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- Check and modify TRS settings
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- Check and Save Flexi WCDMA BTS Information and Logs
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- Use of WCDMA BTS Site Manager Tools



Operational Functionality

The Flexi WBTS can be seen as operational, if:

- **OAM IUB** is **connected**
- Operational state is **On Air** and
 - All Local Cells states are: **Operational**
- **TRS** is **Commissioned**
- All **IUB links**
 - **CNBAP**
 - **DNBAP**
 - **OAM**
 - **SAAL2** are **connected**
- **WCDMA BTS Loop Test** has run successfully (if supported).
- Test calls are carried out successfully
- The BTS is free of unexpected alarms
- Remote Management (RNC / NetAct) through DCN is working.





Check BTS operational states and Site Properties

The whole BTS is running on this SW release, if:

- All other detectable units/modules are visible.
- There is no alarm **Incompatible SW version detected**

OAM Iub Connected - DCN is operational
On Air - at least one Local Cell is operational

Operational states of BTS

Not Commissioned: The BTS is started and not commissioned yet (a commissioning file does not exist).

Commissioned: A valid commissioning file is loaded to the BTS.

Configured: Commissioning parameters are configured to units/modules.

Integrated to RAN: The network connection to the RNC is established.

On Air: At least one local cell has been setup and activated, and the BTS is operational.

Test dedicated: The BTS is under testing. This state can be entered by choosing the *Tests* → *Enter BTS to Test State* menu item.



Radio Module Properties

BTS Hardware

TRS Hardware

Commissioning

BTS PM

ATM

IP

TRS PM

BTS Hardware

Flexi

WCDMA BTS

Local Cells

Local Cell Groups

FRGF

FT1B

FSMD

1

2

3

FRGF 1 Properties

Name: FRGF Flexi RF Module 2100 Triple 70 W

Product Code: 471483A

Core Product Code: 083837A.102

Core Serial Number: L1091917033

Location: oben druff

States

Working State: Working

Module SW State: Configured

Blocking State: Unblocked

Operational State: Enabled

Commissioned: Yes

Initialised: Yes

Antennas

Antenna 1: TX and RX

Antenna 2: RX

Antenna 3: TX and RX

Antenna 4: RX

Antenna 5: TX and RX

Antenna 6: RX

Fans

Fan 2: Working

Fan 1: Working

Block Module...

Unblock Module...

Alarms (1 Active)

Severity

Time GMT+01:00 DST

Description

Source

Major

01.07.2009 10:00:08

BTS master clock tuning failure

BTS : BS 8 / FSMD 1

Details

Show Source

Connected to BTS, TRS

OAM Iub Connected

On Air

TRS Commissioned

Check Radio Module Operational State:
Disabled - a module failure or the module is blocked with BTS Site Manager
Enabled - the module is operational: no HW/SW problems and the module is in the unblocked state.

System Module Properties

FSMD 1 Properties

Name: Flexi System Module FSMD
Product Code: 471402A
Core Product Code: 083780A.102
Core Serial Number: L1091S11209
Location: test
Power Module: Not in Use

States

Working State: Degraded
Module SW State: Configured
Blocking State: Unblocked
Operational State: Enabled
Commissioned: Yes
Initialised: Yes
Mode: System

IUB Links

CNBAP: Connected
DNBAP: Connected
OAM: Connected
SAAL2: Connected

Fans

Fan 2: Working
Fan 1: Working

Working State

- Working
- Degraded
- Faulty
- Resetting

Blocking State

- Blocked
- Unblocked
- Waiting for block

Operational State

- Enabled
- Disabled

Alarms (1 Active)

Severity	Time GMT+01:00 DST	Description	Source
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS : BS 8 / FSMD 1

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TRS Unit Properties

TRS Unit FTIB 1 Properties

Product Code: 471720A.103
Serial Number: L6091454454
Module SW State: Configured
HW Version: 6
Commissioned: Yes

TRS Unit
Hardware information and Commissioning State:
Yes – the unit contains valid and complete configuration data.
No – there are either no or incomplete parameters configured in the TRS unit.

Local Cell Properties

The screenshot displays the 'Local Cell Properties' window in the Nokia Siemens Networks WCDMA BTS Site Manager. The window is titled 'Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection'. It features a menu bar (File, View, Configuration, Software, Tests, Tools, Antenna, Help) and a toolbar. The main area is divided into several sections: 'BTS Hardware' (Flexi WCDMA BTS), 'Local Cells' (showing three cells with status indicators), 'Local Cell 1 Properties' (detailed information for the selected cell), 'Local Cell State' (Operational), 'Operational State' (Enabled), 'Availability State' (Active), 'Working State' (Working), 'Blocking State' (Unblocked), and 'RX Signal Level Monitoring' (RX signal level values or licence not available). A red callout box points to the 'Operational' status with the text: 'The BTS status On Air is shown if at least one local cell is operational. Here the status of each single cell can be checked.' The bottom status bar shows 'Connected to BTS, TRS', 'OAM Iub Connected', 'On Air', and 'TRS Commissioned'. The footer includes '10 © Nokia Siemens Networks RA4540EEN05GLA0'.

Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection

File View Configuration Software Tests Tools Antenna Help

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BTS Hardware

TRS Hardware

Commissioning

BTS PM

ATM

IP

TRS PM

BTS Hardware

Flexi WCDMA BTS

MHA RET Local Cells

FRGF 1

FTIB

System FSHD 1

Local Cell Groups: 1

Local Cell Group 1 Properties

Name: Group 1

Local Cells: Local cell 1, local cell 2, local cell 3

BB Capacity Access

Requested: 100 percent

Dedicated: 0 percent

Actual: 100 percent

Module: System, Extension

In case of 2 Local Cell Group (MORAN) configuration the allocated baseband resource is checked from here.

This BTS only contains 1

Alarms (1 Active)

Show: [Icons]

Severity	Time GMT+01:00 DST	Description	Source
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS : BS 8 / FSHD 1

Details

Show Source

Connected to BTS, TRS

DAM Iub Connected On Air TRS Commissioned

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Alarm Help

Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection

File View Configuration Software Tests Tools Antenna Help

BTS Hardware

Flexi WCDMA BTS

MIHA RET Local Cells

FRGF 1

FT1B

System FSMD 1

Local Cell Groups: 1

Alarms (1 Active)

Severity	Time GMT+01:00 DST	Description	Source
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS : BS 0 / FSMD 1

Details

Scope: base station operation degraded

Status: Active

Started: 01.07.2009 10:00:08 DST

Cleared: -

Show Source

Nokia Siemens Networks WCDMA BTS Site Manager Online Help

Table of Contents

BTS Master Clock tuning failure

Fault name	BTS Master Clock tuning failure
Used in products	FlexiBTS
Detecting unit	FCM
Source	FCM
Meaning	The OCXO adjustment area is reaching its limit value. The DAC word value of the OCXO is lower than 205 or greater than 3891 (5% of the total adjustment area). The range for the DAC word is 0 - 4095.
State	Start / Cancel
Unit status	Degraded
Effect	The BTS can function properly for months or even a year but eventually the BTS becomes faulty.
Reported alarms	7851 BASE STATION OPERATION DEGRADED
LED display	Blinking red
Instructions	<ol style="list-style-type: none"> 1. Start the fast tuning with BTS Site Manager. 2. Check the reference signal from the FTM. 3. Reset the site. 4. If that does not help, replace the system module.

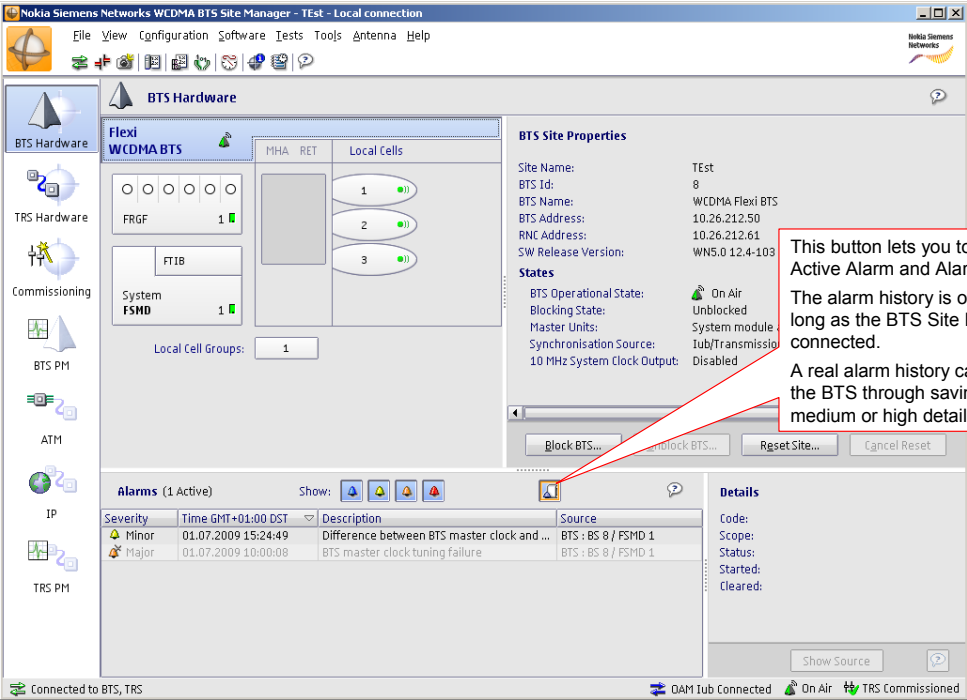
Select an Alarm and click on the ? button to open the Online Help.

Connected to BTS, TRS

QAM Iub Connected On Air TRS Commissioned

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Alarm History



This button lets you toggle between Active Alarm and Alarm History view. The alarm history is only available as long as the BTS Site Manager is connected. A real alarm history can be fetched from the BTS through saving Snapshots of medium or high detail level.

Severity	Time GMT+01:00 DST	Description	Source
Minor	01.07.2009 15:24:49	Difference between BTS master clock and ...	BTS : BS 8 / FSMD 1
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS : BS 8 / FSMD 1

Inspect or modify TRS Hardware settings

BTS Hardware

TRS Hardware

Commissioning

BTS PM

ATM

IP

TRS PM

TRS

FTIB

1

FTIB Properties

Actual Type: FTIB

Interface Type: E1

Interfaces

IF	In Use	CRC On
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>

Interface Loops... Select All

Ethernet Interfaces

Transport Mode: ATM Over Ethernet

EIF	In Use	Speed and Duplex	Speed and Duplex	RX Power (dBm)
1	<input type="checkbox"/>	Autodetect	Autodetect	Not Connected
2	<input type="checkbox"/>	Autodetect	Autodetect	-
3	<input type="checkbox"/>	Autodetect	Autodetect	-

Alarms (1 Active)

Severity

Time GMT+01:00 DST

Description

Source

Major

01.07.2009 10:00:08

BTS master clock tuning failure

BTS : BS 8 / FSMD 1

Details

Code: 7651

Scope: Base station operation degraded

Status: Active

Start time: 01.07.2009 10:00:08 DST

Show Source

Connected to BTS, TRS

OAM Iub Connected

On Air

TRS Commissioned

An existing IMA Group can be upgraded during operation by adding more link(s).
Here: from 3 to 4
A **send** button appears after changing any parameter.

Check IMA Group Status

FileViewConfigurationSoftwareTestsToolsAntennaHelp

IMA

Traffic DescriptorsATM Over Ethernet

IMA Group

Selected Links

☒ IF 1

☒ IF 2

☒ IF 3

☐ IF 4

Count: 1

In Use

Show Status...

IMA Group Status

IMA Group ID: 33

Operational State: Enabled

Near-end IMA Group State: Operational

Far-end IMA Group State: Operational

Current IMA Version: 1.1

Current TX Timing Link: IF 2

RX Timing Link: IF 2

Number of TX Active Links: 3

Number of RX Active Links: 3

RX Frame Length: 128 cells

Cell Rate Available for Transmitting: 13472 cells/s

Cell Rate Available for Receiving: 13472 cells/s

Far-end IMA ID: 1

Near-end IMA ID: 1

IMA Links Status

IF	Oper State	NE TX State	NE RX State	FE TX State	FE RX State	TX Link ID	RX Link ID
1	Enabled	Active	Active	Active	Active	1	1
2	Enabled	Active	Active	Active	Active	2	0
3	Enabled	Active	Active	Active	Active	3	2

Completed

00:01

Refresh

Close

IMA Control Protocol 1.1 is the default. Only if the far end equipment doesn't support it, then the fallback version 1.0 would be used.

