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Nokia BSC/TCSM S11 Product Documentation

QW - Q1 Interface Handling

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Summary of changes

Summary of changes

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made to previous issues.

Changes made between issues 7 and 6

This document has been updated and revised according to the latest documentation standards.

Changes made between issues 6 and 5

Modified command descriptions

QWC	CREATE SERVICE CHANNEL
	New parameter channel type is added. Command printout has been modified due to the BSS11100 feature Q1 Bus Protection in BSC for Q1 service channels.
QWD	DELETE SERVICE CHANNEL
	New parameter channel type is added. Command printout has been modified due to the BSS11100 feature Q1 Bus Protection in BSC for Q1 service channels.
QWM	MODIFY SERVICE CHANNEL
	New parameter channel type is added. Command printout has been modified due to the BSS11100 feature Q1 Bus Protection in BSC for Q1 service channels.
QWL	LIST EQUIPMENT
	Command printout has been modified due to the BSS11100 feature Q1 Bus Protection in BSC for Q1 service channels. The format parameter has been added, and the examples and command printouts have been modified. These changes relate to the BSS9023 feature Software download for transmission equipment.

QWI INTERROGATE SERVICE CHANNEL CONFIGURATION

Command printout has been modified due to the BSS11100 feature Q1 Bus Protection in BSC for Q1 service channels and due to the BSS9023 feature Software download for transmission equipment..

QWS SET SERVICE CHANNEL STATE

Command printout has been modified due to the BSS11100 feature Q1 Bus Protection in BSC for Q1 service channels.

Changes made between issues 5 and 4

New commands

QWG CHANGE EQUIPMENT INFORMATION

QWF MODIFY BTS Q1 BUS PARAMETER

QWL LIST EQUIPMENT

Modified command descriptions

QWC CREATE SERVICE CHANNEL

GSW is not supported in S8 release, thus parameter values for *used bits* and *external PCM-TSL* have been modified. Also the EXAMPLE and EXECUTION PRINTOUTS and SEMANTIC ERROR MESSAGES have been modified due to this.

Used frames is a new field in the printout.

QWM MODIFY SERVICE CHANNEL CONFIGURATION

external PCM-TSL values have changed due to GSW not being supported. SEMANTIC ERROR MESSAGES have also been modified due to this.

Used frames is a new field in the printout.

QWS SET SERVICE CHANNEL STATE

Used frames is a new field in the printout.

QWA

ADD EQUIPMENT TO SERVICE CHANNEL

The PARAMETER *Base Control Function number* is new.
Also SYNTAX has thus been modified.

Transmission device types have been modified due to GSW not being supported.

Alarm unit index use of values have been explained in more detail.

EXAMPLEs have been modified and thus also EXECUTION PRINTOUTS.

The service channels now have 1024 pieces of equipment (see ADDITIONAL INFORMATION).

QWR

REMOVE EQUIPMENT FROM SERVICE CHANNEL

The PARAMETER *Base Control Function number* is new.
Also SYNTAX has thus been modified.

Transmission device types have been modified due to GSW not being supported.

Alarm unit index use of values have been explained in more detail.

EXAMPLEs have been modified and thus also EXECUTION PRINTOUTS.

QWI

INTERROGATE SERVICE CHANNEL CONFIGURATION

EXAMPLE 1 has been modified.

EXECUTION PRINTOUTS have been modified.

Used frames is a new field in the printout.

Table on equipment states has been modified in ADDITIONAL INFORMATION.

QW: Q1 INTERFACE HANDLING

The commands in the command group are used to handle the Q1 interface.

Menu of the command group

```
Q1 INTERFACE HANDLING COMMANDS
? ..... DISPLAY MENU
C: ..... CREATE SERVICE CHANNEL
D: ..... DELETE SERVICE CHANNEL
M: ..... MODIFY SERVICE CHANNEL CONFIGURATION
S: ..... SET SERVICE CHANNEL STATE
I: ..... INTERROGATE SERVICE CHANNEL CONFIGURATION
A: ..... ADD EQUIPMENT TO SERVICE CHANNEL
R: ..... REMOVE EQUIPMENT FROM SERVICE CHANNEL
G: ..... CHANGE EQUIPMENT INFORMATION
F: ..... MODIFY BTS Q1 BUS PARAMETER
L: ..... LIST EQUIPMENT
Z; ..... RETURN TO MAIN LEVEL
```

QW: Q1 INTERFACE HANDLING

The commands in this command group are:

QWC	CREATE SERVICE CHANNEL
QWD	DELETE SERVICE CHANNEL
QWM	MODIFY SERVICE CHANNEL CONFIGURATION
QWS	SET SERVICE CHANNEL STATE
QWI	INTERROGATE SERVICE CHANNEL CONFIGURATION
QWA	ADD EQUIPMENT TO SERVICE CHANNEL
QWR	REMOVE EQUIPMENT FROM SERVICE CHANNEL
QWG	CHANGE EQUIPMENT INFORMATION
QWF	MODIFY BTS Q1 BUS PARAMETER
QWL	LIST EQUIPMENT

1

QWC: CREATE SERVICE CHANNEL

Function

With the QWC command you create a Q1 channel between the Base Station Controller (BSC) and transmission equipment.

Parameters

service channel number,channel type:

baud rate,bandwidth,used bits:

external PCM-TSL,sub tsl;

Syntax

```
QWC: [<service channel number> | <smallest free channel number> def] ,
```

```
[ S | P def] : <baud rate> , <bandwidth> , <used bits> :
```

```
<external PCM-TSL> , <sub tsl> ;
```

Parameter explanations

service channel number

This parameter determines the number of the service channel to be created. The value ranges between the decimals 0-27.

The default value is the smallest free channel number provided by the system when creating the service channel.

channel type

The parameter which defines service channel type in service channel creation can have values S or P. The value S means that channel is secondary channel and value P means that channel is primary channel. Default is primary channel.

baud rate The possible values are 1200, 2400, 4800, and 9600 (bit/s). The parameter is obligatory. If channel type is secondary, parameter baud rate can be skipped and value is the same as in primary channel.

bandwidth The parameter determines the channel bandwidth. The possible values are:

16 16 kbit/s channel

32 32 kbit/s channel

64 64 kbit/s channel

The parameter is obligatory, except when the baud rate is 9600 bit/s. With 9600 bit/s the parameters `bandwidth` and `used bits` are skipped, and bandwidth is set to 64 kbit/s as a default value and used bits to ALL.

