



To: Mr. Tim Johnson, American TCB  
From: David Waitt, Airespace  
Subject: Inquiries regarding Certification application for FCC ID QTZVAP1200  
Date: 4 March 2003

Tim,  
Below are the replies to your additional inquiries regarding this application. If something is unclear, or if you have additional concerns, please contact me.

Best Regards,

A handwritten signature in black ink, appearing to read "David Waitt".

David Waitt  
Consultant representing Airespace

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### General Information

**ATCB)** Conducted emissions were performed only from 450 kHz to 30 MHz per 15.207 and are compared to the current FCC limits. It is recommended that the conducted emissions meet the future limits (CISPR) that will be required in the next few years (extends the frequency range and also changes the limits. This is because the grant will be issued with one of the following grant notes depending on which set of limits it is shown to have met:

#### Current Limits

NOTE: The manufacture and importation of this device must cease on July 10, 2005 pursuant to 15.37(j) or 18.123 transition provisions adopted under FCC 02-157 (ET Docket 98-80).

#### Future Limits (CISPR)

NOTE: This device has shown compliance with the conducted emissions limits in 15.107, 15.207, or 18.307 adopted under FCC 02-157 (ET Docket 98-80) and may be marketed after July 11, 2005 and is not affected by the 15.37(j) or 18.123 transition provisions

Please comment on this issue. Also please note that page 5 of 46 lists the test results that may require changing if the current results will be adjusted for the CISPR limits.

**Airespace:** The units has been retested from 150kHz to 30 MHz and the results included in the UNII report associated with this grant.

## UNII Specific Information

**ATCB )** Please provide the attestation from Airespace referenced in the reply.

**Airespace:** The letter is being signed by a company representative and will be uploaded as soon as it is signed

**ATCB )** The external antennas with the connectors already attached to the device are not suitable for the 5.15-5.25 GHz band (according to information in the application these will be added at a later date via a permissive change). Please explain.

**Airespace:** This grant does NOT allow the use of external antennas with the VAP1200. However it is expected in the near future that a permissive change will be filed against this grant to requesting the use of external antennas. Airespace understands the requirement of 15.407(7)(d) which requires the use of an integral antenna for the band 5.15 to 5.25 GHz.

In order to select external antennas, the user will have to configure the radio appropriately using the configuration firmware in the device. Airespace intends on disabling transmissions within the 5.15 to 5.25 GHz if external antennas are selected during the configuration of the radio. This functionality will be within the radio configuration firmware and modification of these operating characteristics will not be able to be altered by the user.

Currently however this functionality is not in place because the ability to select external antennas is not present in the firmware.

**ATCB )** Your response mentions that different models in the future may allow the user to upgrade the units. Please note that for the 5.15 to 5.25 GHz band, the antenna connections currently provided in the product are not acceptable for the FCC's intent of the integral antenna requirement if the user is expected to remove the "access door". Note that an antenna that attaches with a connector inside of the case is acceptable, provided that there is no need for the user to ever open the case. Therefore the users manual should not make any reference or explanation to the user on how to open the device. Additionally, the cover should be sealed such that the user has no easy way to open. For instance the use of special screws so that the user can not simply open the device with any standard household screwdriver set, or the door may be "glued" shut.

**Airespace:** This grant is for a 802.11 A/B radio, thus no upgrade is possible due to the fact that is not possible for the user to install another 802.11 card in the device.

In the future, it is anticipated that a single band 802.11 B device will be offered for sale. When this device is available to the public (under a different FCC ID) the ability to upgrade the device will exist since the 802.11 A slot in the unit will be open. If so desired, the access door could be removed and a 802.11 A module installed making the radio a 802.11 A/B radio. Airespace understands the implications of this relative to the FCC ID's and will address this issue during the grant of the single band device.

It is anticipated that the installation and subsequent possible upgrade of a single band radio will NOT be conducted by the end user of the device. The Airespace network infrastructure would be designed and installed by someone familiar with the complexities of deploying a wireless network across a corporate or educational campus. It is anticipated that these personnel would be responsible for performing any upgrade that were to occur to the Airespace network.

To preclude the opening of the access door by someone other than the trained professional responsible for upgrading/maintaining the system, Airespace has elected to secure the access door with "Security hardware" that can only be removed using very specialized tools not available at local hardware stores. It should be noted that removal of the access door only allows access to the various connectors to allow installation of an additional 802.11 card. It does NOT allow access to the antennas inside the device.

Since there is no upgrade path available for this device (FCC ID VAP1200) reference to the access door and its removal will be deleted from the manual. Re-insertion of this information into the manual will be addressed during the future application for a single band radio.

**ATCB )** The test procedures issued by the FCC do describe the intent to obtain "average power" (see attached document). From our discussion Airespace has also made many measurements (both peak and average) to the transmitter to help explain some differences previously discussed. Please add a column for average measurements or adjust the power measurements for average measurements (note this may also affect the RF exposure calculations provided and any summary of results shown).

**Airespace:** The test report has been edited to reflect average power and the MPE calculations have been addressed accordingly.

**ATCB )** Please provide an updated users manual, which includes the statements necessary for 15.407(e) as referenced in your last reply.

**Airespace:** The manual has been edited to include an appropriate statement.

**ATCB )** Your response regarding 15.407(g) mentions that the transmit frequency did not drift out of band. Please confirm that this includes all of the occupied bandwidth within 26 dB of the fundamental.

**Airespace:** The entire spectra of the signal remained within the band when tested over the operating voltage and temperature range.

**ATCB )** Please verify the data on page 27 of 46. It appears that 2 points may be out of specification or the incorrect limits applied. However this data also appears to be presented with correct limits on page 34 of 46. Please explain.

**Airespace:** The tabular data on page 27 contained the wrong limit. The table on page 27 has been corrected by referencing the data on page 34.

**ATCB 11)** Note that spurious emissions NOT falling in restricted bands must also meet the requirement of 27dBm/MHz. This device appears to meet this although information in the report was not given. Note that 27 dBm/MHz may be calculated using the far field equations and equals a limit of 38.8 dBm / 68.3 dBuV/m @ 3 meters. Please comment.

**Airespace:** A section addressing this has been added to the report after the restricted band emissions results.