



13.2.05

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# BreezeNET B

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BreezeNET B Version 3.0

Release Notes

February 2005

P/N: 213999

## 1. Introduction

BreezeNET B version 3.0 includes new SW. It introduces new features and some problem fixes.

## 2. Frequency bands

The currently supported frequency bands:

- 5.725 – 5.850 GHz (5.8 band, FCC)
- 5.470 – 5.725 GHz (5.4 band, ETSI)
- 5.250 – 5.350 GHz (5.3 band, FCC)

## 3. New Features

### Concatenation Mechanism for Increased Capacity

The Concatenation mechanism enables bundling two data frames into a single frame for transmission to the wireless link. This feature reduces the overhead in the wireless media and improves significantly the achievable throughput in BreezeNET B28 links. When concatenation is enabled, data packets in the queue of the internal bridge can be accumulated before the concatenated frame is transmitted to the wireless media. Two data frames can be accumulated, up to a maximum of 2200 bytes.

New Tx and Rx counters were added to indicate the number of transmitted/received concatenated frames.

### DFS +: DFS Algorithm Improvement through Channel Reuse

Typically, operators prefer to preserve the original frequency planning and to avoid moving to a new channel unless they are sure that there is a continuous radar activity in the original channel. It should be noted that detection of radar activity does not necessarily indicate a continuous radar activity in the channel. The channel reuse algorithm enables returning to the original channel under certain conditions that indicates low radar activity in the channel.

### ACCS (Automatic Clear Channel Selection) - Spectrum Analysis and automatic channel selection.

The Spectrum Analysis feature enables gaining knowledge of the noise characteristics per channel. This enables construction of a relatively noise free working environment. When the Spectrum Analysis feature is activated, the unit will enter passive scanning mode for a definite period, during which

information shall be gathered. The scanned channels will be the channels comprising the selected sub set.

Upon activating the spectrum analysis the unit will automatically reset. During the information-gathering period the unit will not receive nor transmit data. It also will not be able to synchronize/associate, meaning that it cannot be managed via the wireless link. At the end of the period the unit will reset automatically regaining normal operability upon start up. During normal operation the administrator can view the results of the last spectrum analysis.

The administrator may configure the AU to analyze the spectrum analysis results and automatically configure itself to use the first most noise free channel.

### **Improved Performance in Links with a Low SNR**

It was found out that in links with a low SNR (below 13), the multirate algorithm may not stabilize on the correct rate. In this case the algorithm may try to use a rate that is too high, resulting in a relatively large number of dropped frames. The “High Decision Thresholds” option in the Multirate Parameters solves this limitation and ensures good performance also in links with a low SNR.

### **DHCP Unicast Override Filter**

When user filtering is activated, unicast DHCP messages are filtered out (unless the address of the subnet that the DHCP server will assign is configured as a part of the User Filtering Addresses). Therefore the unit shall not receive an IP from the DHCP server. In order to avoid such a situation a new parameter was added to enable/disable the option to filter unicast DHCP messages, overriding the general user filtering mechanism.

### **New Diagnostics Features**

#### **Continuous Uplink Quality Indicator Display**

This indicator serves as an additional support tool during installation and maintenance of an RB, enabling to evaluate the quality of the link to the BU. The Link Quality Indicator (LQI) reflects the current Average Modulation Level (AML). The average will be dynamically updated and displayed – meaning that it is calculated taking into account the history of the last few seconds.

Each successful transmission will be included in the average, which is rounded to the nearest integer.

### **Improved Per Modulation Level Counters Display**

In the RB, in addition to the SUCCESS/FAIL counts per modulation level, the Average Modulation Level (AML) is also displayed. This is the average modulation level of successful transmissions (rounded to the nearest integer) since the last time the Per Modulation Level counters were reset.

### **Link Capabilities Exchange**

The Link Capability option provides information on HW and SW capabilities of relevant units, based on information exchange during the association process. When the Best BU option is enabled, RBs also collect information from all BUs found during the scanning process. In a BU, the information provided in the Link Capability reports is for the RB. In an RB, the Link Capability reports include information on all BUs in the neighboring BUs table (all BUs with whom the RB can communicate).

The Link Capability feature enables to adapt the configuration of the unit according to the capabilities of other relevant unit(s) to ensure optimal operation.

### **BU Tx Control**

The Tx Control option enables turning Off/On the BU's transmitter. This feature can be used during maintenance or testing to avoid transmissions using undesired parameters. The feature is available only from the Ethernet port. Note that the unit is reset automatically upon configuration of the parameter.

## **4. Documentation**

The information in the release notes is complementary to the product documentation, provided with the products. BreezeNET B documentation includes system manual and release notes. The system manual covers all relevant topics associated with the BreezeNET B system and its components. The latest release notes is available in the customer service section of the Alvarion web site.

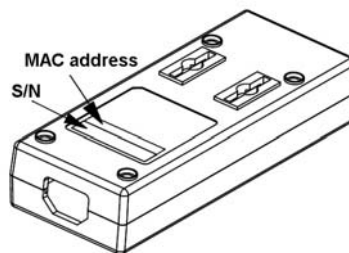
## 5. Compatibility and Interoperability

Version 3.0 is fully compatible with versions 1.2 and 2.0. Nevertheless, it is recommended to always upgrade existing equipment to the latest version.

