Timco Engineering Inc.
849 NW State Road 45
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From: Mario de Aranzeta
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To: Stan Lyles
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FCC Application Processing Branch

Re: FCC ID PDHGMRS-1200L
Applicant: TTI Tech Co., Ltd.

Correspondence Reference Number: 23031
731 Confirmation Number: EA751360

1.) You have two power levels for GMRS. How is the power levels control? Please explain.

The radio has a High and Low power setting from the menu that allows its selection on GMRS frequencies. On FRS frequencies Low power is the only power that the microprocessor allows. High and low power are accomplished in the circuitry by microprocessor control of a transistor in the RF amplifier stage.

2.) Please provide the dBm power levels on pages 11 and 12 of the radiated spurious emissions measurements.

Our test method for the substitution method as described in TIA/EIA 603 (2.2.12) using a dipole for frequencies below 2500MHz. Above 2.5 GHz a double ridged guide antenna was used and referenced back to a dipole.

We usually do not keep the raw data in our files just the adjusted to dipole data. In this case we remeasured the EUT and the adjusted signal generator readings were tabulated.
I have remeasured the EUT and included this data on page 3 of this reply.

3.) Please resubmit new data for battery end-point. Section 2.1055 (d) (2). Your data looks like plus and minus 15%.

A revised temperature stability page is attached as page 2 of this reply.

The alignment instructions page has also been updated and uploaded to you.

Regards,

Mario de Aranzeta,
Engineer

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2.1055 Frequency stability:
95.621(b)

Temperature and voltage tests were performed to verify that the frequency remains within the 0.00025%, 2.5 ppm specification limit. The test was conducted as follows: The transmitter was placed in the temperature chamber at 25 degrees C and allowed to stabilize for one hour. The transmitter was keyed ON for one minute during which four frequency readings were recorded at 15 second intervals. The worse case number was taken for temperature plotting. The assigned channel frequency was considered to be the reference frequency. The temperature was then reduced to -30 degrees C after which the transmitter was again allowed to stabilize for one hour. The transmitter was keyed ON for one minute, and again frequency readings were noted at 15 second intervals The worst case number was recorded for temperature plotting This procedure was repeated in 10 degree increments up to + 50 degrees C.

Readings were also taken at the end point of the battery voltage of 6.0 VDC.

MEASUREMENT DATA:

Assigned Frequency (Ref. Frequency): 462.725 265

TEMPERATURE°C	FREQUENCY_MHz	PPM
REFERENCE_____	462.725265	00.00
-30C_____	462.725242	-0.05
-20C_____	462.725955	1.49
-10C_____	462.725371	0.23
0C_____	462.725039	-0.49
10C_____	462.725347	0.18
20C_____	462.725345	0.17
30C_____	462.725108	-0.34
40C_____	462.725898	1.37
50C_____	462.725849	1.26

BATT.	DATA	VOLTS	BATT. PPM
end point	462.725258	5.1	-0.02

RESULTS OF MEASUREMENTS: The maximum frequency variation over the temperature range was –0.49 to +1.49 ppm. The maximum frequency variation with voltage was -0.02 ppm.

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High power (1.2 Watts)

MHz	Generator Level in dBm	dBc	
462	+31	0	
924	-26	57	
1386	-**	**	FCC limit for High power
1850	-27	58	43+10 log(1.2)= 44 dB
2310	-37	68	
2772	-**	**	
3234	-30	61	
3696	**	**	
4160	**	**	
4620	**	**	

Low Power (0.5 Watts)

MHz	Generator Level in dBm	dBc	
462	+27	0	
924	-29	56	
1386	-38	65	FCC limit for Low power
1850	-29	56	43+10 log(0.5)=40 dB
2310	**	**	
2772	**	**	
3234	-28	55	
3696	**	**	
4160	**	**	
4620	**	**	

** levels below measurement capabilities and 20 dB below FCC limit