



Quantum Lite Quick Guide

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Chapter I

WHAT'S QUANTUM LITE

I.1 Introduction



Picture 1. Quantum Lite codec.

Quantum Lite is a new-generation handheld reporter codec that inherits world-class IP technology from Prodis Ikusnet Video Codec Family and ProntoNet Audio Codec Family.

Lightweight and handy this product will fill the application gap between multi-user and mixing commentary codecs and the best-effort smartphone app.

This unit can be controlled from its built-in web graphical interface, its front panel display menu, or from ProdisControlPlus application.

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I.2 Quantum Lite Features

Among Quantum Lite most remarkable features are:

- **Compression algorithms:** Quantum Lite is equipped with the best of low delay compression algorithms from voice frequencies encoding until full 20kHz bandwidth: OPUS and Enhanced apt-X
- **Communications:**
 - ✓ **Double UMTS /LTE internal modems.** The SIM card slots (micro SIM) are located on the sides of the device.
 - ✓ **Ethernet interface.** The codec might use Local Area Networks with direct access to the internet for the communication.
 - ✓ **Wi-Fi** interface is supported by means of an external Wi-Fi modem connected to the USB slot on the head side.
- **Streaming protocol:** The streaming protocol is the highly performing BRAVE protocol. This protocol enables using and combining any IP connection (two UMTS /LTE, Wi-Fi and LAN) for an extremely reliable audio contribution.
- **Control and monitoring:** A large touch screen provides the management options, making usage quite simple for any user. It is also possible to control the unit remotely with ProdysControlPlus application as long as the unit is connected to the Internet, and even when the unit is connected to the Internet behind a firewall.

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Chapter II

QUICK GUIDE

II.1 Handheld codec. Power On.

The handheld codec is typically used together with the battery bloc engaged at the bottom side. Operation without the battery is possible if the VDC power supply is feeding the device meanwhile.



Picture 2: Codec + battery bloc split off

The device is **powered on** pressing the square push button over the touch screen for at least 3 seconds. The codec is operable 20s later.

Powering off the device is possible in any circumstance by just pressing the same button for 8 seconds until the screen turns totally black.

Remark: Following procedures are applicable for the device with factory default configuration. It might be possible that some procedures are disabled or use short-cuts enabled by your company codec administrator.

An invitation for login with password is the first screen after start up is shown.

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Remark: The factory default login is <Administrator> without any password. Just press <login>.



Picture 3: Login

Remark: The touch screen of handheld codec turns dark (power optimization) after 120s lacking of any user touch. Just touch the screen to awake the GUI again.

II.2 Main menu

The main menu provides a simple overview of the device and communication status, as well as control for initiating or stopping your communication with the studio.



Picture 4: Green status – communication not in progress yet

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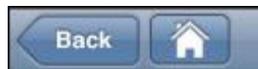
Picture 5: Red status – communication in progress.

- **Main key:**
 - **Green** indicates the communication to the studio is not in progress yet. You are invited to dial your destination.
 - **Red** indicates that a communication with the studio is in progress. You might stop it with double acknowledgment at any time.
- **Small dots over the main key.** Each dot represents a communication interface (UMTS /LTE modems, Wi-Fi and Ethernet). The possible status is:
 - **Red** indicates that the interface is not ready for communication. The SIM cards might not be inserted or well configured or the Ethernet cable might not be plugged.
 - **Grey** indicates that the interface is ready for communication (please refer to the section II.3.2 for details).
 - **Green** indicates that the interface is streaming the audio data to the destination.
 - **Blinking** indicates the the link using this interface is unavailable at this moment but the device is trying to recover the connection.
- **Battery time left** is indicated on the right upper corner of the display.
- **Audio input and output levels** are indicated at the left and right side. TX is microphone input signal. RX is the received audio signal available for the headphones. Please notice the final sound pressure on your headphone should be adjusted with volume knobs (<LOCAL> & <RETURN>) and does not modify the digital measurement on the RX meter.

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- The <**Menu**> icon accesses to the configuration parameters if required.
- The <**Monitor**> icon accesses the status information for the current communication if desired.

Remark: You might skip one menu back or go directly to the main menu from any deeper menu level with following controls, located in the upper left side of any menu window.



