

FAQ • 10/2014

How to configure the Explicit BS feature

RUGGEDCOM WIN5100, RUGGEDCOM WIN5200

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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

The screenshot displays the Siemens Wireless Admin interface. The 'Wireless' menu item is highlighted with a red box. The 'Network Identifiers' page is active, showing the following configuration details:

Field	Value
Base Station Name	BS
Current Base Station ID	00:13:D5:00:00:01
Configured Base Station ID**	00:00:01
Current Operator ID	00:13:D5
Configured Operator ID**	00:13:D5

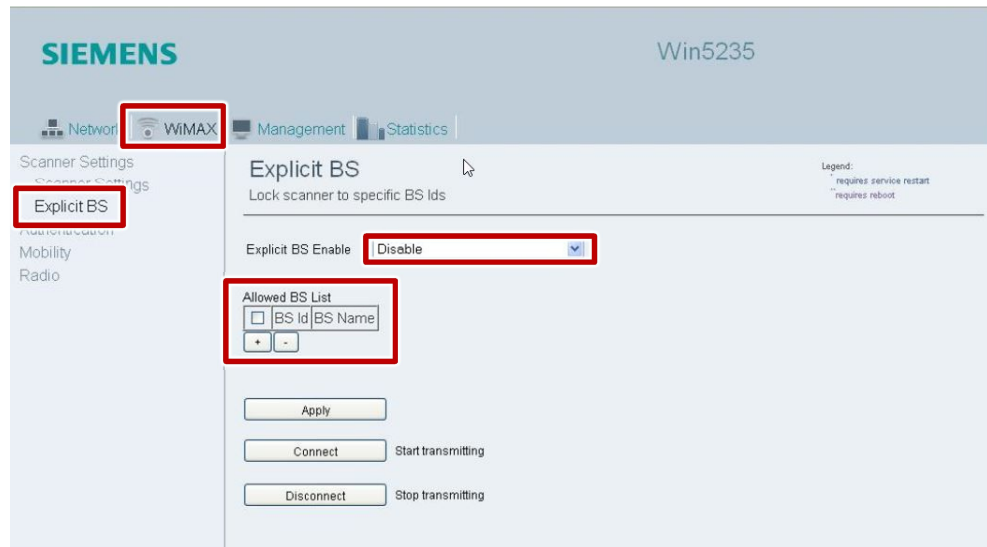
The 'Apply' button is located at the bottom of the configuration area. A legend indicates that ** requires a service restart or a reboot.

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.

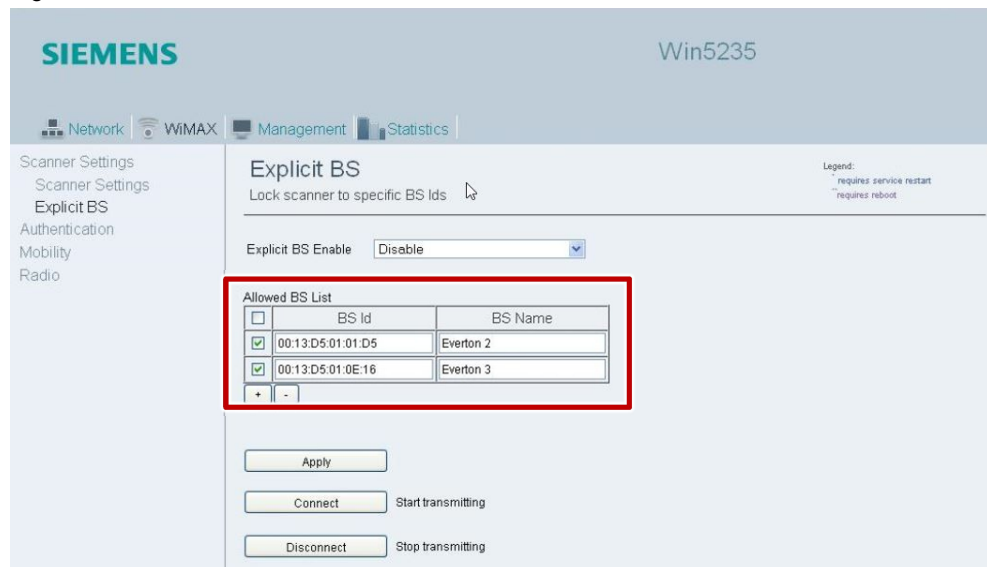
Allowed BS List: The table includes two columns: BS ID and BS Name (Optional) and a maximum of FIVE allowed BS ID's.

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.

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Figure 3: Allowed BS List.



Explicit BS can now be enabled.

Figure 4: Explicit BS Enable.

The screenshot shows the Siemens Win5235 configuration interface. The top bar includes the Siemens logo and the device name 'Win5235'. Below this are navigation tabs for Network, WIMAX, Management, and Statistics. The left sidebar contains a menu with 'Scanner Settings', 'Scanner Settings', 'Explicit BS', 'Authentication', 'Mobility', and 'Radio'. The main content area is titled 'Explicit BS' and has the subtitle 'Lock scanner to specific BS Ids'. A legend indicates that a single asterisk (*) requires a service restart and a double asterisk (**) requires a reboot. The 'Explicit BS Enable' setting is a dropdown menu with 'Disable', 'Enable', and 'Disable' options, where 'Enable' is currently selected and highlighted with a red box. Below this is an 'Allowed BS List' table with columns for a checkbox, 'BS Id', and 'BS Name'. Two entries are listed: '00:13:D5:01:01:D5' (Everton 2) and '00:13:D5:01:0E:16' (Everton 3), both with checked checkboxes. At the bottom of the interface are buttons for 'Apply', 'Connect' (Start transmitting), and 'Disconnect' (Stop transmitting).

SIEMENS Win5235

Network WIMAX Management Statistics

Scanner Settings
Scanner Settings
Explicit BS
Authentication
Mobility
Radio

Explicit BS
Lock scanner to specific BS Ids

Legend:
* requires service restart
** requires reboot

Explicit BS Enable: Disable, Enable, Disable

	BS Id	BS Name
<input checked="" type="checkbox"/>	00:13:D5:01:01:D5	Everton 2
<input checked="" type="checkbox"/>	00:13:D5:01:0E:16	Everton 3

+ -

Apply

Connect Start transmitting

Disconnect Stop transmitting

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

```

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.