frame period defined for the device.	transmissions should be continuous over a time window, not a frame. Delete this sentence, but include this concept in the definition of time window, in Section 303.
	(f) The frequency stability of the carrier frequency of the intentional radiator shall be maintained within +/- 10 ppm over 1 hour or the interval between channel access monitoring, whichever is shorter.	
	The frequency stability shall be maintained over a temperature variation of -30 to +50 degrees C at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20 C.	There may not be industry agreement on temperature range for the new generation of low-cost equipment which is envisioned for this band. Also a paragraph which Test Comm. could address. Would Commission be willing to consider recommendations made by Test Committee regarding this paragraph?
	For equipment that is only capable of operating from a battery, the frequency stability tests shall be performed using a new battery without any further requirement to vary supply voltage.	
15.323	Specific requirements for asynchronous operation in the 1900-1920 MHz sub-band.	
	(a) Operation shall be contained within one of two 10 MHz channels: 1900-1910 MHz or 1910-1920 MHz.	

	Discussion of Issue(s)	AT&T/NCR recommended wording
<p>The emission bandwidth of any intentional radiator operating in this sub-band shall be no less than 500 kHz.</p>		
<p>(b) All systems of less than 2.5 MHz emission bandwidth shall first occupy spectrum beginning nearest a channel edge, while systems of more than 2.5 MHz emission bandwidth will first occupy the center half of a channel.</p>		
<p>Devices with an emission bandwidth of less than 1.0 MHz may not occupy the center half of a channel if other spectrum is available.</p>		
<p>(c) Asynchronous devices must incorporate a mechanism for monitoring the spectrum that its transmission is intended to occupy.</p>		
<p>The following criteria must be met:</p>		
<p>(1) Before initiating a transmission burst, devices must monitor the spectrum window they intend to use for a period of time that is at least 50 microseconds.</p>		
<p>(2) The monitoring threshold must not be more than 32 dB above the thermal noise power for a bandwidth equivalent to the emission bandwidth of the device.</p>		
<p>(3) If no signal above the threshold level is detected, a transmission burst may commence in the monitored spectrum window. Once a transmission burst has started, an individual device or a group of cooperating devices is not required to monitor the spectrum window provided the intraburst gap timing requirement specified below is not exceeded.</p>		
<p>(4) After completion of a transmission burst, an individual device or cooperating group of devices must cease transmission and wait a deference time randomly chosen from a uniform random distribution ranging from 50 to 750 microseconds after which time an attempt to access the band again may be initiated.</p>	<p>the initial spectrum access case is not covered</p>	<p>new suggested wording "After completion of a transmission burst or when the spectrum is busy upon the initial access attempt, an individual device or cooperating group of devices must wait a deference time randomly chosen from a uniform random distribution ranging from 50 to 750 microseconds after which time an attempt to access the band again my be initiated."</p>
<p>For each occasion that an access attempt fails after the initial inter-burst interval, the deference time chosen shall double until an upper limit of 12 milliseconds is reached. The deference time remains at the upper limit until an access attempt is successful.</p>		
<p>The deference time is re-initialized after each successful access attempt.</p>		