When the channel speed is 4800 bit/s, possible bandwidth values are 32 and 64. In 1200 bit/s speed, the possible bandwidth values are 16 and 64. When the baud rate is 2400 bit/s, all values are allowed. If channel type is secondary, parameter bandwidth cannot be given.

used bits This parameter determines the number of used bits if the channel bandwidth is 64 kbit/s. The possible values are:

LS two least significant bits in use

MS two most significant bits in use

LS4 four least significant bits in use

MS4 four most significant bits in use

ALL all eight time slot bits in use

The parameter is obligatory in 64 kbit/s bandwidth.

The possible values depend on the values the user has given for baud rate, bandwidth, as well as the PCM type. If channel type is secondary, parameter used bits cannot be given.

external pcm-tsl This parameter determines the numbers of the external PCM circuit and of the time slot to be reserved for the service channel. Use the PCM-TSL form. The values range between (32...255) - (1...31).

In the ANSI environment the time slot range is 1...24.

The parameter is obligatory.

sub tsl The sub-time-slot parameter determines the channel starting place in the external PCM. In a 16 kbit/s channel the possible values are 0, 2, 4, and 6. For a 32 kbit/s channel the possible values are 0 and 4. The parameter cannot be given for a 64 kbit/s channel.

If the ET_PCM is A/Ater or ISDN Abis, the sub-time-slot parameter cannot be given.

Examples

1. Create primary service channel with baud rate 4800 bit/s, bandwidth 64 kbit/s, used bits is all eight time slot bits in use, external PCM 72 with time slot number 31.

```
QWC::4800,64,ALL:72-31;
```

2. Create secondary service channel with baud external PCM 73 with time slot number 31. Baud rate, bandwidth and used bits cannot be given for secondary channel.

```
QWC:0,S::73-31;
```

Additional information

The maximum number of service channels is 28 (minus the number of channels that are reserved for the O & M of TCSM2 units). A new service channel is created to the state AD (activation denied).

Execution printouts

The abbreviations used and their meaning:

TERM number of the signalling terminal

TERM FUNC terminal function index of the signalling terminal

USED FRAMES

the used frames field printout has two states: EF (every frame) and EOF (every other frame).

The execution printout of example 1 is given below.

```
BSC      BSC-LAB                      1997-09-02  13:54:32
CREATING

CHA      TERM  TERM  BAUD  TSL  BAND  INT      EXT      EXT      USED
NUM  TERM  FUNC  RATE  BITS  WIDTH  PCM-TSL  PCM-TSL  SUBTSL  FRAMES  STATE
-----
0      1      2      4800  MS   64K   1 - 2    72-31    0        EF      AD

COMMAND EXECUTED.
```

The execution printout of example 2 is given below.

```
BSC      BSC-LAB                      1997-09-02  13:54:32
CREATING

CHA      TERM  TERM  BAUD  TSL  BAND  INT      EXT      EXT      USED
NUM  TERM  FUNC  RATE  BITS  WIDTH  PCM-TSL  PCM-TSL  SUBTSL  FRAMES  STATE
-----
0S     1      2      4800  MS   64K   1 - 2    73-31    0        EF      AD

COMMAND EXECUTED.
```

Semantic error messages

```
/** CHANNEL CAN NOT CREATE IN 16 KBIT/S BANDWIDTH
    WITH BAUDRATE 4800 OR HIGHER **/
```

Error in channel creation, you cannot create channel with bandwidth 16 kbit/s and baud rate 4800 or 9600.

```
/** CHANNEL CAN NOT CREATE WITH BAUDRATE 9600
    TO CHANNEL BANDWIDTH OTHER THAN 64K BIT/S **/
```

Error in channel creation, you cannot create channel baud rate 9600 with bandwidth other than 64 kbit/s.

```
/** CHANNEL CAN NOT CREATE WITH BANDWIDTH OTHER THAN
    64 KBIT/S TO A-INTERFACE OR ISDN ABIS INTERFACE **/
```


Error in channel creation, you cannot create channel with bandwidth other than 64 kbit/s in A interface or ISDN Abis interface.

```
/** CHANNEL CAN NOT CREATE WITH BAUD RATE @AS  
BANDWIDTH 64 KBIT/S AND USED BITS @AS ***/
```

Error in channel creation, there is an illegal combination of channel parameters. In the message the @AS is replaced with the actual value given to baud rate and used bits parameters.

```
/** ILLEGAL BANDWIDTH AND SUBTSL COMBINATION ***/
```

There is an illegal combination of bandwidth and sub-time-slot.

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

2

QWD: DELETE SERVICE CHANNEL

Function

With the QWD command you delete a service channel between the BSC and transmission equipment.

Parameters

service channel number,channel type;

Syntax

```
QWD: <service channel number>, [ S | P def] ;
```

Parameter explanations

service channel number

The number of the service channel to be deleted from the Q1 Interface Channel File (Q1CHAN). This number is provided by the system when creating the service channel, and the value ranges between the decimals 0-27. The parameter is obligatory.

channel type

The parameter which defines service channel type in service channel deletion can have values S or P. The value S means that channel is secondary channel and value P means that channel is primary channel. Default is primary channel.

Examples

1. Delete primary service channel number 0.

```
QWD:0;
```

2. Delete secondary service channel number 0.

```
QWD:0,S;
```

Additional information

The state of the service channel has to be AD, and the transmission equipment located in the service channel has to be deleted before the deletion of the service channel.

Execution printouts

The execution printout of example 1 is given below.

```
BSC      BSC-LAB                      1997-02-05  13:54:32
SERVICE CHANNEL NUMBER 0 DELETED.

COMMAND EXECUTED.
```

The execution printout of example 2 is given below.

```
BSC      BSC-LAB                      1997-02-05  13:54:32
SERVICE CHANNEL NUMBER 0 (SECONDARY) DELETED.

COMMAND EXECUTED.
```

Semantic error messages

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

3

QWM: MODIFY SERVICE CHANNEL CONFIGURATION

Function

With the QWM command you modify the data on a service channel located between the BSC and transmission equipment.

