

Spurious emissions (radiated) 9 kHz – 5 GHz

1 GHz – 5 GHz

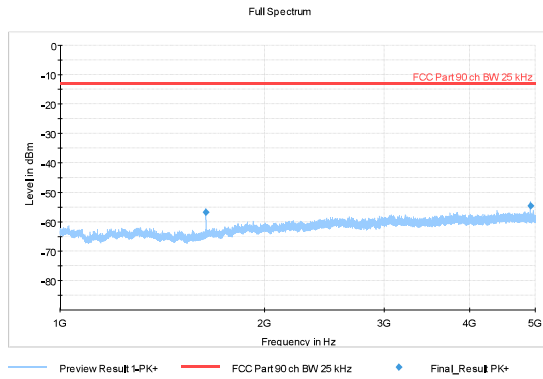


Figure 212: TX 410.0 MHz, 25 kHz, 16000 bps

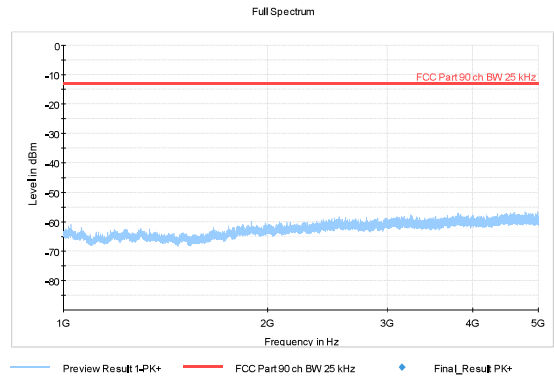


Figure 213: RX 410.0 MHz, 25 kHz, 16000 bps

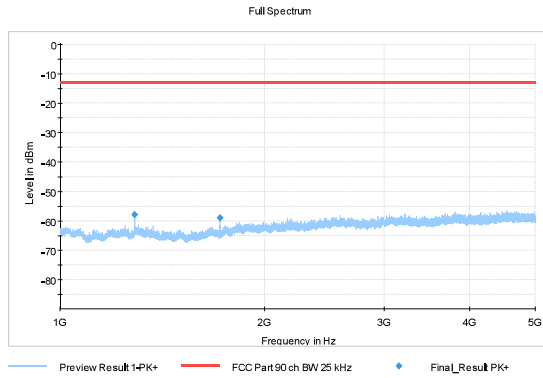


Figure 214: TX 429.5 MHz, 25 kHz, 19200 bps

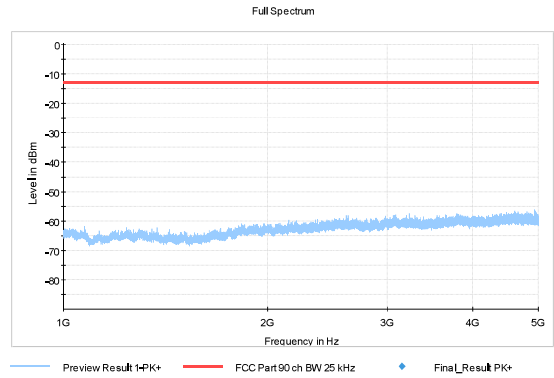
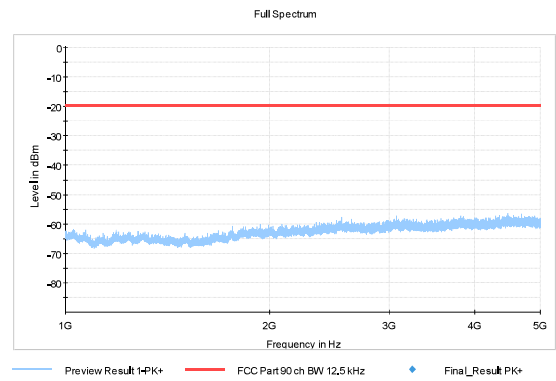
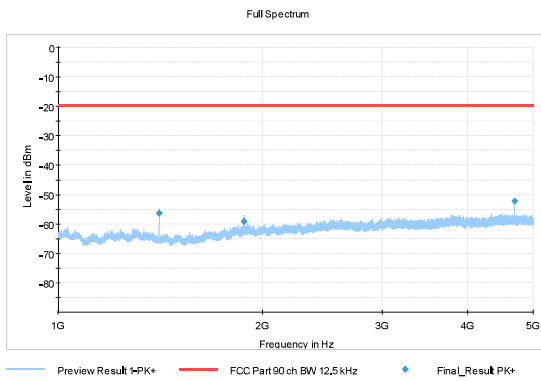
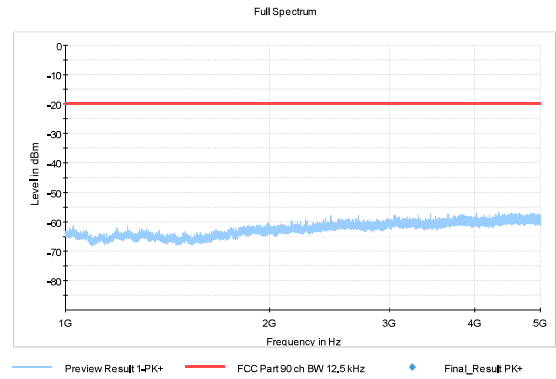
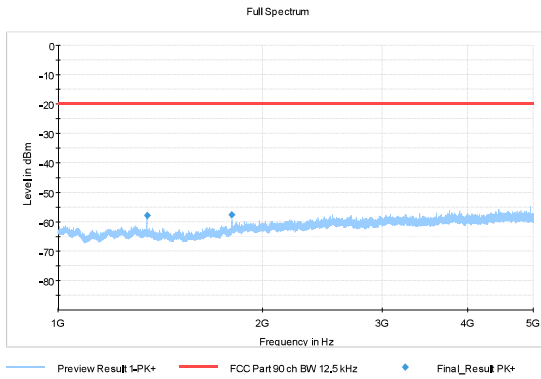