Discussion of Issue(s)		AT&T/NCR recommended wording
	(5) The monitoring system bandwidth must be equal to or greater than the emission bandwidth of the intended transmission and shall have a maximum reaction time less than $50 \times \text{SQRT}(1.25/\text{emission bandwidth in MHz})$ microseconds for signals at the applicable threshold level but shall not be required to be less than 50 microseconds.	
	If a signal is detected that is 6 dB or more above the threshold level, the maximum reaction time shall be $35 \times \text{SQRT}(1.25/\text{emission bandwidth in MHz})$ microseconds but shall not be required to be less than 35 microseconds.	
	(6) The monitoring system shall operate via the transmitting antenna, or an antenna with the same coverage area as the transmitting antenna, and shall be capable of measuring the power level of the monitored signal with an accuracy of +/- 3 dB.	
	(7) Devices that have a power output lower than the maximum permitted under the rules may increase their detection threshold by one decibel for each one decibel that the transmitter power is below the maximum permitted.	
	(d) Emissions shall be attenuated below a reference power of 112 milliwatts as follows: 40 dB between the channel edges and 1.25 MHz above or below the channel; 50 dB between 1.25 and 2.5 MHz above or below the channel; and 60 dB at 2.5 MHz or greater above or below the channel.	same explanation as in 15.321(d) above, also, without this correction, the appears to be an imbalance between the emissions between asynchronous and isochronous bands.
	Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.	Replace "Emissions" in the first sentence with "total power emitted", and insert after 60 dB "in a measurement bandwidth equal to the emission bandwidth"
	(e) The frequency stability of the carrier frequency of intentional radiators operating in this sub-band shall be +/- 10 ppm over 10 milliseconds or the interval between channel access monitoring, whichever is shorter.	
	The frequency stability shall be maintained over a temperature variation of -30 to +50 Celsius at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20 degrees Celsius.	

	Discussion of Issue(s)	AT&T/NCR recommended wording
	For equipment that is only capable of operating from a battery, the frequency stability tests shall be performed using a new battery without any further requirement to vary supply voltage.	
	(f) An asynchronous transmission burst is a series of transmissions from one or more transmitters acting cooperatively. The transmission burst duration from one device or group of devices acting cooperatively shall be no greater than 10 milliseconds.	editorial comment. change "one or more" to "two or more"
	Any intraburst gap between cooperating devices shall not exceed 25 microseconds.	
	(g) Individual unit intraburst transmissions shall be separated by a uniform random-duration interval evenly distributed between 50 and 375 microseconds.	editorial comment change "intra burst" to "inter burst"
	<END SUBPART D>	

TRST-RELATED UPCS SPECIFICATIONS PER SUGGESTED PART 15, Subpart D REQUIREMENTS	Part 15, Subpart D-- Unlicensed Personal Communications Service Devices Applicable Section #	ANSI C63.4 - 1992 Ref. Applicable Section #	ANSI C63.4 Reference Change Needed? (Sections 1-3, 10); Appendix J)	New Test Procedure Development Required? (Sections 4- 8,11,13,15; Appendix I)
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Scope.	15.301	1.1-,1.3, Appendix J	Appendix J	N/A
Definitions.	15.303	3.1-3.2	YES	N/A
Equipment authorization requirement.	15.305	10.1.1-10.2 (Test Reports)	YES	N/A
Cross reference.	15.309	NONE	YES (Separate section?)	N/A
Measurement Procedures - General	15.313	1.2	YES	N/A
General Technical Requirements	15.319			
(a) The 1890-1900 and 1920-1930 MHz sub-bands are limited to use by isochronous devices under the The 1900-1920 MHz sub-band is limited to use by asynchronous devices under the requirements of 15.323.requirements of Section 15.321.	15.319a	NONE	YES	YES
(b) All transmissions must use only digital modulation techniques.	15.319b	NONE	YES	YES
(c) Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in hertz. Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.	15.319c	13.1.8, Section 4, Section 5, Appendix I7	YES	YES
(d) Power spectral density shall not exceed 3 milliwatts in any 3 kHz bandwidth as measured with a spectrum analyzer having a resolution bandwidth of 3 kHz.	15.319d	NONE	YES	YES
(e) The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.	15.319e	NONE	YES	YES
(f) The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure.	15.319f	NONE	YES	YES
The device must comply with IEEE C95.1-1991, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz . Measurement methods are specified in IEEE C95.3-1991 "Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave." All equipment shall be considered to operate in an "uncontrolled" environment.	15.319i	NONE	?To be determined; May need a Cross-reference section (see 15.309)	?To be determined