II.3 Some facts before you might proceed using your handheld codec

Some settings must be provided for the handheld codec and its companion QLST at your studio before any communication is possible. If these preparations already took place, please refer to the next section.

II.3.1 Installing the QLST at the studio site

The QLST device must be connected to your Local Area Network and the access for external TCP/UDP ports must be granted. Please request at your company IT department assignation for your public IP address router (Port Forwarding at your Internet router) for **port 53000 TCP & UDP service**.

Remark: Please notice if several QLST devices are going to be used behind the same Internet router, each QLST should get a different port assignment. Small offsets would let addressing each QLST individually. E.g. first QLST←port 53000, second QLST←port 53010, third QLST←port 53020, etc.

In QLST the factory default Ethernet port to be used is labeled LAN1. For any other arrangement please check document "QLST Hardware and Reference Manual".

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II.3.2 UMTS /LTE settings for the handheld codec

Quantum Lite must get the SIM cards inserted and identify the local UMTS /LTE service provider as any cell phone would require. Service Provider identification should be an automated internal process taking less than 10 seconds. However the automated identification might be disturbed, finishing unsuccessfully. You might realize this disturbance if any of the small dots keeps on blinking red for more than 10s.

Remark: Please advice the SIM card slots accept micro sized SIM cards only

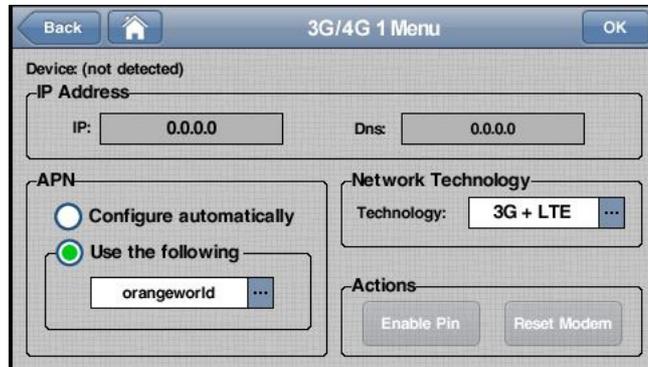


Picture 6: Internal modems registering to UMTS /LTE network

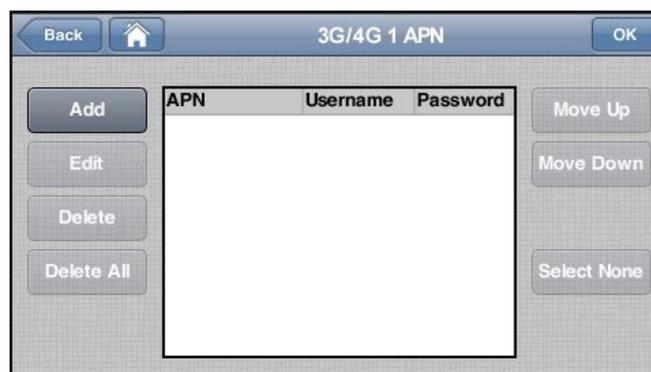
In this case you might assist manually the codec for a successful Service Provider identification. Please type manually your local APN for the SIM cards 1 and 2. Following procedure is required:

1. Go to *Menu>Conf>Interfaces>3G/4G*
2. Choose internal modem 1 or 2
3. Provide the correct APN of this Service Provider as the example of pictures 7 and 8. If you are using two different Service Providers for SIM card 1 and 2, please remind using the proper APN for each modem.

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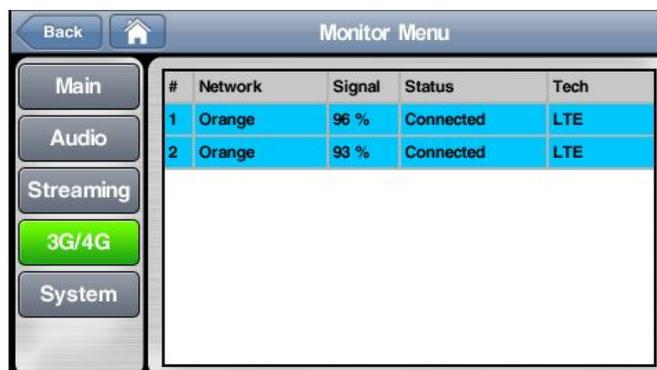