Check or create Traffic Descriptors (TRDE)

IMA Traffic Descriptors

☐ UBR+ Service Category in Use

Traffic Descriptors	Conformance Definition	Name	PCR	In Use
300cbr	CBR.1	300cbr	300	1
150cbr	CBR.1	150cbr	150	2
12000cbr	CBR.1	12000cbr	12000	1
13000ubr	UBR	13000ubr	13000	1
13000cbr	CBR.1	13000cbr	13000	1

New Traffic Descriptor

Delete Traffic Descriptor

Alarms (1 Active)

Severity	Time GMT+01:00 DST	Description	Source
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS : BS 8 / FSMD 1

Details

Code:

Scope:

Status:

Started:

Show Source

Connected to BTS, TRS

DAM Iub Connected On Air TRS Commissioned

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Check or Modify Bidirectional Forwarding Detection

ATM Over Ethernet Settings

Bidirectional Forwarding Detection

☐ Control Word In Use

Desired Minimum Transmit Interval: 500 ms

Required Minimum Receive Interval: 500 ms

Detection Multiplier: 5

There is currently no valid ATM Over Ethernet licence in the transport element (licence missing or expired). Configuration of ATM Over Ethernet functionality requires a licence.

New PSN Tunnel
New Pseudowire
Delete

Alarms (1 Active)

Severity	Time GMT+01:00 DST	Description	Source
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS : BS 8 / PSMD 1

Details

Code:
Scope:
Status:
Started:

Show Source

Connected to BTS, TRS

DAM Iub Connected On Air TRS Commissioned

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In case of ATM over Ethernet transmission, the Bidirectional Forwarding Detection setting can be changed during operation.

Bidirectional Forwarding Detection Select *Control Word In Use* to use the optional control word. This option is selected and disabled if an existing pseudowire has the Bidirectional Forwarding Detection in use. When the control word is used, it detects broken pseudowire connections and an alarm is raised. Bidirectional Forwarding Detection is a mechanism to monitor end-to-end operation of the each pseudowire. The check box can be selected if both termination points in the PSN tunnel support the control word usage. If you select the *Control Word In Use* check box, select the time intervals for the control word from the *Desired Minimum Transmit Interval* and *Required Minimum Receive Interval* lists (500 - 60000 μ s, default 500 μ s). Select also the *Detection Multiplier* (Value range is 2-10 in steps of 1). Default value is 5.

Check or modify IUB Terminations to BTS

As part of an IUB upgrade, the PCR of an existing channel can be modified by selecting a new TRDE. The physical ATM Bandwidth e.g. IMA Group has to be upgraded beforehand.

Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection

File View Configuration Software Tests Tools Antenna Help

ATM

IMA Traffic Descriptors ATM Over Ethernet Iub Terminations to BTS ATM Interfaces

Name	ATM Interf...	VPI	VP TRDE	VCI	VC TRDE
Common NBAP	IMA Group ...	8	13000cbr - CBR.1...	56	300cbr - CBR.1/3...
Dedicated NBAP	IMA Group ...	8	13000cbr - CBR.1...	72	150cbr - CBR.1/1...
AAL2 Signalling	IMA Group ...	8	13000cbr - CBR.1...	40	150cbr - CBR.1/1...
AAL2 User Pat...	IMA Group ...	8	13000cbr - CBR.1...	120	12000cbr - CBR....

New Iub Termination

Delete Iub Termination

Alarms (1 Active)

Severity	Time GMT+01:00 DST	Description	Source
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS: BS 8 / FSMD 1

Details

Code:

Scope:

Status:

Started:

Show Source

Connected to BTS, TRS

DIAM Iub Connected On Air TRS Commissioned

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Check or modify VCC Bundling setting

Virtual Channel Connection Bundling can be turned on or off during operation. The setting should be done in accordance with the network plan and RNC setting.

Local Interface	Egress Bandwidth (cell/s)	Free Capacity (cell/s)	VCC Bundle Capacity (cell/s)
IMA Group 33	13472	472	-

Alarms (1 Active)

Severity	Time GMT+01:00 DST	Description	Source
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS : BS 8 / FSM0 1

Connected to BTS, TRS OAM1 Tub Connected On Air TRS Commissioned

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VCC bundling

The VCC bundling means that a common peak cell rate (PCR) can be set to a group of VCCs. This means that the total traffic amount of the bundled VCCs does not exceed the PCR set. The aim of this functionality is to protect the last mile or any other bottleneck in the system. If dedicated VCCs are used to carry different traffic types, the total traffic amount does not exceed the bundle PCR, thus preventing congestion and traffic loss in the transmission network. The bundle also enables the available capacity of a VCC to be better shared with the traffic of other VCCs.

VCC bundle can be used in both downlink and uplink. The DL bundle is configured in RNC and UL bundle in BTS.

RNC

In a bundle, there can be VCCs towards only one BTS. There can be two VCC bundles defined for a BTS. Two bundles are useful if the HSDPA traffic uses different physical path than the DCH traffic like, for example, with WCDMA BTS Hybrid backhaul.

In the downlink VCC bundle, in addition to the defining MDCRs, the bandwidth share can be affected with the Excess Bandwidth Share (EBS) parameter. The parameter defines how the bandwidth is shared in congestion.

If the NRT and the HSDPA VCC are in the same VCC bundle, then they are guaranteed their MDCR rates. The share of any additional capacity on top of the MDCR is controlled by the EBS parameter.

BTS

In the uplink VCC bundle in the BTS, the EBS parameter does not exist. The bandwidth share can be affected by defining MDCRs and by using the UBRShare parameter.

In the BTS, the bundle PCR is calculated automatically. In the UL bundle, the RT DCH is scheduled first and the other traffic types get bandwidth based on the MDCRs and the UBR Share.

Check or modify IP settings

IP settings can be modified during operation. *TRS*, *BTS* and *RNC* IP addresses have to be set according to the network IP plan to allow DCN channel operation (OAM Iub)

The current OAM connection status.
A optional secured connection requires the existance of certificates and private keys.

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Check or modify the DCN Interface

The screenshot displays the 'Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection' application. The left sidebar contains icons for BTS Hardware, TRS Hardware, Commissioning, BTS PM, ATM, IP, and TRS PM. The main window has tabs for IP Addresses, DCN Interfaces, Transport Address and Quality of Service, Timing Over Packet, BTS Routing, and DCN Routing. The 'DCN Interfaces' tab is active, showing a list of interfaces with 'IMA Group 33, VPI 8, VCI 32' selected. Below the list are 'New ATM DCN Interface' and 'Delete' buttons. The 'ATM Parameters' section on the right includes fields for ATM Interface (IMA Group 33), Virtual Path Id (8), Virtual Path TRDE (13000cbr - CBR/1/13000), Virtual Channel Id (32), Virtual Channel TRDE (13000ubr - UBR/13000), and Destination Address (10.26.212.61). A red callout box points to the Destination Address field with the text: 'The DCN ATM and IP properties can be changed during operation.'

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Inspect or modify Timing Over Packet settings

The screenshot shows the 'Timing Over Packet' configuration window. On the left, a tree view shows 'BTS Hardware' expanded, with 'TRIS' and 'FTIB' visible. The 'Timing Over Packet' tab is active, showing fields for 'Master Clock Address', 'Message Rate' (set to 16 times/second), 'Master Clock State' (Not Operational), and 'Lock Status' (Out of Lock). A red callout box points to the 'Master Clock Address' field with the following text:

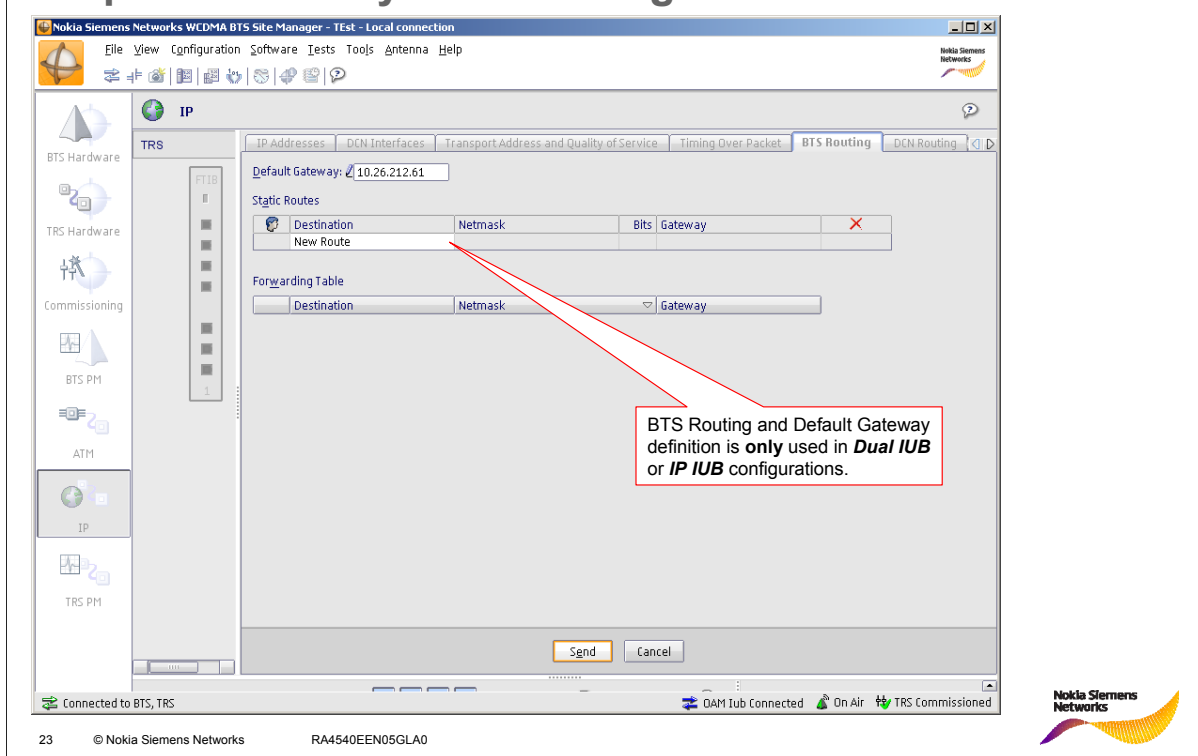
In TOP synchronization mode, the FTIB card receives clock information from a Master Clock device through its Ethernet interface.

If the feature is activated during operation, also the Master Clock device IP address must be defined.

At the bottom of the window, a status bar shows 'Connected to BTS, TRS', 'DAM Tab Connected', 'On Air', and 'TRS Commissioned'. The footer of the page includes '22 © Nokia Siemens Networks RA4540EEN05GLA0'.



Inspect or modify BTS Routing



Flexi WCDMA BTS has an integrated IP router which has to be configured. Nokia Siemens Networks WCDMA BTS Site Manager allows configuration of static routes so that the BTS can route the packets to different destination addresses over Transport Ethernet interface.

In Dual-Iub mode, BTS routing table is used to configure Default Gw/Static Routes required for the Transport Ethernet interface only, specifically for remote RNC Userplane address, BFD and ToP functionalities.

In IP-Iub mode, BTS routing table is used to configure Default Gw/Static Routes required for Transport Ethernet interface and LMP of TRS, specifically for RNC Userplane address, BFD, ToP, NBAP(SCTP) traffic, Management traffic (TCP/IP), LDAP, CMP server and CR server functionalities. It is also used to configure routing table for LMP network.



Inspect or modify DCN Routing

The screenshot shows the 'DCN Routing' tab in the Nokia Siemens Networks WCDMA BTS Site Manager. The interface includes a left sidebar with navigation icons for BTS Hardware, TRS Hardware, Commissioning, BTS PM, ATM, IP, and TRS PM. The main area displays the 'DCN Routing' configuration for the selected TRS (FT18). The 'Default Gateway' is set to 10.26.212.61. Below this, the 'Static Routes' section shows a table with columns for Destination, Netmask, Bits, and Gateway. The 'Forwarding Table' section shows a table with columns for Destination, Netmask, and Gateway.

