



bintec 4Ge-LE

Monitoring

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Chapter 1 Monitoring via the console

To access the monitoring console of the **bintec 4Ge-LE**, you must use a telnet session through the IP address that it has been assigned using DHCP. To access using telnet the default user is *monitor* and the password is *teldat*.

Once we have accessed the monitoring console, the following commands are available:

```
4Ge login...
User: monitor
Password: *****
bintec elmeg                (c)2001-2010
Router model 4Ge 35 1 CPU QorIQ P101X S/N: 809/00133
1 LAN, 1 WWAN Line
CIT software version: 11.00.02 Oct 11 2013 17:06:18
4Ge *?
  logout      Ends the Telnet connection established with the device
  monitor     Monitor the state of the system
  restart     Restart the device
4Ge *
```

By using the **monitor** command, we can access the monitoring menu. Here we can check the status of the interfaces, statistics, connection data, etc.

```
4Ge *monitor
Console Operator
4Ge +?
  buffer      Packet buffers assigned to each interface
  clear       Clear network statistics
  configuration List status of current protocols and interfaces
  device      List statistics for the specified interface
  error       List error counters
  event       Event Logging System environment
  log         Dump log data
  memory      Display memory, buffer and packet data
  network     Enter the console environment of a specified network
  protocol    Enter the commands environment for a specified protocol
  queue       Display buffer statistics for a specified interface
  statistics  Display statistics for a specified interface
  system      Permit monitoring of the system's memory and stacks
4Ge +
```

To obtain further information about monitoring the different interfaces and protocols that the device has, we recommend you consult the following manuals: *bintec-Dm781 "Cellular Interface"*, *bintec-Dm730 "DHCP Protocol"* and the *bintec-Dm750 "Ethernet Subinterface"*.

1.1 WWAN Monitoring

By accessing the monitoring menu of the **cellular1/0** interface we can check various data for the 4G module.

```
4Ge +network cellular1/0
-- AT Console --
4Ge cellular1/0 AT+?
  at-mode     Send AT commands directly to the module
  buffer      Display saved commands and answers
  command     Send AT command to the module
  list        List interface and module parameters
  module      Module related commands
  network     3G Network related commands
  power-module Module power control
  reset       Send reset command
  exit
4Ge cellular1/0 AT+
```

With the **list** command we can list this data.

```
4Ge cellular1/0 AT+list
Daughter Board           = CELLULAR LTE/WCDMA/CDMA-EVDO DATA card
Module Manufacturer      = Novatel Wireless Incorporated
Module Model             = E371 WWAN
Module Firmware          = 3.26 SVN 0 [2011-11-07 13:14:59]
IMEI                     = 012773000150969
IMSI                     = 214019804706344
SIM Card ID              = 8934569820709205294
Drop by ping failed      = 0
Drop by tracert failed   = 0
Drop by traffic failed   = 0
Dialers registered      = none
Current dialer registered = none
State                    = (1) DISCONNECT
Call request             = 0
Telephone number         =
Total connection time    = 0 seconds
Current connection time  = 0 seconds
Time to establish connection = 0 sec
4Ge cellular1/0 AT+
```

With the **network** command we can obtain information about the wireless network that we are connected to.

```
4Ge cellular1/0 AT+network ?
cell-info      Display information about serving and neighbour cells
operator       Operator information menu
performance    Display signal quality samples
quality        Display RSSI value
status         List GPRS/UMTS connection status
4Ge cellular1/0 AT+
```

For example, we can check the cell that we are registered with using the **network cell-info** command.

```
4Ge cellular1/0 AT+network cell-info
Querying...Please wait...
      UARFCN PSC ECIO(-dBm) RSCP(-dBm)
      -----
Serving Cell: 10738 376          4          72
4Ge cellular1/0 AT+
```

We can also check the network signal strength and the technology being used by the module using the **network status** command.

```
4Ge cellular1/0 AT+network status
Querying...Please wait...
Registration state: Home network
PLMN Public Land Mobile Network code: 21401
PLMN Public Land Mobile Network name: Vodafone
Cell Location Area Code 0x430e (17166), Identification 0x0c03 (3075)
System Mode WCDMA
Available module bands:
"GSM850","GSM900","GSM1800","GSM1900","UMTS850","UMTS1900","UMTS2100" (00df)
Available band: "UMTS2100"
Network technology currently in use: HSDPA/HSUPA
UTRAN Radio Frequency Channel Number: 10738
Receive signal code power of the active set's strongest cells(RSCP): -72 dBm
Total energy per chip per power density value of set's strongest cells(EcIo): -4 dB
Last EcIo measured in WCDMA DATA mode: -4 dB
Primary Scrambling Code (PSC) 0x0178 (376)
RRC State: 3 - CELL_PCH
RX level (dBm):-75
Coverage level: 4 (**** )
4Ge cellular1/0 AT+
```

By using the **network performance** command we show the graphical representations of the three parameters that help to choose the best location for the device.

```
4Ge cellular1/0 AT+network performance
Rx_Level (-dBm) measured during the last 60 samples
```

RSCP (-dBm) measured during the last 60 samples

EcIo (-dB) measured during the last 60 samples

4Ge cellular1/0 AT+

In the monitoring menu of the **cellular1/1** interface we can check the data of the connection to the cellular network.

```
4Ge cellular1/1 NIC+
```

```
4Ge cellular1/1 NIC+list
```

```

Drop by ping failed      = 0
Drop by tracert failed   = 0
Drop by traffic failed   = 0
Dialers registered      = PROFILE
Current dialer registered = PROFILE
State                   = (8) CONNECT
Call request            = 3
Access Point Name       = airtelnet.es
Total connection time   = 5 days 18 hours 15 minutes 21 seconds
Current connection time = 1 day 16 hours 37 minutes 57 seconds
Time to establish connection = 15 sec
Hardware Interface address = 00A0C6000000
Low layer link state     = Up
IP Interface addr.(reported) = 62.87.46.77
DNS primary server address = 0.0.0.0
DNS secondary server address = 0.0.0.0
4Ge cellular1/1 NIC+

```

We can also check the statistics of the data connection to the cellular network using the **statistics layer3-stats** command.

```

4Ge cellular1/1 NIC+statistics layer3-stats
Total
Rx pkts:      546191   Tx pkts:      486919
Rx bytes:    431009881 Tx bytes:    109615653
Throughput (bps)
Last sec  Rx:      0   Tx:      0
Last 1 min Rx:      0   Tx:      156
Last 5 min Rx:      0   Tx:      109
4Ge cellular1/1 NIC+

```

By using the **bitrate** command we can see in real-time the transmission and reception bitrate.

```

4Ge cellular1/1 NIC+bitrate
      Interface cellular1/1
Trx rate ( bps/pps)  Rcv rate ( bps/pps)
-----
    2328/    1      2480/    1
    9496/    4      7440/    3
   21144/   13      2400/    4
  150064/   97     619376/  101
  225760/  177     1758152/  212
  276488/  169     2301688/  248
  257432/  186     1024912/  168
  297296/  236     1381712/  246
      0/    0        0/    0
4Ge cellular1/1 NIC+

```