

L4G KOALA

4G/LTE Live Audio with Real Time GPS Tracking

Live listening store-n-forward solution delivered from a 4G/LTE platform



SUPERIOR LIVE LISTENING SOLUTION DELIVERED ON A 4G/LTE PLATFORM

The L4G Koala is the next generation of Nautics renowned and reliable L2 live listening series. Built on all new technology platform using previously proven features, it delivers faster robust processing. The L4G offers a stereo live listening phone call or audio streaming.

It features external 4G/LTE and GPS antennas to allow for deeper installs. The audio settings, power management, GPS configuration, movement & voltage sensors, reporting rate, content & scheduling features are fully programmable over the air. The L4G can be used independently or managed using APS web audio/tracking server software using a PC or mobile phone. Third party software integrators are also supported.

- ✓ VoLTE and streaming listening capability
- ✓ Automatic audio file uploads providing extremely fast transfer rates
- ✓ Ability to configure and overwrite audio recording and GPS data when memory is full

KEY FEATURES

- 4G/LTE live listen, stereo recording, IP uploading, and live tracking capabilities used together or as separate functions
- Stereo left and right filters in APS software or selectable in device at setup
- Audio stored on SD card with auto rollover option to continue recording
- Fast audio data uploads
- Event driven recording, VOX, tracking and alerts
- 16 Polygon boundaries
- Anti-sweep detection managed by activating the modem to OFF when not moving
- Can make a boundary a dead zone shutting down the device or stop GPS logging
- External cell and GPS antenna
- Input / Output relay trigger support from Lemo version of L4G is IP67 rated
- L4G available in lemo or Harwin connector configuration

L4G Koala

PRODUCT SPECIFICATION



OPERATING CURRENT

PROPERTY	SPECIFICATION
Size Metric (excluding connectors)	L4G, 78 x 46.5 x 16.5mm \ L4GH 73 x 48 x 16.5mm
Size Imperial (excluding connectors)	L4G, 3.0 x 1.83 x 0.65" \ L4GH, 2.9 x 1.89 x 0.65"
Casework & Connectors	L4G, IP67 sealed with Lemo connectors. L4GH Harwin connectors: SMA, Modem RF; SMC, GPS RF
Normal Operating Temperature	-20°C to 65°C / -4°F to 149°F
Extended Operating Temperature	-40°C to 85°C / -40°F to 185°F
Operating Voltage	5 to 28v DC
Device Asleep	TBD
Audio Recording	TBD
GPS Logging	TBD
Modem Registered	TBD
Uploading	TBD
Maximum	TBD
Controllable Outputs	2, each channel fused to 2 Amps
4G/LTE Modem	Sierra Wireless, Multiple Network options including FirstNet™ compatibility (CAT4, Interchangeable Options Available)
Network Bands Supported ²	B1, B3, B2, B4, B5, B7, B8, B12, B13, B14, B20, B25, B26, B28, B66, B71
Interfaces	VoLTE, USB, TCP/IP, SMS
GPS Engine	Concurrent GNSS, uBlox 8th Gen chipset with, BeiDou, Galileo, GLONASS, GPS / QZSS support
GPS Logged Position Storage	>500,000 points with roll over capability
Microphone Inputs	2 External, 2 wire for L4GH and 3 wire for L4G
Bit Rate	Various, 16 bit default
Sample Rate	Various, 16kHz default
Audio Recording Storage	Removable microSD (exFAT) with roll over capability (SD, SDHC and SDXC card compatibility)
File Types	Audio (WAV), GPS (Proprietary), Authentication (Proprietary)
Firmware Updates	Cable
Software Compatibility	Windows™ 10 or higher
Servers supported	APS



The L4G is available in the renowned L4Gh – Harwin connectors used by many users. The microphones, programming port, and I/O have a Harwin connector in the L4Gh model. The Harwin connector reduces the size profile of the L4G facilitating an easier installation and backward compatible to L2G accessories.

L4G KIT	CONTENTS
	L4G or L4Gh Device
	4G/LTE Antenna
	GPS Antenna
	2 x Microphones (2m/6ft & 4m/12ft cables)
	USB Configuration Cable
	USB Stick w/Software & User Guide
	Power Lead
	High Quality Storage Case

RECORDING TIME (TYPICAL)					
QUALITY	BITS	128GB	256GB	512GB	1TB
16kHz Mono	16 bit PCM	49 days	99 days	198 days	396 days
16kHz Stereo	16 bit PCM	24 days	49 days	99 days	198 days

- ✓ Active call minimization feature
- ✓ Simultaneous live listen and track
- ✓ Polygon shape boundaries with conditional dead zone/ GPS logging
- ✓ Motion sensitivity alerts and modem on/off
- ✓ Audio streamed listening

COMPATIBLE PRODUCTS (Sold Separately)

L4G is compatible with various tracking software platforms including APS by Nautics Group, FireWire by LDX Inc., and Silver Eye by Knowmadics.