Parameters

service channel number,channel type:

baud rate,bandwidth,used bits,external PCM-TSL,sub-time-slot;

Syntax

```
QWM: <service channel number> [ S | P def] :  
  [ BR = <baud rate> |  
  
    BW = <bandwidth> |  
  
    TSB = <used bits> |  
  
    CRCT = <external PCM-TSL> |  
    STSL = <sub tsl>] ... ;
```

Parameter explanations

service channel number

The number of the service channel to be modified. This number is provided by the system when creating the service channel. The possible values range between the decimals 0-27. The channel data are in the Q1 Interface Channel File (Q1CHAN).

The parameter is obligatory.

channel type	The parameter which defines service channel type in service channel modification can have values S or P. The value S means that channel is secondary channel and value P means that channel is primary channel. Default is primary channel.	
baud rate	Possible values are 1200, 2400, 4800, and 9600 (bit/s). The parameter is not allowed if channel type is secondary.	
bandwidth	The parameter determines the channel bandwidth. Possible values are:	
	16	16 kbit/s channel
	32	32 kbit/s channel
	64	64 kbit/s channel
	The parameter is obligatory, except when the baud rate is 9600 bit/s. With 9600 bit/s the <code>bandwidth</code> parameter is skipped and bandwidth is set to 64 kbit/s as a default.	
	When the baud rate is 4800 bit/s, possible bandwidth values are 32 and 64. In a 1200 bit/s baud rate, the possible bandwidth values are 16 and 64. When the baud rate is 2400 bit/s, all values are allowed. The parameter is not allowed if channel type is secondary.	
used bits	This parameter determines the number of bits in the time slot used for transmission in the 64kbit/s channel. The parameter is not allowed if channel type is secondary. Possible values are:	
	MS	two most significant bits in use
	LS	two least significant bits in use
	LS4	four least significant bits in use
	MS4	four most significant bits in use
	ALL	all eight time slot bits in use
external pcm-tsl	This parameter determines the numbers of the external PCM circuit and of the time slot to be reserved for the service channel. Use the PCM-TSL form. Values range between (32...255) - (1...31).	

In ANSI environment the time slot range is 1...24.

The parameter is obligatory.

sub tsl

The parameter `sub-time-slot` determines the channel starting place in the external PCM. In a 16 kbit/s channel the possible values are 0, 2, 4, and 6. For a 32 kbit/s channel the possible values are 0 and 4. The parameter cannot be given for a 64 kbit/s channel.

If the `ET_PCM` is A/Ater ET or ISDN Abis, the `sub-time-slot` parameter cannot be given.

Examples

1. Modify data concerning primary service channel 6. Define the baud rate as 1200, set the bandwidth to 16kbit/s and give the external PCM-TSL the value 74-31 and sub-time-slot to 6.

```
QWM:6:BR=1200,BW=16,CRCT=74-31,STSL=6;
```

2. Modify data concerning primary service channel 6. Define the baud rate as 2400.

```
QWM:6:BR=2400;
```

3. Modify data concerning secondary service channel 6. Define the external PCM-TSL value as 74-31 and sub-time-slot to 6.

```
QWM:6,S:CRCT=74-31,STSL=6;
```

Additional information

The state of the service channel has to be AD when modifying the parameters of the channel.

If the baud rate is modified to 9600 bit/s, other parameters are not needed as the bandwidth is changed to 64 kbit/s and used bits to value ALL automatically by the system.

Execution printouts

The abbreviations used and their meaning:

USED FRAMES

the used frames field printout has two states: EF (every frame) and EOF (every other frame).

The execution printout of example 1 is given below.

```

BSC      BSC-LAB                      1997-09-02  16:32:15
MODIFIED
CHA      TERM  BAUD  TSL  BAND  INT      EXT      EXT      USED
NUM  TERM  FUNC  RATE  BITS  WIDTH  PCM-TSL  PCM-TSL  SUBTSL  FRAMES  STATE
-----
  6      1      2    1200    -    16K    1 - 2    74-31    6      EOF      AD

COMMAND EXECUTED.

```

The execution printout of example 2 is given below.

```

BSC      BSC-LAB                      1997-09-02  16:32:45
MODIFIED
CHA      TERM  BAUD  TSL  BAND  INT      EXT      EXT      USED
NUM  TERM  FUNC  RATE  BITS  WIDTH  PCM-TSL  PCM-TSL  SUBTSL  FRAMES  STATE
-----
  6      1      2    2400    -    16K    1 - 2    74-31    6      EF      AD

COMMAND EXECUTED.

```

The execution printout of example 3 is given below.

```

BSC      BSC-LAB                      1997-09-02  16:32:45
MODIFIED
CHA      TERM  BAUD  TSL  BAND  INT      EXT      EXT      USED
NUM  TERM  FUNC  RATE  BITS  WIDTH  PCM-TSL  PCM-TSL  SUBTSL  FRAMES  STATE
-----
  6S      1      2    2400    -    16K    1 - 2    74-31    6      EF      AD

COMMAND EXECUTED.

```

Semantic error messages

```

/*** CHANNEL CAN NOT CREATE IN 16 KBIT/S BANDWIDTH
      WITH BAUD RATE 4800 OR HIGHER *** /

```

Error in channel creation, you cannot create a channel with the bandwidth 16 kbit/s and the baud rate 4800 or 9600.

```

/*** CHANNEL CAN NOT CREATE WITH BAUD RATE 9600
      TO CHANNEL BANDWIDTH OTHER THAN 64 KBIT/S *** /

```

Error in channel creation, you cannot create the channel baud rate 9600 with a bandwidth other than 64 kbit/s.

```

/*** CHANNEL CAN NOT CREATE WITH BANDWIDTH OTHER THAN
      64 KBIT/S TO A-INTERFACE OR ISDN ABIS INTERFACE *** /

```


Error in channel creation, you cannot create a channel with a bandwidth other than 64 kbit/s in A interface or ISDN Abis interface.

```
/* ** CHANNEL CAN NOT CREATE WITH BAUD RATE @AS  
BANDWIDTH 64 KBIT/S AND USED BITS @AS ** */
```

Error in channel creation, there is an illegal combination of channel parameters. In the message, the @AS is replaced with the actual value given to the baud rate and used bits parameters.

```
/* ** ILLEGAL BANDWIDTH AND SUBTSL COMBINATION ** */
```

There is an illegal combination of bandwidth and sub-time-slot.

