

CRY2623M Fixed Acoustic Imager User Manual V1.0



Measure Better Sound

User Manual V1.0

Warranty and Calibration

Within two years from the date of purchase, we provide free warranty service for abnormal and malfunction caused by product quality. Free warranty service does not include the non-product quality problems caused by improper use, accidental drop, etc.

In case of equipment failure caused by improper use or accidental drop, we promise to provide maintenance service at cost price.

The equipment has been calibrated when delivered to the user. However, in the long term use process, we suggest that you send the equipment to our office every two years for equipment calibration, testing and maintenance.

Contact us

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Overview

CRY2623M is a fixed acoustic imager that supports ultrasonic frequency band and has Ex ic IIC T4 Gc explosion-proof level. The equipment uses the microphone array beamforming technology to obtain sound source distribution data, and cooperates with high-definition cameras to collect video images in real-time.

CRY2623M fixed acoustic imager can help you detect possible pressurized gas leaks and vacuum leaks in noisy industrial sites; when used in power systems, it can help you find and monitor potential partial discharge fault points.

Fixed acoustic imager adopts an all-aluminum alloy shell, which is strong and durable, and can adapt to the complex and changeable working environment.

The device is easy to install and operate. It only needs to configure two parameters: test frequency range and test dynamic range to meet most monitoring needs; and private network, etc.) remote monitoring system. Help users achieve industrial digital transformation. Support remote real-time monitoring of video images.

Safety Instruction

- To prevent possible fire or personal injury, please note:
- The explosion-proof mark of this equipment is Ex ic IIC T4 Gc, please use it in an explosive environment that matches the explosion-proof mark.
- During the installation and use of the product, all electrical safety regulations of the country and region of use must be strictly observed.
- Please be sure to disconnect the power supply of the device during disassembly and assembly operations such as wiring, opening the cover, etc., and do not operate with power on; if the device is in an explosive environment, do not perform the above operations.
- An easy-to-use disconnect device should be incorporated into the building installation wiring.
- When installing on a wall or ceiling, make sure the product is securely fastened.
- This product is an explosion-proof product, please carry out explosionproof treatment on the cable.
- If the device emits smoke, produces peculiar smell, or makes noise, please turn off the power immediately and unplug the power cord, and contact the manufacturer in time. If the product does not work properly, please contact the manufacturer, do not disassemble or modify the product in any way, so as to avoid affecting the flameproof performance of the flameproof surface. (The company does not assume any responsibility for problems caused by unauthorized modifications or repairs).

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- Avoid installing the product in a vibration or shock environment, and keep the product away from electromagnetic interference. (Ignoring this may damage the product)
- Do not directly touch the heat dissipation parts of the product to avoid burns.
- Please be careful not to bump the explosion-proof surface of the product, so as not to affect the explosion-proof performance.
- Do not use the product in extremely hot, cold, dusty or high-humidity environments. For specific temperature and humidity requirements, please refer to the product parameter table.
- The equipment needs to be stored in a dry and non-corrosive gas environment and avoid direct sunlight.
- Avoid aiming the lens at strong light (such as lighting, sunlight, or laser beams, etc.), otherwise the image sensor will be damaged.
- Avoid heat accumulation and keep ventilation around the product smooth.
- Do not touch the image sensor directly, and if cleaning is necessary, to prevent static buildup, wipe the surface with a damp cloth or other substitutes that are soft enough to gently remove dust.
- Do not use corrosive solvents or strong, abrasive cleaners, otherwise will damage the surface of the product or reduce the performance of the product.
- Equipments connected to the Internet may face network security issues. Please strengthen the protection of personal information and

data security. When you find that the device may have network security risks, please contact us in time.

Please keep all the original packaging materials of the fixed acoustic imager properly, so that when there is a problem, use the packaging materials to pack the Audio-Visual Guard and send it to the agent or return it to the factory for processing. Accidental damage during transportation caused by non-original packaging materials is the responsibility of the user.



Directions

Quality requirements for installation and maintenance personnel Have the "Explosion-proof Electrical Equipment Installation and Maintenance Qualification Certificate", have the qualification certificate or experience to engage in the installation and maintenance of video surveillance systems, and have the qualifications to engage in related work (such as high-altitude work, etc.). Moreover, must have the following knowledge and operating skills,

-Basic knowledge and installation skills of AIG monitoring systems and components.