Destination	Netmask	Bits	Gateway
New Route			

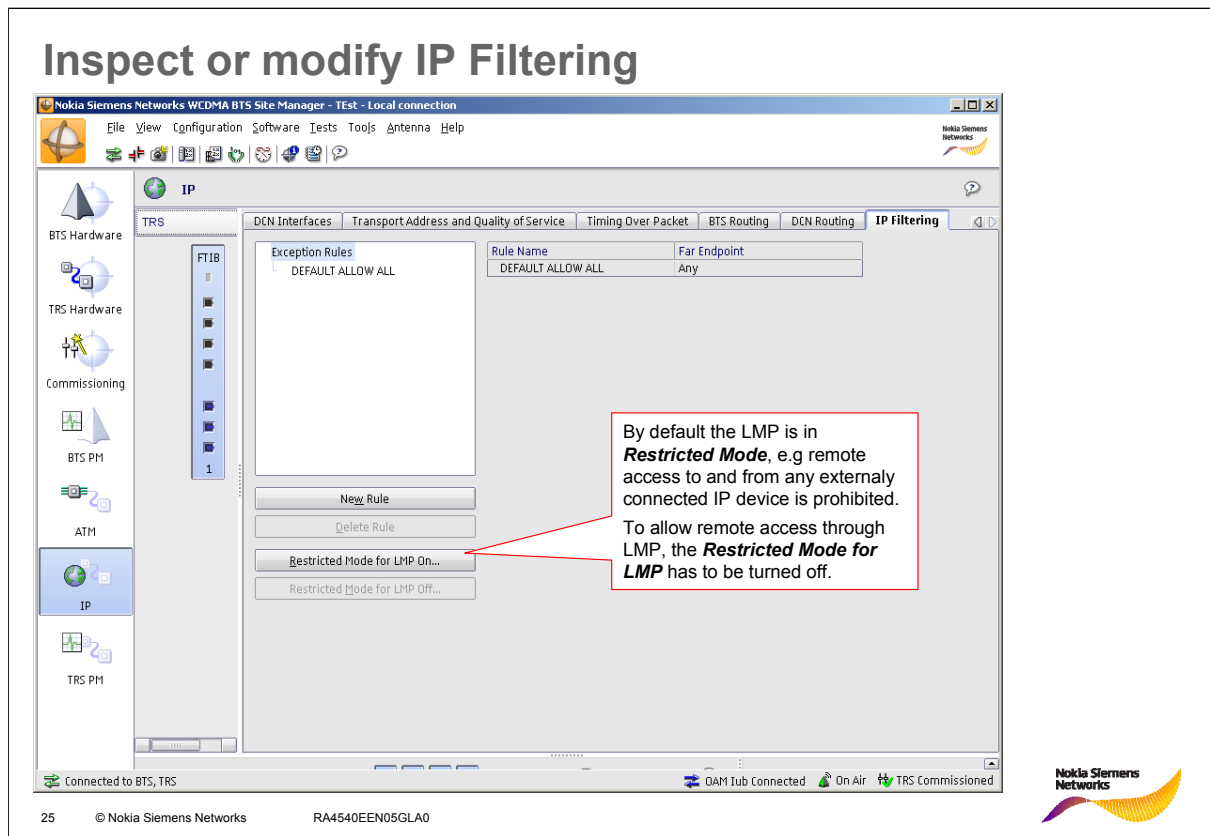
Destination	Netmask	Gateway
10.26.212.61	255.255.255.255 / 32	
10.26.212.48	255.255.255.240 / 28	BTS Subnet
Default Gateway		10.26.212.61

In ATM based transmission, the DCN Default Gateway is typically the RNC AA-interface or RNC OMU address.

In case the DCN channel is terminated by an intermediate ATM switch, this router is to be configured as the gateway.

Flexi WCDMA BTS has an integrated IP router which has to be configured for the O&M connection RNC.

Nokia Siemens Networks WCDMA BTS Site Manager allows configuration of static routes so that the BTS can route the packets to different destination addresses over the data communication network (DCN). DCN Routing table is configurable in ATMoE and Dual Iub Transport modes of the BTS.



IP address based filtering

Flexi WCDMA BTS provides the filter service for IP packets from and to the attached site support equipment like e.g. webcams, battery backup units or external GPS receivers. These devices are typically rather simple without any own IP packet filter or firewall. Thus, the site support equipment would be directly accessible if it was not protected by a packet filter in front. Hence, Flexi WCDMA BTS provides the IP packet filter service to protect the equipment from harmful network traffic and the network from unintended traffic from the site support equipment.

In WN5.0 the packet filtering is done based on the far-end IP addresses. Any IP packets from/to any site support equipment which is not targeted to/originated by any of the given far-end IP addresses will be dropped. The filtering is done based on IP addresses only, neither ports nor protocols are taken into account. Furthermore, there is not distinction between the support equipment. Any far-end with granted access is allowed to access any attached site support equipment on any port and with any IP protocol. No site support equipment can be accessed by default.

Rule sets configurations

Flexi WCDMA BTS supports only one rule set configuration in the IP Filtering settings. This rule is for LMP subnet. The traffic shall be allowed from/to the site support addresses from the remote IP addresses configured in the filtering rule set on the system. These remote IP addresses can be configured as "Single IPs", "Range IPs" (must be a subnet) or "All" which allows traffic from any remote network. If the site support equipment IP address is beyond the LMP subnet range, it can be accessed by adding appropriate filter rules and route entries.

DCN restricted mode

Traffic between site support addresses (LMP) and DCN networks is blocked by default, whereas all types of traffic between Flexi WCDMA BTS/TRS management IP subnet and DCN networks are allowed. Enabling and disabling the restricted mode for LMP is supported for backward compatibility. Access from site support addresses to DCN network is blocked when 'DCN Restricted Mode' is enabled.

Configure IP Filtering Rules

Configure IP Filtering Rules

The screenshot displays the 'Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection' window. The 'IP Filtering' tab is selected, showing a 'New Rule' configuration dialog. The dialog includes the following fields:

- Name:** OMC
- Near Endpoint:** Site Support Addresses: 10.26.212.48 - 10.26.212.63
- Far Endpoint:** Address Type: Single, Address: 10.0.10.1

A red callout box points to the 'New Rule' button with the text: "Additionally, filter rules can be defined to only allow certain IP addresses (or ranges) to remotely access the Site Support Equipment connected to LMP."

The interface also shows a list of exception rules on the left, including 'DEFAULT ALLOW ALL' and 'OMC'. The status bar at the bottom indicates 'Connected to BTS, TRS', 'DAM1 Tub Connected', 'On Air', and 'TRS Commissioned'.

TRS Performance Monitoring: Summary

TRS Performance Monitoring: Summary

Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection

File View Configuration Software Tests Tools Antenna Help

TRS Performance Monitoring

Summary Reports Counters

Overall status of running measurements

Status	Location	Counter
✓	IF 1 (E1)	Unavailable seconds
✓	IF 1 (E1)	Errored seconds
✓	IF 1 (E1)	Severely errored seconds
✓	IF 1 (E1)	Background block error
✓	IF 2 (E1)	Unavailable seconds
✓	IF 2 (E1)	Errored seconds
✓	IF 2 (E1)	Severely errored seconds
✓	IF 2 (E1)	Background block error
✓	IF 3 (E1)	Unavailable seconds
✓	IF 3 (E1)	Errored seconds
✓	IF 3 (E1)	Severely errored seconds
✓	IF 3 (E1)	Background block error
✓	IF 4 (E1)	Unavailable seconds
✓	IF 4 (E1)	Errored seconds
✓	IF 4 (E1)	Severely errored seconds
✓	IF 4 (E1)	Background block error

Details...

Alarms (1 Active) Show: [Icons]

Severity	Time GMT+01:00 DST	Description	Source
Major	01.07.2009 10:00:08	BTS master clock tuning failure	BTS : BS 8 / FSMD 1

Details

Code:
Scope:
Status:
Started:

Show Source

Connected to BTS, TRS

DAM Tab Connected On Air TRS Commissioned

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TRS Performance Monitoring: Physical Layer Counters

Physical layer counters: IF 1

No	Time	UAS	SES	ES	BBE
1	01.07.2009 14:44:26	0	0	0	0
2	01.07.2009 14:30:00	0	0	0	0
3	01.07.2009 14:15:00	0	0	0	0
4	01.07.2009 14:00:00	0	0	0	0
5	01.07.2009 13:45:00	0	0	0	0
6	01.07.2009 13:30:00	0	0	0	0
7	01.07.2009 13:15:00	0	0	0	0
8	01.07.2009 13:00:00	0	0	0	0
9	01.07.2009 12:45:00	0	0	0	0
10	01.07.2009 12:30:00	0	0	0	0
11	01.07.2009 12:15:00	0	0	0	0
12	01.07.2009 12:00:00	0	0	0	0
13	01.07.2009 11:45:00	0	0	0	0
14	01.07.2009 11:30:00	0	0	0	0
15	01.07.2009 11:15:00	0	0	0	0
16	01.07.2009 11:00:00	0	0	0	0
17	01.07.2009 10:45:00	0	0	0	0
18	01.07.2009 10:30:00	0	0	0	0
19	01.07.2009 10:15:00	0	0	0	0
20	01.07.2009 10:00:00	0	0	0	0

Physical layer counters indicate the condition of the physical transmission layer, broken. SES means that there have been serious faults, but the link has been up, faults in the link.

Counter reports (up to 96) are generated every 15 min. A TRS unit or Site reset deletes all PM data.

You can inspect the following counters:

- Unavailable seconds (UAS)
- Severely Errored seconds (SES)
- Errored seconds (ES)
- Background Block Errors (BBE)

TRS Performance Monitoring: ATM Counters

TRS Performance Monitoring

Summary Reports Counters

Counters

Physical Layer

IF 1

IF 2

IF 3

IF 4

EIF 1

EIF 2

EIF 3

ATM Over Ethernet

ATM

IMA Group 33

VPI 8

VCI 32

VCI 40

VCI 56

VCI 72

VCI 120

IP

TRS ETH IF

Timing over Packet

Presentation: Graphical Tabular

ATM counters: IMA Group 33, VPI 8, VCI 56

No	Time	RXTotCellsVc	TXTotCellsVc
1	01.07.2009 14:44:26	1833	2648
2	01.07.2009 14:30:00	1885	2740
3	01.07.2009 14:15:00	1899	2746
4	01.07.2009 14:00:00	1884	2739
5	01.07.2009 13:45:00	1913	2752
6	01.07.2009 13:30:00	1885	2740
7	01.07.2009 13:15:00	1886	2741
8	01.07.2009 13:00:00	1885	2740
9	01.07.2009 12:45:00	1884	2739
10	01.07.2009 12:30:00	1885	2740
11	01.07.2009 12:15:00	1885	2740
12	01.07.2009 12:00:00	1885	2740
13	01.07.2009 11:45:00	1885	2740
14	01.07.2009 11:30:00	1882	2741
15	01.07.2009 11:15:00	1886	2749
16	01.07.2009 11:00:00	1286	1894
17	01.07.2009 10:45:00	1885	2740
18	01.07.2009 10:30:00	1118	1657
19	01.07.2009 10:15:00	949	1419
20	01.07.2009 10:00:00	1697	2470
21	01.07.2009 09:45:00	1021	1426

The counters present the total number of received and transmitted ATM cells per Virtual Connection.

Threshold... Save... Print... Copy

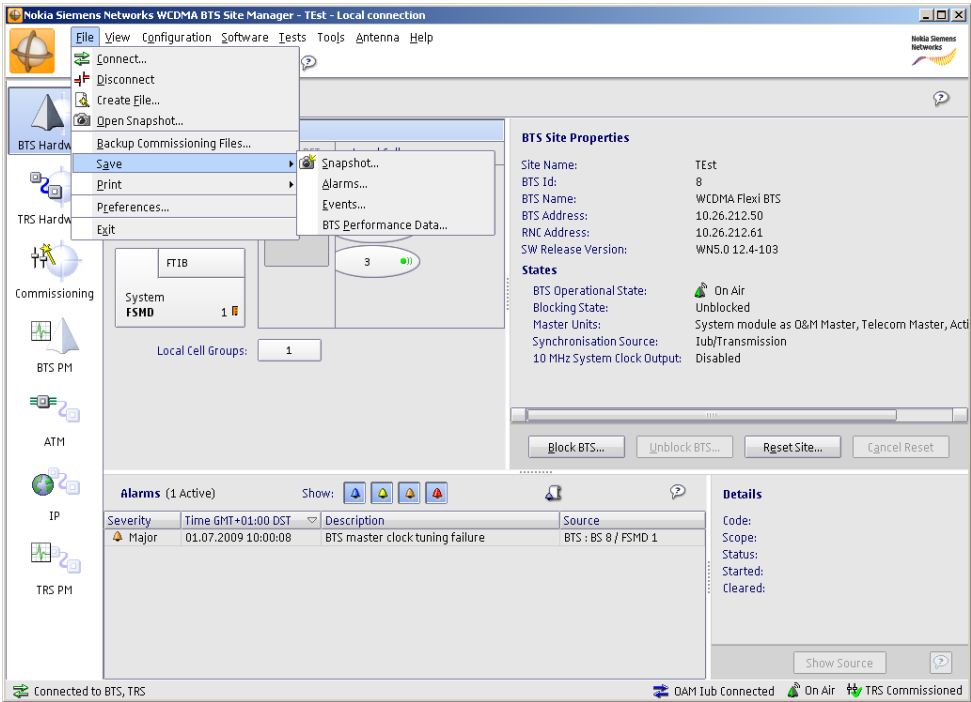
Connected to BTS, TRS

DAM Tab Connected On Air TRS Commissioned

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ATM cell traffic can be monitored down to VC level. The refresh button can be used to update the currently generated 15-min- interval.

Saving information from the BTS...





Saving Snapshot

Current Data in WCDMA Site Manager

Fetch Most Important Data From Elements

Fetch Most Important Data From Elements

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The snapshot file can be saved in the connected mode and it contains the current status of elements and WCDMA BTS Site Manager: used HW configuration, logs, alarms, HW and SW version information, for example.

Remember to attach the logs when raising a Resolve case to Tier3.

Snapshot Detail Levels

WinZip Pro - Snapshot_TEST_2009...

