PHOENIX MOBILE
Multi-Function Portable Audio Codec

AEQ

The Industries Most Versatile and Powerful IP Portable Audio Codec

...and PSTN/POTS, ISDN, DIGITAL HYBRID, 3G and 4G, WiFi....

The ideal companion for work outside the studio. Ethernet connectivity for audio broadcast over IP networks.

Complete audio platform - Holds your choice of two additional comms modules providing even more versatility.

Unique Design Features - Fully independent Main Program and Coordination / Talk-Back channels, and a crystal clear 3.5" color TFT display.

Fully configurable Digital Mixer (cross-point & summing). Microphone and analog line inputs. Phantom power for mics. Dynamically processed inputs (DLP).

Designed For Complete Mobility - Use with its shoulder strap or on a table top. Operate on AC or its powerful Li-Ion battery. Tough ABS design. Includes a convenient carrying case and accessories.

Compatible with other manufacturer's codecs over IP, and ISDN. Fully compliant with N/ACIP EBU Tech 3326 recommendations. Supports SIP. Employs widely used encoding algorithms.

IP Advantages - Adaptive buffer mitigates network jitter. DHCP for automatic configuration of IP connection parameters.

SIP SERVER - To simplify operation over IP, AEQ puts its own SIP server at your disposal.

Superior Performance And Exceptional Features
All At An Affordable Price!

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General Description

A compact, light, and portable multi-function IP audio codec which is fully compliant with the N/ACIP EBU Tech 3326 recommendations.

A completely flexible and extremely versatile communications platform. In addition to the built-in IP, it Includes two slots which accommodate additional interfaces, allowing you to use PSTN and / or ISDN lines, or any type of line that can be adapted to them such as 3G, Wi-Fi, GSM, satellite, etc

Phoenix Mobile is designed to be compatible with existing and future equipment made by AEQ as well as other manufacturers. It comes equipped with a wide variety of encoding modes including AAC, allowing it to link with other compatible IP codecs. And through its additional comms modules, with virtually any ISDN codec on the market. Optionally including AAC.

The equipment allows you to choose the encoding mode and output bit rate suited to the bandwidth and type of network available at any time.

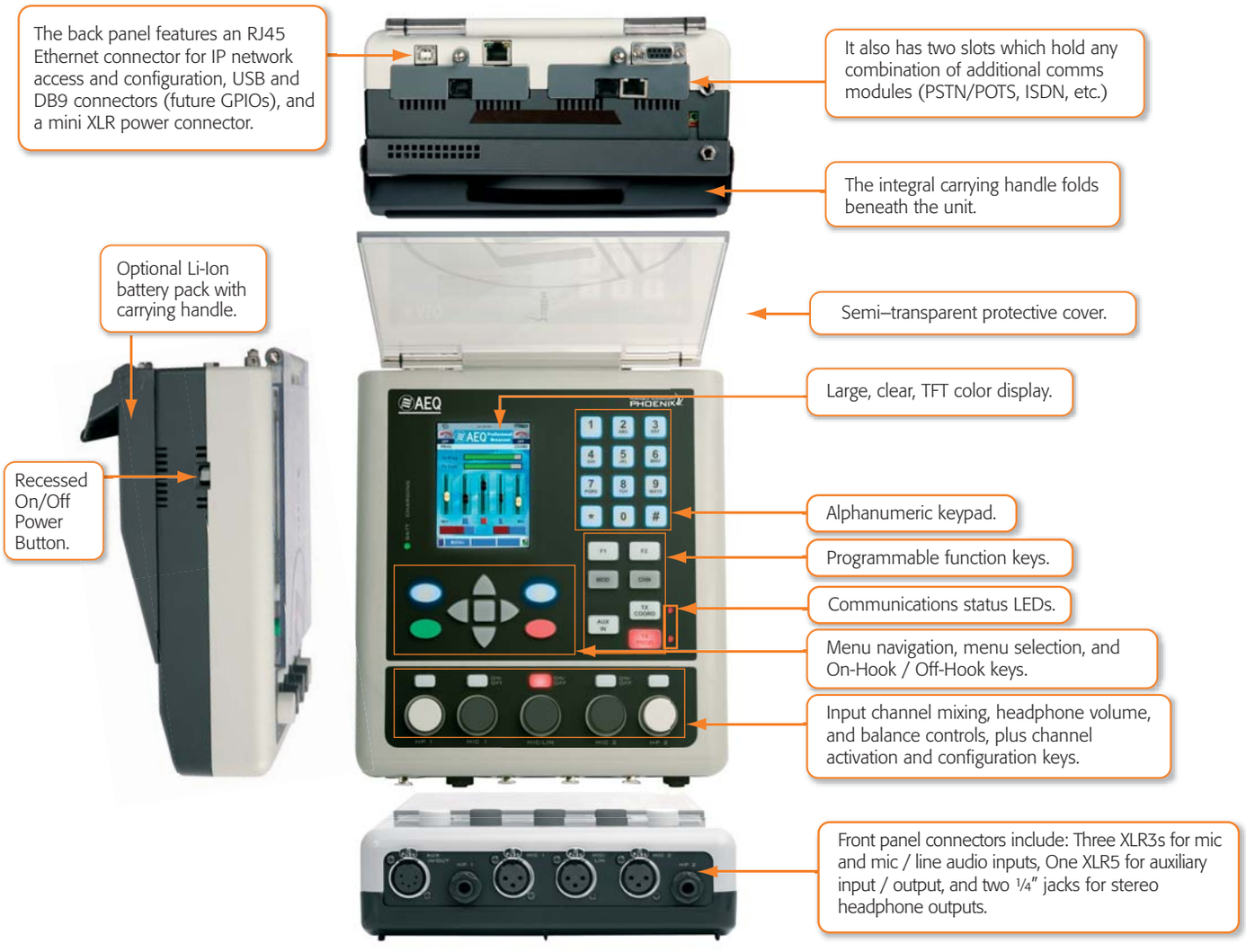
Its translucent, hinged cover protects audio and comms settings from inadvertently being changed during a broadcast, while still allowing the user to see and monitor its parameters.

