



BreezeACCESS VL

BreezeACCESS VL Version 5.0

Release Notes

February 2008



1 Introduction

BreezeACCESS VL version 5.0 introduces improved performance, new features and support of new and updated country codes. Below is the summary of the new version. For detailed information please refer to the applicable sections in the System Manual and Country Codes documents.

Note: Starting on SW Version 4.5, units with HW Revision A are no longer supported. Please refer to your local office to learn how you can grow with Alvarion to a newer version.

2 Frequency bands

The currently supported frequency bands:

- 5.8 GHz Band: 5.725–5.875 GHz (Universal Country Code with HW Revision C)/5.725–5.850 GHz (all other Country Codes)
- 5.4 GHz Band: 5.470–5.725 GHz
- 5.2 GHz Band: 5.150–5.350 GHz
- 5.3 GHz Band: 5.250–5.350 GHz
- 4.9 GHz Band: 4.900-5.100 GHz

3 Changes Related to Country Codes (Regulatory Domains)

3.1 New Country Codes

Version 5.0 introduces the following new Country codes (supported by Revision C and higher):

- ETSI-F (France and Australia) 5.4 GHz
- Germany 5.8 GHz
- India 5.8 GHz

Note the following limitations related to the new Country Codes:

- a. A unit cannot be downgraded to a SW version that does not support the current Country Code used by the unit. To downgrade the SW version of such a unit, the Country Code must first be changed to a Country Code that is supported by the lower SW version.



- b. The Country Code Learning by SU feature in an AU using SW version 5.0 with a new Country Code must be disabled until all the SUs served by it are upgraded to SW Version 5.0. This should be done to prevent SUs running previous SW version to try learning a Country Code that is unrecognized by their SW version.

3.2 Country Code Selection – New Feature

The new Country Code Selection feature enables changing the Country Code used by the unit to any of the Country Codes available for the unit's Radio Band.

NOTE: A specific procedure must be followed to change the Country Code. Please refer to the "Selecting Country Code" document included in the product's CD. This document is also available on the Customer Service website of Alvarion.

4 New Management Tools

The following new tools, designed to effectively manage all BreezeACCESS Family products (BreezeACCESS VL, BreezeNET B), are available:

4.1 AlvariSTAR

AlvariSTAR provides all the network surveillance, monitoring and configuration capabilities that are required in order to effectively manage the Broadband Wireless Access (BWA) system components. This comprehensive management system is supporting the following network management functionality:

- Device Discovery
- Device Inventory
- Topology
- Fault Management
- Configuration Management
- Data Collection
- Performance Monitoring
- Device embedded Software Upgrade
- Security Management



- Northbound interface to other Network Management Systems.

4.2 AlvariCRAFT

Designed for on-line management of system components, AlvariCRAFT simplifies the installation and maintenance of small size installations by enabling the configuration or upgrade of a single sector – AU and its associated SUs – or one SU at a time.

AlvariCRAFT allows accessing a wide array of monitoring and configuration options, including:

- Device Manager for the selected Unit
- Configuration of a single sector or SU
- Firmware upgrade for a single sector or SU
- On-line performance data monitoring
- Export of configuration details to a CSV file
- Support for Telnet cut-through to the managed devices and http cut-through to Gateways or Wi² APs behind connected SUs.

Note: Starting with SW version 5.0 BreezeCONFIG is no longer supported. BreezeCONFIG will be able to configure all parameters supported in version 4.5 or lower even if SW version on units is 5.0.

5 New Features and Improvements for Enhanced Management

The new management concept is based on getting the necessary information required for on-going monitoring of the system's status from the AU, including the necessary information related to the associated SUs (the SUs may still be managed directly if necessary).

To better support SNMP-based management, and in order to reduce the impact of management traffic on sector capacity, the following new features and improvements have been implemented:

5.1 New Association Data Base

The new Association Data Base (ADB) in the AU is indexed by the associated SU's MAC address. In addition to all the SU's parameters included in the older ADB (that is still supported for backward compatibility), it includes a multitude of new parameters, including the SU's IP address, to facilitate



simpler and more efficient SNMP-based management of these SUs. A synchronization mechanism based on Association/Re-Association messages ensures accuracy and timely update of the ADB.