- Basic knowledge and operational skills in low-voltage wiring and low-voltage electronic wiring.

- Have basic network security knowledge and skills, and be able to read the contents of this manual.

- Requirements for lifting equipment
 - Use safe lifting equipment suitable for where and how it is installed.

- Lifting equipment with sufficient lift height to reach the installation location.

- Lifting equipment has good safety performance.

Terminology

Sound Pressure Level (SPL)

A physical quantity used to express the magnitude of sound waves; the unit is decibels (dB). It is also used as dBSPL.

Audible domain

The frequency range of sound that can be perceived by human ears generally refers to the sound that frequency is in the frequency band of 20Hz-20KHz.

Ultrasonic

Generally, refers to the frequency of more than 20kHz sound, the human ear cannot perceive.

Sound image

It refers to the two-dimensional data table representing the intensity distribution of sound sources in the space plane after the signal collected by microphone array is calculated by the sound source location algorithm.

Palette

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The color data used in the color mapping of an Sound cloud chart.

Sound cloud image

The sound pressure level data of each resolution point on the sound image is mapped to a certain color number on the palette according to a certain conversion formula to form a color image, and then it is fused with the visible image to form an sound cloud image.

Test frequency range

When a frequency range is selected within the full frequency range supported by the device, the device will only measure and display a sound cloud image that is within this frequency range. Sound outside this frequency range will not be displayed.

Frequency peak

A peak in spectrum, it denotes a strong sound energy distribution at this particular frequency.

Dynamic range

The scale of the intensity of the sound source that can be shown on the sound cloud image.

Field of view

For camera, it is an angle formed by camera and the two diagonal points of the rectangular picture which is captured by the camera.

For sound cloud image, it is an angle formed by microphone array and the two diagonal points of the rectangular sound image which is captured by the microphone array.

ADS:

Acoustic Data Server—Acoustic Imaging Intelligent Data Server

ACS:

Acoustic Compute Server—Acoustic imaging intelligent computing server

Product Features

Photo/Video/Audio and Video Streaming

It can take photos/videos, save the audio and video files in the local folder, and push the monitored audio and video images in real time.

Dynamic Range

The dynamic range is the numerical range in which the cloud image energy is drawn in the cloud image. For example, 12dB dynamic range indicates that the energy interval of 12 dB in the cloud image energy is drawn in the cloud image.

Cloud Map Color

It can change the color of the cloud image of the video.

Frequency Range

The frequency range for device detection can be changed.

Split Screen Focus Function

This function supports up to 4 rectangular focus windows. After the split-screen focusing function is enabled, multiple split-screen focusing windows can be set, and the size and position of each window can be set arbitrarily. After the split-screen focus function is enabled, the cloud image is only displayed in the focus window. When in use, the focus window is generally aligned with the target detection area, which can reduce interference to a certain extent.

Automatic Alarm Function

Set a sound pressure threshold and turn on the function. When the device detects a leak exceeding the sound pressure level, an alarm message will be sent to the system.

Local Storage Function

After enabling this function, the detected video files will be saved in the external memory card in real time.

Log Export

Export logs during equipment operation for engineers to analyse device operation status.

Monitoring Range & Equipment Sensitivity

The device monitoring range is horizontal 62 ° vertical 48 °. The monitoring sensitivity is related to the monitoring distance. The relationship is as follows:

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Fixed Acoustic Imager Minimum Leakage (Pressure 0.5Mpa, 20-40kHz site environment noise 40dB)					
Distance to Sound Source (m)	Leakage CCM(±1)				
0.5-2	28				
2-4	46				
4-6	47				
6-8	50				
8-10	53				
10-12	66				
12-14	70				
14-16	78				
16-18	90				
18-20	97				



Equipment and Accessories

Name	Introduction
CRY2623M	Product host
Explosion-proof Junction Box	Internally installed digital signal barrier and intrinsically safe power supply
Digital Signal Barrier	Limit the voltage and current of the digital signal of the network cable to prevent overvoltage and overcurrent from affecting the explosion-proof performance of the equipment
Network Switch	Provide network communication for Fixed Acoustic Imager
ADS	Provides storage and forwarding of video streams
Intrinsically Safe Power Supply	Provides operating voltage and current for Fixed Acoustic Imager

