

Project: p0940019, Kenwood radio: TK-3140-02

Company:	Kenwood USA Corporation (Compliance Testing)	Composite Device:	Yes:	No:
MT#:	81741	FCC Direct Filing:	Yes:	No:
		Permit But Ask:	Yes:	No:
FCC ID:	ALH322601	FCC Rule Part:	90	
UPN:	-	RSS Standard:		
FRN:	0004356960	Class II PC/Reassessment:	Yes:	No:

Technical Review:

1. Please update the table on page 8 of the test report to include the units of measurement.

The table on page 8 of the test report has been has been edited to include the units of measurement.

2. The conducted power is listed as peak in the test report. However, the power sensor used (i.e. 8482A) is an average power sensor. Please clarify this discrepancy. Also, the RF power output has to be measured as radiated as well (ERP). Please update the test report to show ERP values as well.

Conducted power on a narrow band FM transmitter is identical to a CW measurement. Average and peak power on this type of signal is the same value.

Test data for Radiated Output Power is listed on each table on pages 15 – 17 of the test report.

3. Please clarify if the correction factors were programmed into the SA for conducted spurs measurements. If so, please indicate as such in test report.

A reference level offset was programmed into the spectrum analyzer to account for the attenuator and cable loss. The notch filter was utilized to suppress the fundamental preventing compression of the spectrum analyzer. Test report has been updated.

4. Please clarify which bandwidth was used for measuring conducted and radiated spurs and justify why both bandwidths were not used.

12.5 KHz occupied bandwidth was used for testing. In a narrow band FM transmitter the occupied bandwidth does not affect the radiated spurious power level reading.

5. Please clarify what the power output values mean above each of the radiated spurs tables. This doesn't appear to be the ERP value of the transmitter since it is less then the measured conducted power of the transmitter.

As with almost all narrow band FM transmitters these radios have antennas with a negative gain. (ie. less than 0 dBi) therefore the radiated output power will always be less than the conducted power.

6. The worst case limit for radiated spurs appears to be -20 dBm. However, the test report states -13 dBm. Please address this discrepancy.

Emissions outside of the band of operation are required to meet the emissions level of -13 dBm per TIA-603 section 3.2.12. This is a fixed limit.

7. Please provide antenna data sheets for the two antennas.

There are no requirements for antenna data sheets.

8. Please clarify if scrambling is employed by the transmitter and if so if it complies with 90.212 of the commissions rules.

There is no scrambling associated with this radio.

9. Please clarify during testing that the dimensions of the flat phantom were appropriate for measurements at 450 MHz.

The phantom is described in appendix f of the report. The size of the phantom is 600 mm x 450 mm x 200 mm. There is an ellipse in the center of the area which is 350 mm x 200 mm which is 2 mm thick. This is the dimension which are needed for 450 MHz testing.

10. Please clarify when the microphone is being used that the antenna on the radio is being by-passed.

When the antenna is used on the microphone the antenna on the radio is by-passed.

11. Internal pictures should be taken of individual boards. This way it is possible to zoom in a lot closer making the components on the board visible. Also, form factors need to be visible in the internal pictures.

Additional photos have been provided.

12. It appears that the shell thickness of the flat phantom is 6 mm per the calibration certificate for the phantom. The shell thickness shall be 2 mm for testing purposes per OET 65. Please clarify this discrepancy. Please include a full description of the EUT phantom as well as a certificate demonstrating that the requirements are met.

Question 9 provided the information regarding the phantom.

13. The SAR report lists that the measured RF power was ERP whereas the part 90 report lists it as conducted. Please indicate how the ERP was verified for the SAR report before and after each SAR test and also show how the ERP correlates to the conducted RF power listed in the part 90 report.

Page 17 of the SAR report indicates the conducted power measurement for the radio tested. This measurement is the conducted power.