The SW package will be available in the customer service section of the Alvarion web site.

## 6. Important Notes

- The system provides TFTP functionality for SW and configuration download. In case FTP functionality is required, an additional IP address is required for the FTP client. In addition, FTP parameters change requires reset. Note: The FTP frames are not handled as management frames and are not affected by VLAN management and management filtering.
- In case the MAC address and S/N stickers are not found on the IDU two sets of MAC and S/N stickers are provided attached to the ODU. Stick one set on the bottom of the IDU and save the spare set for future use for RMA cases.



- Although minimum output power is defined as -10 dB when configuring the Tx Power manually, when ATPC is enabled the RB's output power may be less than this minimum.
- Extra care should be taken when configuring VLAN management and management IP filtering in order not to lose connectivity with unit. In case of connectivity loss, use the "restore default parameters" application to reset to factory values.
- The system was checked with SNMPC version 5.1.11e.

## 7. Limitations & Known Issues

- Sensitivity may change slightly as a function of frequency (+/-2dB).

- The prioritization mechanism is disabled when the traffic rate reaches the maximum information rate supported by the RB.
- It is not possible to configure FTP Client IP address with the same value as the unit's IP address. Attempting to do so will display an error when telnet is used and no error will be raised when SNMP (BreezeCONFIG) is used. Note that the FTP settings are not reverted to defaults upon issuing a "Set Full Operator defaults" command (they do revert to default after executing "Set Full Factory Defaults").
- The accuracy of the Transmit Power level is typically +/- 1 dB. However, at levels that are 15 dB or more below the maximum supported by the hardware, the accuracy is +/- 3 dB (for information on hardware limitations refer to the Country Codes document). At these levels the use of ATPC may cause significant fluctuations in the power level of the transmitted signal. When operating at such low levels, it is recommended to disable the ATPC Option in the RB and to set the Transmit Power parameter to the average Tx Power level before the ATPC was disabled.
- In units operating in the 5.3 GHz band, the following rules must be met for full compliance with FCC regulations:
  1. In units that use a 20 MHz bandwidth:
    - a. Frequency channel 5260 MHz should not be used
    - b. When operating at 5270 MHz, the Transmit Power parameter in the BU, and the Maximum Tx Power parameter in the RB connected to this BU, should not be set to a value above "17-Antenna Gain" (The maximum allowed EIRP for 5270 MHz is 17 dBm).
  2. In units that use a 40 MHz bandwidth (Turbo Mode): Frequency channels 5270 and 5280 MHz should not be used.
- Burst Mode cannot be activated when using WEP for data encryption. Burst Mode option will be "blocked" upon trying to enable it when using WEP for data encryption.

## 8. Fixed Issues

- In country code parameters screen, with country code where the EIRP is not limited by regulations, such as in units with country code 1020 (FCC regulation), the indicated “Max EIRP” value was 100dBm, meaning that practically there is no limit. In version 3.0 it displays “No Limit”.
- It was not possible to use the DHCP Client feature (Enabled or Automatic) with User IP Filtering, unless the IP address or the Subnet that the DHCP will assign is configured as part of the User IP Filtering addresses. This limitation is now solved with the DHCP Unicast Override Filter parameter.
- In previous versions, upon requesting “Reset and Run From Shadow” the unit was reset even if there was no Shadow version. This problem was solved and no action will take place upon trying to perform “Reset and Run From Shadow” when a Shadow version does not exist.
- FTP parameters are set to their factory default values upon requesting Set Full Factory Defaults. Note that these parameters are set to their default values immediately upon selecting the Set Full Factory Defaults option (not after reset). These parameters do not revert to defaults after execution of a Set Full Operator Defaults operation.
- The Per Modulation Level Counters option was previously available only under Administrator access rights. Now it is available also under Installer access rights.
- Upon upgrading to SW Version 2.0 from a lower version with the SW Retry Option enabled, the SW Retry algorithm was enabled, blocking the activation of the Burst Mode Option. This limitation was eliminated, and the SW Retry algorithm is never enabled, regardless of the configuration of the SW Retry parameters before the upgrade.
- In previous versions, it was observed that after a few days of system operation when the Link Distance is set to Automatic, some RBs no longer learn the distance from the BU. In such a case the RB may use inappropriate acknowledge timeout, leading to link throughput degradation (retransmissions and drops). This problem could previously be solved only by setting the Link Distance manually. In SW version 3.0 this problem has been solved and the Automatic Link Distance may be used without any limitations.

- In some previous versions, it was found out that not all SNMP applications succeeded to compile the MIB file correctly. This was a result of the wrong location of two object identifiers in the MIB. To fix this, it was needed to move these two lines to a different location in the MIB file. This problem was corrected.
- In previous version the values of the MIB II ifInOctets and ifOutOctets counters of the wireless link interface were incorrect. This problem was solved.