AARC

AAS Remote Control

Remote control protocol

Reference Manual

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1. Introduction

Some AETA codecs can be managed and supervised via remote control in a “command line” mode. The remote control interface uses the AARC (AAS Remote Control) protocol.

This document is a reference manual describing this protocol and the commands allowing the management and supervision of an AETA codec thanks to this protocol.

As the different codecs have different features and capabilities, some commands may not apply to all codecs; similarly, the validity domain for a parameter may differ depending on the model. Such specific behaviour is mentioned whenever possible, but this document is not guaranteed to be exhaustive. For thorough understanding of the functions and operating modes of a given codec and its specific capabilities or limitations, the reader should refer to the user manual of this unit.

The following are concerned by the described protocol:

- HIFISCOOP 3 5AS (also referred to as «HS3» in the following)
- SCOOP 3 5AS (also referred to as «S3» in the following)
- SCOOP 4+ (also referred to as «S4» in the following)
- SCOOPY+ (also referred to as “S+” in the following)
- SCOOP 5 and SCOOP 5 IP (also referred to as “S5” in the following)
- Scoop5 S, Scoop5 S-IP and Scoopy+ S (referred as “SxS” in the following)

Other products are not remote controllable, or feature older versions of the protocol (incompatible or partially compatible). Consult us for additional information regarding those products.

2. General principles

The protocol used is similar to the Hayes AT command protocol. It is used for remote controlling (almost) all the functions of the codec, with similar capability as when using the front panel keyboard and display.

Two physical interfaces can be used, depending on the product.

2.1. Serial remote control port

The control port is an asynchronous serial port enabling the connection of the device to a terminal or PC.

Note: on older units the serial port could also be used for downloading software updates to the unit.

2.2. Ethernet interface

Some products also feature remote control via an Ethernet interface and a TCP/IP connection. The protocol is the same in spite of the different physical interface. Commands and answers are exchanged inside a TCP/IP session established between the controlling device and the TCP port of the controlled codec.

An exception to this exists (products other than HIFISCOOP 3 5AS and SCOOP 3 5AS): UDP is used to transmit (unsolicited) messages indicating the audio levels at a regular and configurable pace.

2.3. AT interpreter

For some of the products, one can use the **AT#H** command, which provides access to an on-line help menu. Direct use command are listed (dial, on-hook). More elaborated commands (such as codec configuration) are described in each display command (**AT&V***n*).

AT&V commands indicate for any selection :

- Its numerical value,
- Its meaning in the current language version.

It is therefore possible to find a numerical selection by successive tries of possible options followed by the **AT&V***i* command.

For the specific case of codec bit-rate selection (**AT#CHD**), the **AT&V4** command allows displaying of possible combinations of bit rate / number of B-channels for the selected codec (previously selected via **AT#COD** command).

Device specific commands have a AT#XXX format, with a three letters label.

It is possible to recall the last command for replay via the A+ non standard command.

Whenever a command for a configuration change is valid, the new value is immediately stored in non-volatile memory within the current configuration. Such a command may induce other changes in configuration in order to maintain the consistency of the configuration (e.g. programming the algorithm to G711 induces a change to 64 kbit/s, whatever the previous bit rate was).

As in the Hayes AT command format, commands may be concatenated. ***Commands that may cause a reset of the equipment or a change in the RS232 format must not be concatenated.*** The same holds for commands related to a change in dialling number.

The OK acknowledgement of a command is transmitted only when the device is ready to accept the next command.

Conversely, the next command cannot be sent before the OK acknowledgement for a command has been received.

2.4. Opening/closing a control session

Access to the device may be protected by a password. In such case, the user (or control system) must enter the password with the appropriate command (**AT#PWD=***password_value*) in order to open a control session. Conversely, the session can be closed by entering the **AT#EXI** command.

If the password is left «blank», access to the device is granted at any time.

2.5. Debug information

In the debug operating mode some information may be sent by the device on the AT link. Such information is sent as BASIC language commentaries, i.e. it is preceded by « ‘ » sign (Quote 27 hexa).

Any management system should ignore all information between such a « ‘ » sign and the end of the line.

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4. Details of AT commands syntax

4.1. General commands

ATE

Description :

Local echo control
This command is not "password-sensitive", i.e. it is available even without opening a control session

Applicable to : all units

Format :

ATE[*n*]

n=1 (default): local echo active
n=0 : no local echo
ATE0 *switches off the local echo*

ATI

Description :

Equipment identification
This command is not "password-sensitive", i.e. it is available even without opening a control session

Applicable to : all units

Format :

ATI[*n*]

n=0 (default): Product identification
n=1 : ISDN interface board version number (HS3 / S3)
n=2 : Codec board software version numbers; Global software version (S4/S+)

Examples :

```
ATI
SCOOP4+
OK

ATI1
S0 -- V 5.06 -
OK

ATI2
V8.01 3.12
OK
```

ATZ

Description :

Resets the device.

Applicable to : all units

Format :

ATZ

Response :

OK is transmitted as an acknowledgement, before the unit reboots. *Note: because of the reboot, the control session is closed after this command!*

AT#H

Description :

On line help
This command is not "password-sensitive", i.e. it is available even without opening a control session

Applicable to : HS3 / S3

Format :

AT#H, **AT#H0**, **AT#H1**

First help screen

AT#H2, **AT#H3**, **AT#H4**

Other help screens

4.2. Session and password management

AT#PWD

Description :

Opening of a control session

Applicable to : all units

Format :

AT#PWD=*password*

The password includes a maximum of 8 numerical characters
The factory setting is «blank» (no password)

AT#EXI

Description :

Closure of a control session (previously opened by entering the password with AT#PWD).

Applicable to : all units

Format :

AT#EXI

AT#NPW

Description :

New password programming

Applicable to : all units

Format :

AT#NPW=*new_password*

The password must include a maximum of 8 numerical characters

4.3. Call control

This category of commands enables the management of communications (dial & receive calls).

AT#NET

Description :

Allows the selection of the active transmission interface

Applicable to : all units

Format :

AT#NET=*n*

n=0 : ISDN interface	
n=1 : Leased line interface	(not allowed for S3, S+, Scoopy+ S)
n=2 : Analog line : Codec mode	(not allowed for S3, HS3)
n=3 : Analog line : Hybrid mode	(S+, Scoopy+ S)
n=4 : Mobile voice interface	(not allowed for S3, HS3)
n=5 : IP interface	(not allowed for S3, HS3)
n=6 : Mobile IP	(2G/3G/3G+/4G) (S+, S4, S5, SxS)

Example :

AT#NET=0
OK

Command to display the current configuration:

AT&V, AT&V0

AT#DIA

Description :

Configuration of the dial method

Applicable to : S+, S4, S5, SxS

Format :

AT#DIA=*n*

n=0 : Tone
n=1 : Pulse

AT#TON

Description :

Selection of the dial tone

Applicable to : S+, S4, S5, SxS

Format :

AT#TON=*n*

n=0 : Detect,
n=1 : Do not wait for dial tone

AT&Z
AT#NUM

Description :

Remote party identifier for an outgoing call: dial number and sub-address programming (ISDN mode), dial number (POTS mode, GSM mode), IP address or SIP URI (IP mode).

Warnings:

- Separate numbers are allocated for single or dual codec modes (ISDN). Moreover, numbers may or may not be linked to configuration memories (see AT#NAC command).
- Each **B channel** is allocated a dial number in ISDN mode

Applicable to : all units

Format (ISDN mode):

AT&Z*n*=*nnn*[**sss*], or **AT#NUM***n*=*nnn*[**sss*]

where

n is the index of the number to be entered
1, 2, 3, 4, 5, or 6 for single codec mode
7 for the «1st codec» in dual codec mode
8 for the «2nd codec» in dual codec mode
(or mobile voice coordination channel on S+)

nnn : ISDN number (40 digits maximum)
* : Number / sub-address separator
sss : Sub-address (optional, 4 digits maximum)

Format (POTS or mobile voice):

AT&Z1=*nnn*, or **AT#NUM1=***nnn*

where

nnn : dial number (40 digits maximum)

Format (IP mode, direct IP address):

AT&Z1=*n.p.q.r*, or **AT#NUM1=** *n.p.q.r*

where

n.p.q.r is an IP address in decimal format
example: 192.168.120.23

Format (IP mode, SIP URI format):

AT&Z1=*user@server*, or **AT#NUM1=** *user@server*

where

user : is a valid identifier on a SIP server
server : is the IP address or the domain name of a SIP server
(40 digits maximum for user@server)

Command to display the current configuration:

AT&V, AT&V0

AT#LOC

Description :

Local number and sub-address programming.