Phoenix Mobile is ergonomically designed, and is made of tough ABS materials making it especially resistant to the rigors of working on the road. It is also supplied with a universal voltage AC adapter for use anywhere in the world.

Its optional high-capacity Li-Ion battery, (including charger), provides for AC-free operation for approximately 2.5 hours - more than adequate to cover most remote events. The battery also also protects against line AC interruptions while using the AC adapter to power the unit.

Phoenix Mobile's built-in handle folds neatly below the unit, tilting it forward to give a better viewing angle of indicators and controls.

Phoenix Mobile is supplied with a specially designed carrying case which holds not only the unit and all of its accessories, but the reporter's materials as well.



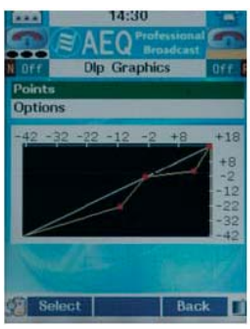
On-Screen Information

The Phoenix Mobile includes a large, clear, very bright color screen which graphically displays:

- Simple and intuitive configuration and operating menus
- Connection status information
- User configurable VU meters for input and output audio signals
- Real-time display showing your adjustments as you make them.

Combining the great display screen, easy to use navigation controls, user programmable fast access keys, robust encoder, and other features - you have complete monitor and control over the extensive functionality of the unit.

Intuitive monitor and control of all inputs and outputs - see them change as you adjust.



Fully configurable and graphical display of dynamics processing.

Fully configurable input parameters - DLP, Phantom feed, etc.

A complete digital mixer is included.

Manually configure IP parameters, or do it automatically with DHCP.

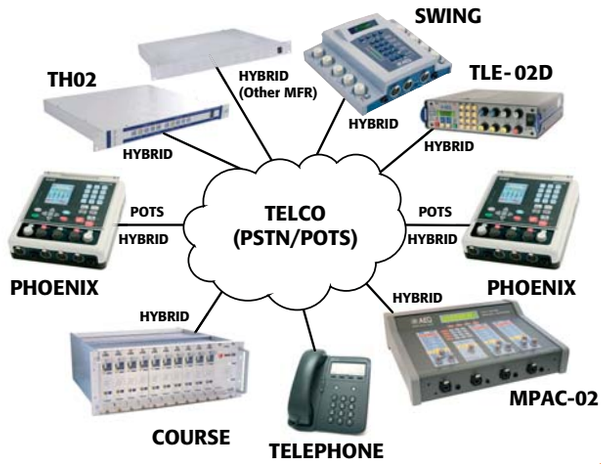
Set up and use AEQ's SIP server - free of charge!