<p>TEST-RELATED UPCS SPECIFICATIONS PER SUGGESTED PART 15, Subpart D REQUIREMENTS</p>	<p>Part 15, Subpart D- Unlicensed Personal Communications Service Devices Applicable Section #</p>	<p>ANSI C63.4 - 1992 Ref. Applicable Section #</p>	<p>ANSI C63.4 Reference Change Needed? (Sections 1-3, 10); Appendix J)</p>	<p>New Test Procedure Development Required? (Sections 4- 8,11,13,15; Appendix I)</p>
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<p>Specific requirements for Isochronous devices operating in the 1890-1900 and 1920-1930 MHz sub-bands.</p>	<p>15.321</p>			
<p>(a) Operation shall be contained within one of two channels starting with 1890-1895 MHz and ending with 1895-1900 MHz, or within one of eight channels that are 1.25 MHz in width starting with 1920-1921.25 MHz and ending with 1928.75-1930 Mhz.</p>	<p>15.321a</p>	<p>Section 13</p>	<p>YES</p>	<p>YES</p>
<p>(b) Intentional radiators with an intended emission bandwidth less than 625 kHz shall start searching for an available time and spectrum window at 1890 or 1920 MHz and search upward from that point.</p>	<p>15.321b</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>Devices with an intended emission bandwidth greater than 625 kHz shall start searching for an available time and spectrum window at 1930 or 1900 MHz and search downward from that point.</p>	<p>15.321b</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(c) Isochronous devices must incorporate a mechanism for monitoring the time and spectrum windows that its transmission is intended to occupy.</p>	<p>15.321c</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>The following criteria must be met</p>	<p>The majority of these requirements need a receiver-type tests which are absent in the existing ANSI C63.4 document</p>			
<p>(1) Before initiating transmission, devices must monitor the time and spectrum windows they intend to use for a period of at least 10 milliseconds to determine if the access criteria is met.</p>	<p>15.321c(1)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(2) The monitoring threshold must not be more than 30 dB above the thermal noise power for a bandwidth equivalent to the emission bandwidth used by the device.</p>	<p>15.321c(2)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(3) If no signal above the threshold level is detected, transmission may commence and continue with the same emission bandwidth in the monitored time and spectrum windows without further monitoring.</p>	<p>15.321c(3)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>However, occupation of the same combined time and spectrum windows by a device or group of cooperating devices continuously over a period of time longer than 8 hours is not permitted without repeating the access criteria.</p>	<p>15.321c(3)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(4) Once access to specific combined time and spectrum windows is obtained an acknowledgement from a system participant must be received by the initiating transmitter within one second or transmission must cease.</p>	<p>15.321c(4)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>

<p>TRST-RELATED UPCS SPECIFICATIONS PER SUGGESTED PART 15, Subpart D REQUIREMENTS</p>	<p>Part 15, Subpart D-- Unlicensed Personal Communications Service Devices Applicable Section #</p>	<p>ANSI C63.4 - 1992 Ref. Applicable Section #</p>	<p>ANSI C63.4 Reference Change Needed? (Sections 1-3, 10); Appendix J)</p>	<p>New Test Procedure Development Required? (Sections 4- 8,11,13,15; Appendix I)</p>
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<p>(5) If access to spectrum is not available as determined by the above, and a minimum of 40 duplex system access channels are defined for the system, the time and spectrum windows with the lowest power level below a monitoring threshold of 50 dB above the thermal noise power determined for the emission bandwidth may be accessed.</p>	<p>15.321c(5)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>A device utilizing the provisions of this paragraph must have monitored all access channels defined for its system within the last 10 seconds and must verify within the 20 milliseconds immediately preceding actual channel access that the detected power of the selected time and spectrum windows is no higher than the previously detected value.</p>	<p>15.321c(5)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>The power measurement resolution for this comparison must be accurate to within 6 dB.</p>	<p>15.321c(5)</p>	<p>NONE</p>	<p>YES</p>	<p>NO</p>
<p>No device or group of cooperating devices located within 1 meter of each other shall occupy more than three 1.25 MHz channels, two 1.25 MHz channels and one 5 MHz channel, or two 5 MHz channels during any 10 millisecond period of time.</p>	<p>15.321c(5)</p>	<p>NONE</p>	<p>?To be determined</p>	<p>?To be determined</p>
<p>(6) If the selected combined time and spectrum windows are unavailable, the device may either monitor and select a different window or seek to use the same windows after waiting an amount of time randomly chosen from a uniform random distribution between 10 and 150 milliseconds.</p>	<p>15.321c(6)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(7) The monitoring system bandwidth must be equal to or greater than the emission bandwidth of the intended transmission and have a maximum reaction time less than $50 \times \text{SQRT}(1.25/\text{emission bandwidth in MHz})$ microseconds for signals at the applicable threshold level but shall not be required to be less than 50 microseconds.</p>	<p>15.321c(7)</p>	<p>13.1.7 (partially)</p>	<p>YES</p>	<p>YES</p>
<p>If a signal is detected that is 6 dB or more above the applicable threshold level, the maximum reaction time shall be $35 \times \text{SQRT}(1.25/\text{emission bandwidth in MHz})$ microseconds but shall not be required to be less than 35 microseconds.</p>	<p>15.321c(7)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>

