

Narrative Statement (Form 442, Item 7)

This application proposes the use of ETSI Digital Mobile Radio (DMR) Tier II conventional radio technology in the General Mobile Radio Service (GMRS) at one fixed site with mobile units.^{1,2} DMR is used by the majority of digital commercial land-mobile radio systems in the country and is a well-proven, stable and affordable technology for family use.

However, DMR emissions are not currently allowed in the GMRS and requires special authorization.

An existing analog FM land mobile repeater station (certified under Part 95) will be temporarily replaced with a DMR-capable model (certified under Part 90). This will support a small number of digital subscriber units (e.g., vehicular and handheld radios). Both voice and simple text messaging will be used. The repeater covers a rural area in California’s central valley near Modesto, California.

The objective of this project is to determine if modern narrowband digital technology will provide better features and functionality than legacy analog technology and co-exist with other legacy analog radio systems located in other areas. In particular, we expect that the ability to support two simultaneous conversations in 7.6 kHz using DMR Time Division Multiple Access (TDMA) technology, versus one in a 20 kHz analog channel, may allow more families to cost-share and use a single repeater, and/or reduce collisions and wait times. Text-messaging may also improve communications while simultaneously using less airtime. Various other calling features are possible that will enhance usability as well.

Technical Parameter Differences in Rules

The proposed equipment is type-certified in Parts 22, 74, 80 and 90. However, it meets or exceeds all critical technical standards specified for GMRS in Part 95. These are shown below in Table 1 and Figure 1 below:

KEY TECHNICAL PARAMETERS	GMRS	PROPOSED
Frequency Tolerance, Mobile Relay (ppm)	2.5	1.5
Frequency Tolerance, Mobile (ppm)	5	1.5
Authorized Bandwidth (kHz)	20	7.6
Emission Types	A1D, F1D, G1D, H1D, J1D, R1D, A3E, F3E, G3E, H3E, J3E and R3E	FXE, FXD, F7E, F7D, and F7W
Peak Deviation (kHz)	±5	±1.944

Table 1 – Comparison of Key Technical Parameters

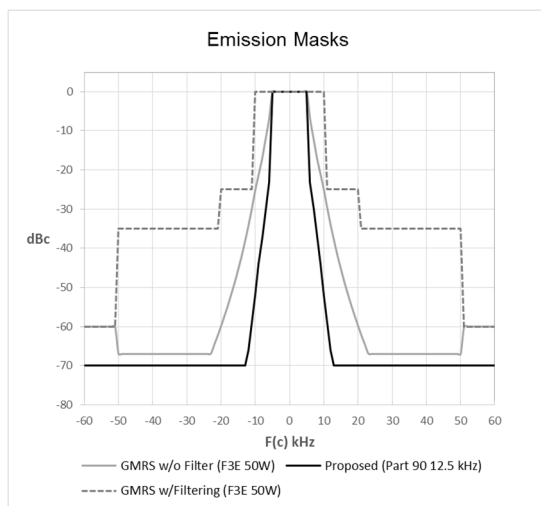


Figure 1 – Current GMRS and Proposed Emission Masks

¹ European Telecommunications Standards Institute.

² DMR Tier II is defined in ETSI standards TS 102 361-1, TS 102 361-2, TS 102 361-3 and TR 102 398. It is used extensively in Part 90 Business/Industrial and some Public Safety services.