Applicable to : all units (ISDN mode)

Format :

AT#LOC*n*=*nnn*[**sss*]

where

n	is the index of the number to be entered 1, 2, 3, 4, 5, or 6 for single codec mode 7 for the «1st codec» in dual codec mode 8 for the «2nd codec» in dual codec mode *(not relevant for mobile voice coordination channel on S+)*
nnn	: Local ISDN number (40 digits maximum)
*	: Number / sub-address separator
sss	: Local sub-address (optional, 4 digits maximum)

Command to display the current configuration:

AT&V, AT&V0

ATDS

Description :

Call initiating (ISDN mode, IP mode). The command triggers a call to the destination specified by AT&Zn or AT#NUMn (see above).

Applicable to : all units.

Format :

ATDS[*n*]

n	corresponds to the index of the concerned codec (1 or 2, default 1) 2 is codec 2 in dual codec mode (HS3 / S3 / S4 / S5 / Scoop5 S) 2 is mobile voice coordination channel for S+ / Scoopy+ S.

Examples:

ATDS2 *initiate a call from codec 2 (in dual ISDN codec mode)*

ATDS *initiate a call (on codec 1 if in dual codec mode)*

ATH

Description :

Link termination (any mode except LL)

Applicable to : all units

Format :

ATH[*n*]

n : is the index of the communication link to terminate (default 1)

AT#AUTO

Description :

Allows the selection of the automatic answering mode

Applicable to : HS3 / S3

Format :

AT#AUTO*i=n*

i = 0 : codecs 1 & 2
i=1 : codec 1
i=2 : codec 2

n=0 : Manual answering
n=1 : Automatic answering

Example :

AT#AUTO1=1
OK

Command to display the current configuration:

AT&V, AT&V0

ATA

Description :

Accept an incoming call

Applicable to : HS3 / S3

Format :

ATA*n*

n is the index of the link to accept (1 or 2)

AT#TAE

Description :

This command allows the user to filter ISDN calls depending on their nature.

Applicable to : all units

Format :

AT#TAE=*n*

n= 0 Any incoming call is accepted
n= 1 Only "telephone" type calls are accepted.
n= 2 Only "data" type calls are accepted (recommended mode when it is not intended to receive calls from normal telephones).

Example:

AT#TAE=2
OK

Command to display the current configuration:

AT&V9

AT#TFS

Description :

Enables a «proprietary» filtering mode on incoming ISDN calls, based on sub-address values. In this mode, the local sub-address behaves like a password for incoming calls.

Applicable to : HS3 / S3

Format :

AT#TFS=*n*

n= 0 Standard mode
n= 1 Proprietary filtering mode

Example:

AT#TFS=1
OK

Command to display the current configuration:

AT&V9

AT#HLC

Description :

Enables coding of HLC (High Layer Capability) information element in outgoing ISDN calls.

This parameter should usually stay equal to zero. However, some international calls may require the encoding of this parameter.

Applicable to : HS3 / S3

Format :

AT#HLC=*n*

n= 0 No (default)
n= 1 Yes

Example:

AT#HLC=1
OK

Command to display the current configuration:

AT&V9

AT#RED

Description :

Activation of auto redialling feature (recall destination in case of loss of link)

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#RED*i*=*n*

i=1 : codec 1
i=2 : codec 2

n=0 : Normal mode (default)
n=1 : Redial active

Example :

AT#RED1=1
OK

Command to display the current configuration:

AT&V0

AT#NBR

Description :

Number of retries for redialling feature.

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#NBR=*n*

n=0 : no limit, infinite retry
n=1..20 : number of (unsuccessful) trials before giving up (default 1)

Example :

AT#NBR=6
OK

Command to display the current configuration:

AT&V9

AT#TTR

Description :

Time to wait before redial redialling.

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#TTR=*n*

n=1..30 : Time in seconds before new redialing attempt (default 1 second)

Example :

AT#TTR=10
OK

Command to display the current configuration:

AT&V9

AT#LCT

Description :

Use of loop control feature

Applicable to : S4 / S5 / Scoop5 S / Scoop5 S-IP

Format :

AT#LCT=*n*

n=0 : Disabled (default, no loop control)
n=1 : Active (outgoing links controlled by loop)
n=2 : Active, loop switches to backup mode

Example :

AT#LCT=1
OK

Command to display the current configuration:

AT&V0

AT#LLBC

Description :

Selection of network for backup call (in relation with loop controlled backup)

Applicable to : S4 / S5 / SxS

Format :

AT#LLBC=*n*

n=0 : ISDN backup call triggered via loop control
n=5 : IP backup call triggered via loop control

Example :

AT#LLBC=5
OK

Command to display the current configuration:

AT&V0

AT#LLBR

Description :

Activate “passive” backup mode (switch to backup on receiving an ISDN or IP call)

Applicable to : S4 / S5 / SxS

Format :

AT#LLBR=*n*

n=0 : Inactive (default, IP or ISDN incoming call ignored when in LL mode)
n=1 : Active (accept and switch to backup on receiving an IP or ISDN call)

Example :

AT#LLBR=0
OK

Command to display the current configuration:

AT&V0

4.4. IP network settings

The commands in this category allow the configuration of the IP network interface.

AT#DHCP

Description :

IP addressing mode

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#DHCP=*n*

n=0 : use DHCP (default)
n=1 : static mode

Example :

AT#DHCP=0
OK

Command to display the current configuration:

AT&V9

AT#IP

Description :

Static IP address setting (valid when DHCP is not used)

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#IP=*n.p.q.r*

n.p.q.r is the static IP address

Example :

AT#IP=10.0.58.125
OK

Command to display the current configuration:

AT&V9

AT#IPM

Description :

Sub-network mask (valid when DHCP is not used)

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#IPM=*n.p.q.r*

n.p.q.r is the mask

Example :

AT#IPM=255.255.255.0
OK

Command to display the current configuration:

AT&V9

AT#GW

Description :

Default gateway address (valid when DHCP is not used)

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#GW=*n.p.q.r*

n.p.q.r is the gateway IP address

Example :

AT#GW=10.0.58.254
OK

Command to display the current configuration:

AT&V9

AT#DNS

Description :

DNS address (valid when DHCP is not used)

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#DNS=*n.p.q.r*

n.p.q.r is the DNS IP address

Example :

AT#DNS=10.15.58.2
OK

Command to display the current configuration:

AT&V9

AT#IPQ

Description :

IP network quality setting

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#IPQ=*n*

n=0 : low quality
n=1 : middle quality (default)
n=2 : high quality
n=3 : bad quality
n=4 : very bad quality
n=5 : very high quality

Example :

AT#IPQ=1
OK

Command to display the current configuration:

AT&V9

AT#VISU

Description :

Configure the periodic sending of measured audio levels to a codec management server. The messages are sent unsolicited at regular time intervals.

Important notice:: The message is sent using **UDP**

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#VISU=*n.p.q.r:port period*

n.p.q.r is the IP address of the codec management server
port is the UDP port number on the management server
period time interval in ms; multiple of 50, minimum 150.

Example :

AT#VISU=10.0.20.55:8010 500 *send every 500 ms to port 8010 of IP 10.0.20.55*
OK

Command to display the current configuration:

None

AT#REP

Description :

Activation and configuration of the packet replication feature (IP modes)

Applicable to : S+ / S5 / SxS

Format :

AT#REP=*n*

n=0 : Normal mode, no packet replication
n=1 : Every packet is sent twice
n=2: Every packet sent twice, with interleaving

Command to display the current configuration:

AT&V1

4.5. Coding configuration

The commands in this category allow the configuration of the coding part in the device.

AT#SEL

Description :

Selection of the single or dual codec mode (LL or ISDN mode).

Warning, this command may induce a modification of the following parameter (coding type) when changing from single to dual mode, as only G711 and G722 algorithms are available in dual codec mode.

Applicable to : HS3 / S3 / S4 / S5 / Scoop5 S

Format :

AT#SEL=*n*

n=0 : single codec mode
n=1 : dual codec mode

Command to display the current configuration:

AT&V1

AT#SELIP

Description :

Selection of the single or dual codec mode (IP mode).

