BreezeMAX 3000™ FDD

Software Version 3.0
Official Release Note

October 2007

General

This document details the main features, known limitations, version compatibility, bug fixing information, and the documentation available for the BreezeMAX 3000 software version 3.0. It corresponds to software versions 3.0.1.16 of the NPU (Network Processing Unit), software version 3.0.1.17 of the micro base station, software version 3.0.1.14 of AU (access unit) and software version 3.0.1.18 of the SU (subscriber unit).

Introduction:

The new software version 3.0 is based on SW version 2.5 of BreezeMAX 3000. It introduces new features in the product, mainly in the base station (both Modular and Micro).

Main Content and Features:

- Second order Diversity
  - Delayed diversity on the downlink and discrete diversity on the uplink
- AU-ODU automatic redundancy
- Support of Q-in-Q tagging.
  - Metro VLAN classification is based on source VLAN (user's VLAN)
- Sector capacity measurement tool
  - Based on new additional counters
  - Base station concentrates and summarizes CPE counters per sector.
- Proportional rate per CPE

Second Order Diversity:

To improve the link stability in non line of sight conditions, BreezeMAX version 3.0 introduces diversity support on existing BreezeMAX hardware. Same radios and modem cards (AU 2 channel) can be used with the new software version 3.0, and still get the benefits of second order diversity. Diversity will work both with regular AU radios and high power AU radios.

The diversity mechanism introduced in this version includes delayed diversity on the downlink direction (from the base station to the CPE), which will benefit the user mostly in multipath conditions (like NLOS). On the uplink, the mechanism used is discrete diversity, where, due to fading occurrences, the base station uses two antennas, and it is assumed that even if fading occurs in the reception of one of the antennas, the second antenna may still receive the signal with no fading at the same moment. Thus, by using discrete diversity, fading occurrences are reduced.

Proportional rate per CPE:

This feature allows the operator to define certain CPEs with an SLA that depends on the radio link condition that the user is getting at every given moment.: For example, an operator sells an SLA of 2Mbps (UL and DL), assuming the user is mostly using rates 7 and 8. However, if the radio conditions temporarily change, and the user's rate drops to rate 1 or even 6, then the CPE will automatically reconfigure the SLA to ensure that the maximum air time which the CPE consumes is the same for 2MBPS in rate 7.

This will ensure, for example, that residential users will not consume too much sector capacity if and when their link conditions drops, even temporarily.

Note: The counters and measurement tools provided by the BreezeMAX devices are not intended to be used for billing purposes.

Known Problems & Limitations

Note: Some problems and limitations will be addressed in future software versions.

Base station

- AU ODU fails to initialize when IF cable is disconnected and reconnected within 10 seconds.
- In 1.75MHz channel bandwidth, the distance between the BST and the CPE presented at the monitor is not accurate
- When the bandwidth available at the base station backbone is less than the traffic at the wireless side, then the prioritization of service types may not be maintained (it may happen that a RT service is not prioritized to a BE service)
- The maximum possible throughput for multicast connection forwarding rule is 2.5 Mbps for BreezeMAX PRO and PRO-S CPEs and 4.5 Mbps for BreezeMAX CPEs.
- The management port is for local management only. The management port may be used only when the network is different from the data port (i.e. another router interface). This restriction evolves from the useof the same physical router MAC address for both data and management ports.
- Configuring an IP address 0.0.0.0 either for the data or management port is not allowed
- Setting factory default should be done from local RS-232, as management IP address is changed during the process.
- The bridge aging table in the NPU uses a fixed time definition for aging that is user configurable with a default of ten minutes.
- When testing Point-to-Point bi-directional UDP traffic, the ratio between downlink and uplink traffic may not be symmetric (downlink traffic will take higher bandwidth than uplink traffic).
- Using L2 transparent service and PPPoE traffic over it, the unicasts packets in downlink might be transmitted over the multicast QoS. The workaround is to configure PPPoE service.

Subscriber units

- In case ATPC is disabled, and TX power is set below 10 dB, the BreezeMAX PRO and PRO-S CPE units might transmit with an inaccuracy of up to 5 dB.
- The WEB monitor application does not ask for password after SU is reset while logged in.
- Alvarion's Voice Gateway will not work properly in case Hybrid VLAN mode is enabled on one of the services passing through the VG. Requires working in transparent VLAN mode.
- Software download to a BreezeMAX CPEs may fail in case uplink traffic is higher than 2.5Mbps specifically per CPE.
- When downloading a previous saved configuration file to a CPE, the common name and location parameters are not updated
- In BreezeMAX PRO CPE units, the following parameters are not present in the SU's monitor: Serial Number, RF Card HW Revision and Boot Version.
- In the Si CPE – if an external antenna is used, then the unit must be configured to work with it.. The default configuration is internal antenna no 3.

Counters

- RbPMConnDLI counter is not working.
- IfOutDiscards and ifInDiscards counters present inaccurate information.
- When ARQ mechanism is enabled, inaccuracy may occur in some of the counters.