Functions





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Dimension





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On-site Installation

Installation



Installation Renderings







Installation Renderings



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Typical Installation



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Monitoring Platform Software

Software Catalog

AN	IP (C:) > Users > wy308 > Desktop > VMS ⊳	DeBug 🗸 🗸	・ Search DeBu	g
	Name	Date modified	Туре	Size
	📜 AppDump	3/10/2022 7:41 PM	File folder	
	🣜 Cache	3/30/2022 2:15 PM	File folder	
	📙 Config	3/10/2022 2:39 PM	File folder	
	📜 Data	3/10/2022 2:41 PM	File folder	
`	📙 FFmpeg	3/10/2022 2:39 PM	File folder Soft	ware Catalog
•	📙 Log	3/30/2022 10:47 AM	File folder	•
٠	📜 Proj	3/10/2022 4:45 PM	File folder	
	📜 ref	3/10/2022 2:39 PM	File folder	
	📜 runtimes	3/10/2022 2·39 FM	File folder	
	CRYImagerVMS.deps.json	2/22/2022 3:44 PM	JSON File	20 KB
	SCRYImagerVMS.dll	3/10/2022 2:47 PM	Application extension	1,678 KB
	CRYImagerVMS.exe	3/10/2022 2:47 PM	Application	145 KB
	CRYImagerVMS.pdb	2/28/2022 9:57 PM	Program Debug Data	148 KB
	CRYImagerVMS.runtimeconfig.json	2/28/2022 3:44 PM	JSON File	1 KB
	EntityFramework.dll	4/17/2020 4:38 AM	Application extension	4,862 KB
	EntityFramework.SqlServer.dll	4/17/2020 4:39 AM	Application extension	578 KB
	FFmpeg.AutoGen.dll	1/20/2022 6:22 PM	Application extension	600 KB
	MControl.dll	2/28/2022 3:18 PM	Application extension	712 KB
	💽 HMControl.pdb	2/28/2022 3:18 PM	Program Debug Data	990 KB
	ICSharpCode.AvalonEdit.dll	5/24/2018 1:49 PM	Application extension	676 KB
	🖷 libvvnat.dll	11/7/2018 3:52 PM	Application extension	210 KB

• Click the "CRYImagerVMS.exe" application in the Debug folder to open the monitoring platform software.

Network Configuration Instructions

- Using the device for the first time
- Step 1: Fixed Acoustic Imager and the computer are connected to the same network: the device is connected to the local area network, and the computer

running the client software is also connected to the local area network, such as the company network.

- Step 2: Connect the power to the audio-visual guard. Please refer to the power supply wiring instructions for the power supply voltage and wiring sequence.

Dynamic IP Address

The dynamic IP address is used to connect the Fixed Acoustic Imager and the host under the same network segment, and the IP address is automatically assigned by the router. That can view the IP local address through the ipconfig command in the command terminal. Both wired and wireless connections support dynamic IP settings.

Static IP Address

The static IP address is used for the direct connection between the Fixed Acoustic Imager and the host machine. The static IP address of the device can be set through the client in the state of automatically obtaining the IP address. At the same time, that needs to set the network properties of the computer running the client software to static IP.

The device is on the same network segment as the Fixed Acoustic Imager. If the Fixed Acoustic Imager is a static IP, it needs to be set.

(TCP/IPv4) Properties						
General						
You can get IP settings assigned auton this capability. Otherwise, you need to for the appropriate IP settings.	natically if your network supports ask your network administrator					
Obtain an IP address automatical	y					
• Use the following IP address:						
IP address:	192 . 168 . 0 . 18					
Subnet mask:	255 . 255 . 255 . 0					
Default gateway:						
Obtain DNS server address autom	natically					
• Use the following DNS server add	resses:					
Preferred DNS server:						
Alternate DNS server:						
Validate settings upon exit	Advanced					
	OK Cancel					

Scan Device

 Open monitoring platform 	
CRYImagerVMS (1.0.1.1)	_ = ×
File Local View Device Help Home Page Device List CRYSOUND Factory	
Z + A A	
CRYSOUND Factory	
NVR:OnLine 设备数量:4	



• Then click the "Settings" button, fill in the gateway and the device IP in the same network segment, the port number is 8000, and click "Save" after the input is completed.

