26 October 2000

Mr. Errol Chang
FCC Application Processing Branch

Re: Question from the FCC

FCC ID:	**O3JF2R802D1**
Correspondence Reference Number:	**16077**
731 Confirmation Number	**EA98661**
Date of Original E-Mail:	**9/13/2000**

Dear Mr. Chang:

Pursuant to your e-mail to MIST's Drazen Ivanovic, I am forwarding to you our responses to items 1 through 6. The relevant portions of the FCC's e-mail follow with our response inserted in the appropriate place:

```
> To:   Drazen Ivanovic,
        MIST Inc.
> From: Errol Chang, echang@fcc.gov
>       FCC Application Processing Branch
> Re:                              FCC ID O3JF2R802D1
> Applicant:                       MIST Inc.
> Correspondence Reference Number: 16077
> 731 Confirmation Number:         EA98661
> Date of Original E-Mail:         9/13/2000


1. A number of exhibits uploaded for this filing contain cover pages
   that identify another product (Lipman)… .
```

Mr. A. Brennan (of APREL Laboratories) noted this discrepancy soon after the filing was completed and informed your offices with the following message. Our records show the required exhibits as filed, as well as these incorrectly labeled. Please feel free to purge the incorrectly labeled exhibits from the application.

-----Original Message-----

From:	**Arthur Brennan**
Sent:	September 7, 2000 2:45 PM
To:	'btaube@fcc.gov'
Cc:	Jay Sarkar
Subject:	EA98661 FCC ID: O3JF2R802D1

Dear Ms. Taube;
I noticed that the adobe files for the application noted above (filed September 6, 2000) had the incorrect face pages over some of the correct exhibit documents. I have refilled exhibits 3,4,6,7,8,9 and 11 with the correct cover pages with the exhibit documents. I hope this is satisfactory.
Sincerely
Art Brennan
APREL Laboratories

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2. Filing is requesting for Part 22 approval. The operating frequency
range for this product indicates it is a Part 90 device and is not
  applicable for  Part 22 operations: please clarify and revise
applicable filing info.
```

The unit should be operating under FCC Part 90, not 22 as you have correctly pointed out but erroneously indicated in 731. It was a typographical error from our part. which shall be corrected. A corrected 731 is attached with this. The reports bear the appropriate FCC Part Nos. (90).

```
>
> 3. Please confirm that only the 25% duty factor version of this
> device is applicable for this filing; therefore, earlier info and
> results submitted based the 100% version of this product will be
> ignored as necessary.
```

Only the 25% duty factor of the device will be put into production. When this device was originally received for testing it incorporated a RIM R802D-2-O modem with firmware allowing it to transmit at 100%. All modems provided to developers last year and early this year were so configured. As of this spring RIM is installing firmware to restrict the duty factor of all modems to 25%. This device was subsequently retested at a duty factor of 25% for the worst case determined with a 100% duty factor.

