Telecommunications Authority of Trinidad and Tobago
Schedule B - Schedule of Class-Licensed Devices

Class Licence Category Type:
Type 1 - End-user devices or customer premise equipment
Type 2 - Base Stations
Type 3 - Fixed Stations

Type of Radio-communication Device	Class Licence Category Type	Registration Required (Yes/No)	Frequency Range of Operation (MHz)	Max. Transmitter Output Power (dBm)	Max. Antenna Gain (dB)	ITU Class of Emission	Other Specific Technical Operating Parameters
Cellular Mobile Handset and Cellular Subscriber Unit / Cellular Mobile Transmitter	1	No	824 - 960, 1710 - 1990	33	0	200KD9W 200KG7D 1M25D9W	For every 1 dB increase in maximum antenna gain above 0 dB, there shall be a 1 dB decrease in maximum transmitter output RF power. The equivalent isotropic radiated power (EIRP) shall not exceed 33 dBm
			824 - 894, 1850 - 1990			247KGXW 246KG7W 248KGXW 247KG7W	
Family Radio Service (FRS) / General Mobile Radio Service (GMRS)	1	No	462.525 - 462.750, 467.525 - 467.750	33	0	16K0F3E	N/A
Broadband Wireless Access / Wireless Fidelity (WiFi) / Bluetooth	1	No	2400 - 2483.5	23	4	22M0D7W 3M50D7W	See Schedule B.1
Broadband Wireless Access / Wireless Fidelity (WiFi)	2 (Private indoor use)	No	2400 - 2483.5	23	4	22M0D7W 3M50D7W	See Schedule B.1
Broadband Wireless Access / Wireless Fidelity (WiFi)	2 (Public indoor and outdoor use)	Yes	2400 - 2483.5	30	6	22M0D7W 3M50D7W	See Schedule B.1
Broadband Wireless Access / Wireless Fidelity (WiFi)	3	Yes	2400 - 2483.5	30	6	22M0D7W 3M50D7W	See Schedule B.1

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Broadband Wireless Access / Wireless Fidelity (WiFi) / HiperLAN / Worldwide Interoperability for Microwave Access (WiMAX)	1	No	5150 - 5250 5470 - 5725 5725 - 5850	23 23	4 4	10M0D7W 22M0D7W 3M50D7W	See Schedule B.2
Broadband Wireless Access / Wireless Fidelity (WiFi) / HiperLAN / Worldwide Interoperability for Microwave Access (WiMAX)	2 (Private indoor use)	No	5150 - 5250 5470 - 5725 5725 - 5850	23 23	4 4	10M0D7W 22M0D7W 3M50D7W	See Schedule B.2
Broadband Wireless Access / Wireless Fidelity (WiFi) / HiperLAN / HiperMAN / Worldwide Interoperability for Microwave Access (WiMAX)	2 (Public indoor and outdoor use)	Yes	5150 - 5250 5470 - 5725 5725 - 5850	23 30	4 6	10M0D7W 22M0D7W 3M50D7W	See Schedule B.2
Broadband Wireless Access / Wireless Fidelity (WiFi) / HiperLAN / HiperMAN / Worldwide Interoperability for Microwave Access (WiMAX)	3	Yes	5151 – 5250 5470 – 5725 5725 – 5850	23 30	4 6	10M0D7W 22M0D7W 3M50D7W	See Schedule B.2
SCADA Transceiver (Automatic Meter Reader)	1	No	424.775	10	2	16K0F3D	N/A

