



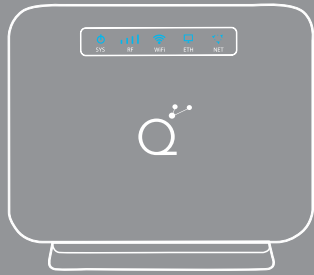
# Quantum Access Q6

## Modem LTE inalámbrico

### Technical Specs

4G LTE  
CAT 4

Wi-Fi



|   |  |  |
|---|--|--|
| <b>General Information</b>              | TYPE (Specify type and technology: Handset, Modem, Router, MiF,... 2G, 3G, 4G, etc.)<br>BRAND<br>MODEL<br>COMMERCIAL NAME<br>SW VERSION<br>HW VERSION  | CPE - LTE (Customer Premises Equipment)<br><br>QUANTUM CONNECTIVITY<br>Access Q6<br>Access Q6<br>Access Q6_ALTAN Ver 1.10<br>V1.0  |
| <b>SIM</b>                              | SIM TYPE (Normal 2FF, MicroSIM 3FF, NanoSIM 4FF)<br>SINGLE SIM / DUAL SIM support  | 2FF<br>Single SIM  |
| <b>Chipset</b>                          | BRAND<br>MODEL<br>NUMBER OF CORES & SPEED  | ZTE<br>ZX297520V3E<br>Cortex-A53 Dual, 624MHz/Cortex-A53   |
| <b>S.O</b>                              | OPERATIVE SYSTEM & VERSION   | Linux 3.4.110  |
| <b>Supported Technologies and Bands</b> | 2G - GSM (Supported bands -MHz)<br>3G - UMTS (Supported bands - MHz)<br>4G - LTE (Supported bands - MHz)<br><br>NB-IoT<br>CatM   | Not supported<br>B11 (1900) & B1 (850) MHz<br>FDD: B2 (1900)/B4 (AWS)/B5 (850)/B7(2600) /B28a&b(700 -APT)/<br>B66 (1700+) MHz<br>Not supported<br>Not supported  |
| <b>Release 3GPP</b>                     | UMTS - HSDPA - Release, Category & DL/UL Speed<br>UMTS - HSUPA - Release, Category & DL/UL Speed<br>DC-HSDPA (Supported-Enabled / Supported-Disabled / Not Supported)<br>DC-HSUPA (Supported-Enabled / Supported-Disabled / Not Supported)<br>GSM - GPRS CLASS AND DL/UL SPEED<br>GSM - EDGE CLASS AND DL/UL SPEED<br>3GPP RELEASE (Access Stratum Release)<br>LTE - DL Category - DL Speed / UL Category - UL Speed   | DL 14.4Mb/s(Category 10), DL 21Mb/s(Category 14)<br>UL 5.76Mb/s(Category 6)<br>Not supported<br>Not supported<br>Class 10, Max 85.6kbps(DL)/85.6kbps(UL)<br>Class 12, EDGE: Max 236.8kbps(DL)/236.8kbps(UL)<br>Cat 4 / Release 9<br>150Mbps(DL)/50Mbps(UL)   |
| <b>Throughput</b>                       | 16QAM DL (Supported-Enabled / Supported-Disabled / Not Supported)<br>64QAM DL (Supported-Enabled / Supported-Disabled / Not Supported)<br>256QAM DL (Supported-Enabled / Supported-Disabled / Not Supported)<br>16QAM UL (Supported-Enabled / Supported-Disabled / Not Supported)<br>64QAM UL (Supported-Enabled / Supported-Disabled / Not Supported)<br>MIMO 2x2 (Supported-Enabled / Supported-Disabled / Not Supported)<br>MIMO 4x4 (Indicates in which LTE Bands supports MIMO 4x4)<br>CARRIER AGGREGATION 2CC (DL)<br>CARRIER AGGREGATION 3CC (DL)<br>CARRIER AGGREGATION 4CC (DL)<br>CARRIER AGGREGATION CA_28C (DL)<br>MAXIMUM NUMBER OF COMPONENT CARRIERS IN DL<br>MAXIMUM NUMBER OF COMPONENT CARRIERS IN UL  | Supported<br>Supported<br>Not supported<br>Supported<br>Not supported<br>Supported<br>Not supported<br>Not supported<br>Not supported<br>Not supported<br>Not supported<br>Not supported<br>Not supported  |