The general semantic error messages are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

4

QWS: SET SERVICE CHANNEL STATE

Function

With the QWS command you set the service channel state.

Parameters

service channel number:

state;

Syntax

```
QWS: <service channel number> :  
      <state> ;
```

Parameter explanations

service channel number

This parameter indicates the number of the service channel the state of which is to be set. This number is provided by the system when creating the service channel. The possible value ranges between the decimals 0-27. The parameter is obligatory.

state

The parameter indicates the state to which the service channel is to be set. Possible values are:

AL allow activation

AD deny activation

The parameter is obligatory.

Examples

1. End supervision on the service channel 0 by changing its state to AD.

```
QWS:0:AD;
```

Additional information

When the service channel is in the state AL, the partner program block supervises the equipment located in it. There is no supervision in the state AD.

Execution printouts

The execution printout of example 1 is given below.

```
BSC      BSC-LAB                      1997-09-02  16:36:10
SERVICE CHANNEL 0 STATE IS CHANGED TO AD

COMMAND EXECUTED.
```

Semantic error messages

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

5

QWI: INTERROGATE SERVICE CHANNEL CONFIGURATION

Function

With the QWI command you interrogate the configuration of Q1 service channels and transmission equipment on them.

Parameters

service channel number:

output width;

Syntax

```
QWI: [<service channel number> ... | <all> def] :  
      [ CHA | ALL | EQU def ] ;
```

Parameter explanations

service channel number	This parameter determines the number of the service channel (s) to be interrogated. This number is provided by the system when creating the service channel. The value ranges between the decimals 0-27. Characters && and & can be used.	
	The default value is all channels.	
output width	The parameter determines the width of the output. Possible values are:	
	EQU	equipment information is output
	CHA	channel information is output
	ALL	channel and equipment information is output

The default value is EQU.

Examples

1. Interrogate information on service channels from 0 to 2 and 10.

QWI:0&&2&10:CHA;

2. Interrogate information on every service channel, as well as information on equipment located in them.

QWI::ALL;

3. Interrogate information on equipment in the service channel 1.

QWI:1;

Additional information

The possible states of the channels are:

AL Activation allowed

AD Activation denied

AL-FAULTY Activation allowed, channel faulty

AL-SERVICE Activation allowed, channel in service

AD-SERVICE Activation denied, channel in service

The possible states of the equipment are:

Channel state	AL	AD
BSC site	OK	SERVICE
	PARTIAL INIT	SERVICE, PART INIT
	UNINIT	SERVICE, UNINIT
	SERVICE	NO POLLING
	SERVICE, PART INIT	NO POLLING, PART INIT
	SERVICE, UNINIT	NO POLLING, UNINIT
	NO ANSWER	

NO ANSWER, PART INIT

NO ANSWER, UNINIT

ALARM

ALARM, PART INIT

Execution printouts

The abbreviations used and their meaning:

USED FRAMES

the used frames field printout has two states: EF (every frame) and EOF (every other frame).

Example 1 has the following execution printout:

```

BSC      BSC-LAB
CHA      TERM  FUNC  BAUD  TSL  BAND  INT  EXT  EXT  USED
NUM      TERM  FUNC  RATE  BITS WIDTH PCM-TSL PCM-TSL SUBTSL FRAMES STATE
-----
0         1     2    1200   MS   64    1 - 2   72-31   -      EOF    AL
1         1     3    2400  ALL   64    1 - 3   73-31   -      EF     AL-FAULTY
2         1     4    9600  ALL   64    1 - 4   73-30   -      EF     AD
10        1    12    4800  ALL   64    1 - 5   74-31   -      EF     AD
COMMAND EXECUTED

```

Example 2 has the following execution printout:

```

BSC      BSC-LAB
CHA      TERM  FUNC  BAUD  TSL  BAND  INT  EXT  EXT  USED
NUM      TERM  FUNC  RATE  BITS WIDTH PCM-TSL PCM-TSL SUBTSL FRAMES STATE
-----
0         1     2    1200   MS   64    1 - 2   72-31   -      EOF    AL

CHA
NUM  TYPE  INDEX  Q1 ADDRESS  STATE
----
0    DN2   20      1    NO POLLING, UNINIT

CHA      TERM  FUNC  BAUD  TSL  BAND  INT  EXT  EXT  USED
NUM      TERM  FUNC  RATE  BITS WIDTH PCM-TSL PCM-TSL SUBTSL FRAMES STATE
-----
1         1     3    2400  ALL   64    1 - 3   73-31   -      EF     AL
1S        1     3    2400  ALL   64    1 - 5   76-31   -      EF     AL

CHA
NUM  TYPE  INDEX  Q1 ADDRESS  STATE
----
1    TRE   72      1    NO POLLING, UNINIT

```

1S	TRE	21	2	NO POLLING, UNINIT
1	TRE	73	3	NO POLLING, UNINIT
1S	TRE	74	4	NO POLLING, UNINIT

CHA	TERM	TERM	BAUD	TSL	BAND	INT	EXT	EXT	USED	
NUM		FUNC	RATE	BITS	WIDTH	PCM-TSL	PCM-TSL	SUBTSL	FRAMES	STATE
2	1	4	9600	ALL	64	1 - 4	73-30	-	EF	AD-SERVICE

CHA					
NUM	TYPE	INDEX	Q1	ADDRESS	STATE
---	---	---	---	---	---
2	DN2	8	8		NO POLLING, UNINIT

COMMAND EXECUTED

Example 3 has the following execution printout:

BSC	BSC-LAB		1999-10-18	15:30:00
CHA				
NUM	TYPE	INDEX	Q1	ADDRESS
---	---	---	---	---
1	TRE	72	1	NO POLLING, UNINIT
1S	TRE	21	2	NO POLLING, UNINIT
1	TRE	73	3	NO POLLING, UNINIT
1S	TRE	74	4	NO POLLING, UNINIT

COMMAND EXECUTED

Semantic error messages

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

6

QWA: ADD EQUIPMENT TO SERVICE CHANNEL

Function

With the QWA command you add equipment to a service channel.

