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October 5, 1994

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DOCKET FILE COPY ORIGINAL

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, Room 222
Washington, D.C. 20554

Re: GEN Docket No. 90-314
Ex Parte Presentation

Dear Mr. Caton:

Attached is Omnipoint's proposed rule for out-of -band emissions for licensed PCS. This proposed rule is to follow up on and clarify the the written ex parte presentation made yesterday by Omnipoint (see attached).

In accordance with Section 1.1206(a)(1) of the Commission's rules, I am submitting to you today an original and two copies of this letter for inclusion in the public record of the above-referenced docket. As indicated below, I am also sending a copy of this letter and its enclosures to Mr. Julius Knapp of the Commission's Office of Engineering and Technology.

Sincerely,

Mark J. O'Connor
Counsel for Omnipoint Corporation

Enclosures
cc (via facsimile):
Julius Knapp, OET

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List ABCDE

24.238 Emission Limits:

(a) The fundamental emission of the transmitter shall be located as close to the edge of the licensee band as the transmitter is designed to operate. Compliance with the Out of Band Emission Limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth of 10 kHz. Out of Band Emissions shall be attenuated below 2 Watts (0dB reference) as follows: 30 dB at the licensee band edges linearly decreasing to 50 dB at 1.25 MHz above or below the licensee band; 50 dB at 1.25 MHz above or below the licensee band linearly decreasing to 60 dB at 2.50 MHz above or below the licensee band. Compliance with the Spurious Emissions Limits is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz. Spurious Emissions outside a licensee frequency block shall be attenuated below the transmitter power in Watts (P) by at least 43 + $10\log_{10}(P)$ decibels, or 80 decibels, whichever is the lesser attenuation.

(b) When an emission outside of the licensee frequency block causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

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October 4, 1994

HAND DELIVER

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, Room 222
Washington, D.C. 20554

Re: GEN Docket No. 90-314
Ex Parte Presentation

Dear Mr. Caton:

Attached is Omnipoint's response to an ex parte presentation given by Motorola on or about September 30, 1994 concerning reconsideration of the Commission's rules on out-of-band emmissions for licensed PCS. Omnipoint has previously raised those issues in its "Petition for Reconsideration" and "Reply to Oppositions to Omnipoint's Petition for Reconsideration" filed in the above-referenced docket on July 25, 1994 and September 19, 1994, respectively.

In accordance with Section 1.1206(a)(1) of the Commission's rules, I am submitting to you today two copies of this letter for inclusion in the public record of the above-referenced docket. As indicated below, I am also sending copies of this letter and its enclosures to members of the Commission's staff.

Sincerely,

Mark J. O'Connor

Mark J. O'Connor
Counsel for Omnipoint Corporation

Enclosures
cc (via hand delivery or FedEx & w/ enclosures):
Julius Knapp, OET
John Reed, OET
Phillip Inglis, OET
Stanley Wiggins, CCB

ERP

- Omnipoint agrees that P in 43 + 10log(P) represents the conducted RF power output of a transmitter (antenna gains are not considered in this measurement).

RESOLUTION BANDWIDTH

- Motorola confirms Omnipoint's proposed 1% Resolution Bandwidth.
- This is consistent with the Part 15.323 measurement techniques.

MEASUREMENT BANDWIDTH & DISPLACEMENT

- We agree that the objective is to protect the PCS service in the adjacent licensee frequency block and that the rules should be "technology neutral" for wideband PCS.
- We also agree that the 1 MHz resolution bandwidth attempts a compromise bandwidth to integrate the noise potential of an adjacent channel licensed transmitter, and that this is too close to use a 1MHz resolution bandwidth.

MOTOROLA RECOMMENDATIONS

- These are too complex. Five different measurement bandwidths are required under the Motorola proposal.
- In all the other FCC licensed rules, this has not been necessary although different bandwidth services, with different modulations are located adjacent to one another.
- In all previous FCC rules, this has been effectively managed by using linearly decreasing modulation masks, which allows compliance to be readily observed with the use of a single measurement resolution bandwidth.

