SIEMENS

FAQ • 10/2014

How to configure the Explicit BS feature

RUGGEDCOM WIN5100, RUGGEDCOM WIN5200

http://support.automation.siemens.com/WW/view/en/103156327

This entry is from the Siemens Industry Online Support. The general terms of use (http://www.siemens.com/terms_of_use) apply.

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, solutions, machines, equipment and/or networks. They are important components in a holistic industrial security concept. With this in mind, Siemens' products and solutions undergo continuous development. Siemens recommends strongly that you regularly check for product updates.

For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action (e.g. cell protection concept) and integrate each component into a holistic, state-of-the-art industrial security concept. Third-party products that may be in use should also be considered. For more information about industrial security, visit http://www.siemens.com/industrialsecurity.

To stay informed about product updates as they occur, sign up for a product-specific newsletter. For more information, visit http://support.automation.siemens.com.

Table of contents

1 Introduction

1.1 About this document

This document provides the specification to enable and configure the Explicit BS feature in RUGGEDCOM WIN5100 and WIN5200.

1.2 Abbreviations & Acronyms

Table 1-1

Abbreviation / Acronym	Description
BS	Base Station
CPE	Customer-premises Equipment - Same as MS and SS
NE	Network Entry
DCD	Downlink Channel Descriptor
MAC	Media Access Control

1.3 Overview

The purpose of this feature is to limit the CPE units to connect to specific Base Stations. When the feature is enabled the CPE will be allowed to perform NE **only** to the BS's whose IDs are included in Allowed BS list.

BS ID: WiMAX BS has a 48-bit Base Station unique ID. This is different from the MAC address of the BS (although it looks similar). The first 24 bits are Operator ID and can be used for operator identification. The second 24 bits are the BS ID. The BS ID is transmitted from the BS in a DCD Broadcast message - by default each second.

2 Configuration

2.1 Base Station Configuration

The Base Station ID can be either its MAC Address, or, an Operator configured unique ID. From default the BS MAC Address is in use.

Operators have the option to change the BS ID.

1. Go to “Wireless > Network Identifiers”.
2. Change the Configured Operator ID/Configured Base Station ID as required.
3. Click “Apply” – This will require a reboot of the BS.

NOTE The BS ID should be in the following format: xx:xx:xx:xx:xx:xx (each character can be any hexadecimal value) - “00:00:00:00:00:00” – is not valid MAC and cannot be added to the list in the CPE.

In the example below the configured Operator ID is 00:13:D5 (RUGGEDCOM) and the Configured BS ID has been changed to 00:00:01.

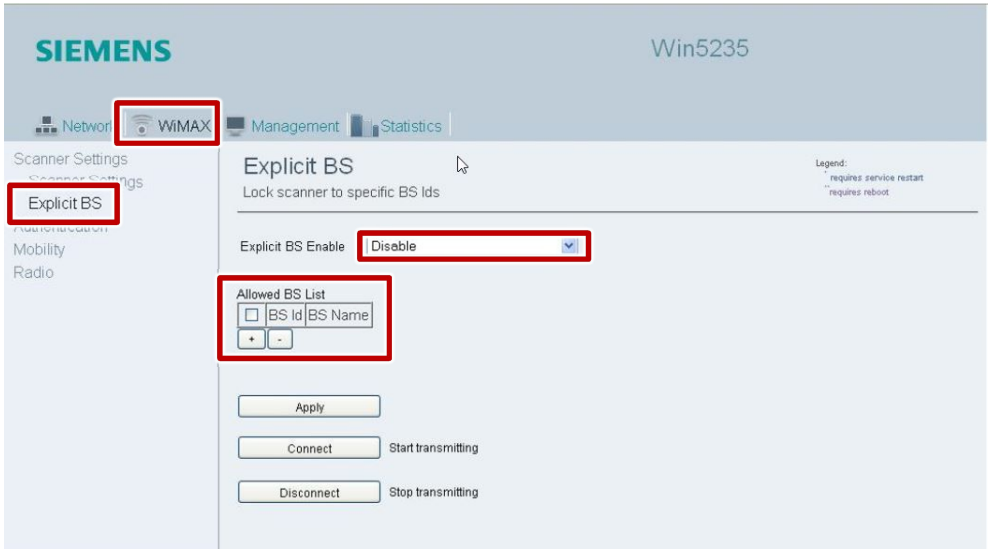
Figure 1: Base Station ID Configuration

2.2 CPE Configuration

By default the feature is disabled, meaning, the CPE can connect to any BS that has its frequency included in the CPE Channel Scanner. To enable the function:

- Go to “WiMAX > Explicit BS”.

