

Aingeal Device

Lightweight, body-worn Wi-Fi device for Surveillance Monitoring

Provides active monitoring for ambulatory adult patients such as post-surgery patients using a small, lightweight wearable device and innovative electrode array.

Device: attaches to the electrode array via snap-on magnets and transmits the physiological measurements over the hospital WLAN.

Electrode array: a disposable, pre-gelled single-patient-use array measuring respiration rate, single-lead ECG and temperature, which is applied to each side of the patient's torso.

Battery charger: can charge up to 12 device batteries with 24 hour battery life.

Features

- Measures respiration rate and waveform, heart rate and single lead ECG (modified lead II) waveform and skin temperature.
- Lethal arrhythmias include asystole, ventricular fibrillation, tachycardia and bradycardia.
- High sensitivity and specificity with low false alarm rate.



Technical specifications

Monitoring

ECG	Modified lead II
	Range: 15 to 240 beats/min
	Frequency response: 0.67Hz–40Hz
	Sample rate: 360 Hz, 12 bit resolution
Respiration	Impedance pneumography
	Range: 4 to 40 breaths/min
	Sample rate: 120 Hz, 12 bit resolution
Cardiac events	Asystole, ventricular fibrillation, tachycardia and bradycardia
Skin temperature	Sample rate: 2 Hz, 12 bit resolution
	Range: 31 to 42°C (88 to 107°F) > 0.3° accuracy

Controls and indicators

Device

WLAN status LED	Green: connection good
	Orange: connection pending
Lead status LED	The Blue LED will be ON if the device is not connected to the patient and will be OFF when connected to the patient once ECG and respiration are detected.
On/Off	Hold down to switch On/Off

Battery charger

AC power LED	Green: power connected
Battery location LED	Orange: battery charging
	Green: battery fully charged

WLAN transmission

Protocol	IEEE 802.11b/g
Frequency range	2400 to 2483 MHz
Channels	1 to 11 North America 1 to 13 Europe
Receive sensitivity	-85 dBm
Output power level	+18 dBm (32 mW)
Modulation	DSSS (CCK-11, CCK-5.5, DQPSK-2, DBPSK-1) OFDM

Environmental specifications

Operating conditions

Device and electrode array

Temperature	5 to 40°C (41 to 104°F)
Relative humidity	45 to 85% (non-condensing)
Altitude	-382 to 3,011 m (-1,253 to 9,878 ft)

Battery and battery charger

Temperature	5 to 40°C (41 to 104°F)
Relative humidity	45 to 85% (non-condensing)
Altitude	-382 to 3,011 m (-1,253 to 9,878 ft)

Transport and storage conditions

Device

Temperature	-40 to 70°C (-40 to 158°F)
Relative humidity	5 to 95% (non-condensing)
Storage life	Two years
Altitude	-382 to 5,572 m (-1,253 to 18,280 ft)

Battery charger

Temperature	-40 to 70°C (-40 to 158°F)
Relative humidity	5 to 95% (non-condensing)
Altitude	-382 to 5,575 m (-1,253 to 18,280 ft)

Rechargeable battery

Temperature	Charge: 0 to 45°C (32 to 113°F)
	Discharge: -20 to 60°C (-4 to 140°F)
Storage life and capacity recovery rate:	One year: 15 to 35°C (59 to 95°F) > 85%
	3 months: -10 to 45°C (14 to 113°F) > 90%
	< 1 month: -20 to 45°C (-4 to 113°F) > 90%

Relative humidity	45 to 85% (non-condensing)
Altitude	-382 to 5,572 m (-1,253 to 18,280 ft)

Electrode array

Temperature	0 to 40°C (-32 to 104°F)
Relative Humidity	5 to 95% (non-condensing)
Altitude	-382 to 5,575 m (-1,253 to 18,280 ft)

Refer to the user manual for full transport and storage conditions, and battery disposal instructions.

Performance specifications

Water resistance	IPX7 IEC60529, with battery IPX4 when battery is disconnected
Impact resistance	IEC60601 15.3.3, 15.3.5

Physical specifications

Device and battery

Dimensions (H x W x D)	7.1 x 9.6 x 1.8 cm (2.8 x 3.8 x 0.7 in)
Weight	84 g (3.0 oz)

Battery charger

Dimensions (H x W x D)	23.7 x 18 x 4.7 cm (9.3 x 7.1 x 1.8 in)
Weight	0.88 kg (1.9 lb)

Power specifications

Battery charger

Input Voltage	100 to 240 VAC (max)
Frequency	50 to 60 Hz
Current	1 A
Output Power	20 W

Battery

Type	Rechargeable lithium-ion
Capacity	1.0 Ah
Nominal voltage	3.7 V
Watt-hour rating	3.7 Wh
Charge time	4 hours (max)
Operating cycle	24 hours (5 minute sample interval)
Battery life	500 cycles

Warranty


One year standard warranty.

Certifications

UL/IEC/EN 60601-1, IEC/EN 60601-1-2, IEC/EN 60601-1-8, IEC/EN 60601-2-27, IEC/EN 60601-2-49, ISO 80601-2-56.

CE marked to the Medical Devices Directive 93/42/EEC as Class IIa and R&TTE Directive 99/5/EEC as Class 1, RoHS-Compliant; FCC Part 15 Class B

Manufactured by:

 Intelesens Ltd.
17 Heron Road
BT3 9LE
Belfast, UK



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