Warning, this command may induce a modification of the following parameter (coding type) when changing from single to dual mode.

Applicable to : Scoop5 S

Format :

AT#SELIP=*n*

n=0 : single codec mode
n=1 : dual codec mode

Command to display the current configuration:

AT&V1

AT#COD

Description :

Selection of the coding algorithm. Available options in this command depend on the « selection » command (AT#SEL).

Warning ! This command may induce a change in the following parameter (codec bit rate) in case its value is not consistent with the new algorithm selected.

Applicable to : all units

Format :

AT#COD*i*=*n*

i = 1 : codec 1
i = 2 : codec 2 (not allowed for S+ / Scoopy+ S)

n=0 : G722 - H242 (mono)
n=1 : G711 (mono)

n=2 : MPEG Layer 2 (J52 for ISDN mode) - Mono
n=3 : MPEG Layer 2 (J52 for ISDN mode) – Dual mono
n=4 : MPEG Layer 2 (J52 for ISDN mode) - Stereo
n=5 : MPEG Layer 2 (J52 for ISDN mode) – Joint stereo

n=7 : G722 – SRT (or G722 for IP mode)
n=8 : G722 – H221
n=9 : 4SB ADPCM - Mono
n=10 : 4SB ADPCM – Stereo

n=12 : TDAC

n=15 : MPEG Layer 3 (J52 for ISDN mode) – Mono
n=16 : MPEG Layer 3 (J52 for ISDN mode) - Dual mono
n=17 : MPEG Layer 3 (J52 for ISDN mode) - Stereo
n=18 : MPEG Layer 3 (J52 for ISDN mode) – Joint stereo
n=19 : MPEG Layer 2 (Proprietary) – Mono (*not used for IP mode*)
n=20 : MPEG Layer 2 (Proprietary) – Dual mono (*not used for IP mode*)
n=21 : MPEG Layer 2 (Proprietary) - Stereo (*not used for IP mode*)
n=22 : MPEG Layer 2 (Proprietary) – Joint stereo (*not used for IP mode*)
n=23: G722 encoding / TDAC decoding
n=24: TDAC encoding / G722 decoding
n=25 : MPEG Layer 3 (Proprietary) - Mono (*not used for IP mode*)
n=26 : MPEG Layer 3 (Proprietary) – Dual mono (*not used for IP mode*)
n=27 : MPEG Layer 3 (Proprietary) - Stereo (*not used for IP mode*)
n=28 : MPEG Layer 3 (Proprietary) – Joint stereo (*not used for IP mode*)

n=30 : CELP (not allowed for S3, HS3)
n=31 : Hybrid mode (analog line) (S+ / Scoopy+ S)

n=32 : MPEG AAC-LC – Mono
n=33 : MPEG AAC-LC - Dual mono *(reserved but actually not used)*
n=34 : MPEG AAC-LC - Stereo
n=35 : MPEG AAC-LC – Joint stereo *(reserved but actually not used)*
n=36 : MPEG HE-AAC - Mono
n=38 : MPEG HE-AAC - Stereo
n=42 : MPEG HE-AAC v2 (Stereo by design)

n=50 : OPUS – Mono (SxS)
n=51 : OPUS – Stereo (SxS)

n=62 MPEG AAC-LC-LOAS - Mono
n=63 MPEG AAC-LC-LOAS - Dual mono *(reserved but actually not used)*
n=64 MPEG AAC-LC-LOAS - Stereo
n=65 MPEG AAC-LC-LOAS - Joint stereo *(reserved but actually not used)*
n=66 MPEG HE-AAC-LOAS - Mono
n=68 MPEG HE-AAC-LOAS - Stereo
n=72 MPEG HE-AAC v2-LOAS (Stereo by design)

n=100 : L16 – Mono (SxS)
n=101 : L16 – Stereo (SxS)
n=102 : L20 – Mono (SxS)
n=103 : L20 – Stereo (SxS)
n=104 : L24 – Mono (SxS)
n=105 : L24 – Stereo (SxS)

Remarks

The proprietary MPEG Layer 2 mode is compatible with CCS codecs.
The *MPEG Layer 3 modes are obsolete* (only older products).
Modes including the TDAC algorithm are only available optionally on the device.

Command to display the current configuration:

AT&V1

AT#FRE

Description :

Selection of the coding sampling rate. Only needed for MPEG algorithms and linear coding (L16/L20/L24), as the sampling rate is fixed for other algorithms.

Applicable to : all units

Format :

AT#FRE=*n*

n=0 : 48 kHz
n=1 : 32 kHz
n=2 : 24 kHz (not valid for MPEG-AAC and linear coding)
n=3 : 16 kHz (not valid for MPEG-AAC and linear coding)

Remarks :

As the configuration must remain consistent after any AT command, AT#FRE command should not be sent when the algorithm is not MPEG. Moreover, in such case, the value returned by configuration display commands (see AT&V1) is meaningless.

Command to display the current configuration:

AT&V1

AT#CHD

Description :

Selection of the codec bit rate and hence desired number of B channels.

Applicable to : all units

Format :

AT#CHD*i=d*

i = 1 : codec 1
i = 2 : codec 2 (not allowed for S+ and Scoopy+ S)
d : bit rate in kbit/s

Remarks :

1. This command is needed if and only if the algorithm is: MPEG (any variation), OPUS, CELP in case of AT#NET=2 (Analog Line: Codec mode). Other cases have a fixed (implicit) bit rate for each algorithm/channel mode combination (AT#COD parameter value). However, in such case, the possible command is accepted and returns OK if the parameter is valid (only one valid value).

2. ***In case of AT#NET=2 (Analog Line: Codec mode), the bit rate is truncated (in comparison with the real bit rate):***

d = 12 : 12 kbits/s
= 14 : 14.4 kbits/s
= 16 : 16.8 kbits/s
= 19: 19.2 kbits/s
= 21 : 21.6 kbits/s
= 24 : 24 kbits/s

3. ***For MPEG-AAC in case of AT#NET=2 (IP mode), the bit rate is also truncated for non integer values. Possible values:***

d = 16, 20, 24, 32, 40, 48, 56, 64, 96, 128, 192, 256

4. For OPUS, the bit rate is the "start value" used at the beginning of the link; it can change during the transmission (if negotiated by the units).

Command to display the current configuration:

AT&V1

Example

AT#CHD1=128 *Codec configured at 128 kbit/s*

AT#ORI

Description :

Configuration of the Original/Copy field (MPEG only)

Applicable to : HS3 / S3

Format :

AT#ORI=*n*

n=0 : Original
n=1 : Copy

AT#COP

Description :

Configuration of the Copyright field (MPEG only)

Applicable to : HS3 / S3

Format :

AT#COP=*n*

n=0 : Active
n=1 : Inactive

AT#COR

Description :

Selection of the error correction mode (MPEG only), or
Selection of the protected mode (Analog line : CELP Codec Mode)

Applicable to : all units

Format :

AT#COR=*n*

n=0 : mode 0,
n=1 : mode 1,
n=2 : mode 2,
n=3 : mode 3.(not allowed in Analog line / CELP Codec Mode)

Command to display the current configuration:

AT&V1

AT#CLK

Description :

Configuration of the clock mode (POTS mode)

Applicable to : S+ / S5 / SxS

Format :

AT#CLK=*n*

n=0 : Standard
n=1 : Free

AT#LEV

Description :

Configuration of the line level (POTS mode)

Applicable to : S+ / S5 / SxS

Format :

AT#LEV=*n*

n=0 : 0 dBm
n=1 : -3 dBm
n=2 : -6 dBm
n=3 : -9 dBm
n=4 : -10 dBm
n=5 : -13 dBm
n=6 : -16 dBm

AT#SPD

Description :

Configuration of the speed (POTS mode)

Applicable to : S+ / S4 / S5 / SxS

Format :

AT#SPD=*n*

n=0 : Auto
n=1 : Fixed

4.6. Auxiliary functions

4.6.1. Data channel configuration

The commands in this group allow configuring the serial data port and the data channel.

AT#CDA

Description :

Activation/Inhibition of the data channel

Applicable to : all units

Format :

AT#CDA=*n*

n=0 : Data channel disable,
n=1 : Data channel enable.

Command to display the current configuration:

AT&V2

AT#BAU

Description :

Data channel bit rate selection.