```
> 4. Table in Section 6.2(4) of the SAR report indicates a number of
SAR test configurations, please provide illustrations to distinguish
the difference between "keyboard up" and "top side up" configurations.
```

The following two figures illustrate these two positions. The "Keyboard Up" scans were performed with the device's keyboard place against the bottom of the phantom (Figure 1).

Figure 1 Keyboard Up with antenna out

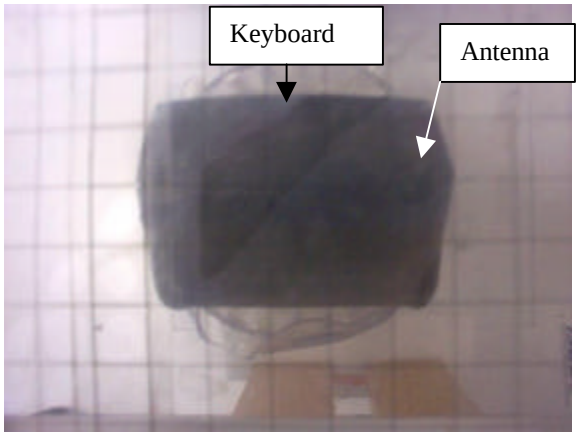

Figure 2 Top Side Up with antenna in

The "Top Side Up" scan was performed with the top of the point of sale device against the bottom of the phantom with the antenna in. This scan was performed to check on the SAR in the direction of a bystander in front of the user.

> 5. Please provide the rational for using the SAR test configurations indicated in 6.2(4). It is not clear if the antenna IN SAR for other configurations that have not been tested at mid-band are always lower; different antenna position and device operating position could have substantially different SAR distributions due to different test configurations, which could also depend on the design of the device. The criteria for selecting test configurations for low and high channel should also be clarified.

Our normal procedure is as follows:

1. Area scans for all surfaces that the user or bystander can be exposed to, with the device on one of the H, M or L channels (usually M) and with the antenna IN and OUT if it is not fixed.
2. The worst surface is then explored with area scans for the other two channels.
3. Any other surface within 20% of the worst surface is also explored with area scans.
4. The worst surface for user exposure is then explored in detail with zoom and depth scans to determine the maximum 10 gram average SAR for a handheld device. If the worst case bystander exposure is from the same surface then this data will also produce the maximum 1g average SAR.
5. If the worst case bystander exposure is from a different surface then it is explored with zoom and depths scans to determine the maximum 1gram average SAR.

In the case of this particular device we skipped a few area scans with the antenna IN because of our previous experience with two other versions of this product, namely a Mobitex and a CDPD implementation, where all the antenna IN scans had a peak SAR lower than the antenna OUT scans with the single exception of the "Top Side Up" scans (the table you reference actually has an error in it – for the High channel the 11.47 W/kg value should be on

the antenna out row and the 9.84 W/kg value should be on the antenna in row). The reason that the "Top Side Up" scans are higher with the antenna IN is because the hot spot for this device is under the plastic just above the printer slot and with the antenna in this surface is 7.5cm closer to the phantom than when the antenna is OUT.

Since each filing should be self sufficient we will ensure that each set of scans is complete in itself in the future.

> 6. Please review figure 14 and explain/verify that the separation distance extrapolation procedures used for 1-g SAR based on 100% duty data can be applied to 25% situations according to the measurement made at 25% duty factor (1.85 W/kg).

Ideally it would have been best to have taken all the measurements at 25%, however, since one complete set of measurements were already taken at 100%, this was not considered necessary (at the time the original 100% duty factor measurements were made RIM had not decided what duty factor they were going to limit all modems to). By making one accurate measurements at 25% we can calculate the other quantities of interest by the appropriate proportional scaling. (In the future all RIM modems will have the 25% duty factor firmware factory installed and the full array of testing will be performed with a 25% duty factor, for all devices using these modems).

In the case of bystander separation we can estimate from the 100% data what we would expected at 25%. The maximum 1g SAR was determined to be 1.40W/kg with a 100% duty factor and a separation of 41.3mm between the surface of the DUT and the phantom (there is an additional 28mm between the phantom and the antenna for a total 69.3mm separation). Since SAR is to first order linearly proportional to average power we would anticipate that the maximum 1g SAR with a 25% duty factor would be 0.25x1.40W/kg, or 0.35W/kg, which is about one 5th of the 1.6W/kg limit. This compares well with the 0.23 W/kg determined, which is about one 7th of the 1.6W/kg limit.

