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ATTORNEYS AT LAW

March 8, 2001

BY ELECTRONIC FILING

Ronald Repasi
International Bureau
Federal Communications Commission
The Portals
445 Twelfth Street, S.W.
Washington, DC 20554

Re: ***Ex Parte Submission***
Establishment of Rules and Policies for the Satellite Digital Audio Radio Service in the 2310-2360 MHz Band
IB Docket No. 95-91

Dear Mr. Repasi:

In response to your request at the meeting on March 1, 2001, AT&T Wireless Services, Inc. ("ATTWS") hereby submits technical information relating to the equipment it is currently deploying to provide broadband Fixed Wireless Service ("FWS") using its licenses in the Wireless Communications Service ("WCS"). The attached information sheet describes the sensitivity of FWS equipment to interference from high power terrestrial repeaters proposed by licensees in the satellite Digital Audio Radio Service ("SDARS").

As requested, the information relates to typical deployment scenarios as the FWS service is currently envisioned. However, it is important to note that ATTWS' deployment of FWS equipment will not be limited to typical cases only. Thus, while a base station would typically be deployed at 30 meters, ATTWS expects that it will need to deploy base stations at heights ranging from a low of 10 meters to a high of 100 meters, and perhaps more. And while receive units will typically be deployed at a height of 3 meters, ATTWS anticipates that deployment could be at much greater heights, particularly for service to multiple dwelling units. Further, the heights provided relate to altitude above terrain at the receiver site and do not account for terrain, which could vary widely over the distances that would be covered by a high power SDARS repeater and have a significant effect on the absolute height differentials between SDARS transmitters and WCS receivers.

ATTWS has designed its FWS equipment based on its many years of experience in providing wireless service and using state-of-the-art wireless technology developed for use in other frequency bands. Yet as stated in the ATTWS' *ex parte* submission filed on February 20, 2001, ATTWS is nonetheless currently exploring the feasibility of equipment that will be more resistant to interference but not so expensive or bulky that it effectively precludes deployment. Those efforts are ongoing and no modified specification has yet been achieved. Accordingly, ATTWS has provided information related to the equipment it is currently deploying and – given typical design and production lead times – expects to continue deploying at least through the end of this year.

We hope that this information will help bring this proceeding to a successful resolution. In accordance with Commission rules, this letter is being filed electronically in the above-captioned docket.

Respectfully submitted,

/s/

William M. Wiltshire
Counsel for AT&T Wireless Services, Inc.

Attachment

cc: Ron Netro
Rockie Patterson

AT&T Fixed Wireless Group, Inc.

Date: March 8, 2001

From: Bob Maxwell

Subject: AT&T Fixed Wireless Service Sensitivity to DARS Interference

Overview/Assumptions

This document describes the Fixed Wireless Service (FWS) sensitivity to DARS terrestrial repeater interference. The sensitivity calculations are based on a signal at the front of the antenna and assume a "typical" deployment. There are many other cases where the base station or the remote unit (RU) will have a higher gain antenna, causing the interference to become much worse. One such case is the Multiple Dwelling Unit (MDU), which would be deployed on the top of an apartment complex. This requires a higher gain antenna to achieve the necessary performance. The calculations are done assuming DARS repeaters using a 5 MHz bandwidth with power spread uniformly throughout.

Base Station Information

Antenna Discrimination

No antenna discrimination is assumed. The original calculations submitted on February 20, 2001 included a more favorable assumption that we could achieve an 18 dB loss due to antenna discrimination/pointing. While this may be achievable in some deployment scenarios, it is not inherent in the equipment specifications and so has not been assumed here.

Base Antenna Gain

The typical base station antenna gain is 17 dBi. This is a standard planer array antenna with a nominal horizontal beam width of 90 or 65 degrees and an elevation beam width of about 6 degrees. Down tilt cannot be assumed.

Base Antenna Height

The typical base station antenna centerline is 30 meters. However, the height may vary significantly, from 10 meters to 100 meters.

Tower Top Amplifier (TTA)

The current FWS design includes a tower top amplifier. The 1 dB compression point of the amplifier is achieved with a DARS repeater signal of -32 dBmi radiated into the antenna. Because the TTA goes into compression first, it is the most sensitive component in the front end of the receiver chain and thus establishes the limiting case.

FWS Base 1 dB compression point = -32 dBmi radiated into the antenna

Base Station Rejection

The current base station design provides about 62 dB of rejection to an adjacent band frequency.

Base Station Sensitivity

To create a 1 dB noise floor rise, the interference signal must be -63.1 dBmi per 5 MHz radiated into the antenna. No antenna discrimination is assumed.

Radiated Sensitivity = -63.1 dBmi per 5 MHz dBm radiated into the antenna

RU Information

Antenna Discrimination

No antenna discrimination is assumed. This is because the RU is be deployed pointing in every direction.

Antenna Gain

The average RU antenna gain is 14 dBi. This is a standard planer array antenna with a nominal horizontal beam width of 30 degrees and an elevation beam width of about 30 degrees.

RU Antenna Height

The typical RU antenna centerline is 3 meters. However, the height may vary from approximately 2 to 10 meters.

RU Rejection

The current RU design provides about 62 dB of rejection to an adjacent band frequency.

RU Compression

The current FWS RU has a 1 dB compression point of -14 dBm at the input port. 1dB compression point = compression point of RU - antenna gain.

FWS RU 1 dB compression point = -14 -14 = -28 dBm radiated into the antenna

RU Sensitivity

To create a 1 dB noise floor rise the interference signal must -58.6 dBmi per 5 MHz.

Radiated Sensitivity = -58.6 dBmi per 5 MHz dBm radiated into the antenna