A2/A4 BILBY & A5 DINGO

Superior Quality Covert Mono/Stereo Digital Audio Recorders

Small surveillance voice recorders
for the harshest environments



RELIABLE IN THE MOST DIFFICULT RECORDING CIRCUMSTANCES, NAUTICS RECORDERS DELIVER CRYSTAL CLEAR AUDIO

Nautics series of recorders delivers renowned and reliable recording in the most difficult circumstances using our companding technology. Companding pulls the voice forward upon playback producing a much clearer voice recording. Used in theatre, noisy and very quiet environments, worn as a concealment, or deployed in a static location; the recorders automatically capture the best quality voice audio possible. Depending on the recorder model, mono Dingo or mono/stereo Bilby, the high quality recorders can be user configured using our Whisper2 software. Authenticate software is also shipped with the kit allowing graphical in court playback.

The recorders come in a variety of different variants including bare board or cased, or in one of our standard concealments. In all situations Nautics' recorders continue to perform providing superior audio on playback.

- ✓ Superior quality mono/stereo digital audio recorders using companding technology
- ✓ Small size for easy concealment
- ✓ Designed for mission critical concealment applications

KEY FEATURES

A2e BILBY

- Superior quality mono or stereo digital audio recorder
- Timer or VOX enabled recording
- Kit includes high speed USB download cable and playback software
- Optional battery caddy for all-in-one design and recorder deployment
- Optional larger memory sizes and metal housing

A4f BILBY

- Smaller format, superior quality mono/stereo recorder
- Flexible durable material casing
- Fast 1 hour onboard rechargeable battery
- Remote switch ON/OFF activation
- Kit includes high speed USB download cable and playback software

A5e DINGO

- High performance mono audio recorder
- Timer or VOX enabled recording
- Smallest and most power frugal Nautics recorder
- Kit includes high speed USB download cable and playback software
- Excellent for size critical concealment applications

A2e Bilby

PRODUCT SPECIFICATIONS



PROPERTY	SPECIFICATION
Size Metric (mm)	53 x 35 x 9
Size Imperial (inches)	2.10 x 1.40 x 0.35
Storage Temperature	-20°C to 70°C / -4°F to 158°F
Operating Temperature	-5°C to 65°C / 23°F to 149°F
Operating Voltage	4 to 10v DC
Operating Current	20mA (typical) measured at 6v DC
Sleep Current	< 1mA (in Timer Mode)
Quantisation	16 bit LPCM Linear / 8 bit ADPCM Non-Linear 4 bit ADPCM Non-Linear
Dynamic Range	>90dB
Signal to Noise Ratio (SNR) 1kHz @-3dB (peak)	>76dB (16 bit) >66dB (8 bit) >44dB (4 bit)
Total Harmonic Distortion (THD)	0.025% (16 bit) (typical) 0.1% (8 bit) (typical) 1% (4 bit) (typical)
Sample Rates	8kHz, 11kHz, 16kHz, 22kHz
Audio Bandwidth	50Hz - 3.2kHz (8kHz sampling) 50Hz - 4.4kHz (11kHz sampling) 50Hz - 6.5kHz (16kHz sampling) 50Hz - 9.4kHz (22kHz sampling)
Software Compatibility	Microsoft™ Windows 7 or later
Computer Interface	USB Downloader (USB 2.0)



A2e

The A2e provides robust recording features including configurable as one channel – mono or two channel – stereo device, multiple record timers, VOX, and line in audio. In addition the A2e comes in different memory 8GB, 32GB, 64GB sizes, all-in-one deployable device / recorder in a powered Caddy option, or a metal housing option.



RECORDING TIME (TYPICAL)			
STEREO	8GB	32GB	64GB
Best quality (22kHz 16bit)	27hrs	4 days	9 days
Good quality (16kHz 8 bit)	3 days	12 days	24 days
MONO	8GB	32GB	64GB
Best quality (22kHz 16bit)	2 days	9 days	18 days
Good quality (16kHz 8 bit)	6 days	24 days	48 days

COMPATIBLE PRODUCTS (Sold Separately)	
APS - Audio	Server-based file management sourced from Whisper2 recorder downloads. Playback using APS web server software.

A2e KIT	CONTENTS
	A2e device
	2 x Microphone (1m/3ft cable)
	2 x Stubby microphone
	USB Downloader (1.2m/4ft cable)
	240mAh Rechargeable Battery Pack
	Cable shroud, Spare 2 and 6 pin connectors
	USB Stick (Whisper2 & Authenticate software, User Guide)
	Carrying case

- ✓ Superior configurable quality mono or stereo companded recording
- ✓ High speed downloads
- ✓ Ability to configure companding ON/OFF allowing channel post processing