OBSERVATIONS

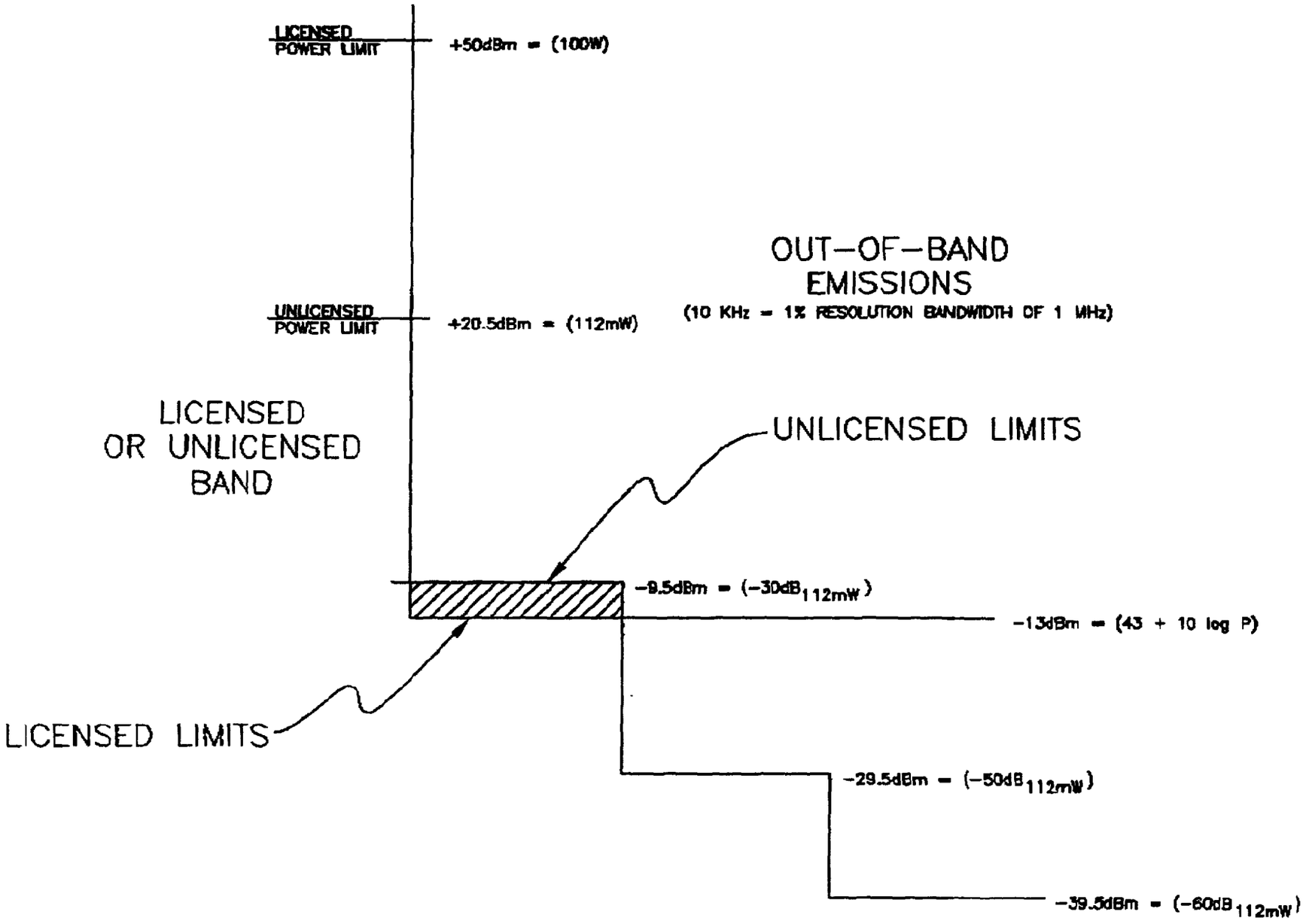
- Unlicensed PCS Out-Of Band Emissions limits (adjacent to the licensed PCS band) exceed the current Part 24.238 rules, even when measured by the Motorola proposed test methods. The licensed band should be allowed at least as much Out-Of-Band Emissions as the unlicensed services.
- The unlicensed emissions limits are at an acceptable level, and industry has shown full support of the current unlicensed emissions rules.

- Other licensed services use linearly decreasing modulation masks to define acceptable Out-Of-Band Emissions.