Note: The new ADB table includes the SNMP communities of the SU. In order to maintain proper security, when reading the table using the Read community of the AU, the Read community of the SU will be returned instead of its Read/Write community.

5.2 New SNMP Error Handling Mechanism

In various situations the SNMP agent in a managed device may return SNMP error as a response to a SET request. The new error handling mechanism generates an optional error code (pending on inclusion of a suitable error handling request with the SET request). The error code includes details on the parameter(s) related to the error. The error codes are stored in an Error Table and are available via SNMP to the management system that requested them.

5.3 Improved Trap Mechanism

All traps are sent by the AU, including traps related to events in the associated SUs. Starting with SW version 5.0, SUs do not generate traps. To increase reliability and support better tracking of traps, a sequence number is included in each trap. The management system can request the sequence number of the last trap to verify that all traps were received properly. In addition, the traps history table in the AU stores the last traps (up to 1024), allowing the management system to get previously sent traps based on the trap's sequence number.

5.4 New Traps

- A new ParameterChange trap (replacing the previous ParameterChange trap) informs the management system of any change in the AU's parameters, as well as changes in any of the SUs parameters included in the new ADB.
- A new RunTimeIPChange trap indicates any change in the IP address of the AU or an associated SU.
- A new DisassociateAllStations trap indicates that all SUs have been disassociated.



5.5 New Synchronization File Mechanism

To facilitate faster and more efficient synchronization of the management system's data base, a synchronization file can be downloaded from the AU using TFTP. The file contains all AU's parameters and SUs information kept in the ADB. The AU can support up to 5 concurrent TFTP sessions for synchronization file transfer.

The file is generated on the fly (upon request) and it contains also the sequence number of last generated trap. The parameters values are those that were in effect when the file transfer was initiated.

5.6 Additional Changes in MIB

5.6.1 Improved SNMP Tables

New SNMP tables, supporting standard management mechanisms (create/destroy row) were implemented (the older tables are still supported for backward compatibility):

Old Table OID	New Table OID
mngIpFilterTable	newMngIpFilterTable
mngTrapTable	newMngTrapTable
brzaccVLMngIpRangesTable	brzaccVLNewMngIpRangesTable
brzaccVLVlanForwardingTable	brzaccVLNewVlanForwardingTable
brzaccVLVlanRelayingTable	brzaccVLNewVlanRelayingTable
brzaccVLIpFilterTable	brzaccVLNewIpFilterTable
brzaccVLMacAddressDenyListTable	brzaccVLNewMacAddressDenyListTable

5.6.2 Revised Implementation of brzaccVLSelectSubBandIndex

In SU, the selected sub band serves only for determining the frequency to be scanned during Spectrum analysis test. The frequency that is actually used for connectivity with the AU may belong to a different sub band. Therefore, the value returned for this parameter represents the configured sub-band rather than the actual band being used by the unit.



6 Supported Unit Types

Starting on SW version 5.0, only “BD” units (supporting a full LAN) will be available (regardless of the name, SU-3-4D will behave as SU-3-BD).

After being upgraded to version 5.0, SU-6-1D units will automatically be changed to SU-6-BD units.

After being upgraded to version 5.0, SU-3-1D units will automatically be changed to SU-3-4D units. Regardless of the name, all SU-3-4D units running SW version 5.0 or higher will behave as SU-3-BD units, supporting a full LAN.

7 New License

A new license for AUS units is available, allowing SU-54 units to associate with the AUS (only SU-3, SU-6 and SU-I units may associate with a regular AUS).

8 Other Improvements

- All MIR/CIR parameters are updated in run-time (reset is not required)
- An optimized association mechanism provides faster association that is noticeable primarily in medium and large size cells (typically over 60 SUs).

9 Documentation

BreezeACCESS VL documentation includes the System Manual for BreezeACCESS VL version 5.0 and related documents, installation support documents, and this release notes. The most updated documentation is available for download from the customer service section of the Alvarion web site.