| <b>IMS</b>                              | VoLTE (Supported-Enabled / Supported-Disabled / Not Supported)<br>ViLTE(Supported-Enabled / Supported-Disabled / Not Supported)<br>VoWiFi (Supported-Enabled / Supported-Disabled / Not Supported)   | Not supported<br>Not supported<br>Not supported  |
| <b>Main Features</b>                    | IP PROTOCOL DEFAULT (IPv4 only, IPv6 only, Dual Stack IPv4/IPv6)<br>RAM MEMORY (list all existing versions)<br>INTERNAL MEMORY (Specify total capacity and capacity available for end user) (list all existing versions)<br>EXTERNAL MEMORY (Specify total capacity)<br>Device screen: Size and Type<br>GSMA TAC number<br>BACK CAMERA (Megapixels) (list all existing versions)<br>FRONT CAMERA (Megapixels) (list all existing versions)<br>FLASH SUPPORT (BACK / FRONTAL)<br>Fingerprint recognition<br>Dual Band in WiFi (2.4GHz / 5GHz)<br>TR069 (Visible & Editable)<br>APN CORRECTION (apn could be corrected by network)<br>NITZ<br>SPN & ONS support (From SIM Card)<br>RADIO FM (Internal antenna or headphones antenna)<br>BLUETHOOT (Version)<br>Wi-Fi (Version 802.11 a/b/g/n)<br>HOTSPOT<br>SMS<br>BATTERY (MiliAmperes & Volts) / REMOVABLE OR INTERNAL | Dual Stack (IPv4/IPv6)<br>64MB<br>Total capacity 128MB, available capacity > 40MB<br><br>Not supported<br>Not supported<br>On behalf of Quantum Connectivity (35750042)<br>Not supported<br>Not supported<br>Not supported<br>Not supported<br>2.4GHz<br>Supported<br>Supported<br>Supported<br>Supported<br>Not supported<br>Not supported<br>802.11 b/g/n<br>Supported<br>Supported<br>Not supported |
| <b>Dimensions and Ports</b>             | DEVICE SIZE (Lenght x Width x Height)<br>Weight (Gr)<br>KEYBOARD TYPE<br>Available Ports (USB, WAN, LAN, etc.)   | 150*127*45mm<br>180g<br>Not supported<br>1xRJ45(LAN/WAN)<br>1xRJ11 (Optional)  |
| <b>Messaging services</b>               | MENSAJES MULTIMEDIA (MMS)<br>E-MAIL<br>SMS 7 & 8 BITS support<br>MULTIMEDIA MESSAGES (MMS)<br>SMS via LTE<br>SMS Concatenated (not mms)<br>SMS via 2G, 3G  | Not supported<br>Not supported<br>Supported<br>Not supported<br>Supported<br>Supported<br>Supported  |
| <b>Audio Codecs</b>                     | 2G - GSM AUDIO CODECS (AMR,AMRFR,ETC)<br>3G - UMTS AUDIO CODECS (AMR,AMRFR,ETC)<br>4G - LTE AUDIO CODEC (AMR-NB / AMR-WB)  | Not supported<br>Not supported<br>Not supported  |
| <b>SIM</b>                              | SDN support (From SIM Card)<br>SIMLOCK BY MCC/ MNC support<br>SIMLOCK BY EF GID 1 / EF GID 2<br>SIM Voltage supported<br>OTA SMS<br>OTA HTTP<br>Preferred networks<br>CLIENTE ANDSF (Access Network Discovery and Selection Function)  | Supported, but need on depth test<br>Supported<br>It can be developed by formal request of any ALTAN - MVNO<br>Supported<br>Supported<br>Supported<br>Supported<br>Not supported   |