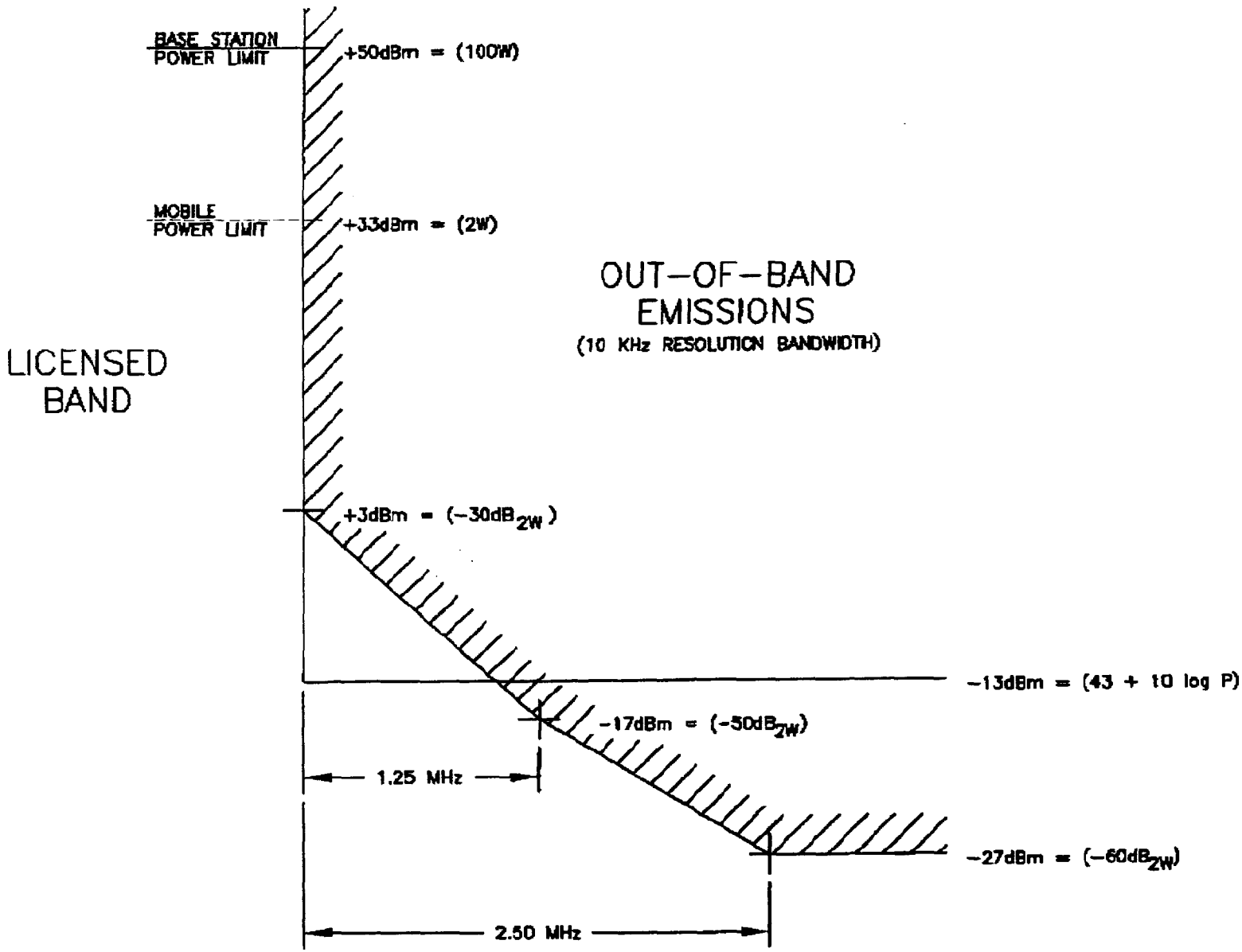
PROPOSED SOLUTION

- Use a linearly decreasing modulation mask for Out-Of-Band emissions like other mobile radio services. For example: Part 80, Part 87, Part 90, Part 95, etc.
- Since the PCS mobile units are limited to 2W, a natural division for the linearly decreasing slope can be found by creating a mask-- linearly decreasing from 30dB to 50dB, and 50dB to 60dB below the 2W power level. The resulting mask has a similar interference potential to that of the existing unlicensed mask. Next to the channel edge it is slightly worse, over further it becomes slightly better than the unlicensed mask.
- This provides a restrictive mask that allows low cost constant envelope transmitters to be used at moderate power levels consistent with mobile radio services, yet provides low interference potential consistent with current and previous FCC measurement practices, thereby making PCS universally affordable to consumers.

- Use of a 10 kHz measurement bandwidth provides sufficient resolution to avoid the too-near or too-wide resolution bandwidth problem. It also provides a common measurement bandwidth for all applicants for type approval and for enforcement. Since modulation products tend to look similar on a spectrum analyser (with many spectral lines adjacent to one another), the use of a modulation mask, with a narrow resolution bandwidth, is widely accepted as the equivalent to measuring and integrating the power over a wider bandwidth.



CURRENT EMISSION LIMITS



PROPOSED LICENSED EMISSION LIMITS