Applicable to : all units

Format :

AT#BAU=*n*

n=0 : 300 bauds,
n=1 : 1200 bauds,
n=2 : 2400 bauds,
n=3 : 4800 bauds.
n=4 : 9600 bauds.

Command to display the current configuration:

AT&V2

AT#PAR

Description :

Data channel parity selection.

Applicable to : HS3 / S3

Format :

AT#PAR=*n*

n=0 : None,

Command to display the current configuration:

AT&V2

AT#DAT

Description :

Data channel number of bits selection.

Applicable to : HS3 / S3

Format :

AT#DAT=*i*

n=1 : 8 data bits.

Command to display the current configuration:

AT&V2

AT#STO

Description :

Data channel number of stop bits selection.

Applicable to : HS3 / S3

Format :

AT#STO=*n*

n=0 : 1 stop bit,

Command to display the current configuration:

AT&V2

4.6.2. Relay transmission

AT#REL

Description :

Activation of the relay transmission function.
This auxiliary function is not available with all coding algorithms, and may not be available simultaneously with another auxiliary function. See details in the HIFISCOOP 3 ISDN user manual.

Applicable to : all units

Format :

AT#REL=*n*

n=0 : Relay transmission disabled
n=1 : Relay transmission active

Command to display the current configuration:

AT&V2

AT#GPI

Description :

Forces the state of the GPI number i on a Scoopy+ or Scoop 4+. For Scoop 4+: overridden by any change of state of the "physical" GPI.

Applicable to : S+ / S4 / S5 / SxS

Format :

AT#GPI*i*=*n*

i = number of GPI (1 or 2 for S+)
n = 0 : GPI open, n = 1: GPI closed

Command to display the *actual* state of the GPI)

AT&V2

AT#GPO

Description :

Forces GPO number i on a Scoopy+ or Scoop 4+. May be overridden by change requested from another origin (e.g. remote GPI if relay transmission is active).

Applicable to : S+ / S4 / S5 / SxS

Format :

AT#GPO*i*=*n*

i = number of GPO (1 or 2 for S+)
n = 0 : GPO open, n = 1: GPO closed

Command to display the *actual* state of the GPO)

AT&V2

4.6.3. Auxiliary audio channel configuration

AT#VOR

Description :

Enables the auxiliary 3 kHz audio channel.
This auxiliary function is not available with all coding algorithms, and may not be available simultaneously with another auxiliary function. See details in the HIFISCOOP 3 ISDN and SCOOP 4+ user manuals.

Applicable to : HS3 / S3 / S4 / S5

Format :

AT#VOR=*n*

n=0 : auxiliary 3 kHz audio channel disabled,
n=1 : auxiliary audio channel enabled.

Command to display the current configuration:

AT&V2

4.6.4. Miscellaneous auxiliary functions

AT#SMS

Description :

Display a simple text message on the user interface of the audio codec.
The exact way of displaying the message is not specified here => device-dependent.

Applicable to : S+ / S4 / S5 / SxS

Format :

AT#SMS=*"text_string"*

Text_string is a text string, with ASCII characters (other than quotes!).
Maximum length and list of allowed special characters to be defined.

Command to display the current configuration: *not relevant*

4.7. Audio configuration

AT#TYP

Description :

Selection of the format of the audio interfaces.
For S4, selection of the audio input source

Applicable to : HS3 / S3 / S4 / S5 / Scoop5 S / Scoop5 S-IP

Format :

AT#TYP=*n*

n=0 : Analogue format
n=1 : AES/EBU format, «asynchronous» mode (S4 : AES format)
n=2 : AES/EBU format, 32 kHz sampling rate (S4: not valid)
n=3 : AES/EBU format, 48 kHz sampling rate (S4: not valid)

Command to display the current configuration:

AT&V1

AT#SYNC

Description :

Selection of synchronisation mode for the AES interfaces.

Applicable to : S4 / S5 / Scoop5 S / Scoop5 S-IP

Format :

AT#SYNC=*n*

n=0 : Genlock mode, synchronisation on AES input
n=1 : Master mode, synchronisation from internal clock or network clock.

Command to display the current configuration:

AT&V1

AT#AES

Description :

Selection of the nominal sampling rate for the AES interfaces.

Applicable to : S4 / S5 / Scoop5 S / Scoop5 S-IP

Format :

AT#AES=*n*

n=0 : 32 kHz sampling rate
n=1 : 48 kHz sampling rate
n=2: 96 kHz sampling rate

Command to display the current configuration:

AT&V1

AT#GIN

Description :

Configuration of the maximum analogue audio input level.
For Scoopy+ and Scoopy+ S, global gain applied to input mix

Applicable to : HS3 / S3 / S4 / S5 / S+ / SxS

Format :

AT#GIN=*n*

n is the desired maximum level, expressed in dBu (integer value).
Valid range: 0 to 22
For Scoopy+, gain in dB, valid range -12 to 12

Example :

AT#GIN=16 *max. input level set to +16 dBu*

Command to display the current configuration:

AT&V1

AT#GOUT

Description :

Configuration of the maximum analogue audio output level.

Applicable to : all units

Format :

AT#GOUT=*n*

n is the desired maximum level, expressed in dBu (integer value).
Valid range: 0 to 22 (for S+: -11 to 22)

Command to display the current configuration:

AT&V1

AT#ZIN

Description :

Configuration of the input impedance.

Applicable to : S4 / S5 / Scoop5 S

Format :

AT#ZIN=*n*

n=0 : low input impedance (600 Ohm)
n=1 : high input impedance

Command to display the current configuration:

AT&V1

AT#IMP

Description :

Configuration of the normal output load.

Applicable to : HS3 / S3

Format :

AT#IMP=*n*

n=0 : Output load is low impedance (600 Ohm)
n=1 : Output load is high impedance

Command to display the current configuration:

AT&V1

AT#CHS

Description :

Mic/Line input channel switch.

Applicable to : S+ and Sy+ S

Format :

AT#CHS*i***=***n*

i=1,2,3: channel to set

n=0 : Channel off
n=1 : Channel on

Command to display the current configuration:

AT&V1

AT#USBA

Description :

USB audio input switch.

Applicable to : S+ and Sy+ S

Format :

AT#USBA=*n*

n=0 : Channel off
n=1 : Channel on

Command to display the current configuration:

AT&V1

AT#GIS

Description :

Mic/Line input gain select.

Applicable to : S+ / Sy+ S

Format :

AT#GIS*i*=*n*

i=1,2,3: channel to set

n=0 : Input gain is 0 dB
n=1 : Input gain is 16 dB
n=2 : Input gain is 32 dB
n=3 : Input gain is 48 dB

Command to display the current configuration:

AT&V1

AT#LIM

Description :

Mic/Line input limiter select.

Applicable to : S+ / Sy+ S

Format :

AT#LIM*i*=*n*

i=1,2,3: channel to set

n=0 : Limiter off (default)
n=1 : Limiter active

Command to display the current configuration:

AT&V1

AT#PWR

Description :

Mic/Line input powering.

Applicable to : S+ / Sy+ S

Format :

AT#PWR*i*=*n*

i=1,2,3: channel to set

n=0 : No microphone powering (default)
n=1 : Phantom +48V
n=2 : Phantom +12V
n=3 : T12 power

Command to display the current configuration:

AT&V1

AT#HPF

Description :

Mic/Line input HP filter setting.

Applicable to : S+ / Sy+ S

Format :

AT#HPF*i*=*n*

i=1,2,3: channel to set

n=0 : Filter off (default)
n=1 : HP filter active

Command to display the current configuration:

AT&V1

AT#CHR

Description :

Mic/Line input routing.

Applicable to : S+ / Sy+ S

Format :

AT#CHR*i*=*n*

i=1,2,3: channel to set

n=0 : signal routed center (default)
n=1 : signal routed left / half left
n=2 : signal routed right / half right

Command to display the current configuration:

AT&V1

AT#CPM

Description :

Channel panning mode

Applicable to : S+ / Sy+ S

Format :

AT#CPM=*n*

n=0 : Panning full left / full right (default)
n=1 : Panning half left / half right

Command to display the current configuration:

AT&V1

AT#PAD

Description :

Mic/Line input attenuation pad.