Picture 7: <Use the following ...APN>



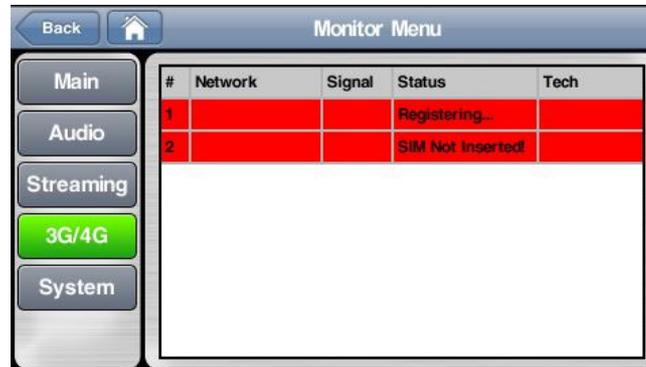
Picture 8: Add or Edit your local APN code

You might check detailed information about your current UMTS /LTE capability at *Monitor>3G/4G*. Below there are some example pictures about possible indications.

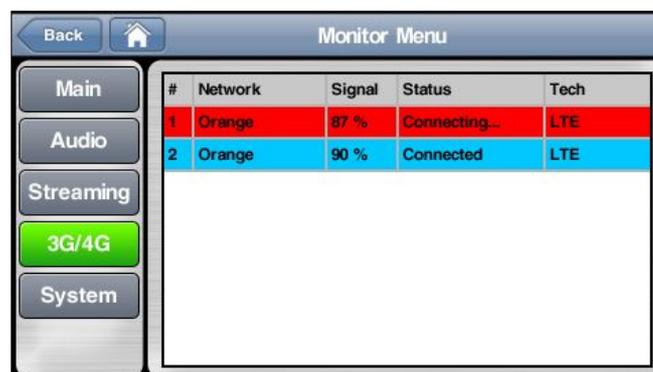


Picture 9: Blue colour indicates the UMTS /LTE network access is available

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Picture 10: Red colour indicates the network access is not ready yet.



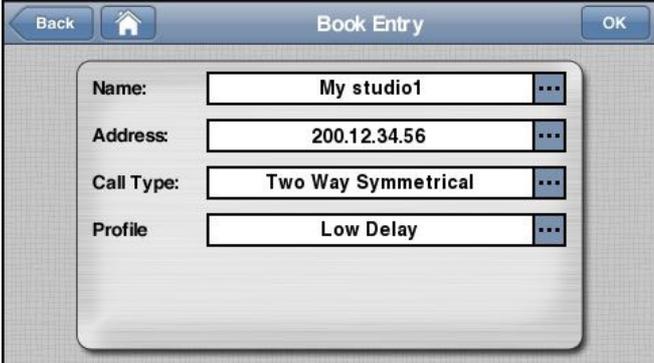
Picture 11: Mixed colours indicate you might proceed with your audio communication restricted to the blue capacities.

II.3.3 Address BOOK

Either you just have the same destination to call (i.e. one QLST at your studio), or several possible destinations are available, you might prefer keeping the numbers to dial ready in your Quantum Lite internal agenda or **address BOOK**.

The recording of addresses in the address book is done through the Book Entry menu. To get there follow *Menu >Book >New*

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The screenshot shows a 'Book Entry' dialog box with the following fields:

Name:	My studio1	...
Address:	200.12.34.56	...
Call Type:	Two Way Symmetrical	...
Profile:	Low Delay	...

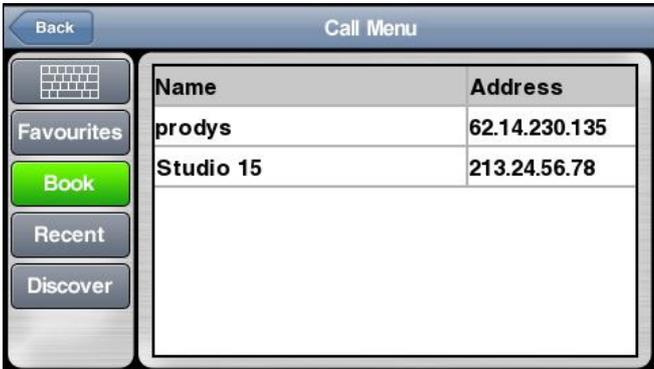
Picture 12: A new book entry

The <address> field must be the public IP address for the destination codec. Usually you prefer <Low Delay> profile for your voice communication. Anyhow you might select another profile at calling time.