Application Scenarios and Connection Methods

Total Versatility Using PSTN / POTS and ISDN Communications & Connections

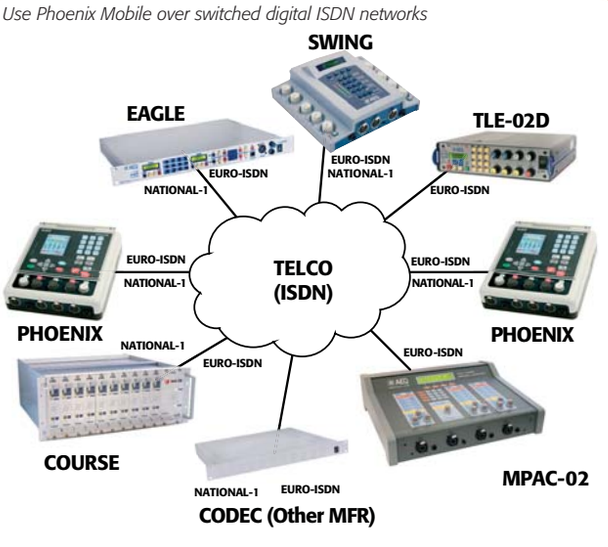
Using the optional PGA-01 type comms module (PSTN / POTS codec and digital hybrid), you can connect one Phoenix Mobile to another, and in the telephone hybrid mode, to virtually any telephone or telephone hybrid that exists. You can also use the built-in frequency extender option with AEQ's Phoenix, Course hybrid, SWING, MPAC, TLE02, and TH02 equipment.

Use Phoenix Mobile over PSTN / POTS telephone networks



Using the optional PGA-03 type comms module (ISDN), you can connect Phoenix Mobile to practically any ISDN codec on the market - including AEQ's Phoenix, Eagle, Course ISDN, SWING, MPAC and TLE02. The PGA-03 module includes S and U interfaces, RJ45 and RJ11 connectors, and supports the Euro ISDN and National-1 protocols.

Use Phoenix Mobile over switched digital ISDN networks



Using The IP Communications Interface

You can connect the Phoenix Mobile via IP to another Phoenix Mobile or to any other compatible equipment over networks of the Ethernet or Internet type, or over circuits that can be transformed into IP, such as: WiFi, 3G telephony and some satellite telephones.

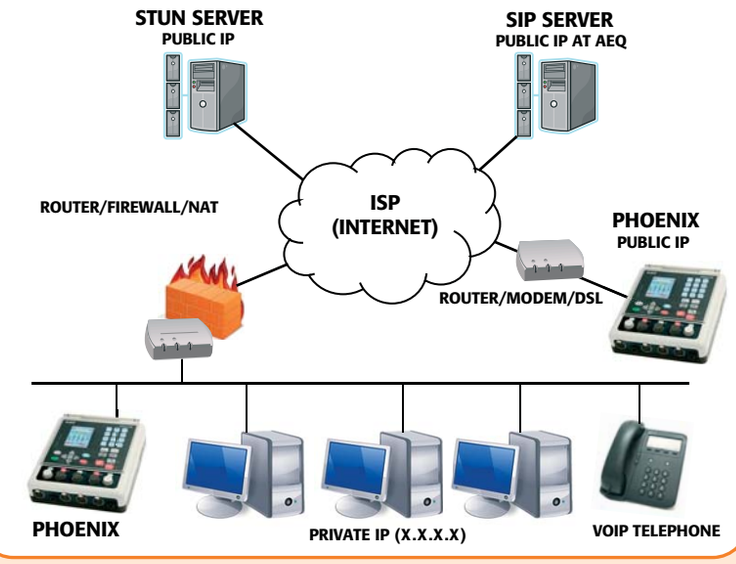
To help simplify operation of the unit over large Internet IP networks, AEQ offers its customers (at no additional cost) the services of its own SIP server. The SIP server facilitates communication with any other user by making the physical location of the codec independent of its network identifier. You only need to know the identifier of the destination equipment in order to establish communication. No additional information is required.

Phoenix Mobile will also work with external STUN servers, allowing the unit to connect between private networks (with final routers as gateways) and the Internet.

Phoenix Mobile simplifies receiving uni-cast or multi-cast communications by using an external SAP server.

