

Gordon L. Gibby MD
KX4Z
15216 NW 41st Avenue
Newberry FL 32669

April 8 2019

RE: RM-11831

Dear Sirs:

What is the real truth regarding 97.221(c) stations' interference? The Petitioner for RM-11831 (and some commentators) have made bold statements claiming major interference to other amateur radio operators from 97.221(c) 500-Hz wide ACDS stations. It is likely that the vast majority of those stations are in the WINLINK group. However, not all of them are in the United States, obviously.

I was unable to find any **objective data** recorded by the proponents of RM-11831 to objectively quantify the possible levels of "interference." Therefore I gathered data from the WINLINK central system on reported high frequency (HF) "minutes" of operation, which are gathered for all stations, including 97.221(b) and (c) stations. By grouping them by frequency, I was able to capture the actual usage of 97.221(c) stations in the United States on both 40 meters and 20 meters. Each USA 97.221(c) gateway was assumed to be operating at the full allowed 500 Hz bandwidth (½ kilo Hertz) in the analysis below.

The results indicate the proponents' claims are ludicrously invalid.

| Band | Total kHz available to General / Advance beneath 97.221(b) segment | Total number of USA 97.221(c) stations | Total reported minutes of HF operation, 2 weeks | Percentage of time-bandwidth utilized by 97.221(c) USA stations |
|-------------|---|---|--|--|
| 40 m | 75 kHz | 24 | 372 | 1.2 hundredths of one percent (0.012 %) |
| 20 m | 69.9 kHz | 9 | 9 | 3 ten-thousandths of one percent (0.000319 %) |

Note: There are 20,160 minutes in a two-week time span, the time span for which operations of WINLINK 97.221(c) were totaled.

Equation:

$$\begin{aligned}
 \text{Percentage of time-bandwidth} &= 100 * \frac{(\text{time used} * \text{bandwidth used})}{(20,160 * \text{kiloHertz available})} \\
 &= 100 * \frac{(\text{HF Minutes} * \frac{1}{2} \text{ kHz})}{(20,160 * \text{kiloHertz available})}
 \end{aligned}$$

The United States 97.221(c) WINLINK stations operating in “winlink” mode through the Central Message Server (CMS) report total times of operation in a 2 week period ending on 4/7/2019 (40 meters) and 4/8/2019 (20 meters) of vanishingly tiny fractions of one percent of the available time and bandwidth available on the 40- and 20meter bands.

As I had expected, the 40-meter band had more 97.221(c) usage; perhaps because this band has both NVIS (near-vertical incident sky wave) properties and modest long-distance properties (both of which are desirable for emergency communications), and the 97.221(b) allocation for wider-bandwidth automatically controlled stations is a mere 5 kilo Hertz on this band.

To my knowledge, these are the only objective data available that can quantify the possible “interference” from 97.221(c) stations in the United States. These data were posted on a publicly available discussion forum (QRZ.COM) and no rebuttal was offered in a space of 24 hours in the midst of a lively discussion that went on past 54 pages.

I am here presenting data only from United States 97.221(c) WINLINK gateways, and it is possible (but seemingly quite unlikely) that some small amount of additional discomfiture comes from foreign stations – however the Petitioner’s requests to delete 97.221(c) will have no impact on those foreign stations.

Comparing the above results with the claims and anecdotal data provided by the Petitioner is striking:

| Filing | Quotation |
|--|--|
| RM-11831 Petitioner https://ecfsapi.fcc.gov/file/100918881206/PETITION FOR RULEMAKING.pdf | <i>“6. Interference from Automatically Controlled Data Stations (ACDS), operating under 97.221(c), continue to be a major problem on the amateur bands. Many examples of complaints may be found in prior FCC documents, RM-113065 and RM-117086 among others. The absence of formal complaints may be due to the fact most of these stations are difficult to identify and the FCC has limited resources to enforce Part 97 violations, depending on amateur radio operators to self-regulate . “</i> |

| | |
|---|---|
| | (Emphasis added) |
| Thomas Adams, cited by the Petitioner. https://ecfsapi.fcc.gov/file/6518321490.pdf | <i>“The use of unmanned "robot" stations run by computers has already caused a great deal of unnecessary interference to non-digital users of the amateur bands through thier [sic] operating mode of transmitting without listening first, continually hammering until they force non-digital station to leave a given frequency “(emphasis added)</i> |
| Bernstein, cited by the Petitioner https://ecfsapi.fcc.gov/file/6518321995.pdf | <i>“As the number of automatic stations operating under 97.221(c) has increased, communications between attended stations using digital protocols have been increasingly disrupted by the aforementioned hidden transmitter effect. “ (Emphasis added)</i> |
| Teller, cited by the Petitioner https://ecfsapi.fcc.gov/file/6518309211.pdf | <i>“To do so would result in an unavoidable enormous increase in FCC enforcement activities, in the same manner as the inclusion of Subpart C of 97.221, which removed limits on automatically controlled digital stations with emitted bandwidths under 500 Hz, has resulted in historically high interference to normal radio amateur communications and should itself be rescinded. “ (Emphasis added.)</i> |

In light of the *nearly infinite gap* between the claims of the Petitioner and those whom he cites regarding the “interference” created by 97.221(c) stations, and the actual data of even possible “interference” above, it is obvious that a vanishingly insignificant impact would follow from his wishes to delete 97.221(c). Therefore, I would ask the Federal Communications Commission to refuse his request to remove 97.221(c).

Sincerely,

Gordon L. Gibby MD
KX4Z