Applicable to : S+ / Sy+ S

Format :

AT#PAD*i*=*n*

i=1,2,3: channel to set (*only i=3 valid for S+)*

n=0 : normal, no pad (default))
n=1 : pad active

Command to display the current configuration:

AT&V1

AT#OSEL

Description :

Output signal selection. Applies both to left and right outputs.

Applicable to : S+ / Sy+ S

Format :

AT#OSEL=*n*

n=0 : Send signal
n=1 : Receive signal
n=2 : Send/Receive mix

Command to display the current configuration:

AT&V1

AT#CCR

Description :

Routing of coordination channel to headphones.
(Only relevant when the coordination line is active, otherwise the standard routing is used)

Applicable to : S+ / Sy+ S

Format :

AT#CCR*i*=*n*

i=1,2: headphone output to configure

n=0 : Program signal only (both ears, default)
n=1 : Coordination signal only (both ears)
n=2 : Program (on left ear) and Coordination (on right)

Command to display the current configuration:

AT&V1

4.8. System and test commands

AT#5AS

Description :

Activation or de-activation of 5A System.

Applicable to : all units

Format :

AT#5AS=*n*

n=0 : 5A System is disabled
n=1 : 5A System is active (default)

Command to display the current configuration:

AT&V0

AT#BAU_X

Description :

Control port bit rate selection.

Applicable to : HS3 / S3

Format :

AT#BAU_X=*n*

n=0 : 300 bauds,
n=1 : 1200 bauds,
n=2 : 2400 bauds,
n=3 : 4800 bauds.
n=4 : 9600 bauds.

Command to display the current configuration:

AT&V8

AT#PAR_X

Description :

Control port parity selection.

Applicable to : HS3 / S3

Format :

AT#PAR_X=*n*

n=0 : None,
n=1 : Even,
n=2 : Odd.

Command to display the current configuration:

AT&V8

AT#DAT_X

Description :

Control port number of bits selection.

Applicable to : HS3 / S3

Format :

AT#DAT_X=*i*

n=0 : 7 data bits,
n=1 : 8 data bits.

Command to display the current configuration:

AT&V8

AT#STO_X

Description :

Control port number of stop bits selection.

Applicable to : HS3 / S3

Format :

AT#STO_X=*n*

n=0 : 1 stop bit,
n=1 : 2 stop bits.

Command to display the current configuration:

AT&V8

AT#MAL

Description :

Alarm masking command

Applicable to : HS3 / S3 / S4 / S5 / SxS

Format :

AT#MAL*n=mmm*

n=1 : first alarm mask byte
mmm : binary mask (decimal format); each alarm is enabled if $b_i = 1$.
b0 (LSB) : Fuse failure
b1 :
b2 : Left decoder fault
b3 : Right decoder fault
b4 : Input overload
b5 : Data channel fault (DSP)
b6:
b7 (MSB): AES input fault

n=2 : second alarm mask byte
mmm : binary mask :
b0 :
b1 :
b2 :
b3 : Sampling rate error
b4 :

n=3 : Third alarm mask byte
mmm : binary mask :
b0 : Encoder 1 fallback
b1 : Decoder 1 fallback
b2 : Encoder 2 fallback
b3 : Decoder 2 fallback

Example:

AT#MAL1=255 *all alarms in the first group are enabled*
OK

Command to display the current configuration:

AT&V6

AT#BOU

Description :

This command activates a test loop.

Applicable to : all units except S+

Format :

AT#BOU=*n*

n=0 : no loopback,
n=1 : AD/DA loopback.
n=2 : « type 2 » loopback.
n=3 : « type 3 » loopback (or codec loopback).
n=4 : audio output to input loopback
n=5 : coding test (not implemented)

Command to display the current configuration:

AT#SUP

AT#RINGING

Description :

Masks or enables the "Ringing" event on a Scoop 4+ or Scoop 5.

Applicable to : S4 / S5 / SxS

Format :

AT#RINGING*i*=*m*

i = 1 : codec 1
i = 2 : codec 2

m = 0: Event is masked
m = 1: Event is enabled

Command to display the *actual* state of the masking

AT&V11

AT#CALLING

Description :

Masks or enables the "Calling" event on a Scoop 4+ or Scoop 5.

Applicable to : S4 / S5 / SxS

Format :

AT#CALLING*i*=*m*

i = 1 : codec 1
i = 2 : codec 2

m = 0: Event is masked
m = 1: Event is enabled

Command to display the *actual* state of the masking

AT&V11

AT#ESTABLISHED

Description :

Masks or enables the “Established” event on a Scoop 4+ or Scoop 5.

Applicable to : S4 / S5 / SxS

Format :

AT#ESTABLISHED*i=m*

i = 1 : codec 1
i = 2 : codec 2

m = 0: Event is masked
m = 1: Event is enabled

Command to display the *actual* state of the masking

AT&V11

AT#RELEASED

Description :

Masks or enables the “Released” event on a Scoop 4+ or Scoop 5.

Applicable to : S4 / S5 / SxS

Format :

AT#RELEASED*i=m*

i = 1 : codec 1
i = 2 : codec 2

m = 0: Event is masked
m = 1: Event is enabled

Command to display the *actual* state of the masking

AT&V11

4.9. Country configuration commands

AT#LAN

Description :

Displayed text language selection

Applicable to : HS3 / S3

Format :

AT#LAN=*n*

n= 0 Text displayed in French
n= 1 Text displayed in English

Command to display the current configuration:

AT&V5

AT#ISDN

Description :

Selection of the ISDN protocol.

Applicable to : all units

Format :

AT#ISDN=*n*

n = 0 :	France (VN6)	(HS3, S3, S4)
n = 1 :	ETSI (Euro ISDN)	(all)
n = 2 :	France (VN3)	(HS3, S3, S4)
n = 3 :	Japan (NTT)	(all)
n = 4 :	Australia	(HS3, S3, S4)
n = 5 :	Belgium	(HS3, S3, S4)
n = 6 :	France (VN2)	(HS3, S3, S4)
n = 7 :	Germany (1TR6)	(HS3, S3, S4)
n = 8 :	Japan (KDD)	(obsolete)
n = 9 :	Nortel (DMS100)	(S4)
n = 10 :	NI-2	(S4, S+)
n = 11 :	AT-T (5E10)	(S4)

Country-specific versions may have other mapping than above

Command to display the current configuration:

AT&V5

AT#POTC

Description :

Selection of the country for the POTS mode.

Applicable to : S4 / S5 / S+ / SxS

Format :

AT#POTC=*n*

n = 0 : France
n = 1 : North America
n = 2 : Japan
n = 3 : United Kingdom

Command to display the current configuration:

AT&V5

4.10. Memory management

AT#MER

Description:

Recall the codec configuration parameters from a memory.
Refer to the user manual for the list of parameters affected by this command.

Applicable to : HS3 / S3

Format:

AT#MER=*n*

n is the memory number (1 to 50)

AT#MEE

Description:

Store the current coding configuration in a memory.
Refer to the user manual for the list of parameters affected by this command.

Applicable to : HS3 / S3

Format:

AT#MEE=*n*

n is the memory number (1 to 50)

AT#MEN

Description:

Change the name (or label) of a memory.

Applicable to : HS3 / S3

Format:

AT#MEN*n***=***NAME*

n is the memory number (1 to 50)
The name must be max. 16 characters long. Only capital letters (low case are forced to capital letters).

AT#NAC

Description :

Memory operation mode control.

Applicable to : HS3 / S3

Format :

AT#NAC=*n*

n= 0	Common dial number set for all memories (i.e. memory recall does not affect the dial numbers)
n= 1	Each memory has its own dial number set

Example:

```
AT#NAC=1
OK
```

Command to display the current configuration:

```
AT&V9
```

4.11. Configuration and status display

AT&V0

Description :

Display of the current dial numbers, local numbers and answering modes.
The current settings for the auto-redial and the loop control features are also displayed.

Applicable to : all units

Format :

AT&V[**0**]

Example:

```
AT&V0

#NET=0          ==> ISDN
#NUM1=123456789*4444
#NUM2=123456789*4445
#NUM3=45632189
#NUM4=45632190
#NUM5=465128
#NUM6=465129
#NUM7=45632192
#NUM8=45632192
#LOC1=333
#LOC2=
#LOC3=
#LOC4=
#LOC5=
#LOC6=
#LOC7=
#LOC8=
#AUTO1=1
#AUTO2=1
#5AS=1 ==> On
#RED1=0         Auto-redial disabled on codec 1 (see AT#REDi)
#RED2=0
#LCT=0
#LLBC=5
#LLBR=0

OK
```

Number allocation :

1, 2, 3, 4, 5, or 6 for single codec mode
7 for the «1st codec» in dual codec mode
8 for the «2nd codec» in dual codec mode

AT&V1

Description :

Display of the codec and audio interfaces configuration.