II.4 Dial-in your studio

After all those initial settings, which likely remain the same for years, you are able to start you first communication to the studio.

1. Press the big green button to dial. (Please refer to picture 4)
2. Choose your BOOK destination to dial or type manually the address.



The screenshot shows a 'Call Menu' screen with a list of book entries:

Name	Address
prodys	62.14.230.135
Studio 15	213.24.56.78

On the left side, there are buttons for 'Favourites', 'Book' (highlighted in green), 'Recent', and 'Discover'.

Picture 13: Dial-in from your BOOK list

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Picture 14: Dial-in typing the destination address

3. Now your communication is progressing. You should get confirmation with a big red button as picture 5.

Remark: Unsuccessful dial attempts would indicate "unable to connect". The big green button offers you another attempt. This result might indicate either your studio codec is busy, you dialled a wrong destination or the "port forwarding" at your studio internet router is incorrect.



Picture 15: Unable to connect. Remote is busy or wrong address.

Remark: About the best suitable call profile, please refer to section IV.1 ("Profiles") for more details.

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Chapter III

AUDIO CONTROLS

The codec top provides microphone and headphone connectors. Three push-lock controls adjust the input gain as well the headphone output gain. For operation push and unlock the knobs.



Picture 16: Quantum Lite Top.

III.1 <IN> audio control

This knob sets the mic preamp gain.

*Remark: Please remind phantom power might be required or your mic at the audio menu. In this case please enable phantom power at:
Menu >Conf >Audio >Input*

III.2 <Local> and <Return> audio controls

Those controls affect only the sound on your headphone.

- **<Local>** emphasizes your own voice or input audio on your headphone.
- **<Return>** emphasizes the return signal from the studio
- The overall sound you will hear on the headphones is the sum of <Local> + <Return>.

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Chapter IV

RECALLING PRESETS & CALL WITH PROFILES

With your Quantum Lite you will included a choice of equipment configuration ready to use. Those got the name **<Preset>**

Please press this sequence to access to the preset menu: *Menu > Preset*

The default list of presets might be enhanced or modified by you or your company codec administrator for the sake of supporting your most common applications for Quantum Lite.

The current firmware version does not offer any factory default profile.

IV.1 Profiles

The **<Profiles>** instead lead to some temporally configuration changes the user will apply only for the next call only. Once the call finished, the codec recovers its original configuration. Therefore **<Profiles>** is useful for a quick adjustment of the audio delay (jitter buffer) for the handheld **and** the studio codecs, or for switching quickly the compression algorithm (therefore the audio quality) just at the moment the destination is dialled.

Remark: Using any profile from the handheld device, this selection is applied synchronously to the handheld as well to studio unit automatically.

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Picture 17: Profile selection at the Call Dialog is possible

New user profiles might be added to the factory default list using the <Profiles> menu of the overall <Streaming> menu. (the complete path is Menu > Streaming > Profiles > New *or* Edit)



Picture 18: New profiles might set up by the user

IV.2 Factory default list of Profiles

Current default profiles available are:

- **Low Delay** (*The buffer on each end will be set to 100ms. Applicable for pretty good LTE or LAN connections*)
- **Mid Delay** (*The buffer on each end will be set to 300ms. Applicable for any UMTS /LTE connection.*)
- **High Delay** (*The buffer on each end will be set to 500ms. Applicable for any difficult or risky connection.*)
- **Opus MN 64 Mid Delay Bonding** (*The next audio connection is using Opus mono 64kbps with 300ms delay and sharing the total bandwidth among any possible data paths enabled. This is profile is "streaming bandwidth efficient". Applicable for small bandwidth connections or crowded areas.*)

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- **Opus MN 64 Mid Delay Diversity** *(The next audio connection is using Opus mono 64kbps with 300ms delay and copying the audio stream other every data path enabled. Should be the default profile for any UMTS /LTE connection.)*
- **Aptx MN 128 Low Delay Diversity** *(The next audio connection is using enhanced Aptx mono 128kbps with 100ms delay and copying the audio stream other every data path enabled. This is the audio communication with minimum delay. Applicable for pretty good LTE connections.)*

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Chapter V

RECORDING AND FILE OPERATIONS

Recording and audio file operation are outstanding complementary features of Quantum Lite.