Parameters

service channel or BCF number, TRX number:

transmission equipment:

Q1 address;

Syntax

The BSC site:

```
QWA: CH = <service channel number> :
```

```
(SM2M = <SM2M index> |  
TRCU = <TRCU_index-tc_index> |  
DN2 = <DN2 index> |
```

```
SSS = <SSS index> |
```

```
DMR = <DMR index> |
```

```
BBM = <BBM index> |  
TRE = <TRE index> ) :
```

```
<Q1 address> ;
```

or the BTS site:

```
QWA: (BCF = <BCF number>
```

```
TRX = <Transceiver number>) :
```

```
(DMR = <DMR index> |  
TRE = <TRE index>
```

```
TRU = <TRU index> ) :  
  
    <Q1 address> ;
```

Parameter explanations

service channel number

This parameter determines the number of the service channel in which the equipment is located. This number is provided by the system when creating the service channel. The value ranges between the decimals 0-27. The parameter is obligatory if the BCF number is not given.

base control function number

With this parameter you define the base control function (BCF) you want to handle. The possible values range from 1 to 248. The possible transmission equipment types are TRE, TRU and DMR. The allowed BTS site types are Nokia MetroSite, Nokia UltraSite, Nokia Talk-family DF 6.0 and Nokia PrimeSite DF 6.0. When the BTS type is Nokia Talk-family or Nokia PrimeSite the software version must be DF 6.0 or newer. The parameter is obligatory if the service channel number is not given.

transceiver number

The possible values for the TRX (transceiver) range from 1 to 16. The parameter can be given only if the BTS site type is Nokia PrimeSite with the software version DF 6.0 or newer.

transmission equipment

With this parameter you determine equipment type and index.

The possible types of equipment located in the service channel are:

SM2M	Submultiplexer
TRCU	Transcoder Unit
DN2	Dynamic Node Equipment
SSS	Supervisory Substation
DMR	Digital Microwave Radio Link

BBM	Baseband Modem
TRE	Other Transmission Equipment
TRU	Transmission Unit

One of the above equipment is obligatory.

The possible values of different equipment types are listed below, first the BSC then the BTS site.

Unit types TRCU and SM2M are numbered according to the corresponding PCM circuits of the BSC switch. The index of the TRCU also contains the index of the transcoder. The form of the index of the TRCU is INDEX - TRANSCODER INDEX. The TRANSCODER INDEX starts from 1 even though the transcoder is not submultiplexed. There cannot be the same equipment types with the same index, not even in different channels.

The BSC site:

SM2M	32...255
TRCU	(32...255) - (1...3)
DN2	0 ...65534
SSS	0 ...65534
DMR	0 ...65534
BBM	0 ...65534
TRE	0 ...65534

The BTS site:

Nokia MetroSite and Nokia UltraSite:

DMR	0 ...254
TRE	2 ...254

Nokia Talk-family and Nokia PrimeSite with software version DF 6.0 or newer:

DMR	0 ...254
TRE	1 ...254
TRU	2

The values are obligatory.

q1 address	The parameter defines the address determined for the equipment. Each piece of equipment located in the same service channel has an individual address that is specifically assigned to it. On the basis of this address they identify and receive their own messages.
------------	---

The values range between decimals 0-4094 (decimal 4095 is not allowed, it is a common broadcasting address to all equipment). The Q1 addresses 0...3999 are for normal use as Q1 network element addresses. The Q1 addresses 4000 to 4094 are reserved for special use and may not be used for normal remote Q1 controlling.

The parameter is obligatory.

Examples

1. Add an SM2M to service channel 1. Index is 72 and Q1 address 0.

```
QWA:CH=1:SM2M=72:0;
```

2. Add a second submultiplexed TRCU to service channel 1. Index is 72-2, Q1 address is 1.

```
QWA:CH=1:TRCU=72-2:1;
```

3. Add a non-submultiplexed TRCU to service channel 2. Index is 73-1, Q1 address is 1.

```
QWA:CH=2:TRCU=73-1:1;
```

Additional information

The total number of pieces of equipment for all the service channels is 1024. The maximum number of pieces of equipment for one service channel is 1024. This means that the maximum number of pieces of equipment can all be on one channel or they can be divided to several channels.

For Nokia Talk-family and Nokia PrimeSite DF 6.0 BTS sites the maximum number of pieces of equipment is 34.

The state of the service channel has to be AD when adding a piece of equipment.

Execution printouts

The execution printout of example 1 is given below.

```

BSC      BSC-LAB                      1997-02-05  13:54:32
  CHA    BCF
  NUM    NUM    TYPE    INDEX    Q1 ADDRESS
  ---    ---    ---    ---    -
    1     -    SM2M     72         0

COMMAND EXECUTED.
```

The execution printout of example 2 is given below.

```
BSC      BSC-LAB                      1997-02-05  13:55:32
  CHA    BCF
  NUM    NUM    TYPE    INDEX    Q1 ADDRESS
  ---    ---    ---    ---    -
    1      -    TRCU    72-1    1

COMMAND EXECUTED.
```

The execution printout of example 3 is given below.

```
BSC      BSC-LAB                      1997-02-05  13:55:32
  CHA    BCF
  NUM    NUM    TYPE    INDEX    Q1 ADDRESS
  ---    ---    ---    ---    -
    2      -    TRCU    73-1    1

COMMAND EXECUTED.
```

Semantic error messages

```
/**/ GIVEN BCF NUMBER IS NOT ALLOWED
      ILLEGAL BTS SITE TYPE  ***/
```

The given BCF number exists but the BTS type is not allowed.

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

7

QWR: REMOVE EQUIPMENT FROM SERVICE CHANNEL

Function

With the QWR command you remove equipment from a service channel.