Applicable to : all units

Format :

AT&V1

Example:

AT&V1

#TYP=3 ==> AES/EBU 48kHz (not returned by S+)
#SYNC=0 ==> AES Genlock (only returned by S4+/S5/SxS)
#AES=1 ==> AES 48 kHz (only returned by S4+/S5/SxS)
#FRE=0 ==> 48 kHz
#SEL=0 ==> NORMAL (single) (not returned by S+)
#SELIP=0 ==> NORMAL (single) (only returned by S5S)
#COD1=4 ==> MPEG Layer2 J52 / STEREO
#COD2=1 (only in double codec mode)
#CHD1=192 ==> 192 KB/S 3B
#CHD2=64 (only in double codec mode)
#COR=0 ==> MODE 0
#GIN=22
#GOUT=16
#ZIN=0 ==> 600 Ohm (only returned by S4/S5/SxS)
#IMP=0 ==> 600 Ohm (only returned by HS3 / S3)
#CHS1=1 (only returned by S+)
#CHS2=0 (only returned by S+)
#CHS3=1 (only returned by S+)
#USBA=0 (only returned by S+)
#GIS1=2 (only returned by S+)
#GIS2=0 (only returned by S+)
#GIS3=0 (only returned by S+)
#LIM1=1 (only returned by S+)
#LIM2=0 (only returned by S+)
#LIM3=0 (only returned by S+)
#PWR1=1 (only returned by S+)
#PWR2=2 (only returned by S+)
#PWR3=0 (only returned by S+)
#HPF1=1 (only returned by S+)
#HPF2=0 (only returned by S+)
#HPF3=0 (only returned by S+)
#CHR1=0 (only returned by S+)
#CHR2=2 (only returned by S+)
#CHR3=0 (only returned by S+)
#CPM=1 (only returned by S+)
#PAD3=1 (only returned by S+)
#OSEL=1 (only returned by S+)
#CCR1=0 (only returned by S+)
#CCR2=2 (only returned by S+)
#REP=0 (only returned by S5/S+)

OK

Warning: this example is a compilation of lines (#xxx=...) possibly included in the answer to the

command. Each line can be seen, but the whole combination as above is in fact impossible!

AT&V2

Description :

Display of the auxiliary functions configuration.

Applicable to : all units

Format :

AT&V2

Example:

```
AT&V2

#CDA=1 ==> ON
#STO=0 ==> 1 stop bit
#DAT=1 ==> 8 bits
#PAR=0 ==> None
#BAU=4 ==> 9600 bits/s
#VOR=0 ==> OFF          (not returned by S+)
#REL=1 ==> ACTIVE
#GPI1=0                 (S4 / S5 / S+ / SxS)
#GPI2=1                 (S4 / S5 / S+ / SxS)
#GPO1=0                 (S4 / S5 / S+ / SxS)
#GPO2=0                 (S4 / S5 / S+ / SxS)

OK
```

AT&V3

Description :

Display of codec alarms in the current language. Codec alarms are listed in free text format.

Applicable to : HS3 / S3 / S4

Format :

AT&V3

Example:

```
AT&V3

ALARM
    NO ALARM

OK
```

Note :

AT#SUP command is preferred for a management system in order to get numerical and language-insensitive codes.

AT&V4

Description :

Display of the possible bit rate settings for the current coding algorithm.

Applicable to : HS3 / S3

Format :

AT&V4

Example:

AT&V4

CHOICE

#CHD1=64 ==> 64 KB/S 1B
#CHD1=128 ==> 128 KB/S 2B
#CHD1=192 ==> 192 KB/S 3B
#CHD1=256 ==> 256 KB/S 4B
#CHD1=320 ==> 320 KB/S 5B
#CHD1=384 ==> 384 KB/S 6B

OK

AT&V5

Description :

Display of the current country configuration parameters.

Applicable to : all units

Format :

AT&V5

Example:

AT&V5

#LAN=1 ==> English
#ISDN=1 ==> Euro ISDN

OK

AT&V6

Description :

Display of alarm masks

Applicable to : HS3 / S3

Format :

AT&V6

Example:

AT&V6

#MAL1=255
#MAL2=255
#MAL3=255

OK

See AT#MAL command for the bit mapping in the masks.

AT&V7

Description :

Display of the negotiated codec configuration (during a connection):

Display of the encoder (COD)

- Algorithm
- Bit rate
- Possible error correction mode

Display of the decoder (DEC)

- Algorithm
- Bit rate
- Possible error correction mode

Applicable to : all units

Format :

AT&V7

Example:

```
AT&V7

CODEC 1:
COD:
#COD1=4 ==> MPEG Layer2 J52 / STEREO
#CHD1=192 ==> 192 KB/S  3B
#COR=0 ==> MODE 0
DEC:
#COD1=4 ==> MPEG Layer2 J52 / STEREO
#CHD1=192 ==> 192 KB/S  3B
#COR=0 ==> MODE 0

OK
```

AT&V8

Description :

Display of the control port configuration

Applicable to : HS3 / S3

Format :

AT&V8

Example:

```
AT&V8

#STO_X=0  ==> 1 stop bit
#DAT_X=1 ==> 8 bits
#PAR_X=0  ==> None
#BAU_X=4 ==> 9600 bits/s

OK
```

AT&V9

Description :

Display of the configuration of the incoming call filtering, plus the memory operation mode and the IP network configuration.

Applicable to : all units

Format :

AT&V9

Example:

AT&V9

#TAE=2 ==> Data calls
#TFS=1 ==> Proprietary
#NAC=0 ==> 1 global set (only HS3 / S3)
#HLC=1 ==> No (only HS3 / S3)
#NBR=0 ==> Infinite number of attempts for auto-redial is active
#TTR=5 ==> Time to redial is 5 seconds
#IPQ=1 ==> “IP Quality” setting is “Middle”
#DHCP=0
#IP=10.0.20.33
#IPM=255.255.255.0
#GW=10.0.20.254
#DNS=10.0.20.3
OK

AT&V10

Description :

Display a list of options installed in the unit

Applicable to : S4 / S5 / SxS

Format :

AT&V10

Example:

AT&V10

#PSTN=0 => POTS not installed
#NB_ISDN=1 => 1 ISDN interface (1B/2B)
#TDAC=0 => TDAC not installed
#TDAC_ASYMMETRIC=0 => “asymmetric TDAC” not installed
#AAC=1 => AAC option installed
#MOBILE=0 => Mobile option not installed

OK

Answer format: #OPTxx=n

n=0 : Option OPTxx not installed
n=1 : Option installed
For NB_ISDN: 0 => no ISDN interface, 1 => 1 ISDN line, 2 => 2 ISDN lines

AT&V11

Description :

Display the configuration of the events mask

Applicable to : S4 / S5 / SxS

Format :

AT&V11

Example:

AT&V11

#RINGING_1=1 => Event “Ring” active on codec 1
#CALLING_1=0 => Event “Calling” masked on codec 1
#ESTABLISHED_1=1 => Event “Established” active on codec 1
#RELEASED_1=1 => Event “Released” active on codec 1
#RINGING_2=1 => Event “Ring” active on codec 2
#CALLING_2=0 => Event “Ring” masked on codec 2
#ESTABLISHED_2=0 => Event “Ring” masked on codec 2
#RELEASED_2=1 => Event “Ring” active on codec 2

OK

Answer format: #EVENT_i=m

i=1 : Event on codec 1
i=2 : Event on codec 2
m=0 : Event type masked on codec i
m=1 : Event type active on codec i

AT&V20

Description :

Display audio levels

Applicable to : S4 / S5 / SxS

Format :

AT&V20

Example:

AT&V20

#LVL=20,18,3,4 => -20 dBFS on Tx left, ..., -4 dBFS on Rx right
OK

Answer format: #LVL=n,p,q,r

Level on Tx left = -n dBFS
Level on Tx right = -p dBFS
Level on Rx left = -q dBFS
Level on Rx right = -r dBFS
99 equivalent to -∞ (“total” silence)

AT&V21

Description :

Mobile network status display

Shows the registration status (0: not registered, 1: registered) and the current type of network the unit is registered to, among the following possible values:

GSM	(*2G*)
GPRS	(*2G*)
EDGE	(*2G*)
UMTS	(*3G*)
HSDPA	(*3G*)
HSUPA	(*3G*)
HSDPA/ HSUPA	(*3G*)
HSPA+	(*3G*)
LTE	(*4G*)
XXX	(*unknown status, error*)

Applicable to : S5 / S+ / SxS

Format :

AT&V21

Example:

AT&V21

#CREG=1	*Registered on the mobile network*
#CNTI=HSDPA	*=> Network is currently 3G technology (HSDPA)*
OK	

AT#SUP

This command is intended for use by a supervisory equipment. Answers to this command are independent on the selected language.