<p style="text-align: center;">TEST-RELATED UPCS SPECIFICATIONS PER SUGGESTED PART 15, Subpart D REQUIREMENTS</p>	<p>Part 15, Subpart D-- Unlicensed Personal Communications Service Devices Applicable Section #</p>	<p>ANSI C63.4 - 1992 Ref. Applicable Section #</p>	<p>ANSI C63.4 Reference Change Needed? (Sections 1-3, 10); Appendix J)</p>	<p>New Test Procedure Development Required? (Sections 4- 8,11,13,15; Appendix D)</p>
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(8) The monitoring system shall operate via the transmitting antenna, or an antenna with the same coverage area as the transmitting antenna, and shall be capable of measuring the power level of the monitored signal with an accuracy of +/- 3 dB.	15.321c(8)	NONE	YES	YES
(9) Devices that have a power output lower than the maximum permitted under the rules may increase their monitoring detection threshold by one decibel for each one decibel that the transmitter power is below the maximum permitted.	15.321c(9)	13.1.8	YES	YES
(d) Emissions shall be attenuated below a reference power of 112 milliwatts as follows: 40 dB between the channel edges and 1.25 MHz above or below the channel; 50 dB between 1.25 and 2.5 MHz above or below the channel; and 60 dB at 2.5 MHz or greater above or below the channel.	15.321d	Sections 4-6, 8-11, 13	YES	YES
For systems which further sub-divide a 1.25 MHz channel into X sub-channels, the following emission mask shall be followed: in the bands between 1B and 2B measured from the center of the emission bandwidth the total power emitted by the device shall be at least 40 dB below the transmit power permitted for that device; in the bands between 2B and 3B measured from the center of the emission bandwidth the total power emitted by an intentional radiator shall be at least 50 dB below the transmit power permitted for that radiator; in the bands between 3B and the 1.25 MHz channel edge the total power emitted by an intentional radiator in the measurement bandwidth shall be at least 60 dB below the transmit power permitted for that radiator.	15.321d	Sections 4-6, 8-11, 13	YES	YES
"B" is defined as the emission bandwidth of the device in hertz.	15.321d	Section 3	YES	N/A
Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.	15.321d	Section 4	YES	YES
(e) The frame period (a set of consecutive time slots in which the position of each time slot can be identified by reference to a synchronizing source) of an intentional radiator operating in these sub-bands shall be 10 milliseconds/X where X is a positive whole number.	15.321e	NONE	YES	YES

