

08 May, 2000

Mr. Frank Coperich
FCC Application Processing Branch

Re: Questions from the FCC

FCC ID: NVA010164-004A
Correspondence Reference Number: 13119
731 Confirmation Number EA96756
Date of Original E-Mail: 03/30/2000

Dear Mr. Coperich:

Pursuant to your e-mail to our Jay Sarkar, I am forwarding to you our response to item 1. Item 2 has been addressed by an update to the warning in the product's manual. The relevant portions of the FCC's e-mail follow with our response inserted in the appropriate place:

> -----Original Message-----
> To: Jay Sarkar, jsarkar@aprel.com
> From: Frank Coperich, fcoperic@fcc.gov
> FCC Application Processing Branch
>
> Re: FCC ID NVA010164-004A
> Applicant: Hypercom Corporation
> Correspondence Reference Number: 13119
> 731 Confirmation Number: EA96756
> Date of Original E-Mail: 03/30/2000
>
>
> 1. This is a Point of Sales handheld terminal. They did SAR
> at extreme conditions and extrapolate back to determine a
> minimum separation distance for satisfying SAR compliance. A
> minimum separation distance of 1.3 cm for the hand and 2.8 cm
> for the body were determined in the SAR report. The manual
> indicated a 3 cm separation but the SAR report recommends 2.3
> cm, please confirm 3 cm is the final number used for the
> separation distance.

3cm is the final number. The distance determined to satisfy the FCC requirements for bystander and parts of the user other than extremities is 2.8cm from the antenna axis to the tissue boundary. To be conservative this is rounded up to 3cm and warning is placed in the manual advising that any parts of the body other than the user's hand be kept at least 3cm away from the base of the antenna.

The 2.3cm arises due to the fact that the antenna axis is 5mm away from the side of the device at the base of the antenna (the device is slightly curved and was tested with the antenna ~parallel to the bottom of the phantom, putting the antenna ~8mm from the bottom of the phantom or ~11mm from the tissue boundary).

- > 2. The proposed warning statement is unclear - "put the side
- > of the terminal near the antenna and above the credit card
- > slot less than 3 cm from". The 6-minute time averaging
- > factor is only applicable to controlled exposure environment,
- > it does not apply to this device. Please revise accordingly
- > and re-submit relevant pages of the manual; suggestion -
- > "WARNING: To comply with FCC RF exposure requirements, this
- > unit must be operated with a minimum separation distance of 3
- > cm (1-1/8 inches) between its antenna and a person's body.
- > The user's hand should not be placed next to the antenna or
- > at locations on the unit where the antenna is connected, a
- > minimum separation distance of 1.5 cm is needed to ensure
- > compliance with FCC RF exposure limits for the hand.

The following warning is in the revised device manual (uploaded as a separate document with this response)

WARNING:

To comply with FCC RF exposure requirements, the CDPD or Mobitex units must be operated with a minimum separation distance of 3 cm (1-1/8 inches) between its antenna and a person's body. The user's hand should not be placed next to the antenna or at locations on the unit where the antenna is connected. A minimum separation distance of 1.5 cm is needed to ensure compliance with FCC RF exposure limits for the hand.