Parameters

service channel or BCF number, TRX number:

transmission equipment;

Syntax

The BSC site:

```
QWR: CH = <service channel number> :
```

```
    [ [ SM2M = <SM2M index>... |  
      TRCU = <TRCU_index-tc_index> |
```

```
    DN2 = <DN2 index>... |
```

```
    SSS = <SSS index>... |
```

```
    DMR = <DMR index>... |
```

```
    BBM = <BBM index>... |
```

```
    TRE = <TRE index>... ] |<all> def] ;
```

or the BTS site:

```
QWR: BCF = <BCF number> ,
```

```
    TRX = <Transceiver number> :
```

```
    [ [ DMR = <DMR index>... |
```

TRE = <TRE index>...

TRU = <TRU index>...] |<all> def] ;

Parameter explanations

service channel number

The parameter determines the number of the service channel in which the equipment is located. This number is provided by the system when creating the service channel. The value ranges between the decimals 0-27. The parameter is obligatory if BCF number is not given.

base control function number

With this parameter you define the base control function (BCF) you want to handle. The possible values range from 1 to 248. The possible transmission equipment types are TRE, TRU and DMR. The allowed BTS site types are Nokia MetroSite, Nokia UltraSite, Nokia Talk-family DF 6.0 and Nokia PrimeSite DF 6.0. When the BTS type is Nokia Talk-family or Nokia PrimeSite the software version must be DF 6.0 or newer. The parameter is obligatory if the service channel number is not given.

transceiver number

The possible values for the TRX (transceiver) range from 1 to 16. The parameter can be given only if the BTS site type is Nokia PrimeSite with the software version DF 6.0 or newer.

transmission equipment

With this parameter you determine the equipment type and index.

The possible types of equipment located in the service channel are:

SM2M	Submultiplexer
TRCU	Transcoder Unit
DN2	Dynamic Node Equipment
SSS	Supervisory Substation

DMR	Digital Microwave Radio Link
BBM	Baseband Modem
TRE	Other Transmission Equipment
TRU	Transmission Unit

The characters && and & can be used. The possible values of different equipment types are listed below, first the BSC then the BTS site.

The unit types TRCU and SM2M are numbered according to corresponding PCM circuits of the BSC switch. The index of the TRCU also contains the index of the transcoder. The form of index of the TRCU is INDEX - TRANSCODER INDEX. The TRANSCODER INDEX starts from 1 even though the transcoder is not submultiplexed. There cannot be the same equipment types with the same index, not even in different channels.

The BSC site:

```
SM2M      32...255
TRCU      (32...255) - (1...3)
DN2       0 ...65534
SSS       0 ...65534
DMR       0 ...65534
BBM       0 ...65534
TRE       0 ...65534
```

The BTS site:

Nokia MetroSite and Nokia UltraSite:

```
DMR       0 ...254
TRE       2 ...254
```

Nokia Talk-family and Nokia PrimeSite with software version DF 6.0 or never:

```
DMR       0 ...254
TRE       1 ...254
TRU       2
```

Note

The default value is that all equipment of the service channel are removed. If the default value is used, the system asks the user to confirm the execution of the command.

Examples

1. Remove equipment located in service channel 0.

```
QWR:CH=0;
```

2. Remove a TRCU located in service channel 1. The index is 72-1.

```
QWR:CH=1:TRCU=72-1;
```

Additional information

The state of the service channel has to be AD when removing a piece of equipment.

Execution printouts

Example 1 has the following execution printout:

```
BSC      BSC-LAB                      1997-09-02  16:34:18
EQUIPMENT REMOVED FROM SERVICE CHANNEL 0
COMMAND EXECUTED.
```

Example 2 has the following execution printout:

```
BSC      BSC-LAB                      1997-09-02  16:35:24
EQUIPMENT TRCU - 72-1 REMOVED FROM SERVICE CHANNEL 1
COMMAND EXECUTED.
```

Semantic error messages

```
/**/ GIVEN BCF NUMBER IS NOT ALLOWED
      ILLEGAL BTS SITE TYPE  /**/
```

The given BCF number exists but the BTS type is not allowed.

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

8

QWG: CHANGE EQUIPMENT INFORMATION

Function

With the QWG command you modify equipment information. Only the equipment address can be changed.

Parameters

service channel or BCF number, TRX number:

transmission equipment:

Q1 address;

Syntax

The BSC site:

```
QWG: CH = <service channel number> :  
  
      (DMR = <DMR index> | TRE = <TRE index> ) :  
  
      <Q1 address> ;
```

or the BTS site:

```
QWG: BCF = <BCF number> :  
  
      (DMR = <DMR index> |
```

```
TRE = <TRE index> |
```

```
TRU = <TRU index> ) :
```

<Q1 address> ;

Parameter explanations

service channel number

The parameter determines the number of the service channel in which the equipment is located. This number is provided by the system when creating the service channel. The value ranges between the decimals 0-27. The parameter is obligatory if BCF number is not given.

base control function number

With the parameter BCF you define the base control function (BCF) you want to handle. The possible values range from 1 to 248. The possible transmission equipment types are TRE, TRU and DMR. The allowed BTS site types are Nokia MetroSite, Nokia UltraSite, Nokia Talk-family DF 6.0 and Nokia PrimeSite DF 6.0. When the BTS type is Nokia TalkFamily or Nokia PrimeSite the software version must be DF 6.0 or newer. The parameter is obligatory if the service channel number is not given.

transceiver number

The possible values for the TRX (transceiver) range from 1 to 16. The parameter can be given only if the BTS site type is Nokia PrimeSite with the software version DF 6.0 or newer.

transmission equipment

With this parameter you define the equipment type and index. The parameter is obligatory.

The possible types of equipment located in the service channel are:

DMR	Digital Microwave Radio Link
TRE	Other Transmission Equipment
TRU	Transmission Unit

The possible values of different equipment types are listed below. The index of the TRCU also contains the index of the transcoder. The form of the index of the TRCU is INDEX - TRANSCODER INDEX. The TRANSCODER INDEX starts from 1 even though the transcoder is not submultiplexed.