Figure 3 (below) presents a zoomed in view of Figure 14 from the report. Note that the 28mm on the x-axis corresponds to the surface of the DUT being in contact with the phantom; 40mm would correspond to the antenna axis being 40mm from the simulated tissue boundary within the phantom (12mm from surface of DUT facing phantom); and 68mm on the x-axis would correspond to the DUT surface facing the phantom being 40mm from the tissue boundary. From the figure we see that at 40mm from the DUT surface the maximum 1g average SAR would be 0.23W/kg while at 40mm from the antenna axis (12mm from DUT surface) the maximum 1g average SAR would be 0.99W/kg. Consequently, if the user keeps the device at least 4cm (1 ½ inches) away from bystander, then the bystander will not be exposured to SAR levels exceeding the FCC health and safety guidelines.

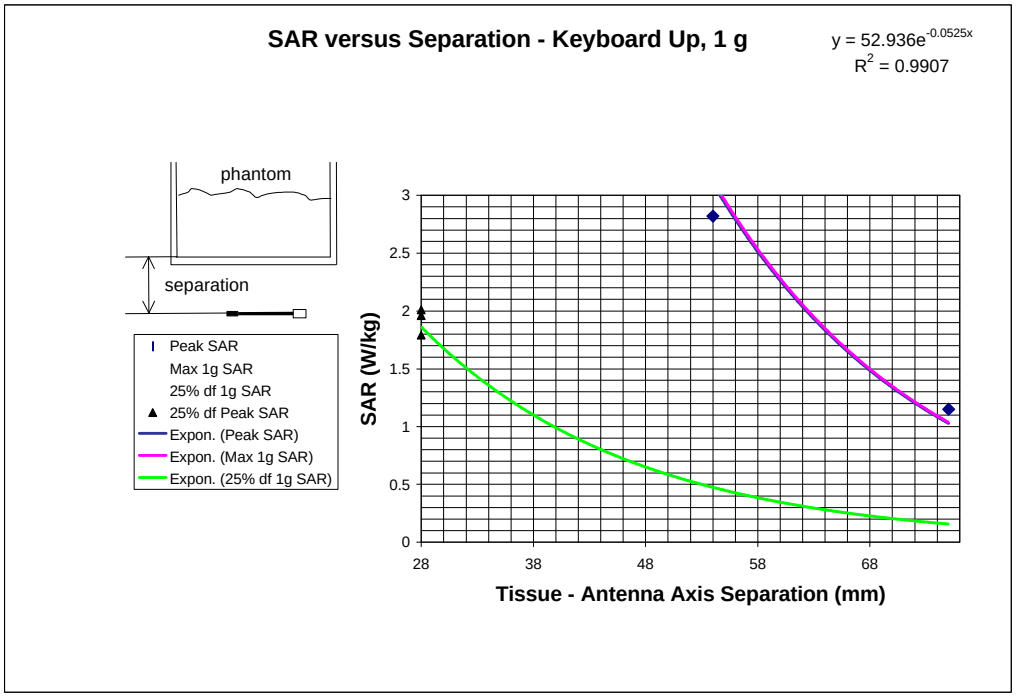

Figure 3. Zoom on 25% duty factor separation curve

I trust that the above will answer your inquiry. If not, feel free to contact Jay Sarkar, Director, Standards and Certification (jsarkar@aprelcom or (613) 820-2730).

Regards,

Paul G. Cardinal, Ph.D.
Director, Laboratory Operations

FEDERAL COMMUNICATIONS COMMISSION - FCC FORM 731
APPLICATION FOR EQUIPMENT AUTHORIZATION

Approved by OMB
3060 - 0057
Expires 9/30/00

You will be presented with the FCC FORM 159, Fee Remittance Advice after submitting your application and obtaining a confirmation number. This Fee Remittance Advice, FCC Form 159, must currently be submitted in paper form along with payment to the address indicated in the FCC Fee Filing Guide. Electronic submission of FCC Form 159 i not currently available.

Item 1. Applicant's complete, legal business name: **MIST Inc.**

Item 2. Applicant's mailing address

Line 1: **500-703 Evans Ave.**

Line 2:

P.O.Box:

City: **Toronto, Ontario**

State: Country(if foreign address): **Canada** Zip/Postal Code: **M9C 5E9**

Item 3. FCC ID: Grantee code: **O3J** * Equipment Product Code (14 characters maximum): F2R802D1

Item 4. Person at the applicant's address to receive grant or for contact:

First Name: **Drazen**
Last Name: **Ivanovic**
Title: **Executive VP Engineering**
E-mail: **drazen@mistwireless.com**

Mail Stop:
Telephone: **416-621-2154** Ext:
Fax No:

Item 5. Instead of Applicant, FCC is authorized to mail original Grant to:

Firm Name:

Address Line 1: P.O.Box:

Address Line 2: City: State:

Country(if foreign address): Zip/Postal Code:

Person at above address to receive Grant:
First Name: Last Name:

Title: Mail Stop:

Item 6. Technical Contact:

Firm Name: Telephone: Ext: Fax No:
MIST Inc. 416-621-2154 416-621-8875

First Name: Middle Initial: Last Name:
Drazen Ivanovic

Address Line 1: 51 Spectrum Way
P.O.Box: Nepean, Ontario
Address Line 2:
City: Toronto, Ontario
State:
Country(if foreign address): Canada
Zip/Postal Code: K2R 1E6
E-mail: drazen@mistwireless.com

Item 7. **Non-Technical Contact:**
Firm Name: MIST Inc.
Telephone: 416-621-2154
Ext:
Fax No: 416-621-8875
First Name: Drazen
Middle Initial:
Last Name: Ivanovic
Address Line 1: 51 Spectrum Way
P.O.Box: Nepean, Ontario
Address Line 2:
City: Toronto, Ontario
State:
Country(if foreign address): Canada
Zip/Postal Code: K2R 1E6
E-mail: drazen@mistwireless.com

Item 8. *** Does this application include a request for confidentiality for any portion(s) of the data contained in this application pursuant to 47 CFR § 0.459 of the Commission Rules? If "Yes" see instructions.** (●) Yes ( ) No

Item 9. *** Does the applicant request that the Commission defer grant of this application pursuant 47 CFR § 0.457(d)(1)(ii)? (See instructions)** ( ) Yes (●) No
If so, specify date when grant may be issued (MM/DD/YYYY format):

Item 10. **Equipment Code:** TNB -Licensed Non-Broadcast Station Transmitter
*** Description of Product as it is Marketed:** Wireless Point of Sale Terminal
*** Equipment will be operated under FCC Rule Part(s):** 90

Item 11. *** Application is for:**