Current Data

Name	Type
ActiveTests.xml	XML Document
Alarms.xml	XML Document
BTSLogFiles.zip	WinZip File
ClockFreq.gz	WinZip File
CommissioningData.xml	XML Document
Dacword.txt	Text Document
Events.txt	Text Document
Licences.xml	XML Document
PM.NE-WBTS.20090701.090000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.100000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.110000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.120000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.130000.WCDM.xml	XML Document
BTSManager.properties	PROPERTIES
Session.txt	Text Document
SiteConf.xml	XML Document
CurrentBD.xml	XML Document
trustcacerts.jks	JKS File
CLLog.xml	XML Document
modelDebugger.xml	XML Document
raml20.dtd	DTD File
Snapshot.xml	XML Document
TRS.xml	XML Document
SiteManagerLog.bak	BAK File
SiteManagerLog.xml	XML Document
snapshot.properties	PROPERTIES
snapshotDesc.xml	XML Document

Selected 0 files, 0 byte Total 27 files, 5.501KB

WinZip Pro - Snapshot_TEST_20090701_2.zip

Most Important Data

Name	Type
ActiveTests.xml	XML Document
Alarms.xml	XML Document
BTSLogFiles.zip	WinZip File
ClockFreq.gz	WinZip File
CommissioningData.xml	XML Document
Dacword.txt	Text Document
Events.txt	Text Document
Licences.xml	XML Document
PM.NE-WBTS.20090701.090000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.100000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.110000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.120000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.130000.WCDM.xml	XML Document
BTSManager.properties	PROPERTIES
RadParams.xml	XML Document
Session.txt	Text Document
SiteConf.xml	XML Document
CurrentBD.xml	XML Document
trustcacerts.jks	JKS File
CLLog.xml	XML Document
BasicNetsLog.tar.gz	WinZip File
modelDebugger.xml	XML Document
modelDebugger.xml	XML Document
raml20.dtd	DTD File
Snapshot.xml	XML Document
TRS.xml	XML Document
SiteManagerLog.bak	BAK File
SiteManagerLog.xml	XML Document
snapshot.properties	PROPERTIES
snapshotDesc.xml	XML Document

Selected 1 file, 91KB Total 30 files, 7.375KB

WinZip Pro - Snapshot_TEST_20090701_...

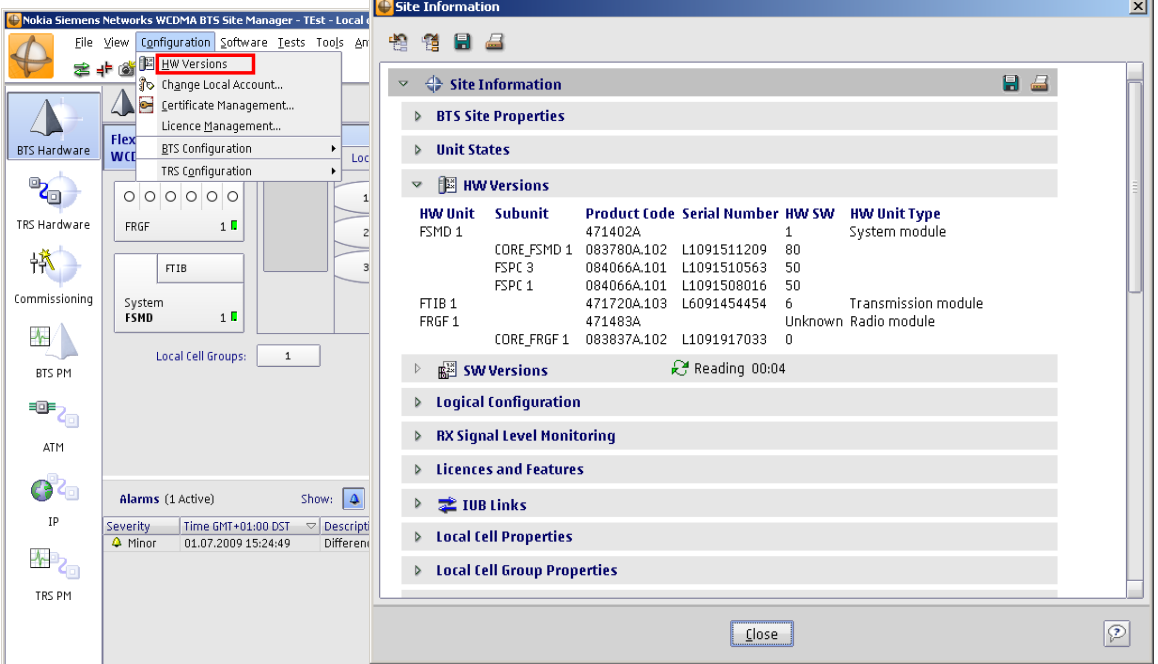
All Data

Name	Type
ActiveTests.xml	XML Document
Alarms.xml	XML Document
BTSLogFiles.zip	WinZip File
ClockFreq.gz	WinZip File
CommissioningData.xml	XML Document
Dacword.txt	Text Document
Events.txt	Text Document
Licences.xml	XML Document
PM.NE-WBTS.20090701.090000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.100000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.110000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.120000.WCDM.xml	XML Document
PM.NE-WBTS.20090701.130000.WCDM.xml	XML Document
BTSManager.properties	PROPERTIES
RadParams.xml	XML Document
Session.txt	Text Document
SiteConf.xml	XML Document
CurrentBD.xml	XML Document
trustcacerts.jks	JKS File
CLLog.xml	XML Document
ExtendedNetsLog.tar.gz	WinZip File
modelDebugger.xml	XML Document
modelDebugger.xml	XML Document
raml20.dtd	DTD File
Snapshot.xml	XML Document
TRS.xml	XML Document
SiteManagerLog.bak	BAK File
SiteManagerLog.xml	XML Document
snapshot.properties	PROPERTIES
snapshotDesc.xml	XML Document

Selected 1 file, 884KB Total 30 files, 8.890KB

For Troubleshooting purposes the highest detail level snapshot shall be taken

Check or save Hardware Information



The screenshot shows the 'Site Information' dialog box with the 'HW Versions' tab selected. The table below lists the hardware units and their versions.

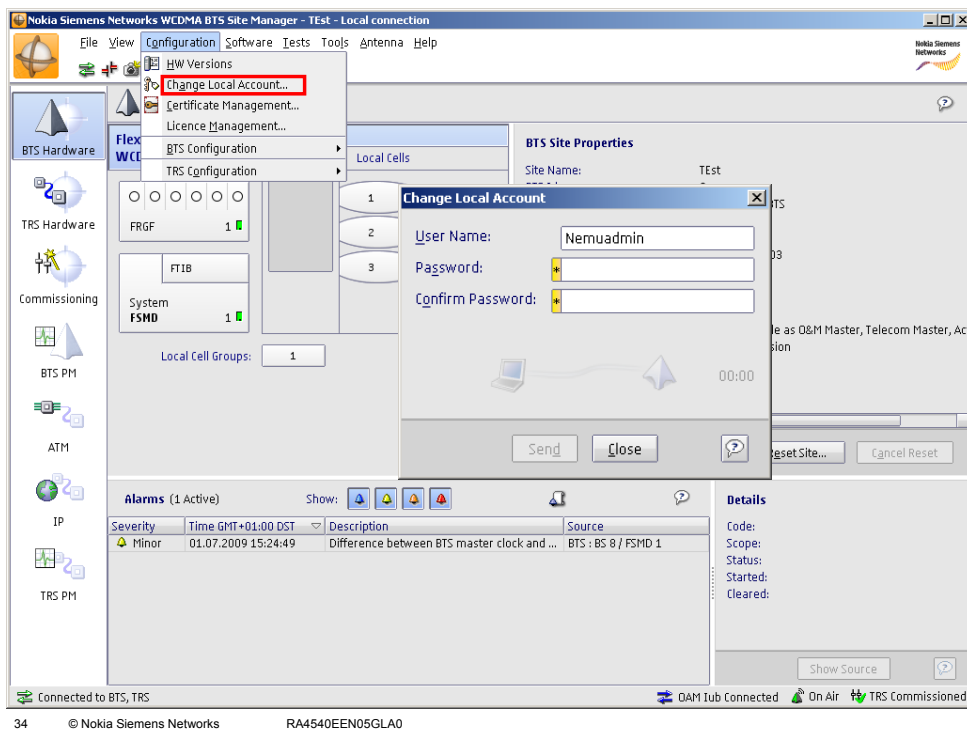
HW Unit	Subunit	Product Code	Serial Number	HW SW	HW Unit Type
FSMD 1		471402A		1	System module
	CORE_FSMD 1	083780A.102	L1091511209	80	
	FSPC 3	084066A.101	L1091510563	50	
	FSPC 1	084066A.101	L1091508016	50	
FTIB 1		471720A.103	L6091454454	6	Transmission module
FRGF 1		471483A		Unknown	Radio module
	CORE_FRGF 1	083837A.102	L1091917033	0	

The dialog box also includes sections for 'SW Versions', 'Logical Configuration', 'RX Signal Level Monitoring', 'Licences and Features', 'IUB Links', 'Local Cell Properties', and 'Local Cell Group Properties'. The 'Close' button is visible at the bottom right of the dialog.

Hardware information of all detected units and manually added passive units is available as part of the Site Information file.



Change Local Account



Local user account

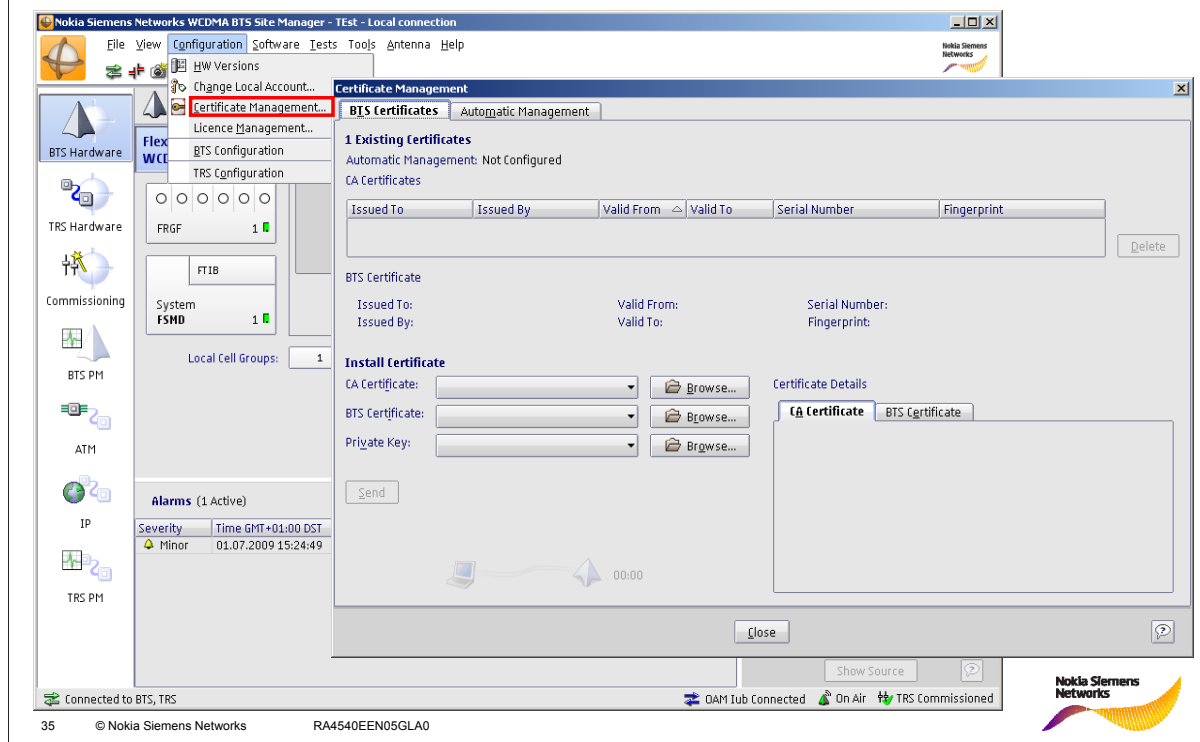
Local account information is stored directly in Flexi WCDMA BTS. No DCN connection is required for logging in with the local account. Therefore, it can be used for example for troubleshooting or during local management operations. The use of the local account is not limited to connections via the local management port (LMP), however. It is also possible to use the local account when logging in remotely.

Only one local user can exist on a Flexi WCDMA BTS. It always has superuser privileges, which means that any management operation is allowed for the local user account.

If the local user account password is lost, it can be reset to default by resetting the transmission sub-module of the Flexi WCDMA BTS to factory defaults. This can only be done via local management port, therefore a site visit is required in this case. For resetting the transmission sub-module to factory defaults, the default username and password (Nemuadmin/nemuuser) can be used.



Check or install Certificates



Configuring BTS keys and certificates manually

The CA and BTS certificates as well as BTS private keys must be created from Certificate Authority. All of these have to be stored in the local machine where the Site Manager is installed. These certificates can be configured into the BTS in three ways : (1) CA certificate configuration first , (2) then, BTS certificate and private key configuration, or (3) CA and BTS certificates and BTS private key altogether.

Steps

- In BTS Site Manager, select *Configuration* and then *Certificate management*.
- Browse to the location where the BTS certificates and keys are stored.
- Select the *Send* button to install and store the certificates into the BTS.