You might operate those functions at *Menu >Conf >Files*



Picture 19: Recording and file operations

Remark: Please remind function <Network Share> is visible only browsing the menu thru Ethernet access.

V.1 Rec menu

You might set the device for recording your input sound on demand or each time you start a new communication with your studio. You might press the red round recording icon on the bottom line from the main menu to proceed if only encoded or decoded or both signals should be recorded.

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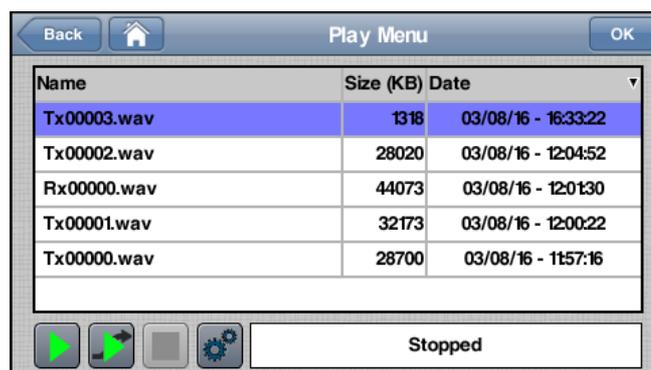
Picture 20: Recording and playout controls from the main menu.

V.2 Play menu

The playout menu is available using the main menu playout icon. Two playout applications are available upon file selection:

1. Most left green icon would give a local playout without disturbing on-going streaming of the mic input.
2. Second left green icon would mix the playout with the input microphone.

Remark: Please remind matching the input gain for the recorded matter and the live mic for the optimal audio mix.



Picture 21: Local playout versus playout & streaming option

V.3 Upload menu

You can transfer quickly any of your recorded files to the FTP server of your choice or to a memory device plugged to the QLST receiver at your studio. The

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file transfer will progress while the device keeps powered on and any Internet link to your studio is still available.

Alternatively you might push your collection of recorded audio files to any FTP server. Following picture gives the clue how to address one or other destination.

Menu > Conf > Files > Upload > Settings

The screenshot shows the 'Upload Settings' screen. At the top, there are 'Back' and 'Home' icons, the title 'Upload Settings', and an 'OK' button. Two radio buttons are present: 'To FTP Server' (unselected) and 'To Quantum' (selected). Under 'To FTP Server', there are four input fields: 'Server:', 'User:', 'Password:', and 'Interface:' (containing 'LAN1'). Under 'To Quantum', there is an 'Address:' field containing '192.168.124.202'. Below these is a checkbox for 'Automatically Upload Recorded And Received Files' which is unchecked. At the bottom left is a 'Storage:' field containing 'SD'. At the bottom right is a 'Test' button.

Picture 22: File Upload Settings menu

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Chapter VI

APPENDIX

Detailed information about configuration and functions are available at the Quantum User Manual. However some additional information is made available here too.

VI.1 Wi-Fi configuration

Quantum units can be equipped with an external USB Wi-Fi module. This chapter describes how to configure this interface. The user has to provide the setting of this interface before using this wireless link.

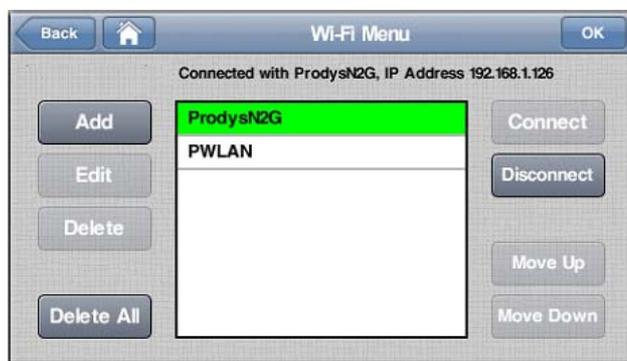
The access to the Wi-Fi configuration menu is provided by *Menu>Conf>Interfaces>Wi-Fi*