10 Compatibility and Interoperability

Version 5.0 is fully compatible with versions previous SW versions except for support of new Country Codes. Nevertheless, it is recommended to always upgrade existing equipment to the latest version.

If an SU with SW version 5.0 is used in a cell where the AU uses a lower SW version (or vice versa), the performance will be those available with the lower SW revision.



The latest SW package is available in the customer service section of the Alvarion web site.

11 Important Notes

- If you are not upgrading from version 4.5 (The most recent version prior to 5.0) please refer to the Release Notes of previous versions – according to the version you are upgrading from - to understand all the changes you should expect.
- BreezeNET B in 2.4GHz is not covered by this version.
- Although minimum output power is defined as -10 dB when configuring the Tx Power manually, when ATPC is enabled the SU'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.
- In case data encryption is used, the maximum number of SUs that can be served by an AU is limited to 124 (512 when data encryption is not used). Note that when data encryption is needed, it must be used by all SUs served by the same AU, as well as by the AU itself. The Maximum Number of Associations in the AU must be set to 124 or lower to enable data encryption. As long as data encryption is enabled, the Maximum Number of Associations cannot be set to a value higher than 124.
- Upon downgrade from version 5.0 to version 3.0 or lower, all the information in the new Network Management IP Address Ranges table will be lost. Hence, management access may be lost if the unit was managed from an IP address that is on a subnet defined in the new tables.
- When upgrading from version 3.0 or lower to version 5.0, the high/low packet classification settings according to the old VLAN Priority Threshold or IP Precedence Threshold parameters will be lost. The new parameters are forced to the default value of 7, meaning no prioritization.
- When downgrading from version 5.0 to version 3.0 or lower the MIR value is changed to the default 14976 and can manually be set to any value up to the maximum of 32896.



- When Wireless Link Prioritization feature is activated the prevention of Low Priority Traffic Starvation is automatically disabled.
- Remote changes of the Maximum Modulation Level in an SU while Adaptive Modulation is disabled may lead to lose of connectivity with the unit. The recommended workaround is to enable Adaptive Modulation, reset the unit to apply the change, and then change the Maximum Modulation Level.
- Adaptive Modulation may not converge to best modulation in some setups with high variance in noise levels. In these cases better performances may be achieved with manual modulation settings (Adaptive Modulation Disabled).
- When using the Q-in-Q feature the units can be managed by a management station behind the AU only if the following conditions are met:
 - The unit can be managed only with tagged frames: VLAN ID – Management must be other than 65535 (None).
 - To enable proper management, all units in a cell (the AU and all SUs served by it) must use the same VLAN ID - Management.
 - The VLAN ID – Management must differ from the Customer's VLAN ID - Data.
- Upon upgrade to SW version 5.0 from version 3.1 or lower the FTP Client IP Address and Subnet Mask no longer exist as configurable parameters and the unit's IP parameters are used instead. Upon downgrade from SW version 5.0 to version 3.1 or lower the FTP Client IP Address of the unit is automatically set to the same value as the IP Address of the device. In this case following warning message appears:

```
*** WARNING: Same 'Unit IP Address' and 'FTP Client IP Address!' ***  
*** 'FTP Client IP Address' ignored until change and reset! ***
```

After downgrade it is recommended changing the FTP Client IP Address to 1.1.1.3 and the FTP Server IP Address to 1.1.1.4.

- When a SU with SW version 3.x is upgrade to version 5.0 and the ATPC is activated, the TX power of the SU will be modified to the maximum value allowed by HW version and regulatory domain used (Country Code). ATPC will later adjust it to the optimal level.



- Starting with SW version 5.0, the frequency 4905 MHz is available when working on 10MHz. on Country Code 1090 (Universal 4.9). This is correcting a misbehavior from previous versions.
- The operation of “Reset and boot from shadow” executed from SW version 5.0 and higher may take up to 2 seconds longer when the shadow version is lower than 5.0.