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Remote Keyless Entry	1	No	902 – 928	21	0	200KL1D	Any increase in gain of 1dB there shall be an equal decrease of transmit RF output power of 1dB
			312.150, 314.350, 433.920, 434.320	10	0	16K0F3D	N/A
Personal Satellite Tracker	1	No	1611.25 - 1618.75	20	0	2M31G1D	N/A
RFID Reader	1	No	903.14 - 927.26	30	3	500KD7D	N/A
			13.553 - 13.567	See other Specific Technical Operating Parameters	0	14K0A1D	The field strength of any emissions within the band 13.553 - 13.567 MHz shall not exceed 15,848 µV/m at 30 meters. (FCC Part 15F)
Automatic Meter Reader Repeater Unit	3	Yes	0.058	-35.2	0	8K00P0N	N/A
			433.225, 433.725	14	-5.6	232KF1D	
			902 - 928	28	5.15	200KL1D	N/A
Remote Control Transmitter	1	No	431.5, 432.4, 432.7, 433.0, 433.3, 433.6, 433.9, 434.2, 434.8, 435.1, 435.4, 435.7, 436.0, 436.3, 436.6	0	0	483KF1D	N/A

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Automobile Distance Sensor/ Field Disturbance Sensor (Vehicle Radar)	1	No	22,000 - 29,000	-41.9	0	865MD7D	Ultra wide-band radar radio-communications device
			76,000 - 77,000	24.61	-2.89	200MF1N 400MF1N 800MF1N	
			23,570 - 25,258	-24	12	1G60P0N 1G68P0N	N/A
			76,551 - 76,844	See other Specific Technical Operating Parameters	See other Specific Technical Operating Parameters	290MN0N	The power density of any emission within the band shall not exceed 30 $\mu W/cm^2$ at a distance of 3 meters from the exterior surface
Medical Telemetry	1	No	1395 - 1400	25	<1	14K8F1D 24K4F1D	N/A
			402.15 - 404.85	-10.6	0.8	141KF1D	
			0.175	30	0	18K0M1D 74K4F1D	N/A
			402.0 - 405.0	-16.02	0	54K0F1D	N/A
Point-to-Point Radio Communication System	1	Yes	59,500 - 62,000	27	38	899GP1D	N/A
			902 - 928	20	16.15	2K00F1D	FCC 15.247
			24,100.0 - 24,200.0	0	33	100MW7D	

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Satellite Telemetry	1	No	148.0, 150.5	38	2	5K00G1D	Earth-to-Space
			137.2000, 137.2250, 137.2500, 137.2875, 137.3125, 137.4350, 137.4600, 137.6625, 137.6875, 137.7125, 137.7375, 137.8000	38	2	19K00G1D	Space-to-Earth
Wireless microphone	1	No	64.5, 64.7, 64.9, 65.1, 65.3, 65.5, 65.7, 65.9	16.9	0	60K0F3E	FCC Part 74
Satellite phone	1	No	1616.0 - 1626.5	35.2	3	41K7Q7W	Q639555A
Onsite paging system transmitter	1	No	467.750	9.73	0	8K60G1D	N/A
Unmanned Aerial Systems no more than 750g and used for recreational purposes **ONLY**	1	No	2400 - 2483.5	23	4	3M50D7W 22M0D7W	See Schedule B.1
			5725 - 5850	23	4	3M50D7W 80M0D7W	See Schedule B.2
Wireless Fidelity (WiFi) module	1	No	57,240 - 63,720	16.7	15.3	3G06D7W	

Telecommunications Authority of Trinidad and Tobago
Schedule B.1 - Other Specific Technical Operating Parameters

Parameter	Maximum Value	Comments
Maximum Effective Radiated Power ERP (from RF transmitter)		For frequency hopping systems employing less than 75 hopping channels ERP shall be no greater than 20.97 dBm
Antenna Gain		For every dB gain above 6 dBi, ERP of RF transmitter shall be reduced by 1 dBm.
Modulation scheme	Digital	Any digital modulation technique e.g. BPSK, QPSK
Multiple Access technique	Frequency Hopping Spread Spectrum (FHSS) Direct Sequence Spread Spectrum (DSSS)	Any other multiple access technology that can co-exist with FHSS and DSSS systems can be employed.
Minimum Channel Bandwidth	FHSS (20dB) – 25kHz DSSS (6dB) – 500kHz	FHSS shall use at least 15 well-defined, non-overlapping channels separated by the channel bandwidth. The dwell time per channel shall not exceed 0.4s within a period of 0.4n, where n is the number of channels employed
Frequency Range	2.4 – 2.4835GHz	This frequency range can be used for either indoor or outdoor operation.
Narrowband Transmitter spurious emission limits	**Operating** 30MHz – 1GHz = -36dBm 1GHz to 12.75GHz = -30dBm **Standby** 30MHz – 1GHz = -57dBm 1GHz to 12.75GHz = -47dBm	
Narrowband Receiver spurious emission limits	30MHz – 1GHz = -57dBm 1GHz to 12.75GHz = -47dBm	
Wideband Transmitter spurious emission limits	**Operating** 30MHz – 1GHz = -86dBm/Hz 1GHz to 12.75GHz = -80dBm/Hz **Standby** 30MHz – 1GHz = -107dBm/Hz 1GHz to 12.75GHz = -97dBm/Hz	