TEST-RELATED UPCS SPECIFICATIONS PER SUGGESTED PART 15, Subpart D REQUIREMENTS	Part 15, Subpart D—Unlicensed Personal Communications Service Devices Applicable Section #	ANSI C63.4 - 1992 Ref. Applicable Section #	ANSI C63.4 Reference Change Needed? (Sections 1-3, 10); Appendix J)	New Test Procedure Development Required? (Sections 4-11, 13, 15; Appendix I)
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Each device that implements time division for the purposes of maintaining a duplex connection on a given frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 50 parts per millions (ppm).	15.321e	13.1.6	NO	NO
Each device which further divides access in time in order to support multiple communication links on a given frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 10 ppm.	15.321e	13.1.6	NO	NO
The jitter (time-related, abrupt, spurious variations in the duration of the frame interval) introduced at the two ends of such a communication link shall not exceed 25 microseconds for any two consecutive transmissions.	15.321e	NONE	YES	YES
Transmission shall be continuous during the frame period defined for the device.	15.321e	NONE	YES	YES
(f) The frequency stability of the carrier frequency of the intentional radiator shall be maintained within +/- 10 ppm over 1 hour or the interval between channel access monitoring, whichever is shorter.	15.321f	13.1.6	NO	NO
The frequency stability shall be maintained over a temperature variation of -30 to +50 degrees C at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20 C.	15.321f	13.1.6	NO	NO
For equipment that is only capable of operating from a battery, the frequency stability tests shall be performed using a new battery without any further requirement to vary supply voltage.	15.321f	13.1.6	NO	NO
Specific requirements for asynchronous operation in the 1900-1920 MHz sub-band.	15.323			
(a) Operation shall be contained within one of two 10 MHz channels: 1900-1910 MHz or 1910-1920 MHz.	15.323a	Section 13	To be determined	To be determined
The emission bandwidth of any intentional radiator operating in this sub-band shall be no less than 500 kHz.	15.323a	Section 13	To be determined	To be determined
(b) All systems of less than 2.5 MHz emission bandwidth shall first occupy spectrum beginning nearest a channel edge, while systems of more than 2.5 MHz emission bandwidth will first occupy the center half of a channel.	15.323b	Section 13	YES	YES

<p>TEST-RELATED UPCS SPECIFICATIONS PER SUGGESTED PART 15, Subpart D REQUIREMENTS</p>	<p>Part 15, Subpart D—Unlicensed Personal Communications Service Devices Applicable Section #</p>	<p>ANSI C63.4-1992 Ref. Applicable Section #</p>	<p>ANSI C63.4 Reference Change Needed? (Sections 1-3, 10); Appendix J)</p>	<p>New Test Procedure Development Required? (Sections 4-8, 11, 13, 15; Appendix J)</p>
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<p>Devices with an emission bandwidth of less than 1.0 MHz may not occupy the center half of a channel if other spectrum is available.</p>	<p>15.323b</p>	<p>Section 13</p>	<p>To be determined</p>	<p>To be determined</p>
<p>(c) Asynchronous devices must incorporate a mechanism for monitoring the spectrum that its transmission is intended to occupy.</p>	<p>15.323c</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>The following criteria must be met</p>	<p>The majority of these requirements need a receiver-type tests which are absent in the existing ANSI C63.4 document</p>			
<p>(1) Before initiating a transmission burst, devices must monitor the spectrum window they intend to use for a period of time that is at least 50 microseconds.</p>	<p>15.323c(1)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(2) The monitoring threshold must not be more than 32 dB above the thermal noise power for a bandwidth equivalent to the emission bandwidth of the device.</p>	<p>15.323c(2)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(3) If no signal above the threshold level is detected, a transmission burst may commence in the monitored spectrum window. Once a transmission burst has started, an individual device or a group of cooperating devices is not required to monitor the spectrum window provided the intraburst gap timing requirement specified below is not exceeded.</p>	<p>15.323c(3)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(4) After completion of a transmission burst, an individual device or cooperating group of devices must cease transmission and wait a deference time randomly chosen from a uniform random distribution ranging from 50 to 750 microseconds after which time an attempt to access the band again may be initiated.</p>	<p>15.323c(4)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>For each occasion that an access attempt fails after the initial inter-burst interval, the deference time chosen shall double until an upper limit of 12 milliseconds is reached. The deference time remains at the upper limit until an access attempt is successful.</p>	<p>15.323c(4)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>The deference time is re-initialized after each successful access attempt.</p>	<p>15.323c(4)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(5) The monitoring system bandwidth must be equal to or greater than the emission bandwidth of the intended transmission and shall have a maximum reaction time less than $50 \times \text{SQRT}(1.25/\text{emission bandwidth in MHz})$ microseconds for signals at the applicable threshold level but shall not be required to be less than 50 microseconds.</p>	<p>15.323c(5)</p>	<p>Section 13</p>	<p>YES</p>	<p>YES</p>