Inspect or configure Automatic Certificate Management

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A Certificate Management Protocol (CMP) is used to fetch the CA signed BTS certificate and CA certificates automatically and to perform it in a secure manner. To do so BTS must be configured with:

Reference Number (RefNum) and Pre Share Key (PSK).

CMP server IP address and TCP port number.

Certificate repository (CR) IP address and TCP port number.

RefNum and PSK are used for the initial encryption of CMP messages between the CMP client and CMP server. At the initial configuration these values shall be made out-of-band and using the Site Element Manager the values are downloaded over a local connection. The CMP server IP address and TCP port number is configured using the Element Manager or by deploying a BTS Site Configuration File or via the NMS. This configuration is used by the BTS embedded CMP client to exchange messages with the CMP server. The CR IP address and TCP port number is configured using the Element Manager, by deploying a BTS Site Configuration File or via the NMS. This configuration is used by the BTS embedded CMP client to retrieve the CA certificate from the certificate repository (CR). The CA certificate retrieval uses the LDAPv3 protocol.

PSK and RefNum must be generated in the same CMP server which will be used to get BTS and CA certificates. These values also need to be made available for the CMP server in order to allow the establishment of a secure CMP message exchange.

Configuring CMP and CR server IP addresses and PSK and RefNum triggers to take CMP into use for this particular BTS. This causes the creation of a new private and public keypair, followed by a CMP Initialize sequence to obtain a valid and CA signed BTS certificate as well as the CA certificate to be used by the BTS.



Licence Management

BTS Features and Licences

Feature Name	Licence File	Element	Licence End Time	Licence Capacity	Feature State
Additional 2 E1, T1, JT1 i...	F2500488.XML	WBTS	19-Jun-2019	2	Active
Flexi WCDMA BTS Branch...	F2500487.XML	WBTS	19-Jun-2019	3	Active
IMA (FTM)	F2700081.XML	WBTS	30-Jun-2013	1	Active

Licence Details

Existing

Feature Name: Additional 2 E1, T1, JT1 interface (FTM)
 Feature Code: 598
 Target Element: WBTS
 Target Id: -
 Start Time: 19-06-2009
 End Time: 19-06-2019
 Download Time: 19-06-2009
 Capacity: 2
 Customer Name: -
 Customer Id: -

Download Licence to BTS

Browse...
 Download to BTS

Licence Management is usually done remotely through NetAct Licence Manager. In case the licence for a certain feature is missing (indicated by an Alarm), it can also be downloaded locally using the BTS Site Manager.

The Feature State indicates whether a feature is used and the required Licence is existing and valid.

Connected to BTS, TRS
 RA4540EEN05GLA0

BTS Features and Licences

The **BTS Features and Licences** table shows all the optional features that require licences.

Feature Name The *Feature Name* column shows the name of the licenced feature. If a licence file contains licences for many features, those are shown in own rows.

Licence File The *Licence File* column shows the name of the licence file or the text 'No Licence' if there is no licences for the feature.

Element The *Element* column shows the network element the licence is for.

Licence End Time The *Licence End Time* column shows the end time of the licence validity period.

Licence Capacity The *Licence Capacity* column shows the extra capacity that licence provides for the specified feature (only for capacity licences).

Feature State The *Feature State* column shows the status of the licence: Active, Inactive, Expired or - (if there is no licence for the feature).



Clock supervision and adjustment: Fast Tune

Fast Tune BTS Clock

Start Fast Tune

If the ToP (Timing Over Packet) feature is in use, it is highly recommended to block all cells before starting fast tuning.

Do you want to start the fast tuning without blocking cells first?

Start **Cancel**

A Fast Tune process may take up to several minutes. A message pop-up message **Fast Tune Completed** indicates it is done.

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If the reference clock signal (IUB, GPS or external 2048 KHz) has been disadjusted due to a transmission network fault, the local BTS Clock might be disadjusted accordingly. After recovery of the reference clock, the BTS clock may differ quite much from the reference (see alarm ***Difference between BTS master clock and reference frequency***).

In order to quickly re-synchronize back to the corrected reference clock, the **Fast Tune** process can be used.



Clock supervision and adjustment: Manual Tuning

Tune BTS Clock Manually

Synchronisation Source

Active	Priority	Synchronisation Source	Availability
<input type="checkbox"/>	1	GPS/PPS	Not available
<input type="checkbox"/>	2	2.048 MHz external	Not available
<input checked="" type="checkbox"/>	3	Iub/Transmission	Available

Manual Tuning

Current DAC Word: 2006

New DAC Word: (0...4095)

Completed 17:41

Tuning History

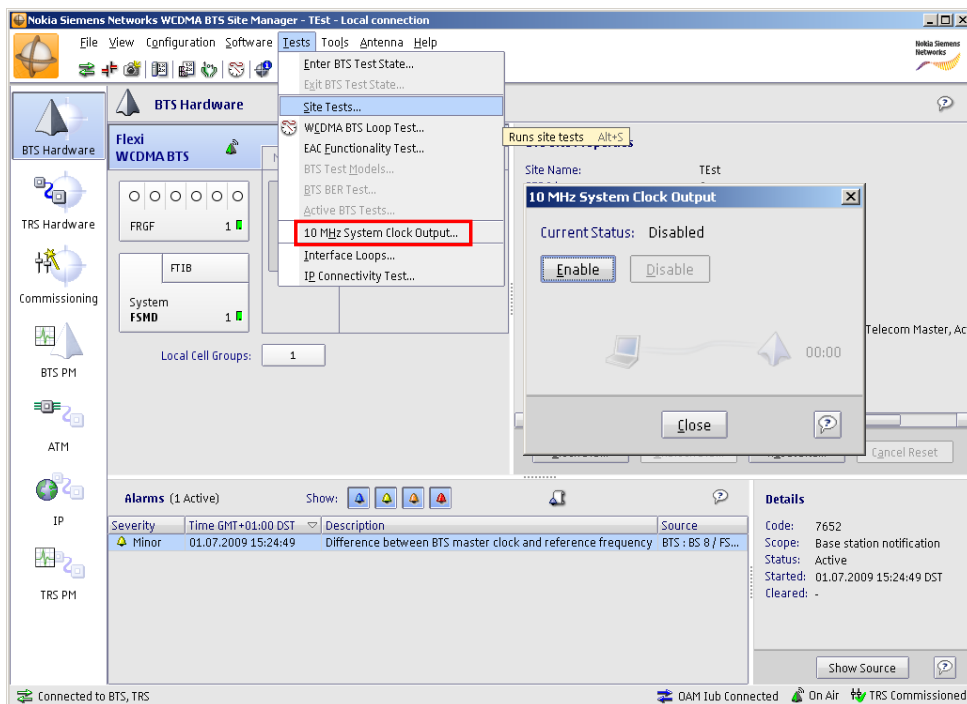
Time GMT+01:00 DST	Source	Average DAC ...	Tuning	Differenc...	Rejected ...
01.07.2009 16:05	Iub/Transmission	2006	Normal	-15.49	0.0
01.07.2009 15:45	Iub/Transmission	2004	Normal	-15.5	0.0
01.07.2009 15:24	Iub/Transmission	2002	Normal	-15.5	0.0
01.07.2009 15:04	N/A	2000	Manual	N/A	N/A
01.07.2009 14:39	Iub/Transmission	4095	Normal	-13.75	0.0
01.07.2009 14:18	Iub/Transmission	4095	Normal	-13.75	0.0
01.07.2009 13:58	Iub/Transmission	4095	Normal	-13.75	0.0
01.07.2009 13:37	Iub/Transmission	4095	Normal	-13.75	0.0
01.07.2009 13:17	Iub/Transmission	4095	Normal	-13.75	0.0
01.07.2009 12:57	Iub/Transmission	4095	Normal	-13.75	0.0
01.07.2009 12:36	Iub/Transmission	4095	Normal	-13.75	0.0
01.07.2009 12:16	Iub/Transmission	4095	Normal	-13.75	0.0

DAC Word and BTS Clock frequency are proportional. Increasing the **DAC Word** increases the frequency.

In order to test the BTS Clock accuracy, it can be adjusted manually. Therefore connect a frequency counter to the FSMx Sync Out interface. The Testclk frequency (FSMx **Sync Out**) shall be adjustable to 10 MHz +/- 0.1 Hz.



10 MHz System Clock Output



In case the BTS clock frequency is to be measured with an external Frequency counter, the appropriate 10 MHz clock output (**FSMx Sync Out**) needs to be enabled first.

Inspect or modify Synchronization

The screenshot shows the 'Synchronisation' configuration window in the Nokia Siemens Networks WCDMA BTS Site Manager. The window displays the 'Timing Sources' table with columns for Priority and Timing Source. The active source is IF 1 (E1). A 'Swap Priorities' button is visible. Annotations highlight the 'Synchronisation...' menu item and the 'Timing Sources' table.

All configured IUB (E1/T1/JT1/STM-1) timing sources are listed, indicating the active source.

Timing sources can be changed or priorities can be swapped during operation

Priority	Timing Source	
1	IF 1 (E1)	<input checked="" type="checkbox"/>
2	IF 2 (E1)	<input type="checkbox"/>
3	Internal Clock	<input type="checkbox"/>



Inspect or modify System Time

System Time

Current Element Time: 01 July 2009 16:15:40 GMT+01:00 DST

IP Address	Status	
10.26.48.73	OK	<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

All configured NTP servers are listed with their status information.
NTP server addresses can be modified or added during operation. There can be up to 3 NTP servers configured.

Completed 00:01

Send Close

Show Source

Tests...

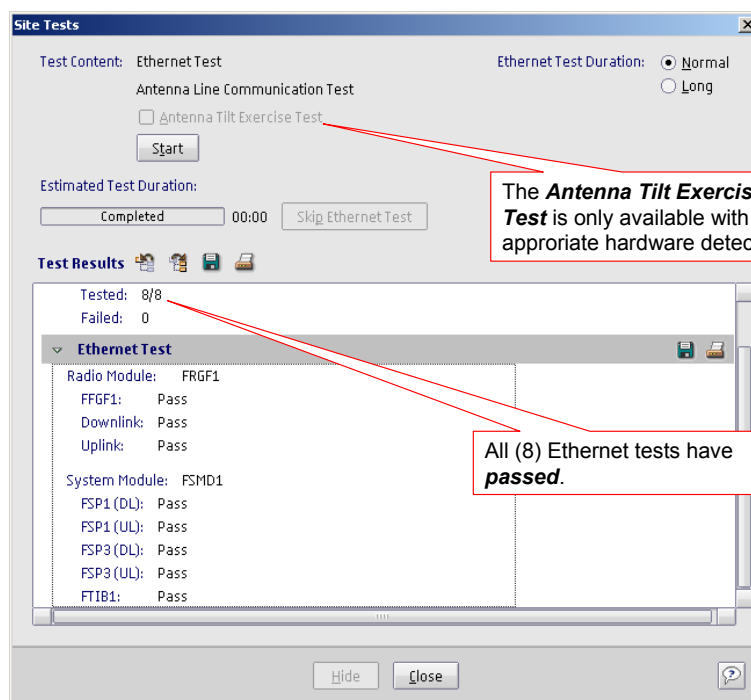
Flexi WCDMA BTS provides a couple of internal tests. **BTS Test Models** and **BTS BER Test** require external measurement equipment.

Severity	Time GMT+01:00 DST	Description	Source
Minor	01.07.2009 15:24:49	Difference between BTS master clock and reference frequency	BTS : BS 8 / FS...

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Site Tests



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The Ethernet test is used to validate Ethernet interfaces of the System Module and Baseband extension module HW resources. The Antenna Line Communication test validates interfaces to all detected 3GPP antenna line devices (RET, for example). The Antenna Tilt Exercise means testing antenna tilt control mechanics for all detected tilt HW resources. The test drives the tilt motor from end-to-end and returns to the original place.

The test results displays the following information:

Waiting for results indicates that the test has been started but the results are not ready yet.

Pass indicates that the test is passed according to the test success limit (defined in the BTS Site Manager properties file).

Fail indicates that the test is failed according to the test success limit (defined in the BTS Site Manager properties file).

Not Tested indicates that, for example, a unit is commissioned but not detected.

Test Summary The *Test Summary* level shows the number of the completed, untested and failed tests for the Ethernet test, Antenna Line Communication test, and Antenna Tilt Exercise test (if it was selected to be executed).

Ethernet Test The *Ethernet Test* level shows the results for the tested modules:

Flexi System Module (FSM): test results for each Flexi BTS Signal Processing (FSP) unit and Flexi Transport Submodule (FT).