Picture 23: Configuration of interfaces

Please take a look at the picture below. It shows the main Wi-Fi configuration menu:

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Picture 24: Selection of Wi-Fi provider

From this menu the user can select what Wi-Fi network will connect to. By pressing the Add button it is possible to access the Wireless Networks Menu where the different Wi-Fi networks automatically detected by the unit will appear, so that the user can just select any of them and add them to the list of Wi-Fi networks on the main Wi-Fi menu. The type of encryption and the quality of reception will be shown for each of the available networks.

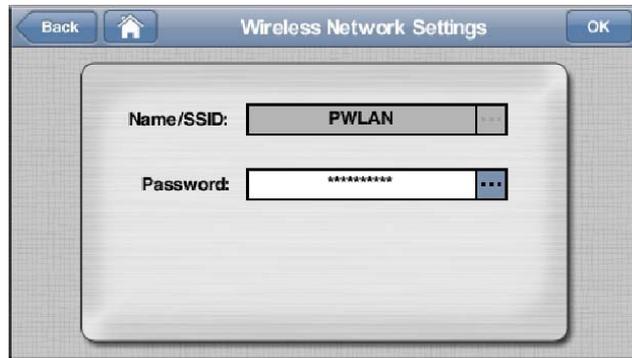
The screenshot shows a 'Wireless Networks' window with a table of detected networks. The table has three columns: 'Name/SSID', 'Signal', and 'Security'. The rows are: 'PWLAN' (-46% WPA2), 'ProdysN2G' (-65% WPA2), 'GRUPO_MEDIS' (-33% WPA2), 'WLAN_ASPA' (-63% WPA2), and 'Add Network...'. There is a 'Back' button at the top left.

Name/SSID	Signal	Security
PWLAN	-46%	WPA2
ProdysN2G	-65%	WPA2
GRUPO_MEDIS	-33%	WPA2
WLAN_ASPA	-63%	WPA2
Add Network...		

Picture 25: Wi-Fi information

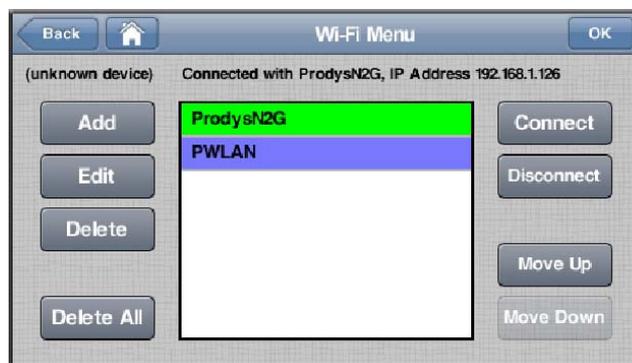
Once in the main Wi-Fi menu, just clicking on any of the Wi-Fi networks available in the list, the user will edit the password settings for that specific network.

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Picture 26: Wi-Fi settings

Once all networks in the list have been configured with their corresponding security settings, the user has to click on the desired network and press the Connect button. The current Wi-Fi network in use will be shown on a green background colour, whilst the currently selected Wi-Fi network will be shown on a purple background colour.



Picture 27: Wi-Fi main menu

In the picture above, ProdysN2G is the current Wi-Fi network in use, whilst the PWLAN network is currently selected by the user. By clicking on the Disconnect button the user can disconnect the unit from the current Wi-Fi network.

To delete a network, just select one network and press the Delete button. The system will ask for a confirmation.

To end with, it is also possible to define the priority of the Wi-Fi networks. The unit will try to connect first to the Wi-Fi network at the top of the list. The user

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can change the order of the different networks in the list by means of the Move Up and Move Down buttons.

Once all networks in the main list have been defined (password configured), and the user has selected one of the available networks, just by pressing on the Connect button the unit will try to connect to that network. Once the unit is connected, a message like 'Connected to WIFix network' will appear at the top of the window.

Remark: In order for the user to configure the Wi-Fi interface, this interface must be configured as one of the IP interfaces to be used for the streaming, be it alone or along with others, like 3G/4G links for example.

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