12 Limitations

- Sensitivity may change slightly as a function of frequency (+/-2dB).
- Transmission power accuracy is +/-1dB above 8dBm @ antenna port (typical condition). At lower levels the accuracy is +/-3dBm, never contradicting regulations. At very low 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 SU 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 rule must be met for full compliance with FCC regulations:
 - For units with HW Revision B, frequency 5270MHz should not be used with a 20 MHz bandwidth. For these units, the Transmit Power parameter in the AU, and the Maximum Tx Power parameter in the SUs served by this AU, should not be set to a value above “17-Antenna Gain”.
 - For units with HW Revision C, frequencies 5270 MHz, 5275 MHz and 5330 MHz should not be used with a 20 MHz bandwidth. For these units, the Transmit Power parameter in the AU, and the Maximum Tx Power parameter in the SUs connected to this AU, should not be set to a value above “20-Antenna Gain”.
 - For units with HW Revision C, frequency 5265 MHz should not be used with a 10 MHz bandwidth. For these units, the Transmit Power parameter in the AU, and the Maximum Tx Power parameter in the SUs connected to this AU, should not be set to a value above “25-Antenna Gain”.



- In BreezeACCESS VL units operating in the 4.9 GHz Japan band (not B&B point-to-point) with a 10 MHz bandwidth, the following rules must be met for full compliance with regulations:
 - When operating at 4945 MHz, the Transmit Power parameter in the AU should not be set to a value above 11 dBm. The Maximum Transmit Power of the SU should not be set to a value above 10 dBm.
 - When operating at 5055 MHz, the Transmit Power parameter in the AU should not be set to a value above 13 dBm. The Maximum Transmit power of the SU should not be set to a value above 10 dBm.

This requirement, although not indicated in the certification document, is needed following the tests performed in the certification lab.

- In units with HW Revision B, Burst Mode cannot be activated when using WEP for data encryption. In units with HW Revision B, the Burst Mode option will be “blocked” upon trying to enable it when using WEP for data encryption. This limitation does not apply to units with HW Revision C. Note that the Burst Mode parameter may be wrongly displayed on HW Revision B units as Enabled instead of Blocked, when DFS or data encryption is activated. However the behavior of the Burst Mode is as expected (blocked).
- The Country Code Learning by SU feature does not function with the default ESSID (ESSID1).
- MAC Address Deny/Allow List supports maximum 100 entries.
- Calculated distance in 10MHz channels might not be accurate when the AU and SUs do not run the same software version; If the AU uses SW version 5.0 and the SU(s) use SW version 3.1, the calculated distance might be higher by 10 km than the actual one. It is highly recommended to upgrade the entire cell to the same software version, or use manual cell distance mode.
- The character “;” (semicolon) is a reserved character. It should not be used in defining any string parameters (unit name, ESSID, etc) since the string will be cut before the semicolon.
- If you are using the Feature Upgrade option in Telnet to enter a license string using copy and paste operation, check carefully that the string is copied properly. You may have to enter it manually due to potential problems in performing copy/paste in Telnet.



- In addition to the limitations related to new Country Codes detailed in Section 3.1, note also the following:
 - An SU will learn a Country Code from the AU only if the SU is running from its main version.
 - In a deployment with two (or more) AUs running different Country Codes, if the Country Code learning feature is activated, SUs may migrate after reset from one AU to the other, try to learn the Country Code during association process and never be able to come back to the original AU. In such cases the Preferred AU feature must be activated in the SUs before enabling Country Code learning.
- When an SU running SW version lower than 5.0 is associated with an AU running SW version 5.0:
 - A special warning messages might be displayed in the log file:
 - WRN: Unknown vendor private element code: 15
 - WRN: Unknown vendor private element code: 16
 - WRN: Unknown vendor private element code: 17
 - Parameters that are not included in the old ADB table will be either not available (unknown) or with wrong values.
- When DFS is enabled, “Pulse sensitivity” parameter, although configurable, is not significant. At this case an equivalent value of HIGH will be automatically assigned to this parameter.
- It is recommended to use TFTP, as opposed to FTP, in all cases when files need to be transferred from/to the unit running SW version 5.0.