\*La información técnica descrita en este documento es una propuesta la cual puede ser actualizada en un futuro próximo.  
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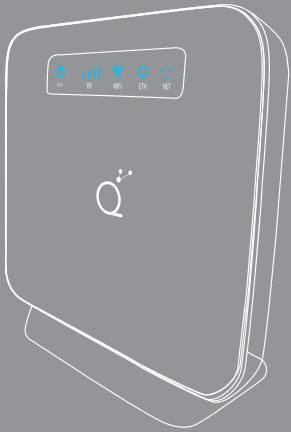
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### Functionalities

|  |  |
|--|--|
| VIDEO PLAYER                           | Not supported                              |
| VIDEO RECORDER                         | Not supported                              |
| VOICE RECORDER                         | Not supported                              |
| AGPS                                   | Not supported                              |
| GPS                                    | Not supported                              |
| PTT                                    | Not supported                              |
| LOUDSPEAKER                            | Not supported                              |
| IMAGE, AUDIO & VIDEO (files supported) | Not supported                              |
| LED Indicators                         | Supported (SYS, RSSI bars, WIFI, ETH, NET) |

### Connectivity

|  |                                 |
|--|---------------------------------|
| LPP protocol support                               | Not supported                   |
| LBS 2G, 3G ,4G (Location based services - Support) | Not supported                   |
| PROTOCOL SUPPORT EAP-SIM / EAP-AKA                 | Supported                       |
| HDMI   | Not supported                   |
| MODEM (USB Cable)                                  | USB Cable                       |
| Tethering via Bluetooth                            | Not supported                   |
| WIFI OFFLOADING (ENABLED /SUPPORTED)               | Not supported                   |
| USB (Support modes , photo, sharing, HDD)          | Not supported                   |
| WAP  | Not supported                   |
| XHTML  | Not supported                   |
| HTTPS  | Not supported                   |
| HTML   | Not supported                   |
| WEB  | Not supported                   |
| WEB BROWSER  | Not supported                   |
| VoIP (Supported/enabled)?                          | Not supported                   |
| NFC Support  | Not supported                   |
| USSD   | Supported                       |
| Tool for traces (Name)                             | Supported, zCAT tool            |
| SW UPDATE (Remote, via PC, etc)                    | FOTA using own QUAMTUM platform |

### 3GPP Features

|   |                                     |
|---|-------------------------------------|
| CPC   | Supported, but need on depth test   |
| RECEIVER TYPE 3i  | Not supported                       |
| ENHANCED F-DPCH & SRBoHS  | Supported, but need on depth test   |
| Cell_PCH and URA_PCH  | Supported                           |
| EVS   | Not supported                       |
| PC/CS Multirab establishment                                      | Supported                           |
| TTI Bundling  | Supported                           |
| RLC segmentation  | Supported                           |
| Different MCS usage   | Supported                           |
| SPS - Semi-persistent scheduling                                  | Supported                           |
| RoHC - Robust overHead Compression                                | Supported                           |
| Handover intra eNodeB/inter eNodeB / inter-Frequency / inter-RAT  | Supported                           |
| Redirection to UTRAN  | Supported                           |
| SRVCC (Telcel / ATT Network)                                      | Supported                           |
| CSFB w/measurements   | Supported                           |
| Short DRX   | Supported                           |
| C-DRX (Connected Mode DRX)  | Supported                           |
| MFBI  | Supported                           |
| TM9   | Not supported                       |
| LAA   | Not supported                       |
| CIRCUIT SWITCH CALL FALLBACK SUPPORT(CSFB)                        | Supported                           |
| IRAT ( UTRAN, GERAN con PS HANDOVER)                              | Supported                           |
| FAST DORMANCY (rel 8 3gpp support)                                | Supported                           |
| SRBoHS  | Supported, but need on depth test   |
| E-FACH (HS_FACH, HS_RACH, e_DRX)                                  | Supported, but need on depth test   |
| VAMOS I&II  | Not supported                       |
| SUPPORT BIP (BEARER INDEPENDENT PROTOCOL)                         | Supported                           |
| BIP Client Supported: UDP/ TCP                                    | Supported                           |
| SOPORTE DE MODO TRANSPARENTE (Alpha ID = NULL o NO Alpha ID)      | Supported                           |
| OPEN CHANNEL  | Supported                           |
| CLOSE CHANNEL   | Supported                           |
| RECEIVE DATA  | Supported                           |
| SEND DATA   | Supported                           |
| REFRESH   | Supported                           |
| GET CHANNEL STATUS  | Supported                           |
| Handset requirement: A BIP-capable SIM Toolkit handset, "class e" | Not supported, This is CPE product. |
| BIP Channels supported  | Supported                           |

### CPE, MiFi, Routers

#### CPE , Mifi data

#### Mandatory

- Protocol TR069 suport and data models: TR098
- TR-069 Amendment 1,2,3,4,5 – CPE WAN Management Protocol
  - TR-098 – Internet Gateway Device Data Model for TR-069
  - TR-104 – LTE/WiMAX Home™ Provisioning Parameters for VoIP CPE/UE
  - TR-106– Data Model Template for TR-069 Enabled Devices - provides the template for extending TR-069 remote management to other digital home devices
  - TR-111/TR-069 Annex G and K – Applying TR-069 to Remote Management of Home Networking Devices - makes it easier for an auto-configuration server (ACS) to interact with home-based devices that live behind a NAT router
  - TR-110 Issue 1.01 - DSLHome™ Reference Models for VoIP Configurations in the DSL Home
  - TR-135 – Data Model for a TR-069 Enabled STB
  - TR-140 Issue 1.1 - TR-069 Data Model for Storage Service Enabled Devices
  - TR-142 – Framework for TR-069 enabled PON devices
  - TR-143 – Specifies diagnostics objects for use in data models
  - TR-156 – Using GPON Access in the context of TR-101
  - TR-157 – Specifies Component objects for use in data models
  - TR-181i1 - Specifies Device:1
  - TR-181i2 - Specifies Device:2
  - TR-196 - Femto Access Point Service Data Model