Description :

Global supervisory command. Allows single command interrogation of the device in order to acquire the equipment status and the current value of some configuration parameters.

General comments :

The position of some fields may be changed, and fields may be absent.
Future commands may be added.

Applicable to : all units

Format :

AT#SUP[*nnn*]

nnn is a binary mask (in decimal format) filtering the answer. For each bit b_i in the mask, the corresponding information is enabled if $b_i = 1$. If *nnn* is not specified, it defaults to 511 (all information display is enabled).

Mask bit to information type mapping:
b0 (LSB): current configuration number (*obsolete, see 6.5,AT#NCF, p. 40)*
b1 : test loops,
b2 : alarms,
b3 : codec status only,
b4 : codec and simple communication status,
b5 : codec and detailed communication status,
b6 : incoming call requests,
b7 : options available in the device,
b8 (MSB) : transmission errors monitoring (*obsolete,see 6.5,AT#PERF, p. 40)*

Format of the answer to a configuration number request (b0=1) :

CFG=0 (fixed answer)

Format of the answer to a test loops request (b1=1) :

BOU=*n*

n : loop type:
n=0 : no loop,
n=1 : AD/DA loopback.
n=2 : « type 2 » loop.
n=3 : « type 3 » loop.
n=4 : analogue output to input loopback
n=5 : coding test (not implemented)

Format of the answer to an alarm request (b2=1) :

ALA:D1=*x*,D2=*y*,D3=*z*

x : First alarm byte
b0 : Fuse failure (not returned by S+)
b1 :
b2 : Left decoder fault
b3 : Right decoder fault
b4 : Input overload
b5 : Data channel fault
b6 :
b7 : AES input fault (not returned by S+)

y : Second alarm byte
b0 :
b1 :
b2 :
b3 : Sampling rate error
b4 :

z : Third alarm byte
b0 : Encoder 1 fallback
b1 : Decoder 1 fallback
b2 :
b3 :
b4 : Encoder 2 fallback (not returned by S+)
b5 : Decoder 2 fallback (not returned by S+)

Format of the answer to a communication status request (b3=1,b4=1,b5=1) :

COD1:S=*s* (*information for codec 1*)
–C1=*x***,N1=***Num*SA***,CLS=***y***,VAL=***z*
…
-Ci=*x***,Ni=***Num*SA***,CLS=***y***,VAL=***z* (*when significant*)
COD2:S=*s* (*information for codec 2, for dual codec mode only*)
–C1=*x***,N1=***Num*SA***,CLS=***y***,VAL=***z*

s : codec status:
0 : idle
1 : Call : 1st call in progress
2 : Call : 1st call connected
3 : Call : negotiating
4 : Call : connecting other channels
5 : Answer : 1st call waiting for manual answer
6 : Answer : 1st call in progress
7 : Answer : 1st call connected
8 : Answer : negotiating
9 : Answer: other channels connected
10 : End of negotiation
11 : All links established (All links needed for the codec are done)
12 : Disconnection in progress
13 : Codec disconnection request
14 : Wait for codec disconnection acknowledgement
15 : Outgoing call request under process

i : Number of a connection/B channel (i = 1 to 6)

x : Status of a connection/B channel link
0 : Idle connection
1 : Call in progress
2 : Search
3 : Ring
4 : Connection
5 : Disconnection request
6 : Disconnection
7 : Connected outgoing call (only for S4/S5)
8 : Connected incoming call (only for S4/S5)
Num : ISDN number of the remote terminal for this ISDN connection.

SA: Sub-Address of remote terminal for this ISDN connection.

Y : ISDN error class describing last call failure.
Z : ISDN error code describing last call failure.
Note: x and y are reset to zero at beginning of any call.

A zero on bit b4 hides the status of the connections (-Ci…), thus displaying the codec status only.
A zero on bit b5 deletes the following fields in the connection status lines (-Ci…):
,Ni=Num*SA,CLS=y,VAL=z.

Format of the answer to an incoming call status request (b6=1) :

ENT:APPEL1=*x***,APPEL2=***x* (,APPEL2=x only appears in dual codec mode)

x : 0 = No incoming call waiting
1 = Incoming call waiting

Format of the answer to a request for available options (b7=1) :

USI: DEP=1,AES=*b***, V8K=***c***,FIL=***d***,DSP=0,RSC=1,AL3=***g***,TDA=***h***,A64=0,CCS=1**

b : 0 = AES interface module absent
1 = AES interface module installed

c : 0 = Auxiliary audio channel absent
1 = Auxiliary audio channel installed

d : Number of available BRI / ISDN interfaces (d = 1 to 3)

g : 0 = MPEG Layer 3 not available
1 = MPEG Layer 3 installed

h : 0 = TDAC not available
1 = TDAC option installed

Format of the answer to a transmission error monitoring request (b8=1) : (HS3 / S3)

PERF:
-DMIN=*x***,***y***,**

This information should be ignored as it relates to a deleted function

Example:

In this example, the codec is equipped with 3 BRI, and includes an AES interface module. A connection is established in single codec mode at 192 kbit/s (3 B channels).

```
AT#SUP254
BOU=0
ALA:D1=0,D2=0,D3=0
COD1:S=11
-C1=4,N1=0145236852,CLS=0,VAL=0
-C2=4,N2=0145236852,CLS=0,VAL=0
-C3=4,N3=0145236853,CLS=0,VAL=0
-C4=0,N4=,CLS=0,VAL=0
-C5=0,N5=,CLS=0,VAL=0
-C6=0,N6=,CLS=0,VAL=0
ENT :APPEL1=0
USI:DEP=1,AES=1,V8K=0,FIL=3,DSP=0,RSC=1,AL3=1,TDA=1,A64=0,CCS=1
OK
```

Notes :

AT#SUP is the only command that can be sent after a ATDSi dialling command waiting for CONNECT or NO CARRIER. It can thus be used at this time to monitor outgoing calls.

For Scoop4+, Scoop 5 or Scoopy+, only AT#SUP is allowed.

5. AT command answers

5.1. Answer messages

OK	Command is processed normally
ERROR (*n*)	Command error, error code = n
NOPASSWD	Password missing for this command (control session not opened)
CONNECT 1	Connected on codec 1
CONNECT 2	Connected on codec 2
NOCARRIER 1	Disconnected on codec 1
NOCARRIER 2	Disconnected on codec 2
TRANSPARENT	Ready for software download on DSP board

5.2. Unsolicited event messages

Some messages are sent by the unit without being solicited by an AT command; such messages are event-driven, i.e. are triggered by an event.

It is possible to set each event type as masked or enabled, using suitable commands (see above in 4.8. System and test commands).

$RINGING_i	Incoming call received on codec i (i = 1 for codec 1, 2 for codec 2)
$CALLING_i	Outgoing call initiated on codec i (i = 1 for codec 1, 2 for codec 2)
$ESTABLISHED_i	Connection established on codec i (i = 1 for codec 1, 2 for codec 2)
$RELEASED_i	Connection released on codec i (i = 1 for codec 1, 2 for codec 2)

Event messages are not sent by S3 and HS3.

5.3. Messages for audio levels

These messages are sent periodically using UDP, without being solicited by an AT command.

The destination address and port, and the refresh interval are set using the command AT#VISU (see above in 4.4. IP network settings, page 19).