The BSC site:

```
DMR      0 ...65534
TRE      0 ...65534
```

The BTS site:

Nokia MetroSite and Nokia UltraSite:

```
DMR      0 ...254
TRE      2 ...254
```

Nokia Talk-family and Nokia PrimeSite with software version DF 6.0 or never:

```
DMR      0 ...254
TRE      1 ...254
TRU      2
```

q1 address The parameter defines the address determined for the equipment. Each piece of equipment located in the same service channel has an individual address that is specifically assigned to it. On the basis of this address they identify and receive their own messages.

The values range between decimals 0-4094 (decimal 4095 is not allowed, it is a common broadcasting address to all equipment). The Q1 addresses 0...3999 are for normal use as Q1 network element addresses. The Q1 addresses 4000 to 4094 are reserved for special use and may not be used for normal remote Q1 controlling. The parameter is obligatory.

Examples

1. Change transmission equipment address. The new Q1 address is 2.

```
QWG:CH=0:TRE=1:2;
```

2. Change transmission equipment address on the Nokia MetroSite BTS. The new Q1 address is 3.

```
QWG:BCF=1:TRE=2:3;
```

Additional information

The state of the service channel has to be AD when modifying a piece of equipment.

The address change of the TRE-1 equipment with the address 4080 under a Nokia MetroSite (or newer) BTS is not allowed, if another transmission equipment exists under the same BTS.

Also if transmission equipment is attached to LMU area the address change of the equipment is not allowed.

In these cases the command fails with the following dx error code:

```
/**/ DX ERROR: 242 /**/ /**/ CHANGE IS NOT ALLOWED /**/
```

Execution printouts

Example 1 has the following execution printout:

```
BSC      BSC-LAB                      1997-09-02  16:34:18
MODIFIED
  CHA    BCF
  NUM    NUM    TYPE    INDEX    Q1 ADDRESS
  ---    ---    ---    ---    -
    0      -    TRE      1      1

COMMAND EXECUTED.
```

Example 2 has the following execution printout:

```
BSC      BSC-LAB                      1997-09-02  16:34:18
MODIFIED
  CHA    BCF
  NUM    NUM    TYPE    INDEX    Q1 ADDRESS
  ---    ---    ---    ---    -
    -      1    TRE      2      3

COMMAND EXECUTED.
```

Semantic error messages

```
/**/ GIVEN BCF NUMBER IS NOT ALLOWED
      ILLEGAL BTS SITE TYPE  /**/
```

The given BCF number exists but the BTS type is not allowed.

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

9

QWF: MODIFY BTS Q1 BUS
PARAMETER

Function

With the QWF command you modify the BTS Q1 bus parameter. Only the Q1 bus baud rate can be changed.

Parameters

BCF number:

Q1 bus baud rate;

Syntax

QWF: BCF = <BCF number> :

BR = <baud rate> ;

Parameter explanations

base control function number

With the parameter you define the base control function (BCF) you want to handle. The possible values range from 1 to 248. The allowed BTS site types are Nokia MetroSite and Nokia UltraSite. The parameter is obligatory.

q1 bus baud rate

The possible values are:

1200	1200 bit/s
2400	2400 bit/s
4800	4800 bit/s
9600	9600 bit/s

19200	19200 bit/s
38400	38400 bit/s
57600	57600 bit/s
115200	115200 bit/s

The parameter is obligatory.

Examples

1. Modify data concerning Q1 bus of BCF 2. Define the baud rate as 9600.

```
QWF:BCF=2:BR=9600;
```

Execution printouts

Example 1 has the following execution printout:

```

BSC      BSC-LAB                      1997-09-02  16:34:18
BTS Q1 BUS MODIFIED

      BCF
      NUMBER  BAUD_RATE
      -----
           2      9600

COMMAND EXECUTED.
```

Semantic error messages

```

/*** GIVEN BCF NUMBER IS NOT ALLOWED
      ILLEGAL BTS SITE TYPE  *** /
```

The given BCF number exists but the BTS type is not allowed.

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .

10 QWL: LIST EQUIPMENT

Function

With the QWL command you list the configuration of the transmission equipment on Q1 service channels.

Parameters

service channel or BCF number,TRX number:

transmission equipment:

format;

Syntax

The BSC site:

```
QWL: [ CH = <service channel number>...|<all> def] :
```

```
    [ [ SM2M = <SM2M index> |
```

```
    TRCU = <TRCU_index-tc_index> |
```

```
    DN2 = <DN2 index> |
```

```
    SSS = <SSS index> |
```

```
    DMR = <DMR index> |
```

```
    BBM = <BBM index> |
```

```
    TRE = <TRE index> ]|<all> def] :
```

```
    [ SW | EQU def] ;
```

or the BTS site:

```
QWL: [ BCF = <Base Control Function number>...|<all> def] ,
```

```
    TRX = <Transceiver number>|<all> def] :
```

```
[ [ DMR = <DMR index> |
TRE = <TRE index> |
TRU = <TRU index> |
BIE = <BIE index> ] |<all> def] :
[ SW | EQU def] ;
```

Parameter explanations

service channel number

The parameter determines the number of the service channel in which the equipment is located. This number is provided by the system when creating the service channel. The value ranges between the decimals 0-27. The characters && and & can be used.

The default value is all (equipment are output from BSC and BTS sites).

base control function number

With the parameter you define the base control function (BCF) you want to handle. The possible values range from 1 to 248. The possible transmission equipment types are DMR, TRE, TRU, and BIE. The characters && and & can be used. The default value is all (equipment info is displayed from BSC and BTS sites).

transceiver number

The possible values for the TRX (transceiver) range from 1 to 16. The parameter cannot be given if the characters && and & are used with the Base Control Function number parameter and the BTS site type is not Nokia PrimeSite.

transmission equipment

With this parameter you define the equipment type and index. The possible types of equipment located in the service channel are:

SM2M	Submultiplexer
TRCU	Transcoder Unit
DN2	Dynamic Node Equipment

SSS	Supervisory Substation
DMR	Digital Microwave Radio Link
BBM	Baseband Modem
TRE	Other Transmission Equipment
TRU	Transmission Unit
BIE	Base Station interface Equipment

The possible values of the different equipment types are listed below. The index of the TRCU also contains the index of the transcoder. The form of the index of the TRCU is INDEX - TRANSCODER INDEX. The TRANSCODER INDEX starts from 1 even though the transcoder is not submultiplexed. There cannot be the same equipment types with the same index, not even in different channels.