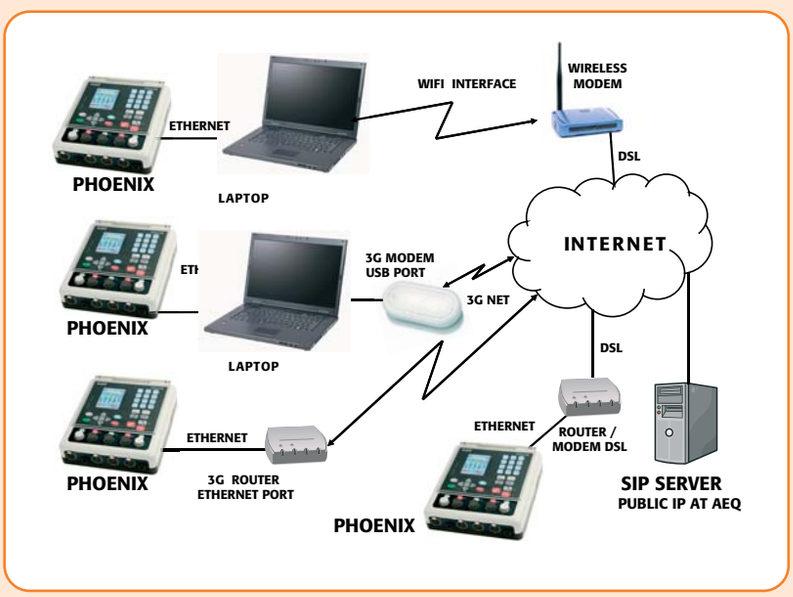
The interface's IP parameters can either be manually configured (by the user), or done automatically (transparent to the user) using the DHCP protocol.

Using the Phoenix Mobile over a public IP network



Making Wired And Wireless Internet Connections

Phoenix can communicate via the Internet by means of its on-board IP interface. Internet access can be accomplished by hard wiring to a DSL or cable modem, or by using a wireless 3G router and connecting Phoenix to the router's Ethernet port. This method allows you to connect to the Internet through a cellular phone system.



There are several ways to set up wireless links to the Internet: by connecting the Phoenix to the Ethernet port of a laptop and using it as a gateway, through a Wi-Fi connection to a DSL line, or directly to a cellular phone system through a 3G modem with a USB connector.

Versatile communications options is the key - in addition to providing you with astonishing audio, Phoenix has the ability to easily connect, via your laptop and the Internet, back to your central control facility or studio's automation system.

Equipment Architecture

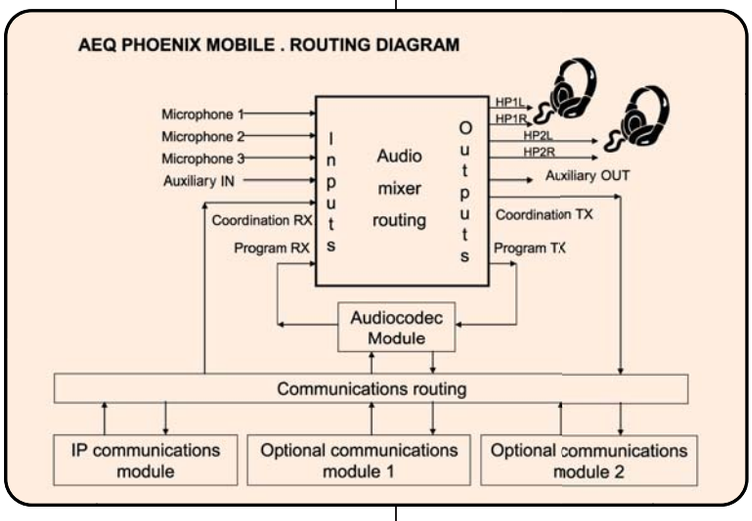
The Phoenix Mobile includes a complete digital mixer and a powerful and versatile communications platform. The unit can be seen as having three clearly defined sections:

- The audio input and output section
- The digital matrix section
- The communications interface section.

Audio inputs and outputs

Phoenix Mobile offers two microphone inputs (with Phantom feed option), a switchable mic / line input on an XLR3, an auxiliary input / output (with line level) on an XLR5, and two stereo headphone outputs on ¼" jacks.

While audio inputs and outputs are analog, internally the Phoenix Mobile is a completely digital device. It employs 24 Kbps @ 48KHz A/D and D/A converters.



Phoenix Mobile enables you to apply dynamic digital processing (DLP) on all its inputs.