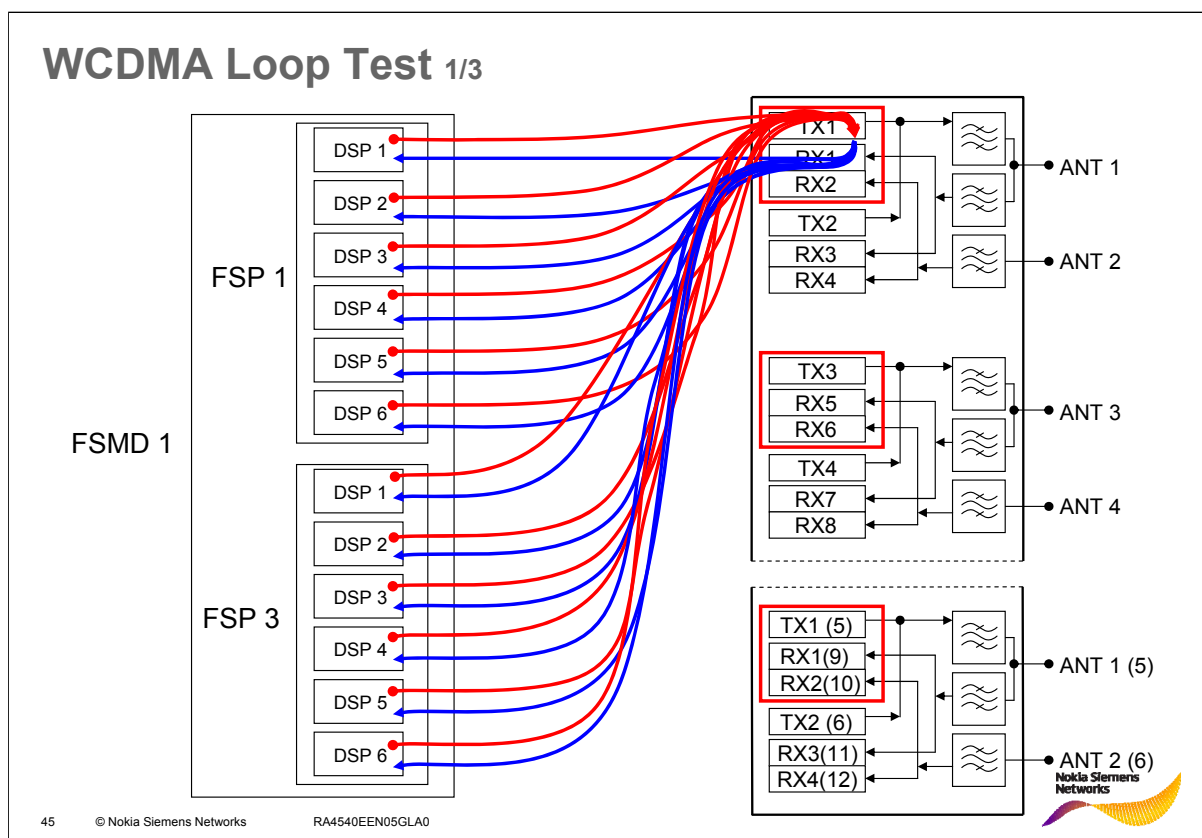
Flexi Radio Modules (FR): test results for Uplink and Downlink, and for each filter (FF) belonging to the FR.
Flexi Power module (FP).

Flexi Baseband Extension Modules (FSM): test results for Flexi BTS Control and Multiplexing (FCM) unit and for each Flexi BTS Signal Processing (FSP) unit.

Antenna Line Communication Test The Antenna Line Communication Test level shows the results for the tested modules:

Flexi Radio Modules (FR): test results for all detected RETs and other antenna line devices.

Antenna Tilt Exercise Test The Antenna Tilt Exercise Test level shows the results for tested modules: Flexi Radio Modules (FR): tilt angles and test results for all detected RETs. If there are failed tests, the reasons for the failure are also displayed.



Example configuration 1+1+1, the red framed TX and RX belong to the configuration, component numbering for Dual PA and Single PA Modules, Triple PA Module in ().

Selection of tests is done by selecting antennas (see next page).

Example: Selection of **Antenna 1 only** will suppose the following components for the test:

The total number of tests can be calculated from No. of DSPs x no. of RXs (belonging to the configuration and connected to the selected antenna(s)).

12 DSPs X 1 RX = 12 test loops



WCDMA Loop Test 2/3

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The WCDMA loop test can be performed to verify commissioning, integration or reconfiguration, or to find a cause for a problem. The test can be executed when the operational state of the BTS is **On Air** or **Test dedicated**. If the SW update is in progress or radio modules are in 'Initialising' state, the test cannot be run.

In the *Test Setup* tab you can select which units to run the test with and how many test sequences (duration for a single loop) to run, and define if you want to use the optimised variation.

Note that **all Remote Radio Heads do not support WCDMA BTS loop test**.

Test Scope

Select the *Select All* check box if you want to test all antenna connectors, or select the appropriate check boxes to test the antenna connectors for radio modules individually.

Optimised Variation In Use

Select *Optimised Variation In Use* if you want it to be used to optimise the variation of units in elementary tests, so that not all combinations will conduct the elementary test. Excluding variations, which would be excessive from viewpoint of required test coverage, optimises the amount of required elementary tests. Passing over excessive variations will significantly **reduce the time** necessary to complete the test.

Single Loop Duration

Select the *Single Loop Duration* by clicking the appropriate option: 1 second (default), 3 seconds or 10 seconds.

WCDMA Loop Test 3/3

WCDMA BTS Loop Test

Test Setup

Test Summary

Failure Details

Some tests failed or were not executed

Total Number of Tests: 72

Not Executed: 6

Failed: 0

Antenna	Total	Not Executed	Failed
FRGF 1 ANT 1	12	1	0
FRGF 1 ANT 2	12	1	0
FRGF 1 ANT 3	12	1	0
FRGF 1 ANT 4	12	1	0
FRGF 1 ANT 5	12	1	0
FRGF 1 ANT 6	12	1	0

Save Report...

View Report

WCDMA Loop Test Report

WCDMA Loop Test Report 01-Jul-2009 16:25:18

FR	ANT	TX	RX	FSM	FSP	DSP	Success	BER Success	BER	SIR Success	SIR
1	1	1	1	1	1	1	Common Channels Reserved	-	-	-	-
1	2	1	3	1	1	1	Common Channels Reserved	-	-	-	-
1	3	3	5	1	1	1	Common Channels Reserved	-	-	-	-
1	4	3	7	1	1	1	Common Channels Reserved	-	-	-	-
1	5	5	9	1	1	1	Common Channels Reserved	-	-	-	-
1	6	5	11	1	1	1	Common Channels Reserved	-	-	-	-
1	1	1	1	1	1	2	Ok	Ok	2.84e-04	Ok	8.5
1	1	1	1	1	1	3	Ok	Ok	2.84e-04	Ok	8.5
1	1	1	1	1	1	4	Ok	Ok	5.61e-04	Ok	8.5
1	1	1	1	1	1	5	Ok	Ok	2.81e-04	Ok	8.5
1	1	1	1	1	1	6	Ok	Ok	1.39e-04	Ok	8.5
1	1	1	1	1	3	1	Ok	Ok	2.22e-04	Ok	8.5

Close

One DSP is reserved for Common Channel Processing and can not be tested during normal operation.

All tested resources are OK in both BER (Bit Error Ratio) and SIR (Signal/Interference Ratio).

Additional resources would be reserved for HSDPA (at least one DSP).

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EAC Functionality Test

EAC Functionality Test

Alarms Controls

Module	Line Id	Selected to Test	Name	Start Delay	Cancel Delay	Alarm State	Test Result
FSMD 1	1	<input checked="" type="checkbox"/>	LMAA	0	0	ON	OK
FSMD 1	14	<input type="checkbox"/>	Power Module Failure	0	0	ON	Not tested

Check field to suppose an EAC input for the test

Alarm sensor status is to be changed (from open to close or vice versa).
If the sensor status change is detected by the FSMx or RRH alarm input, then the **Test Result** changes from **Failed** to **OK**.

Save As...

Close



Interface Loops

Interface Loops

IF	Loop Configuration	Timeout (min)	Remaining Time (min)
1	Loop to Interface	15	15
2	None		
3	None		
4	None		

Hide Loop Examples <<

Loop to Interface

Loop to Equipment

Completed 00:02

Send Close

Loops are temporary settings. The maximum loop duration is 1440 min., the default is 15 min.

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Note: Making Loops during normal operation will disconnect the BTS from the RNC, calls will be dropped and the remote OAM supervision will be lost.

Purpose

In the **Interface Loops** dialog box you can test the physical layer functionality and internal functionality of the TRS. Typically an external signal generator is used at the other end of the physical connection that generates traffic, and traffic is looped back to the generator that can measure traffic and detect CRC errors and lost packets, for example. Also the equipment internal performance monitoring notices errors in the traffic.

The following loopbacks can be configured on PDH interfaces:

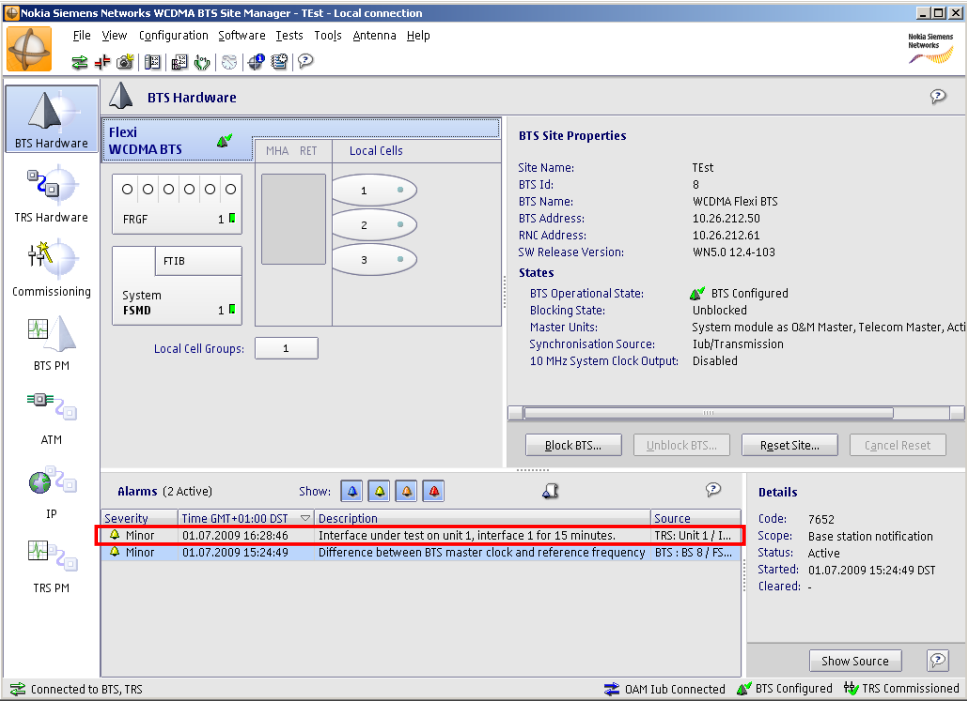
Loop to interface - the incoming signal is looped back to the output in the interface

→ Used when a BER test is run from the far end

Loop to equipment - the outgoing signal is looped back to the equipment in the interface.

→ Triggers the BTS to go into **Integrated to RAN** state without an RNC connection, when all IUB Terminations are configured and working.

Interface Loop Alarm



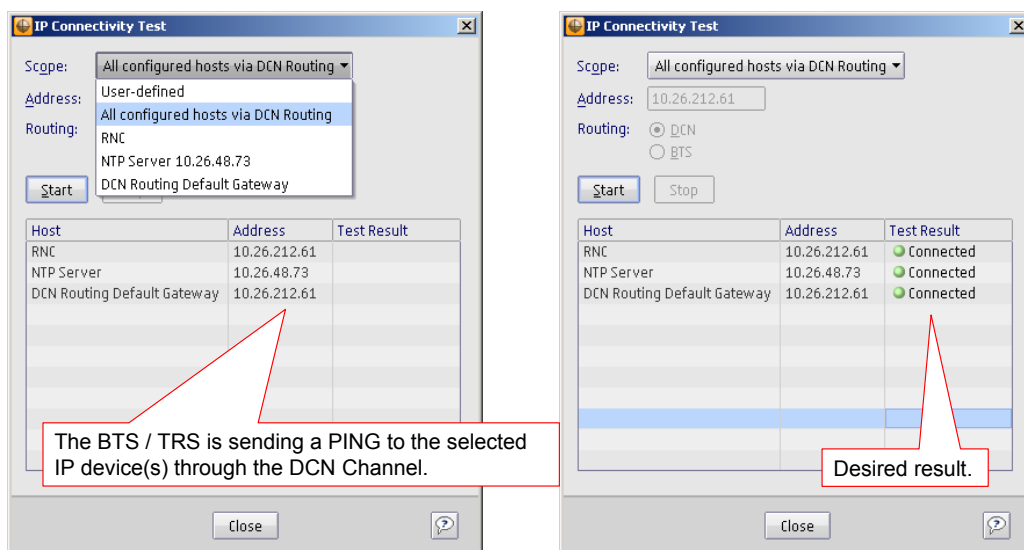
The screenshot displays the 'Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection' window. The interface is divided into several sections: a left-hand navigation pane with icons for BTS Hardware, TRS Hardware, Commissioning, BTS PM, ATM, IP, and TRS PM; a central 'Flexi WCDMA BTS' configuration area with tabs for MHA, RET, and Local Cells; a 'BTS Site Properties' panel on the right showing details like Site Name (Test), BTS Id (8), and various addresses; and an 'Alarms' section at the bottom. The 'Alarms' section shows two active alarms, with the first one highlighted in red: 'Interface under test on unit 1, interface 1 for 15 minutes.' The status bar at the bottom indicates 'Connected to BTS, TRS', 'QAM Iub Connected', 'BTS Configured', and 'TRS Commissioned'.