The BSC site:

SM2M	32...255
TRCU	(32...255) - (1...3)
DN2	0 ...65534
SSS	0 ...65534
DMR	0 ...65534
BBM	0 ...65534
TRE	0 ...65534

The BTS site:

DMR	0 ...254
TRE	1 ...254
TRU	1 ...2
BIE	1 ...2

The default value is all.

format The parameter allows the format change of the displayed equipment information. The user can, by default, interrogate the basic equipment information or alternatively specific information of active and attached software builds.

The possible values are:

EQU	equipment information is displayed
SW	software information is displayed

The default value is EQU.

When the format is SW only those pieces of transmission equipment, which support the software download, are displayed. In the SW output format each piece of equipment has two lines of information. In the first line is the activated master file name and information about transmission equipment software state, whether it is OK or INCONSISTENT. The next line displays the attached master file name and the transmission equipment software download state, if the download information for that exists in the BSC.

Examples

1. List equipment information on Q1 channels from 0 to 2 and 10.

```
QWL:CH=0&&2&10;
```

2. List all equipment.

```
QWL;
```

3. List equipment information from the BTS site number 1.

```
QWL:BCF=1::EQU;
```

4. List equipment software information from the BTS site number 1 and 2.

```
QWL:BCF=1&2::SW;
```

Additional information

The possible states of the equipment are shown in the table.

Channel state	AL	AD
BSC site	OK	SERVICE
	PARTIAL INIT	SERVICE, PART INIT
	UNINIT	SERVICE, UNINIT
	SERVICE	NO POLLING
	SERVICE, PART INIT	NO POLLING, PART INIT
	SERVICE, UNINIT	NO POLLING, UNINIT
	NO ANSWER	

BTS site	NO ANSWER, PART INIT
	NO ANSWER, UNINIT
	ALARM
	ALARM, PART INIT
	PARTIAL INIT
	UNINIT
	SERVICE
	SERVICE, PART INIT
	SERVICE, UNINIT

The possible software states of the equipment are OK and INCONSISTENT.

The possible software download states of the equipment are ATTACHED, PENDING, ONGOING, STOPPED, STOP PEND, CRITICAL, COMPLETED, ACT PENDING, ACT ONGOING, ACT STOPPED, ACT STOP PEND, ACT CRITICAL, ACTIVATED, and NOT SUPPORTED.

For more information about software download states and possible state transactions, see *BSS Transmission Management, Operating Manual* .

Q1 address in execution printouts

The Q1 address field shows the address determined for the equipment. Each piece of equipment located in the same Q1 channel has an individual address that is specifically assigned to it. On the basis of this address they identify and receive their own messages.

The values range between decimals 0-4094 (decimal 4095 is not allowed, it is a common broadcasting address to all equipment). The Q1 addresses 0...3999 are for normal use as Q1 network element addresses. The Q1 addresses 4000 to 4094 are reserved for special use and may not be used for the normal remote Q1 controlling.

Execution printouts

Example 1 has the following execution printout:

BSC	BSC-LAB					1999-10-18					15:30:00	
BUS												
CHA BCF TRX			BAUD			Q1			EQU			
NUM	NUM	NUM	RATE	TYPE	INDEX	ADDR	EQUIPMENT	TYPE	GEN	STATE		

```

-----
0      -      -      - TRCU 73-1 1      TRCU TMS OK
1      -      -      - TRE 71 0      FLEXIHOPPER Q1E -
1S     -      -      - TRE 21 1      FLEXIHOPPER Q1E -
2      -      -      - TRCU 72-1 1      TRCU TMS OK
10     -      -      - TRCU 73-2 2      TRCU TMS OK
COMMAND EXECUTED

```

Example 2 has the following execution printout:

```

BSC      BSC-LAB      1999-10-18 15:30:00

      BUS
      CHA BCF TRX      BAUD      Q1      EQU
      NUM NUM NUM      RATE TYPE INDEX ADDR EQUIPMENT TYPE GEN STATE
-----
0      -      -      - TRCU 73-1 1      TRCU TMS OK
1      -      -      - TRE 71 0      FLEXIHOPPER Q1E -
1S     -      -      - TRE 21 1      FLEXIHOPPER Q1E -
2      -      -      - TRCU 72-1 1      TRCU TMS OK
10     -      -      - TRCU 73-2 2      TRCU TMS OK
-      1      -      2400 TRE 1 4080 FLEXIHOPPER Q1E -
-      2      -      9600 TRE 1 4080 FLEXIHOPPER Q1E -
COMMAND EXECUTED

```

Example 3 has the following execution printout:

```

BSC      BSC-LAB      1999-10-18 15:30:00

      BUS
      CHA BCF TRX      BAUD      Q1      EQU
      NUM NUM NUM      RATE TYPE INDEX ADDR EQUIPMENT TYPE GEN STATE
-----
-      1      -      2400 TRE 1 4080 FLEXIHOPPER Q1E -
COMMAND EXECUTED

```

Example 4 has the following execution printout:

```

BSC      BSC-LAB      1999-10-18 15:30:00

      CHA BCF TRX      Q1
      NUM NUM NUM      TYPE INDEX ADDR      MASTER FILE NAME      TRE SW STATE
-----
-      1      -      TRE 1 4080 ACTIVATED: FLEXIHOP.A08 OK
      ATTACHED: - -
-      2      -      TRE 1 4080 ACTIVATED: FLEXIHOP.A09 INCONSISTENT
      ATTACHED: FLEXIHOP.A10 ONGOING
COMMAND EXECUTED

```

Semantic error messages

```

/*** GIVEN BCF NUMBER IS NOT ALLOWED
      ILLEGAL BTS SITE TYPE *** /

```

The given BCF number exists but the BTS type is not allowed.

The general semantic error messages of MML commands are used. For more information, see *General Notice Messages of MML Session* .

Execution error messages

The general execution error messages of MML commands are used. For more information, see *General Error Messages of System* .