Figure 215: RX 429.5 MHz, 25 kHz, 19200 bps

Spurious emissions (radiated) 9 kHz – 5 GHz



Frequency stability

Frequency stability

Standard: ANSI C63.26 (2015)
Tested by: PKA
Date: 31 July 2020
Temperature: 22 °C
Humidity: 38 %RH

Measurement uncertainty: ± 0.470 dB Level of confidence 95.45 % (k = 2)
Test result: **PASS**

FCC Rule: 90.213

RSS-119 5.3

Frequency stability is a measure of drift due to temperature and supply voltage variations, with reference to the frequency measured at an appropriate reference temperature and the rated supply voltage. The carrier frequency shall not depart from the nominal frequency in excess of the values specified for the equipment's frequency band:

Frequency Band (MHz)	Channel Bandwidth (kHz)	Frequency Stability (ppm)
406.1-430 and 450-470	12.5	± 2.5
	25	± 5

The test was performed with unmodulated carrier at maximum power level, and with a spectrum analyser with following settings:

Span: 1 MHz
 RBW: 10 kHz
 VBW: 10 kHz
 Sweep points: 32001
 Sweep time: Auto
 Detector: Pos. Peak

Frequency stability

Test results

Table 22: Frequency stability (normal temperature, 12.5 kHz channel bandwidth)

Test Conditions		Frequency (MHz)		Deviation from Nominal (ppm)	Result
Temperature (°C)	Voltage (V)	Nominal	Measured		
+20	3.8	410.0	409.9998732	-0.309	PASS
		469.5	469.4998244	-0.374	PASS
	4.1	410.0	409.9998753	-0.304	PASS
		469.5	469.4999825	-0.372	PASS
	4.4	410.0	409.9998739	-0.308	PASS
		469.5	469.4998255	-0.372	PASS

Table 23: Frequency stability (normal temperature, 25 kHz channel bandwidth)

Test Conditions		Frequency (MHz)		Deviation from Nominal (ppm)	Result
Temperature (°C)	Voltage (V)	Nominal	Measured		
+20	3.8	410.0	409.9998741	-0.307	PASS
		469.5	469.4998247	-0.373	PASS
	4.1	410.0	409.9998746	-0.306	PASS
		469.5	469.4998253	-0.372	PASS
	4.4	410.0	409.9998742	-0.307	PASS
		469.5	469.4998247	-0.373	PASS

Table 24: Frequency stability (extreme temperature, 4.1 V, 12.5 kHz channel bandwidth)

Temperature (°C)	Frequency (MHz)		Deviation from Nominal (ppm)	Result
	Nominal	Measured		
-30	410.0	409.9998935	-0.260	PASS
	469.5	469.4998396	-0.342	PASS
-20	410.0	409.9998263	-0.424	PASS
	469.5	469.4997959	-0.435	PASS
-10	410.0	409.9997921	-0.507	PASS
	469.5	469.4997396	-0.555	PASS
0	410.0	409.9998577	-0.347	PASS
	469.5	469.4997552	-0.521	PASS
+10	410.0	409.9998694	-0.319	PASS
	469.5	469.4998386	-0.344	PASS
+20	410.0	409.9998746	-0.306	PASS
	469.5	469.4998253	-0.372	PASS
+30	410.0	409.9998815	-0.289	PASS
	469.5	469.4998326	-0.357	PASS
+40	410.0	409.9999129	-0.212	PASS
	469.5	469.4998891	-0.236	PASS
+50	410.0	409.9998715	-0.313	PASS
	469.5	469.4998559	-0.307	PASS
+60	410.0	409.9998121	-0.458	PASS
	469.5	469.4997078	-0.622	PASS

Frequency stability

Table 25: Frequency stability (extreme temperature, 4.1 V, 25 kHz channel bandwidth)

Temperature (°C)	Frequency (MHz)		Deviation from Nominal (ppm)	Result
	Nominal	Measured		
-30	410.0	409.9998896	-0.269	PASS
	469.5	469.4998417	-0.337	PASS
-20	410.0	409.9998337	-0.406	PASS
	469.5	469.4997882	-0.451	PASS
-10	410.0	409.9997943	-0.502	PASS
	469.5	469.4997362	-0.562	PASS
0	410.0	409.9998421	-0.385	PASS
	469.5	469.4997704	-0.489	PASS
+10	410.0	409.9998786	-0.296	PASS
	469.5	469.4998365	-0.348	PASS
+20	410.0	409.9998746	-0.306	PASS
	469.5	469.4998253	-0.372	PASS
+30	410.0	409.9998891	-0.270	PASS
	469.5	469.4998232	-0.377	PASS
+40	410.0	409.9999233	-0.187	PASS
	469.5	469.4998863	-0.242	PASS
+50	410.0	409.9998672	-0.324	PASS
	469.5	469.4998356	-0.350	PASS
+60	410.0	409.9997854	-0.523	PASS
	469.5	469.4997136	-0.610	PASS