Severity	Time GMT+01:00 DST	Description	Source
Minor	01.07.2009 16:28:46	Interface under test on unit 1, interface 1 for 15 minutes.	TRS: Unit 1 / I...
Minor	01.07.2009 15:24:49	Difference between BTS master clock and reference frequency	BTS : BS 8 / FS...

Details	
Code:	7652
Scope:	Base station notification
Status:	Active
Started:	01.07.2009 15:24:49 DST
Cleared:	-



IP connectivity Test



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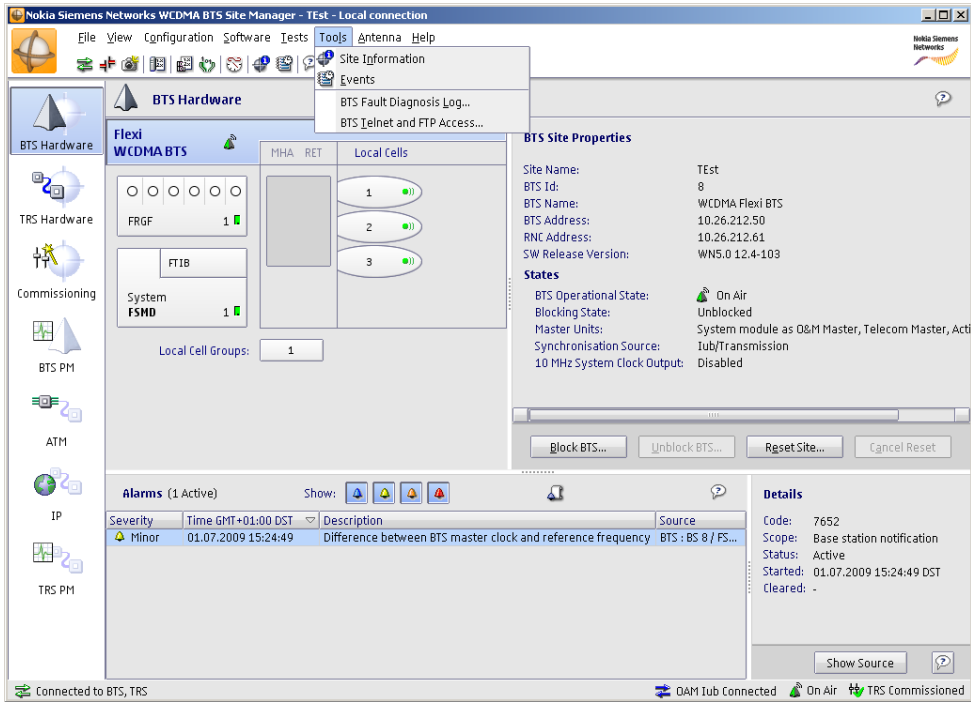
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Select the hosts to be pinged from the *Scope* drop-down list. The options are the following:

- User-defined address (default)
- All configured hosts via DCN Routing
- All configured hosts via BTS Routing
- All configured hosts via BTS and DCN Routing
- RNC
- NTP Server (three addresses)
- LDAP
- Timing over Packet
- CMP Server
- PSN Tunnel Remote IP
- Certificate Repository
- BFD
- BTS Routing Default Gateway
- DCN Routing Default Gateway

Tools



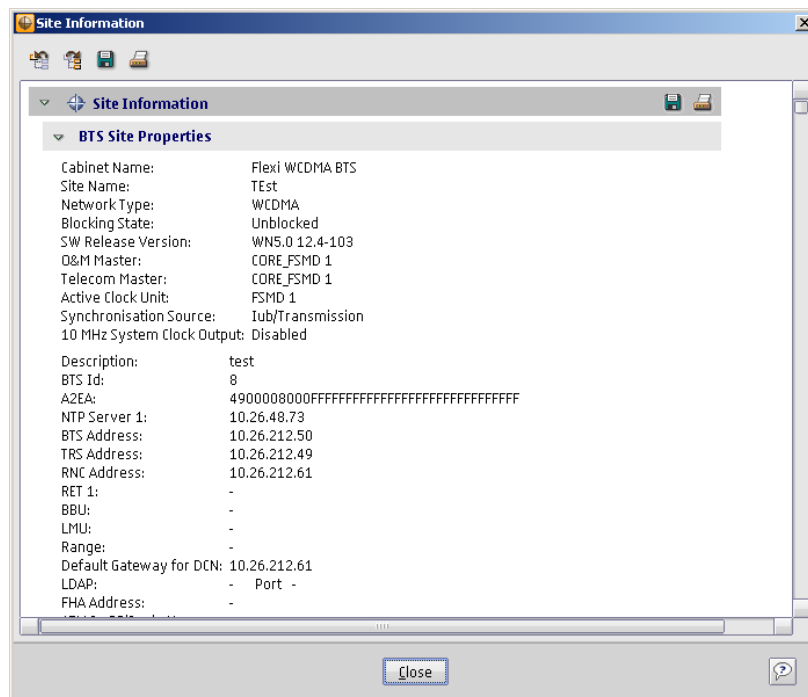
The screenshot shows the 'Nokia Siemens Networks WCDMA BTS Site Manager - Test - Local connection' window. The interface includes a menu bar (File, View, Configuration, Software, Tests, Tools, Antenna, Help), a toolbar, and a left-hand navigation pane with icons for BTS Hardware, TRS Hardware, Commissioning, BTS PM, ATM, IP, and TRS PM. The main area is divided into several sections:

- BTS Hardware:** Displays 'Flexi WCDMA BTS' with a status bar showing 'FRGF' and 'FTIB' (both with green status indicators). Below this, 'Local Cell Groups' shows '1'.
- Local Cells:** A table with columns 'MHA' and 'RET'. It lists three cells: '1', '2', and '3', each with a green status indicator.
- BTS Site Properties:** A section containing site information and states.
 - Site Information:** Site Name: Test, BTS Id: 8, BTS Name: WCDMA Flexi BTS, BTS Address: 10.26.212.50, RNC Address: 10.26.212.61, SW Release Version: WN5.0 12.4-103.
 - States:** BTS Operational State: On Air, Blocking State: Unblocked, Master Units: System module as O&M Master, Telecom Master, Acti, Synchronisation Source: Iub/Transmission, 10 MHz System Clock Output: Disabled.
- Alarms (1 Active):** A table with columns 'Severity', 'Time GMT+01:00 DST', 'Description', and 'Source'. It shows one active alarm: 'Minor' at '01.07.2009 15:24:49' with the description 'Difference between BTS master clock and reference frequency' and source 'BTS : BS 8 / FS...'. Below the table are buttons for 'Block BTS...', 'Unblock BTS...', 'Reset Site...', and 'Cancel Reset'.
- Details:** A section on the right showing alarm details: Code: 7652, Scope: Base station notification, Status: Active, Started: 01.07.2009 15:24:49 DST, Cleared: -. A 'Show Source' button is at the bottom.

At the bottom of the window, a status bar shows 'Connected to BTS, TRS', 'DAM Iub Connected', 'On Air', and 'TRS Commissioned'.



Tools → Site Information



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Site Information

Choosing the *Tools* → *Site Information* menu item opens the Site Information dialog box, where you can view information about the BTS site, local cells, units, HW versions, SW versions, IUB links, logical configuration, licences, BTS tuning history and commissioning parameters.

Also choosing the *SW Versions* menu item on the *Software* menu, or the *Object Properties*, *HW Versions*, *IUB Links*, *Logical Configuration* or *BTS Tuning History* menu item on the *Configuration* → *BTS Configuration* menu opens this dialog box.

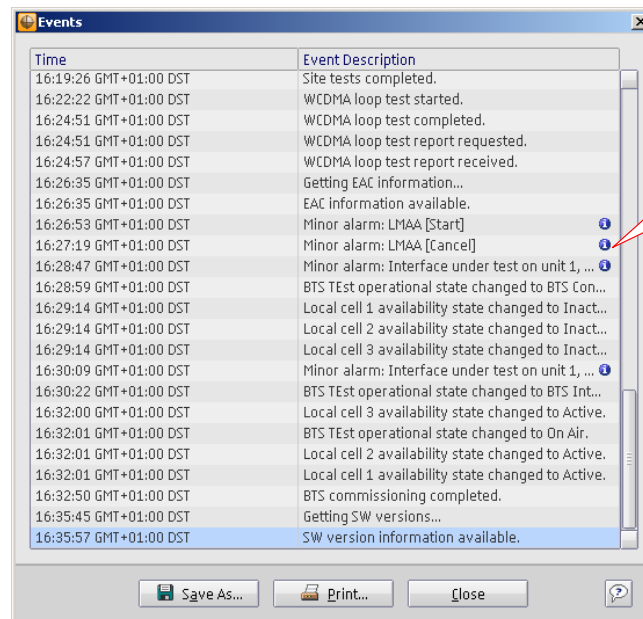
The dialog box is split in the sublevels, which you can expand or collapse by clicking the arrow. You can expand all levels at the same time by clicking the  button or collapse all levels by clicking the  button.

You can save the information by clicking the  button. The default file name is SiteInformation_<Site name>_<yyyymmdd>.txt. The default location is the folder where you have saved the previous files or your default working folder (My Documents, for example).

You can print the information by clicking the  button.



Tools → Events



For some Events there is additional Information available by clicking on the button.

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Events

Choosing the *Tools* → *Events* menu item or clicking the Events button on the toolbar opens the Events dialog box. The dialog box displays messages received from the BTS, and user-activated events. The user-activated events are all operations that cause some actions in the BTS: blocking or unblocking objects, and requesting SW versions, for example. Also the most important messages received from the BTS are displayed in the Events dialog box.

If you want to save the event information, choose the *File* → *Save* → *Events* menu item to open the *Save Events* dialog box, where you can specify the location and filename for the file. The default file name is Events_<Site name>_<yyyymmdd>.txt. The default location is the folder where you have saved the previous events files or your default working folder (My Documents, for example).

To print the event information, choose the *File* → *Print* → *Events* menu item to open the *Print Events* dialog box, where you can specify the print settings.

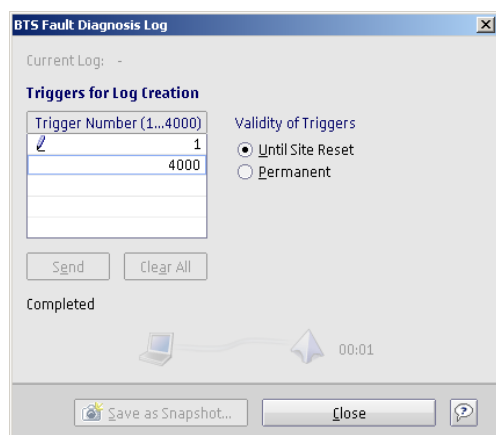
Time

The *Time* column shows the current clock time of the BTS. The time format is HH:MM:SS GMT <±> HH:MM <DST>. The time zone and DST values are defined during commissioning.

Event Description

The *Event Description* column shows the description of the event. If there is the icon in a row, clicking it opens the Event Information dialog box, where you can view detailed information on the event.

Tools → BTS Fault Diagnosis Log



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BTS Fault Diagnosis Log


Choosing the *Tools → BTS Fault Diagnosis Log* menu item opens the BTS Fault Diagnosis Log dialog box, where you can define settings for the BTS fault diagnosis log. The BTS Fault Diagnosis Log is a troubleshooting tool for saving the BTS runtime log when one of the five predefined alarms occurs.

The BTS Fault Diagnosis Log is purely troubleshooting tool for **Nokia Siemens Networks support personnel**.

Current Log

Shows the current BTS fault diagnosis log if the log is available.

Trigger Number (1...4000)

Enter the trigger numbers (raw alarm numbers) in the *Trigger Number (1...4000)* column. You can define five triggers. The  icon indicates that the value has been modified but it has not been sent to the BTS site yet.

Validity of Triggers

Select the *Validity of Triggers* by clicking the appropriate option: Until Site Reset or Permanent. The validity defines whether the settings are valid up to the next site reset or permanently.

Send

Click *Send* to send the log settings to the BTS site and take them in use. The progress bar shows the progress of the operation.

Clear All

Click *Clear All* to clear the log settings in the dialog box. Clicking this button does not update the log settings information in the BTS site.

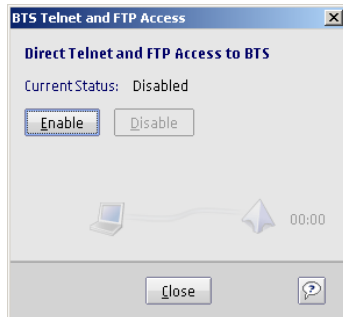
Save as Snapshot...

