



Licensed Devices

Recent Rule Interpretations

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Rule Interpretations

❑ Labeling – Part 2

- The FCC identifier must be on the exterior of the device. There are only two exceptions:
 - 1) The device is an ingested transmitter or it is smaller than a 1/4 inch. In either case, the FCC identifier may go in the manual.
 - 2) Cell phones or Cordless phones can have the Identifier in the battery compartment under certain conditions.



Rule Interpretations

□ Labeling – Part 2

2) continued... battery compartment conditions:

a) The available label area on the phone is limited because they are relatively small and have many contoured surfaces, keypads, LCD displays, charge contacts and/or other connectors.

b) The batteries for these devices are designed for easy removal and that the labels will be visible whenever the batteries are removed for charging or replacement

c) The label will be readily visible at the time of purchase because the phone will be marketed without the battery installed.



Rule Interpretations

- ❑ **GMRS Voice Scrambling – Part 95A**
 - Frequency inversion and Digital scrambling are prohibited. Any type of signal manipulation that does not allow for interoperable communications between devices is prohibited.
 - The intent of 95.183(a)(4) (and its corollary, 95.181(e)) is that any GMRS user be able to understand any other GMRS user, even if the radios are from different manufacturers.



Rule Interpretations

□ **Satellite Services – Part 25**

▪ Part 25 Equipment Authorization Requirements:

1) For earth stations in all Part 25 earth-to-satellite services :

- All Portable terminals require certification per 25.129.
- C and Ku band non-portable earth terminals require verification per 25.132a).
- No equipment authorization is required for other Part 25 transmitters.
- All mobile and portable terminals are routine evaluation per 2.1091 and 2.1093.



Rule Interpretations

□ **Satellite Services – Part 25**

- Part 25 Equipment Authorization Requirements:

2) For Part 25 ATC services (terrestrial to terrestrial) :

- All Mobile Terminals (MT) require certification per 25.149 C. This means both portable and mobile terminals. The rules have a typo MET should be MT.
- Fixed stations do not require equipment authorization.
- All mobile and portable stations are routine evaluation per 2.1091 and 2.1093.



Rule Interpretations

❑ Removable crystal - Section 95.645(b)

- Section 95.645(b) does not allow user-accessible plug-in crystals for R/C transmitters. TCB's should check the manual for user instructions on plug-in crystals, and external photos for access panels that allow user access to internal crystals.
- Section 95.645(b) does permit plug-in frequency determining modules that contain all of the frequency generating circuitry, including a crystal oscillator. The modules are certified with the R/C transmitter.



Rule Interpretations

- **Cellular/PCS phones – Parts 22H/24E**
 - GSM with EDGE reminder
 - If a GSM device has the EDGE data mode then it should have a separate line item with designator G7W.
 - Non-US mode grant remarks for Cell phones
 - **Grant note:** This device contains functions that are not operational in U.S Territories. This filing is only applicable for US operations.
 - **Prior Grant note (do not use):** This device contains GSM 900/1800 MHz and W-CDMA Band I functions that are not operational in U.S. Territories.



Rule Interpretations

□ 4.9 GHz Public Safety Radio – Part 90Y

- There is a typo in Section 90.210 (l)6 which should list 40 dB NOT 50 dB:
 - (l) *Emission Mask L*. For low power transmitters (20 dBm or less) operating in the 4940–4990 MHz frequency band, the power spectral density of the emissions must be attenuated below the output power of the transmitter as follows:
 - 6) On any frequency removed from the assigned frequency above 150% of the authorized bandwidth: 40 dB.



Rule Interpretations

□ 4.9 GHz Public Safety Radio – Part 90Y

- L and M masks in Part 90.210:
 - The rule indicates using a minimum RBW of 1% of the fundamental emission to determine the reference level and a minimum RBW of 1% of the fundamental to determine the mask skirts. The mask should be developed using the same resolution bandwidth throughout, for the reference level and the mask skirts.
 - UNII devices should fit in mask L but may require additional filtering to meet mask M requirement.



Rule Interpretations

❑ 4.9 GHz Public Safety Radio – Part 90Y

- We have been asked whether the procedure in DA 02-2138 (UNII output power procedure) is acceptable for a Part 90Y UNII device:
 - Answer: Still pending. Use peak measurements. Do not approve devices using the UNII procedure at this time.



Rule Interpretations

❑ 4.9 GHz Public Safety Radio – Part 90Y

- 20 dBm reference in 90.210(m) - Is the 20 dBm breakout point in terms of peak, average or RMS and is this conducted or EIRP (including gain of antenna)?
 - Answer: The 20 dBm breakout point in 90.210(m) is peak conducted as consistent with the 90.1215 limits.



Rule Interpretations

❑ 4.9 GHz Public Safety Radio – Part 90Y

- Clarify whether the L and M masks are measured using average or peak.
 - Answer: Section 90.210(l)7 and (m)7 lists average; therefore average is used to measure the L and M masks.



Rule Interpretations

□ 4.9 GHz Public Safety Radio – Part 90Y

- Channel Plan clarifications for 90.1213:
 - Transmitter tests should be performed on channel frequencies listed in the table, for the specific emission bandwidth of the device (either 1 or 5 MHz channels as listed).
 - If channel aggregation is used, the tests would be performed with the transmitter tuned to the center frequency of the aggregated channels rather than frequencies listed in the table of 90.1213.



Rule Interpretations

❑ Output Power Listing

- Output power listed on a grant is based on measurement results:
 - Must be consistent across all parts of filing, e.g., test report, operational description, operating instructions, etc..
 - To ensure compliance with FCC rules, device should be configured for maximum output power during tests.



Rule Interpretations

□ Output Power Listing – Part 90.205(r)

- For Part 90 devices, when requested, the rated power can be listed on the grant per 90.205(r).
 - Rated power can have up to a 20-percent variation from the measured maximum output power. Otherwise, the measured maximum is assumed as the grant power.
 - When requesting rated power per 90.205(r), the filing must clearly document the rated power. In the remarks field, the grant must specify that the listed output power is rated output power. The measured maximum output power must also be documented in the remarks field.



Questions and Answers

Thanks!