NMS

- Alvaricraft cannot support a combination of SUs in version 3.0 and NPU in version 2.5.

Notice Information

- If one ODU unit is already connected with traffic running through it, and the second ODU unit is connected; it will result in a small interference period of 350 milliseconds on the first ODU unit. Traffic may be interrupted and even some CPEs may re-synch.
- When installing HP-ODU in existing or as replacement to ODU installations, it is necessary to check whether it is necessary to change the IF cable due to different power consumption. More information is provided in the installation section of the BST manual.
- After installing unlimited BW license to the BST, the user needs to reset, either the BST, AU or the SU in order to change the operating status and receive the unlimited BW.
- In 3.5GHz, installations of AU-ODU-HP require a power feeder to provide power to these units.
- Frequency configuration change won't apply when configured on AU-ODU connected to a disabled channel.

Fixed Bugs

- When less then four QoS profiles are defined for the service, SNMP Get Next Response on services counters table returns only values for the downlink
- Poor TFTP performance working with AlvariSTAR
- Micro BST– continued SNMP walk in overloaded BST caused AU reset
- Debug stream buffer in NPU got overloaded in loaded cells causing flood of error prints in the NPU
- In sectors in which more than 252 SU's are associated, it can occur that one SU will remain not associated
- The database apparently looks corrupted in NPU following NPU upgrade/reset in a loaded BS. The "No record found" message may appear
- Changing MIB description/names from AUCollectedInfo to CollectedStatisticsInfo.
- In very large base stations, when the sector is restarting and all CPEs are trying to re-associate with the base station at once, the NPU may stop responding and functioning. This issue also applies to version 2.5.13 and below.
- Loss of management (telnet/SNMP) randomly when SNMP packet arrives to BS while rebooting.
- Randomly, AU may occasionally reset in specific high traffic load patterns.
- When more then 256 SUs are used in a sector, then the additional SUs will experience lack of CG provisioning. Manta CPEs could experience that regardless of their quantity in sector.

- In some occasions, a manta CPE could have lost its configuration due to flash driver fault. The config file is also backed up on flash as a safety measure.
- When the number of connections using the same QOS profile exceeds 256, then the exceeded group of SU's will experience a hold-up in receiving BW, thus resulting in sporadic traffic loss to a device behind SU. After a while, the traffic is resumed until the next event of loss.
- In some cases, the base station stops responding to SNMP transactions, and causes the NMS station to loose connection with the base station.
- In some rare scenarios, the NPUs database is seen visually as getting corrupted. This problem has been identified and fixed.
- Due to the introduction of new base station Power Interface Unit (PIU) there is an addition to the MIB that identifies the new PIU.
- There is limitation of configuring a CG service on SUs with SU ID between 1 and 256.
- When all SU's having service in VLAN transparent mode lose association with the BS; after the SU link is recovered, then the service (unicast traffic) will not recover due to an internal deletion of the forwarding rule. Before the fix, it was necessary to reset the AU in order to recover the service.

Version compatibility:

BreezeMAX software version is compatible according to the following tables:

Type of BST	BMAX 3300 CPE ver. 2.5	BMAX 3500 CPE ver. 2.5	BMAX 3600 CPE ver. 2.5
Modular	2.6 and 2.5	2.6 and 2.5	2.6 and 2.5
Micro	2.6 and 2.5	2.6 and 2.5	2.6 and 2.5

Type of CPE	BMAX 3300 BST ver. 2.6	BMAX 3500 BST ver. 2.6	BMAX 3600 BST ver. 2.6
CPE	2.5, 2.0 and 1.5	2.5, 2.0 and 1.5	-
PRO	-	2.5, 2.0 and 1.0.2	-
PRO-S	-	2.5 and 2.0	2.5 and 2.0
Si	-	2.5	-
PRO-S 802.16e ready	-	2.5	-
Si 802.16e ready	-	2.5	-

Documentation

- BreezeMAX™ 3000 Modular Base Station - System Manual
- BreezeMAX™ 3000 Micro Base Station - System Manual
- BreezeMAX™ 3000 CPEs (PRO and Si CPEs) - Product Manual
- Base Stations (Modular & Micro) Installation & Maintenance - User Manual
- PRO CPE_S_Installation & Maintenance Manual
- CPE-IDU-1D and CPE-ODU-PRO Quick Installation Guide
- Si CPE Quick Installation Guide
- BreezeMAX™ 3000 - Troubleshooting Guide
- BreezeMAX™ 3000 - Traps and Alarms
- BreezeMAX™ 3000 - Firmware Upgrade Procedure
- BreezeMAX™ 3000 - Release Note
- Using the Multi Channel Modem (MMC) Feature – Technical Note
- Version 2.5 MIB Changes – Technical Note
- BreezeMAX™ Getting and Loading Feature Licenses
- AlvariSTAR™ Getting and Loading Feature Licenses