Wideband Receiver spurious emission limits	30MHz – 1GHz = -107dBm/Hz 1GHz to 12.75GHz = -97dBm/Hz	
Maximum Spectral Power density	FHSS – 100mW/100kHz DSSS – 10mW/1MHz	
Standardization	FCC	

Telecommunications Authority of Trinidad and Tobago
Schedule B.2 - Other Specific Technical Operating Parameters

Parameter	Maximum Value	Comments
Maximum Effective Radiated Power ERP (from RF transmitter)		For frequency hopping systems employing less than 75 hopping channels ERP shall be no greater than 20.97 dBm.
Antenna Gain		For every dB gain above 6 dBi, ERP of RF transmitter shall be reduced by 1 dBm.
Modulation scheme	Digital	Any digital modulation technique e.g. BPSK, QPSK
Multiple Access technique (WiFi and WiMAX Technology)	Frequency Hopping Spread Spectrum (FHSS) Direct Sequence Spread Spectrum (DSSS) Orthogonal Frequency Division Multiplexing (OFDM)	Any other multiple access technology that can co-exist with FHSS, DSSS and OFDM systems can be employed.
Minimum Channel Bandwidth (WiFi and WiMAX Technology)	FHSS (20dB) – 25kHz DSSS (6dB) – 500kHz OFDM (20dB) – 1.25MHz	FHSS shall use at least 75 well-defined, non-overlapping channels separated by channel bandwidth. The dwell time per channel shall not exceed 0.4s within a period of 30s
Operating Frequency Range (WiFi and WiMAX Technology)	5150 – 5250MHz 5250 – 5350MHz 5470 – 5725MHz 5725 – 5850MHz	Frequency ranges 5150 – 5250 MHz and 5250 – 5350 MHz shall be for indoor use only. Frequency ranges 5470 – 5725 MHz and 5725 – 5850 MHz can be used for wither indoor or outdoor operation.
Narrowband Transmitter mask (WiFi technology)	**Un-modulated** F_{tx} +/- 3 to 14MHz = -49dBm **Modulated** F_{tx} +/- 3 to 8MHz = -32dBm F_{tx} +/- 2 to 14MHz = -35dBm	
Transmitter Spectral Mask (WiMAX technology)	**20 MHz Channelization:** F_{tx} +/- 9.5MHz = 0dBm F_{tx} +/- 10.9MHz = -25dBm F_{tx} +/- 19.5MHz = -32dBm F_{tx} +/- 29.5MHz = -50dBm	

	10 MHz Channelization: F_{tx} +/- 4.75MHz = 0dBm F_{tx} +/- 5.45MHz = -25dBm F_{tx} +/- 9.75MHz = -32dBm F_{tx} +/- 14.75MHz = -50dBm	
Transmitter spurious emission limits (WiFi Technology)	**Operating** 25MHz – 1GHz = -69dBm 1GHz to 40GHz = -63dBm **Standby** 25MHz – 1GHz = -90dBm 1GHz to 40GHz = -80dBm	
Receiver spurious emission limits (WiFi Technology)	25MHz – 1GHz = -90dBm 1GHz to 40GHz = -80dBm	
Maximum Spectral Power density (WiFi Technology)	FHSS – 1W/100kHz DSSS – 10mW/3kHz	
Standardization	FCC, ETSI	