The digital matrix

The Phoenix Mobile is based on a fully configurable digital audio matrix. This allows routing of the audio inputs to the remote devices via its communications modules.

The unit enables you to independantly control both crosspoints and gain associated with each of the inputs and outputs, creating a very powerful and robust portable mixer.

You can also use the Phoenix Mobile (without the communications modules) as a simple, stand-alone digital audio mixer. It gives you four inputs: two microphones, one mic / line, and one line input. All into a single master output.

The program and coordination (back-up) audio returns are received by the communications modules and are sent to the auxiliary output and / or the headsets.

Phoenix Mobile gives you simple yet intuitive mixing control of the system. Its rotary encoders are associated with the faders on Phoenix's display screen. Each input channel's level, as well as the volume and balance of the headsets, are graphically displayed on the screen.

Phoenix Mobile also has two VU meters displayed on the screen. They measure the signal present at the inputs or outputs of the equipment - whichever you prefer to monitor.

Phoenix Mobile supports the transmission and encoding of audio which is compatible with stereo decoders, as well as being able to receive and decode audio in stereo format. While internally the unit works in a monophonic format, it is well suited for use in out-of-studio applications.

The Communications Interface

Phoenix Mobile is a portable IP audio codec which was developed in accordance with the N/ACIP EBU Tech 3326 recommendations. This completely guarantees interoperability with units made by AEQ and other manufacturers.

Phoenix Mobile has two slots to accommodate additional communications modules: PSTN/POTS (PGA-01) and ISDN (PGA-03) now, as well as others which will be released in the very near future.

Internally, Phoenix Mobile manages two communications channels called Program and Coordination (or Backup), along with their respective returns. Either can be independently assigned to any of the communications interfaces.

Program, as a high quality channel, can be assigned any encoding algorithm from the many listed on the last page of this brochure. Program is characterized by its high efficiency and low delay. On the Coordination channel, the allowed algorithms are exclusively low delay and complexity.

Integrated Web Server

Phoenix Mobile includes an internal web server which allows you use a computer's Internet browser to easily perform maintenance, do updates, and carry out configuration tasks on the codec without the need to install, load, or use any special software application.

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Specifications

Mic Audio Inputs	2 x Female XLR 3. Low noise preamp. Phantom power. 2 K Ω.
Mic / Line Audio Input	Female XLR 5. 6.6 K Ω / 50 Ω
Aux Input/Output	Female XLR 5. 6.6 K Ω / 50 Ω
Headphones	2 x 1/4" ST Jacks with volume control (on top panel)

Audio features

Clipping Level	+20 dBu (auxiliary output)
Gain max MIC	65 dB programmable, 1 dB steps
MICROPHONE max. level	-25 dBu
MICROPHONE nominal level	-60 dBu
LINE/AUX max. gain	45 dB
LINE/AUX max. level	+22 dBu
LINE/AUX nominal level	+ 0 dBu
Crosstalk @ 1 kHz	< -70 dB
Crosstalk @ 20 kHz	< -53 dB
Frequency Response	20 Hz to 20 kHz +/- 0.35 dB
Total Harmonic Distortion	<0.17 % @ input -45 dBu
Mic Input Eq. Noise @ 200 ohms	< -126 dBu
Analog I/O: A/D and D/A converters	24 bit Sigma-Delta 48 kHz max.

Communications Interfaces

IP Standard interface	RJ45 Ethernet port
PGA-O1 PSTN/POTS interface	PSTN/POTS Modem module and telephone hybrid with frequency extender. RJ11 connector.
PGA-03 ISDN interface	Euro ISDN and National 1 module with up to 2 B channels supported per module. RJ11 & RJ45 connector.
Satellite	External Satellite phone can be connected to IP interface or the ISDN module.
3G telephone	An external satellite phone can be connected to the IP interface or the ISDN module.

Through optional PGA interfaces, Phoenix can use a second simultaneous communications channel for backup or coordination.