Figure 2: Explicit BS Configuration



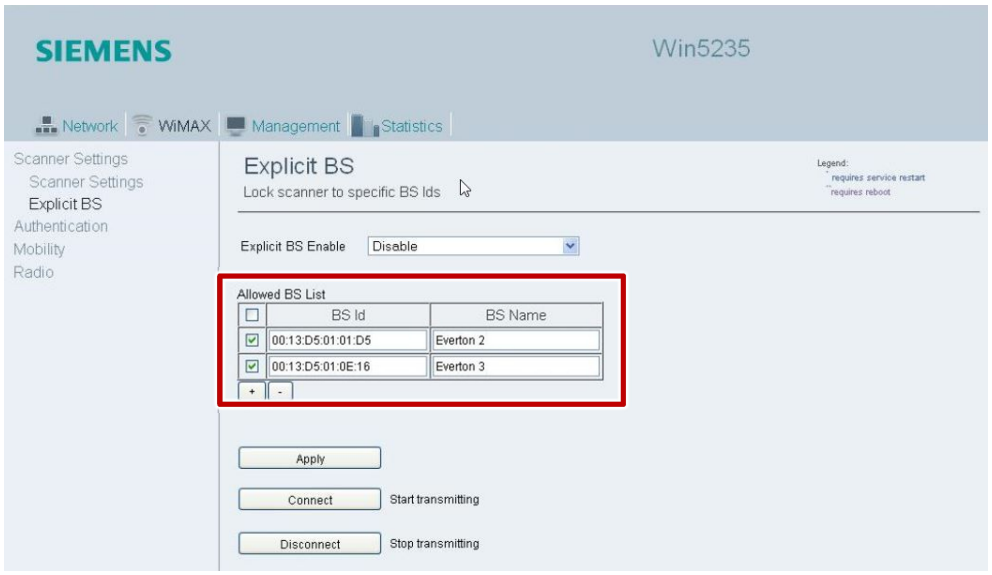
The Allowed BS List has to be populated prior to enabling Explicit BS.

Allowed BS List: The table includes two columns: BS ID and BS Name (Optional) and a maximum of FIVE allowed BS ID's.

NOTE

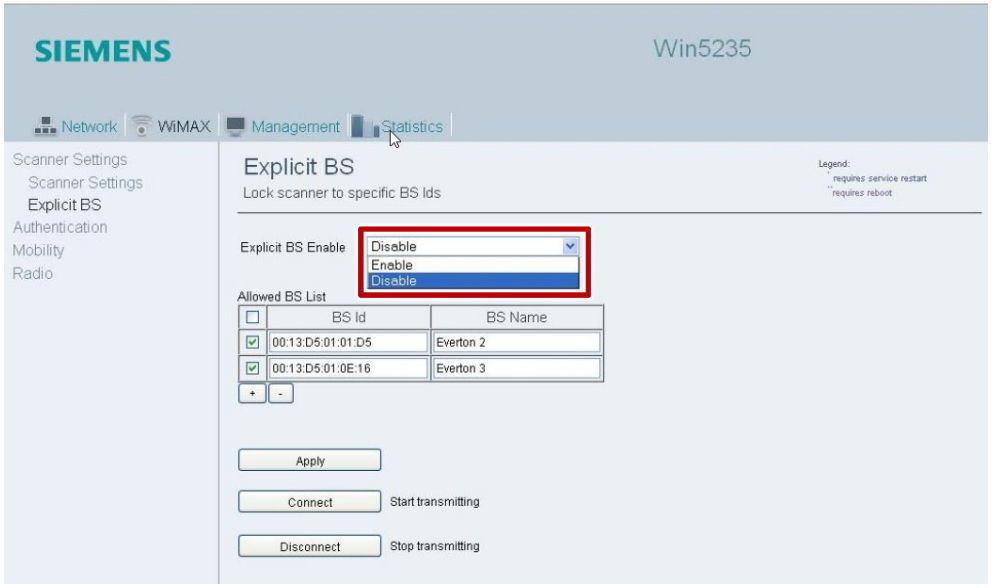
The changes in this list cannot be done if the CPE is in scanning mode. When configuring from the LAN and the CPE is scanning, it is necessary to click the "Disconnect" button before the configuration can be completed. DO NOT click on the "Disconnect" button if configuring via the RF Interface. This will stop the CPE from transmitting and therefore the CPE will lose connection to the BS and will require either a site visit to reboot via the GUI or a hard reset – Power down/up.

Figure 3: Allowed BS List.



Explicit BS can now be enabled.

Figure 4: Explicit BS Enable.



3 CLI / SSH Debug Commands

The CLI interface, which can be accessed via SSH connection is used for **debug purposes only**.

The following CLI commands are available for the Explicit BS module:

3.1 Explicit BS General Information

Figure 3-1

```
···Shellss·····cbe·"ndss:state"¶
NDSS·CONFIG¶
===========¶
··STATE¶
····State·····:·Scanning¶
····Resetting·state·····:·0¶
····Waiting·before·scan·····:·0¶
····Frequency·hypothesis·····:·2¶
····CINR·Threshold·····:·2500¶
····BS·Lock·····:·Enabled¶
··Allowed·BS·IDs¶
····Number·of·allowed·BS·Ids·····:·3¶
····BS·ID·····:·00:13:D5:01:02:03¶
····BS·ID·····:·00:13:D5:01:02:04¶
····BS·ID·····:·00:13:D5:01:02:05¶
```

3.2 Explicit BS enable/disable

To enable the feature:

Figure 3-2

```
cbe·"NDSS::setExplicitBsEnable·1"¶
```

To disable the feature:

Figure 3-3

```
cbe·"NDSS::setExplicitBsEnable··0"¶
```

NOTE Enable/disable Explicit BS by using this method is only for debugging purposes and can cause mismatches with GUI configuration.