Click *Save As Snapshot* to open the [Save Snapshot](#) dialog box, where you can save the BTS fault diagnosis log as one of the files when saving a snapshot. This button is enabled if the BTS fault diagnosis log is available.

Clicking the *Save As Snapshot* button closes the *BTS Fault Diagnosis Log* dialog box.



Tools → Enabling Telnet and FTP Access



Enabling Telnet and FTP access

Purpose

For troubleshooting, it might be necessary to enable telnet and FTP access to the BTS. By default, these protocols are blocked and BTS Site Manager can be used to enable these protocols in the BTS. Telnet and FTP capabilities will remain enabled as long as BTS Site Manager remains connected or the access is disabled again.





Antenna → Antenna Line Management

Antennas	3GPP/AISG Communication	DC Voltage
FRGF 1 ANT 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGF 1 ANT 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGF 1 ANT 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGF 1 ANT 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGF 1 ANT 5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FRGF 1 ANT 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

☒ Reset BTS After Sending

Send

Estimated Duration: -

00:00

Close

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Antenna Line Management

Choosing the **Antenna → Antenna Line Management** menu item opens the Antenna Line Management dialog box where you define antenna line parameters.

If the same device is seen by different antennas you might need to disable 3GPP/AISG communication manually. This may happen, for example, if the device has two 3GPP/AISG capable ports which are connected to different 3GPP/AISG capable antenna connectors of the radio module.

Antennas

Lists all antennas.

3GPP/AISG communication

Select or unselect checkbox in the *3GPP/AISG communication* column to enable or disable 3GPP/AISG communication for the appropriate antenna.

DC voltage

Select or unselect checkbox in the *DC voltage* column to enable or disable antenna line DC Voltage. When antenna line DC voltage is disabled any commissioned values are overridden. When antenna line DC voltage is enabled commissioned values are in use.

Reset BTS after sending

The *Reset BTS after sending* checkbox is selected by default. To reset the BTS later, for example after commissioning, unselect the checkbox.

Send

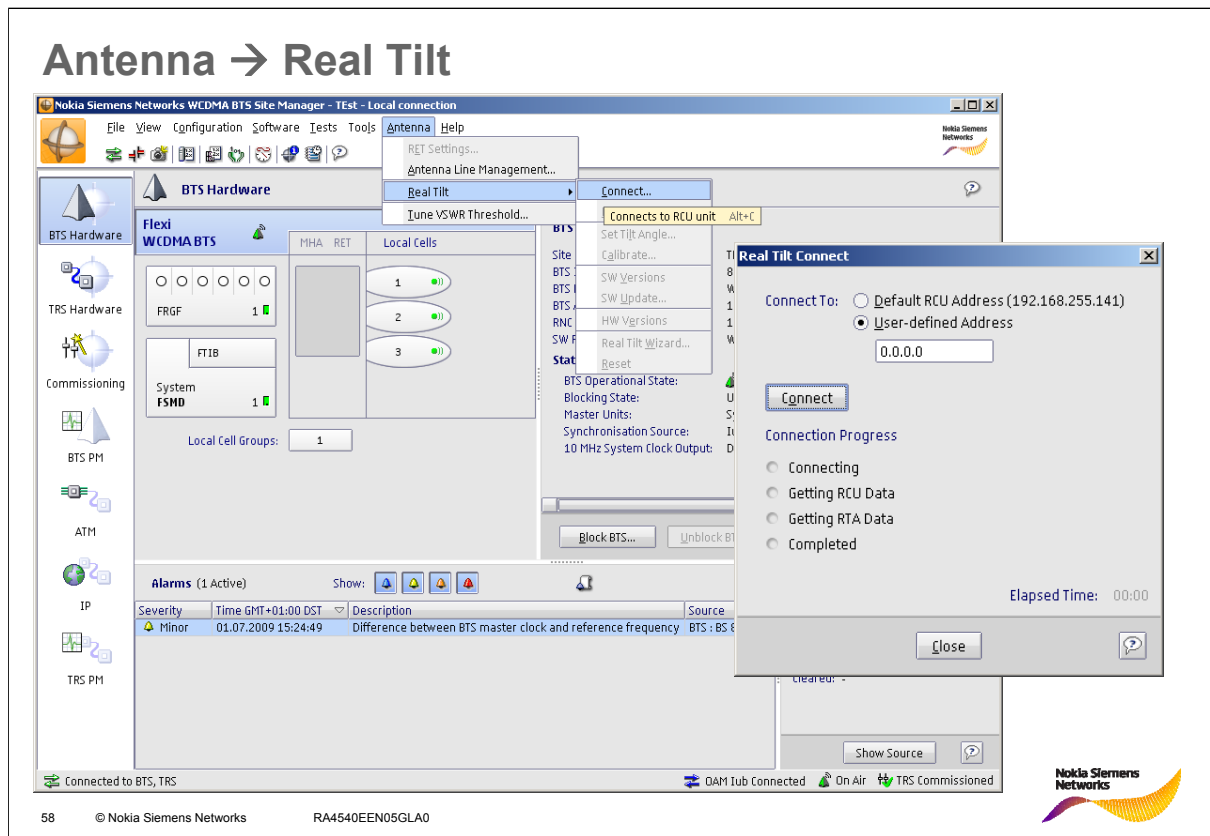
Click *Send* to send the changes to BTS. This button is enabled when the values have been changed.

Estimated duration

Estimated duration and the progress of the operation are displayed. States: Sending/Resetting/Waiting antenna data/Completed/Failed.

Close

Click *Close* to close the dialog.



Connecting to RCU

Purpose

You can perform the Real Tilt operations with WCDMA BTS Site Manager: set tilt angle, calibrate antennas, monitor used HW and SW, update SW and commission the Real Tilt Control Unit (RCU).

In the **Real Tilt Connect** dialog box you can establish a connection to RCU.

Steps

- Choose the Antenna → Real Tilt → Connect menu item to open the Real Tilt Connect dialog box.
- Select Default RCU Address or User-defined Address by clicking the appropriate option.
- If you select the *User-defined Address* option, enter the Host IP address in the field.
- Click the Connect button to establish the connection to the RCU.
- The *Real Tilt Connect* progress dialog box displays the progress of the ongoing operation.

Expected outcome

The menu items on the *Antenna → Real Tilt* submenu are enabled.



Antenna → Tune VSWR Threshold ^{1/2}

Tune VSWR Threshold

Antenna Line VSWR Threshold Values

Tune	Local Cells	Antennas	Minor Alarm	Major Alarm	Alarms
<input checked="" type="checkbox"/>	1	FRGF1 ANT1 + ANT2			
<input type="checkbox"/>	2	FRGF1 ANT3 + ANT4			
<input type="checkbox"/>	3	FRGF1 ANT5 + ANT6			

VSWR Value (1.5...3.5)

Start Tuning

Test Values

Stop and Save

Stop

VSWR threshold tuning requires a licence.

Close

Tune VSWR Threshold

Start Tuning

During the VSWR tuning procedure, the BTS stops sending VSWR alarms to the network and any recovery actions related to VSWR alarms are discarded.

Do you want to start the tuning?

Start Cancel

VSWR threshold tuning requires a licence.

Close

Tune VSWR Threshold

Choosing the *Antenna → Tune VSWR Threshold* menu item opens the Tune VSWR Threshold dialog box, where you can tune VSWR alarm threshold values for antenna filters inside RF modules.

The VSWR threshold tuning is used for defining values when an alarm notification needs to be sent for a minor problem of an antenna line condition (decreased condition) and for a major problem condition (cell blocking). The VSWR threshold tuning can be also used (indirectly) to find out the actual VSWR value by changing the values and monitoring alarms.

Note: You need to have a valid licence for the VSWR Threshold Tuning feature.

Antenna Line VSWR Threshold Values

Tune

Select the check boxes in the *Tune* column to define filters to be tuned.

Local Cells

The *Local Cells* column shows the cells where the filter belongs to.

Antennas

The *Antennas* column shows the RF module within the filter is, and the antenna lines connected to the filter.

Minor Alarm

Select or enter the threshold value for a minor VSWR alarm activation in the *Minor Alarm* column (1.5 - 3.5). As soon as the actual VSWR value is equal to or greater than this threshold value, the filter activates the alarm. The threshold value for the minor alarm have to be less than the value for the major alarm.

A cell in the Minor Alarm column is enabled and displays the threshold value after the you have selected the filter for tuning and started the tuning successfully.

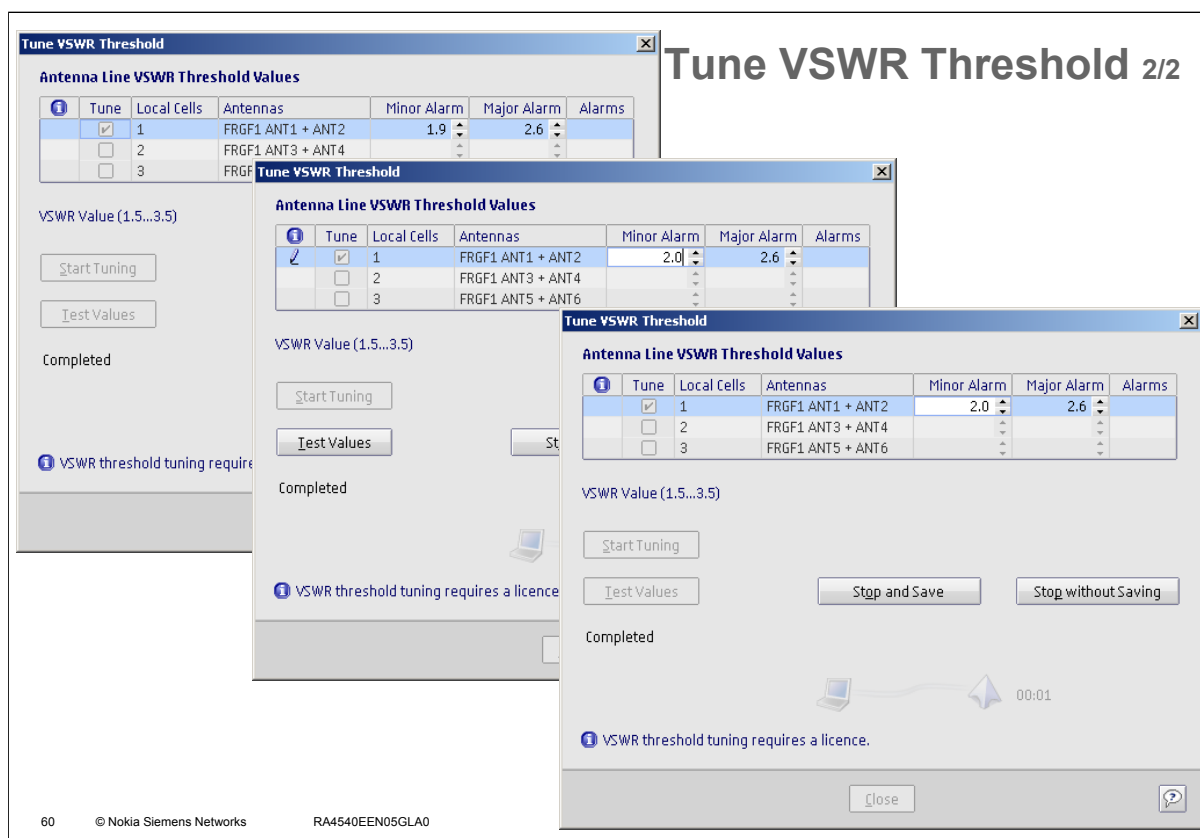
Major Alarm

Select or enter the threshold value for a major VSWR alarm activation in the *Major Alarm* column (1.5 - 3.5). As soon as the actual VSWR value is equal to or greater than this threshold value, the filter activates the alarm. The threshold value for the major alarm have to be less than or equal to Minor Alarm value

A cell in the Major Alarm column is enabled and displays the threshold value after the you have selected the filter for tuning and started the tuning successfully.

Alarms

The *Alarms* column shows the states of VSWR alarms for each filter.



Start Tuning

Click **Start Tuning** button to start tuning for the selected filters. This button is disabled if no filters has been selected to be tuned. A progress bar shows the progress of starting the tuning.

Note: When the tuning mode is activated by clicking the **Start Tuning** button, sending alarms to the NetAct from the selected antenna lines is blocked. Alarms will not be sent until the tuning is stopped by clicking the **Stop and Save** or **Stop without Saving** button.

Test Values

Click **Test Values** to send the new VSWR threshold values in the BTS and take them temporarily in use. This button is disabled if no VSWR threshold values has been changed. A progress bar shows the progress of testing the values.

Stop and Save

Click **Stop and Save** to stop tuning and take the changed VSWR values permanently in use in the BTS. This button is disabled if tuning is not ongoing. A progress bar shows the progress of stopping tuning.

Stop without Saving

Click **Stop without Saving** to stop tuning and discard any changes made to the VSWR threshold values in the BTS. The original threshold values will be taken in use. This button is disabled if tuning is not ongoing. A progress bar shows the progress of stopping tuning.