USB Slave- Master	USB -1.1 slave or master configurable (host)
LAN 10 base T	RJ45 connector

Other features

Front Panel Interface	Keypad: 33 Keys . Display: 240 x 320 pixels, TFT, color
Level Indicators	Vumeters in the display.
Internal routing	Digital audio router
Temperature range	-10 to +45 º C (14 a 114 º F)
Dimensions	242 x 210 x 75 mm (9.5 x 8.3 x 3“)
Dimensiones with battery	242 x 210 x 96 mm (9.5 x 8.3 x 3.8“)
Weight	1.4 kg (3.08 lbs)
Weight with battery	1.875 kg (4.125 lbs)
Power	12 VDC (9 - 18 V DC) 15 W operation 20 W Charge 20 W Charge + Operation 90-250 VAC, 20 W Adapter-charger 3 PIN Mini XLR connector.
Battery duration	More than 2.5 hours of normal operation

Specifications are subject to changes without notice

Available audio compression algorithms: sampling frequencies, bit rates, bandwidths, delays and compliance with the EBU N/ACIP recommendation:

Encoding modes and sampling frequencies (KHz)	IP Basic equipment	PGA-01 PSTN module	PGA-03 ISDN module	Bit rate (Kbps)	Bandwidth (KHz)	Delay	EBU N/ACIP status
program channel							
PHONE		✓		uncoded	3,4	Very Low	Not applicable
PHONE (AEQ frequency extender)		✓		uncoded	3,1	Very Low	Not applicable
AEQ LD EXTENDED	✓		✓	128	15	Low	Proprietary
ITU G.711 A-Law mono	✓		✓	64	3.5	Low	Obligatory
ITU G.711 µ-Law mono	✓		✓	64	3.5	Low	Obligatory
G.711 A-Law mono EXTENDED	✓		✓	64	3.5	Low	Proprietary
G.711 µ-Law mono EXTENDED	✓		✓	64	3.5	Low	Proprietary
ITU G.722 Statistical Mono	✓		✓	64	7	Low	Obligatory
MPEG-2 LII 128 mono 24 KHz	✓		✓	128	11.25	Medium	Obligatory
MPEG-1 LII 128 mono 32 KHz	✓		✓	128	15	Medium	Recommended
MPEG-1 LII 128 mono 48 KHz	✓		✓	128	20	Medium	Obligatory
MPEG-1 LII 128 stereo 32 KHz	✓		✓	128	10.5	Medium	Recommended
MPEG-1 LII 128 stereo 48 KHz	✓		✓	128	10.5	Medium	Obligatory
MPEG-2 LII 64 mono 16 KHz	✓		✓	64	7.5	Medium	Obligatory
MPEG-2 LII 64 mono 24 KHz	✓		✓	64	11.25	Medium	Obligatory
MPEG-1 LII 64 mono 32 KHz	✓		✓	64	10.5	Medium	Recommended
MPEG-1 LII 64 mono 48 KHz	✓		✓	64	10.5	Medium	Obligatory
MPEG-4 AAC-LC mono 12 Kbps * 24KHz		✓		12	3.375	High	Not applicable
MPEG-4 AAC-LC mono 22 Kbps * 24KHz		✓		22	5.625	High	Not applicable
MPEG-4 AAC-LC mono 32 Kbps * 24KHz	✓			32	6.750	High	Recommended
MPEG-4 AAC-LC mono 32 Kbps * 48KHz	✓			32	16	High	Recommended
MPEG-4 AAC-LC mono 64 Kbps * 24 KHz	✓		✓	64	11.520	High	Recommended
MPEG-4 AAC-LC mono 64 Kbps * 48 KHz	✓		✓	64	20	High	Recommended
MPEG-4 HE-AAC mono 12 Kbps * 48KHz		✓		12	10.875	High	Not applicable
MPEG-4 HE-AAC mono 22 Kbps * 48KHz	✓	✓		22	15.375	High	Recommended
MPEG-4 HE-AAC mono 32 Kbps * 48KHz	✓			32	16.875	High	Recommended
coordination channel							
PHONE		✓		uncoded	3,4	Very Low	Not applicable
ITU G.711 A-Law mono	✓		✓	64	3.5	Low	Obligatory
ITU G.711 µ-Law mono	✓		✓	64	3.5	Low	Obligatory
G.711 A-Law mono EXTENDED			✓	64	3.5	Low	Proprietary
G.711 µ-Law mono EXTENDED			✓	64	3.5	Low	Proprietary

*The AAC coding algorithms are optional for the family of Phoenix Audiocodecs. Other algorithms on demand for special projects.

Phoenix Mobile in use at live event

Phoenix Mobile comes with all accessories shown here

Phoenix Mobile shown with several accessories attached

MINISTERIO DE INDUSTRIA, TURISMO Y COMERCIO

Project endorsed by Spain's Ministry of Industry, Tourism, and Commerce

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