A4f Bilby

PRODUCT SPECIFICATIONS



PROPERTY	SPECIFICATION
Size Metric (mm / inches)	97 x 24 x 4.0 / 3.8 x 0.96 x 0.16"
Storage Temperature	-20°C to 70°C / -4°F to 158°F (Recommended 20°C or under)
Operating Temperature	-5°C to 65°C / 23°F to 149°F
Operating Current	14 to 20mA (recorder settings dependent)
Quantisation	16 or 8 bit PCM Linear / 4 bit ADPCM Non-Linear
Dynamic Range	90dB (16 bit), >80dB (8 bit), >60dB (4 bit)
Sample Rates	8kHz, 11kHz, 16kHz, 22kHz
Audio Bandwidth	20Hz-3.2kHz (@ 8kHz) 20Hz-4.4kHz (@ 11kHz) 20Hz-6.5kHz (@ 16kHz) 20Hz-9.4kHz (@ 22kHz)
Computer Interface	USB Downloader (USB 2.0)
Internal battery capacity	100mAh
Battery self discharge rate	<5% per month
Charge/Discharge cycles	300 (to 80% capacity @1C, 25°C)

A4f Bilby

The A4f Bilby is a flexible and robust stereo rechargeable recording device. The size of the recorder allows it to be used in multiple use cases. The A4f comes in a 4GB or 16GB memory size.

A4 Bilby Stereo Recorders

- A4e** – cased stereo external power recorder
- A4f** – flexible case stereo rechargeable recorder
- A4RF** – cased stereo recorder with RF ON/OFF option

RECORDING TIME (TYPICAL)						
STEREO	1GB	2GB	4GB	8GB	16GB	
Best quality (22kHz 16bit)	3.4hrs	6.8hrs	13hrs	27hrs	2 days	
Good quality (16kHz 8bit)	9.3hrs	18hrs	37hrs	3 days	6 days	
MONO	1GB	2GB	4GB	8GB	16GB	
Best quality (22kHz 16bit)	6.8hrs	13hrs	27hrs	2 days	4 days	
Good quality (16kHz 8bit)	18 hrs	37 hrs	3 days	6 days	12 days	

A4F KIT	CONTENTS
	A4f device
	2 x Microphone (1m/3ft cable)
	Download / Charging cable
	Cabled Remote Switch
	Spare connectors
	USB Stick (Whisper2 & Authenticate software, User Guide)
	Carrying case



- ✓ Flexible fitting around curves
- ✓ Operates for 5 hours on 1 hour recharge
- ✓ Remote switch activation option
- ✓ High speed download

COMPATIBLE PRODUCTS (Sold Separately)	
APS - Audio	Server-based file management sourced from Whisper2 recorder downloads. Playback using APS web server software.

PROPERTY	SPECIFICATION
Size Metric (mm)	32 x 28 x 6.2
Size Imperial (inches)	1.26 x 1.11 x 0.24
Storage Temperature	-20°C to 70°C / -4°F to 158°F
Operating Temperature	-5°C to 65°C / 23°F to 149°F
Operating Voltage	4.0 to 10v DC (external)
Operating Current	8mA (maximum)
Sleep Current	Typical average 500µA, typical minimum 300µA (on Timer Mode)
Quantisation	8 bit PCM Linear / 4 bit ADPCM Non-Linear
Dynamic Range	48dB (theoretical), > 42dB typical 8 bit, >38dB typical 4 bit
Sample Rates	8kHz, 11kHz
Audio Bandwidth	200Hz - 3.2kHz (8kHz sampling), 200Hz - 4.7kHz (11kHz sampling)
Software Compatibility	Microsoft™ Windows 7 or later
Computer Interface	USB Downloader (USB 2.0)

A5e

The A5 series is Nautics smallest high audio quality mono recorder line. Companding is permanently configured on at the factory for the best recording quality possible. The A5 series offers an A5e cased, A5i internal battery, and popular A5f flexible case recorders in a 2GB or 16GB memory size. Concealments options are available using the A5 series recorder, ask your representative for more information.

A5 Mono Recorder Types

- A5e** – external powered recorder
- A5i** – internal battery recorder with RF ON/OFF option
- A5f** – rechargeable 10 hour operation flexible recorder
- A5RF** – external powered recorder with RF ON/OFF option

RECORDING TIME (TYPICAL)

QUALITY	BITS	2GB	16GB
11kHz Mono	8 bit - PCM	2 days	18 days
	4 bit - ADPCM	4 days	36 days
8kHz Mono	8 bit - PCM	3 days	24 days
	4 bit - ADPCM	6 days	49 days

A5E KIT

CONTENTS

	A5e device
	Microphone (1m/3ft cable)
	Stubby microphone
	USB Downloader (1.2m/4ft cable)
	100mAh Rechargeable Battery Pack
	Cable shroud, Spare 2 and 6 pin connectors
	USB Stick (Whisper2 & Authenticate software, User Guide)
	Carrying case

COMPATIBLE PRODUCTS (Sold Separately)

APS - Audio	Server-based file management sourced from Whisper2 recorder downloads. Playback using APS web server software
Concealments	Ask about our range of microphone options and professional concealments



- ✓ Superior quality mono companded recording
- ✓ Small and power fugal recorder
- ✓ High speed downloads