(●) **Original Equipment (See instructions)**
( ) **Change in identification of presently authorized equipment:** **Original FCC ID:** **Grant Date (MM/DD/YYYY format):**
( ) **Class II permissive change or modification of presently authorized equipment (See instructions)**

Item 12 . **EQUIPMENT SPECIFICATIONS: (See instructions)**

Frequency range in MHz	Rated RF power output in watts	Frequency tolerance	Emission designator (See 47 CFR § 2.201 and § 2.202)	Microprocessor Model Number

806	821	1.65	2.5	ppm	20K0FID	n/a

Item 13. **Is the equipment in this application:**

*** (a) a composite device subject to an additional equipment authorization?** ○ Yes ◉ No

*** (b) part of a system that operates with, or is marketed with, another device that requires an equipment authorization?** ◉ Yes ○ No

If either of the above questions is answered "Yes" complete section 13(c).

(c) The related application:

- ○ **has been filed at same time as this application under the FCC ID listed to the right**
- ◉ **has been granted under the FCC ID listed to the right**
- ○ **is in the process of being filed under the FCC ID listed to the right**
- ○ **is pending with the FCC under the FCC ID listed to the right**

FCC ID L6AR802D-2-0

Item 14. **Name of test firm and contact person on file with the FCC, if different from applicant or contact person:**

Firm Name: APREL Laboratories -Nepean

First Name: Jayanta (Jay) **Last Name:** Sarkar

Telephone: (613)820-2730 **Ext:** **Fax No:** (613)820-4161 **E-mail:**

Read each certification carefully before answering and signing this application

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTITUTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Item 15. **SECTION 5301 (ANTI-DRUG ABUSE) CERTIFICATION:**

The applicant must certify that neither the applicant nor any party to the application is subject to a denial of Federal benefits, that include FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 862 because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the definitio of a "party" for these purposes.

Does the applicant or authorized agent so certify? ◉ Yes ○ No

Item 16. APPLICANT/AGENT CERTIFICATION:

I certify that I am authorized to sign this application. All of the statements herein and the exhibits attached hereto, are true and correct to the best of my knowledge and belief. IN accepting a Grant of Equipment Authorization issued by the FCC as a result of the representations made in this application, the applicant is responsible for (1) labeling the equipment with the exact FCC ID specified in this application, (2) compliance statement labeling pursuant to the applicable rules, and (3) compliance of the equipment with the applicable technical rules. If the applicant is not the actual manufacturer of the equipment, appropriate arrangements have been made with the manufacturer to ensure that production units of this equipment will continue to comply with the FCC's technical requirements.

Authorizing an agent to sign this application, is done solely at the applicant's discretion; however, the applicant remains responsible for all statements in this application.

If an agent has signed this application on behalf of the applicant, a written letter of authorization which includes information to enable the agent to respond to the above section 5301 (Anti-Drug Abuse) Certification statement has been provided by the applicant. It is understood that the letter of authorization must be submitted to the FCC upon request and that the FCC reserves the right to contact the applicant directly at any time.

* Signature of Authorized Person Filing:	Title of authorized signature:
Jay Sarkar	Technical Director, Certification and Standa

Complete items below if an agent signs the application

Firm Name:	Telephone:	Ext:	Fax No:
APREL Laboratories	(613)820-2730		(613)820-4161

First Name:	Middle Initial:	Last Name:
Jayanta (Jay)		Sarkar

Address Line 1:	P.O.Box:
51 Spectrum Way	Nepean, Ontario

Address Line 2:

City:	State:	Country(if foreign address):	Zip/Postal Code:
Toronto, Ontario		Canada	K2R 1E6

E-mail: j.sarkar@aprel.com

NOTE: An asterisk '*' preceding a field indicates it must be completed before this application can be submitted.