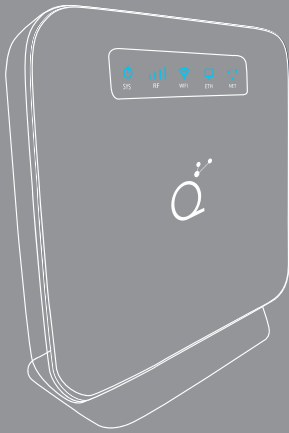
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|                 |   |  |
|-----------------|---|--|
|                 | Enabled and editable menu to enter URL ACS Server, user and password and Periodic Inform Interval. But Support limited access to restrict/disable this sensitive settings from the LAN Side   | Supported  |
|                 | Protocol STUN or XMPP support   | Partially supported, need to know the detail requirement                                   |
|                 | Support real-time update of this hosts list including connected devices and relevant parameters (MAC, IP, description, speed)   | Supported  |
|                 | LTE Statistics:<br>- WAN/LAN Statistics (Packet Drops/Lost/Sent/Received)<br>- WAN/LAN bandwidth utilization/allocation<br>- Uplink/Downlink data rates<br>- IMSI<br>- IMEI<br>- MSISDN<br>- Cell ID<br>- RSRP<br>- RSRQ<br>- SINR<br>- CQI<br>- RSCP<br>- RSSI<br>- CPE Tx power<br>- CPU usage<br>- Memory usageRSRQ<br>- Connection time (retention) to network and additional WIFI Statistics (neighbor's channels, noise level, etc) | Supported  |
|                 | Support active and passive notifications  | Supported  |
|                 | Support device diagnostics: speed test (ping, DSL, ATM Loopback, DNS diagnostics, Trace, etc)   | Partially supported, need to know the detail requirement                                   |
|                 | Support Https with and without certificate  | Partially supported, need to know the detail requirement                                   |
|                 | Support of Connection request issued by the ACS with user and Password (basic, digest)  | Supported  |
|                 | Support of RPC  | Partially supported, need to know the detail requirement                                   |
|                 | Support file download RPC initiated by ACS server   | Partially supported, need to know the detail requirement                                   |
|                 | Support restart RPC, when activated by ACS  | Partially supported, need to know the detail requirement                                   |
|                 | Support functionality of Set and Get commands, issued by the ACS. CPE should respond according to TR-069 (and its subsets) protocol rules(e.g. Get parameters, get attributes etc.). ALL parameters must to be checked one by one. session to the ACS and including new value in the Parameter List within associated Inform message.   | Partially supported, need to know the detail requirement                                   |
|                 | Avoid using X_Vendor, if possible<br>To make life much easier, it is highly recommended to avoid or reduce to a minimum the use of devices which their data model is based on X_Vendor parameters rather than standard data model. In cases the data model includes parameters which are not part in the TR-069 standard data model, naturally there is no alternative.   | Partially supported, need to know the detail requirement                                   |
|                 | TR-069 Client robustness<br>Important to verify that the TR-069 client on the device is not stopping to work after a sever load, and become non-manageable. If the TR-069 Client sopped working, only a manual reboot will fix the problem. This problem can be resolved by implementing a "Watchdog" in the CPE that monitors and verified that the TR-069 Client is alive.  | Supported, need to test with server  |
|                 | Security<br>Verify that the CPE supports HTTPS with and without Certificate. The CPE should support advanced security authentication where the CPE will use the Serial as unique username and use unique password only for this Serial.   | Supported, need to test with server  |
| <b>Optional</b> | Protocol LPP/LPPa support<br>NAT configuration (Type A, B, C, D, E, F or 1, 2, 3)<br>Function as Ethernet Access point  | Not supported<br>Not supported<br>Partially supported, need to know the detail requirement |
|                 | Port Forwarding   | Supported  |
|                 | VoLTE supported /Enabled  | Not supported  |
|                 | NAT ALG (supported/enabled)   | Not supported  |