Message format: $BAR=*n,p,q,r*

Level on Tx left = -n dBFS
Level on Tx right = -p dBFS
Level on Rx left = -q dBFS
Level on Rx right = -r dBFS
99 equivalent to -∞ ("total" silence)

Example:

$BAR=20,18,3,4 => -20 dBFS on Tx left, ..., -4 dBFS on Rx right

5.4. Error codes

1	"=" sign missing
2	Too long ISDN number
3	Too long ISDN sub-address
4	Parameter out of boundaries
7	Unknown command
10	Unavailable loop
20	Command applicable to unavailable second codec
21	Invalid because the codec is busy (connection running)
22	Dial number(s) missing for a call
23	Invalid because the codec is idle (no connection running)
24	Wrong codec number
25	Inconsistent selection (type 1)
26	Inconsistent selection (type 2)
27	Inconsistent selection (type 3)
30	Codec 2 unavailable
31	Incorrect bit rate/B channel number
40	Back on line requested for disconnected equipment
50	Command not available in remote maintenance operation
51	Missing password
52	Codec initialisation in progress
53	Invalid password
60	single/dual communication switching not allowed in remote operation.
70	No incoming call on this CODEC

1	"=" sign missing
2	Too long ISDN number
3	Too long ISDN sub-address
4	Parameter out of boundaries
7	Unknown command
10	Unavailable loop
20	Command applicable to unavailable second codec
21	Invalid because the codec is busy (connection running)
22	Dial number(s) missing for a call
23	Invalid because the codec is idle (no connection running)
24	Wrong codec number
25	Inconsistent selection (type 1)
26	Inconsistent selection (type 2)
27	Inconsistent selection (type 3)
30	Codec 2 unavailable
31	Incorrect bit rate/B channel number
40	Back on line requested for disconnected equipment
50	Command not available in remote maintenance operation
51	Missing password
52	Codec initialisation in progress
53	Invalid password
60	single/dual communication switching not allowed in remote operation.
70	No incoming call on this CODEC

6. AT command alphabetical list

Syntax	Function	Category
AT#5AS=n	Activation of 5A System	System and test commands
AT#AES	AES interface sampling frequency	Audio configuration
AT#AUTOi=n	Automatic answering mode	Call control
AT#BAU_X=n	Control port baud rate	System and test commands
AT#BAU=n	Data channel baud rate	Auxiliary functions configuration
AT#BOU=n	Test loops	System and test commands
AT#CALLING_i=m	Configure "Calling" events	System and test commands
AT#CCRi=n	Coordination channel routing	Audio configuration
AT#CDA=n	Data channel activation	Auxiliary functions configuration
AT#CHDi=n	Coding bit rate selection	Coding configuration
AT#CHRi=n	Mic/Line input routing	Audio configuration
AT#CHSi=n	Channel switch	Audio configuration
AT#CLK=n	Clock mode	Coding configuration
AT#CODi=n	Coding algorithm selection	Coding configuration
AT#COP=n	Copyright configuration (MPEG)	Coding configuration
AT#COR=n	Error correction mode (MPEG)	Coding configuration
AT#CPM=n	Channel panning mode	Audio configuration
AT#DAT_X=n	Control port bit number	System and test commands
AT#DAT=n	Data channel bit number	Auxiliary functions configuration
AT#DHCP=n	Addressing mode DHCP/static	IP network settings
AT#DIA=n	Dial method	Call control
AT#DNS=n.p.q.r	DNS address (static IP mode)	IP network settings
AT#ESTABLISHED_i=m	Configure "Established" events	System and test commands
AT#EXI	Closure of a control session	Session and password management
AT#FRE=n	Coding sampling rate selection	Coding configuration
AT#GIN=n	Maximum input level configuration	Audio configuration
AT#GISi=n	Mic/Line input gain select	Audio configuration
AT#GOUT=n	Maximum output level configuration	Audio configuration
AT#GPIi=n	Force state of a GPI	Auxiliary functions configuration
AT#GPOi=n	Force state of a GPO	Auxiliary functions configuration
AT#GW=n.p.q.r	Default gateway (static IP mode)	IP network settings
AT#H[n]	On line help	General commands
AT#HLC=n	HLC enabling	Call control
AT#HPFi=n	Mic/Line input HP filter	Audio configuration
AT#IMP=n	Output load impedance selection	Audio configuration
AT#IP=n.p.q.r	IP address of equipment (static mode)	IP network settings
AT#IPM=n.p.q.r	Sub-network mask (static IP mode)	IP network settings
AT#IPQ=n	IP network quality	IP network settings
AT#ISDN=n	ISDN protocol selection	Country configuration commands
AT#LAN=n	Display language selection	Country configuration commands

Syntax	Function	Category
AT#LCT=n	Loop control mode	Call control
AT#LEV=n	Line level	Coding configuration
AT#LIMi=n	Channel limiter activation	Audio configuration
AT#LLBC=n	Backup call for LL backup	Call control
AT#LLBR=n	Backup receive mode for LL backup	Call control
AT#LOCn=nnnn*sss	Local number and sub-address setting	Call control
AT#MALn=m	Alarm mask programming	System and test commands
AT#MEE=n	Store a configuration memory	Memory management
AT#MENn=NAME	Name a configuration memory	Memory management
AT#MER=n	Recall a configuration memory	Memory management
AT#NAC=n	Memory operation mode	Memory management
AT#NBR=n	Redial, number of retries	Call control
AT#NET=n	Selection of active transmission interface	Call control
AT#NPW=password	New password programming	Session and password management
AT#NUMn=nnnn*sss	Dial number and sub-address programming	Call control
AT#ORI=n	Original/Copy configuration (MPEG)	Coding configuration
AT#OSEL=n	Output signal selection	Audio configuration
AT#PADi=n	Mic/Line input attenuation pad	Audio configuration
AT#PAR_X=n	Control port parity	System and test commands
AT#PAR=n	Data channel parity	Auxiliary functions configuration
AT#POTC=n	POTS line country selection	Country configuration commands
AT#PWD=password	Opening of a control session	Session and password management
AT#PWRi=n	Mic/Line input powering	Audio configuration
AT#REDi=n	Auto redial mode	Call control
AT#REL=n	Relay transmission activation	Auxiliary functions configuration
AT#RELEASED_i=m	Configure "Released" events	System and test commands
AT#REP=n	Packet duplication mode	IP network settings
AT#RINGING_i=m	Configure "Ringing" events	System and test commands
AT#SEL=n	Single/Dual codec mode	Coding configuration
AT#SMS="string"	Send message to front panel display	Auxiliary functions configuration
AT#SPD=n	Speed	Coding configuration
AT#STO_X=n	Control port stop bits	System and test commands
AT#STO=n	Data channel stop bits	Auxiliary functions configuration
AT#SUP[n]	Global supervisory command	Configuration and status display
AT#SYNC	AES interface synchronization mode	Audio configuration
AT#TAE=n	Incoming calls filtering	Call control
AT#TFS=n	Proprietary call filtering	Call control
AT#TON=n	Dial tone	Call control
AT#TTR=n	Redial, time to redial	Call control

Syntax	Function	Category
AT#TYP=n	Audio interface format selection	Audio configuration
AT#USBA=n	USB audio input switch	Audio configuration
AT#VISU=n.p.q.r:port time	Configure periodic audio level packets	IP network settings
AT#VOR=n	Auxiliary audio channel	Auxiliary functions configuration
AT#ZIN	Input impedance selection	Audio configuration
AT&V[0]	Dial numbers, local numbers and answering modes display	Configuration and status display
AT&V1	Codec and audio interface configuration display	Configuration and status display
AT&V10	Display list of installed options	Configuration and status display
AT&V11	Display events mask	Configuration and status display
AT&V2	Auxiliary functions configuration display	Configuration and status display
AT&V20	Get audio levels	Configuration and status display
AT&V21	Mobile network status	Configuration and status display
AT&V3	Codec alarms display	Configuration and status display
AT&V4	Available bit rates	Configuration and status display
AT&V5	Country configuration display	Configuration and status display
AT&V6	Alarm masks display	Configuration and status display
AT&V7	Negotiated codec configuration display	Configuration and status display
AT&V8	Control port configuration display	Configuration and status display
AT&V9	Display incoming calls filtering and IP network configuration	Configuration and status display
ATAn	Accept an incoming call	Call control
ATDS[n]	Call initiation	Call control
ATEn	Local echo control	General commands
ATH[n]	Link termination	Call control
ATI[n]	Equipment identification	General commands
ATZ	Reset the device	General commands