<p>TEST-RELATED UPCS SPECIFICATIONS PER SUGGESTED PART 15, Subpart D REQUIREMENTS</p>	<p>Part 15, Subpart D-- Unlicensed Personal Communications Service Devices Applicable Section #</p>	<p>ANSI C63.4 - 1992 Ref. Applicable Section #</p>	<p>ANSI C63.4 Reference Change Needed? (Sections 1-3, 10); Appendix J)</p>	<p>New Test Procedure Development Required? (Sections 4-8, 11, 13, 15; Appendix J)</p>
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<p>If a signal is detected that is 6 dB or more above the threshold level, the maximum reaction time shall be $35 \times \sqrt{1.25 / \text{emission bandwidth in MHz}}$ microseconds but shall not be required to be less than 35 microseconds.</p>	<p>15.323c(5)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(6) The monitoring system shall operate via the transmitting antenna, or an antenna with the same coverage area as the transmitting antenna, and shall be capable of measuring the power level of the monitored signal with an accuracy of +/- 3 dB.</p>	<p>15.323c(6)</p>	<p>Section 4</p>	<p>YES</p>	<p>YES</p>
<p>(7) Devices that have a power output lower than the maximum permitted under the rules may increase their detection threshold by one decibel for each one decibel that the transmitter power is below the maximum permitted.</p>	<p>15.323c(7)</p>	<p>NONE</p>	<p>YES</p>	<p>YES</p>
<p>(d) Emissions shall be attenuated below a reference power of 112 milliwatts as follows: 40 dB between the channel edges and 1.25 MHz above or below the channel; 50 dB between 1.25 and 2.5 MHz above or below the channel; and 60 dB at 2.5 MHz or greater above or below the channel.</p>	<p>15.323d</p>	<p>Sections 4-6, 8, 10, 11, 13</p>	<p>To be determined</p>	<p>To be determined</p>
<p>Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.</p>	<p>15.323d</p>	<p>Sections 4-6, 8, 10, 11, 13</p>	<p>To be determined</p>	<p>To be determined</p>
<p>(e) The frequency stability of the carrier frequency of intentional radiators operating in this sub-band shall be +/- 10 ppm over 10 milliseconds or the interval between channel access monitoring, whichever is shorter.</p>	<p>15.323e</p>	<p>13.1.6</p>	<p>NO</p>	<p>NO</p>
<p>The frequency stability shall be maintained over a temperature variation of -30 to +50 Celsius at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20 degrees Celsius.</p>	<p>15.323e</p>	<p>13.1.6</p>	<p>NO</p>	<p>NO</p>
<p>For equipment that is only capable of operating from a battery, the frequency stability tests shall be performed using a new battery without any further requirement to vary supply voltage.</p>	<p>15.323e</p>	<p>13.1.6</p>	<p>NO</p>	<p>NO</p>

TBST-RELATED UPCS SPECIFICATIONS PER SUGGESTED PART 15, Subpart D REQUIREMENTS	Part 15, Subpart D-- Unlicensed Personal Communications Service Devices Applicable Section #	ANSI C63.4- 1992 Ref. Applicable Section #	ANSI C63.4 Reference Change Needed? (Sections 1-3, 10); Appendix J)	New Test Procedure Development Required? (Sections 4- 8,11,13,15; Appendix J)
(f) An asynchronous transmission burst is a series of transmissions from one or more transmitters acting cooperatively. The transmission burst duration from one device or group of devices acting cooperatively shall be no greater than 10 milliseconds.	15.323f	Section 3	YES	YES
Any intraburst gap between cooperating devices shall not exceed 25 microseconds.	15.323f	Section 3	YES	YES
(g) Individual unit intraburst transmissions shall be separated by a uniform random-duration interval evenly distributed between 50 and 375 microseconds.	15.323g	Section 3	YES	YES
<END SUBPART D>				