CRYIma File	gerVMS (1.0.1.1) Tool View Device e Page Setting	E	: ×
	NetWork Setting GateWay 192.168.11.11 Enable Tcping.exe : Auto Scan On Startup : Project Setting Open Project On Startup : NVR Setting IPAddress 192.168.11.69 User admin Auto Login On Startup :	Port 8000 OFF ON OFF Port 9000 Password •••••• ON	
	• Chinese	• English	

 Click the "Device List" button in the "View" drop-down menu to jump to the device list interface.

 Click the "Scan" button in the "Device" drop-down menu to start searching for devices

CRYImagerVMS (1.0.1.1)									
Fi	le	Tool	View	Device	Help				
Ħ	Hom	e Page	Hor	nePage					
	ਵੇ∙	÷	Dev	ice List					
f	*		Vide	eo List					
			Prev	view					
ᆇ									
9									

CRYImagerVMS (1.0.1.1)								
Fi	e	Tool	View	Device	Help			
≡	Hom	e Page		Scan				
	₽	₽						
f	*							
"								
₽								
ᆇ								
9								

Streaming Function Description



CRY	/ImagerVMS (1.0.1.1)		_ = ×
Fil	le Tool View Device	Help	
₿	Home Page Device List		
A	192.168.11.10:8000	Device Type:	CRY2622M
#	21BBD014 192.168.11.70:8000	Product ID:	218BD001test
	21BBD017 192.168.11.75:8000	Version:	4.3.2.6
ᆇ	218BD001test	Device:	Reconnect Reb ot Update Time 2022-04-19 16:13:09 🗰 Get
8	192.191.0.177:8000	DTD.	Mode RTSP Vith Audio: OFF RTP Open: ON
	191.168.11.52:8000	KIP:	RTP Url rtsp://192.168.0.177:8554/live/test1
		Storage:	Storage Info SD Card : 225M/60G (1%)
Ste	p1, double click the devic	e Network	DHCP Auto V IPAddress 192.168.111 Apply
		Network:	Test Result
		Logging:	Select Logging All V Download
		Others:	GB28181: OFF Setting
			\/ Step3, turn on the audio
			and RTP button

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Instructions for building a monitoring Home Page

It can add "rectangle", "device" and "text" in the blank space of the

right-click of the software homepage

CR	/Ima	gerVMS	(1.0.1.1)								_ 🗆 ×
Fi		Tool	View	Device	Help						
⊞	Hom	e Page	Device List								
	<i>ਦ</i> •	₽									
π											
#											
-											
*											
				New		Rectangle -					
						Device 、					
						Text					
						- CAR					
									CRYS(DUND Factory	
								- Woi	kshop1		
NVR	: OnLi	ne 设备	数量:5								

- Click "Device" and click "Select Device" to select a device.
- Click "Connect", and click "Save" to save the setting

ImagerItem	EditWindow				×
Object		Left 368	Top 254	Width 160	Height 50
Comments	CRYSOUND Fac	tory			
Screen1	NULL				
Screen2	NULL				
Screen3	NULL				
Screen4	NULL				
Lock	UnLock				
Product ID	218BD001test	Select Dev	ice Conne	ct Disconnect	Status 🔵
NVR Ch	None 💊	2 De 2	1BBD019		
		2	18BD001test	Apply	Cancel

• When the connection is successful, the "connection status" indicator will change from gray to green.

Screen	NOLL				
Lock	UnLock				
Product ID	218BD001test	Select Device	Connect	Disconnect	Status 🦲
NVR Ch	None 🗸 🗸	Device Info			
			Save	Apply	Cancel

• Double-click the configured device to enter the monitoring dashboard



L	Alarm								
<u>~</u>	Mai	n	Sceen1	s	:een2	Sceen3	Sceer	14	Pdd
8	Id	Tir	me			Describ	e	Op	erate
	1	20	22-04-19	03:	17:25	52.7 / 50	0.0	F	review
	2	20	22-04-19	03:	23:43	50.2 / 50	0.0	P	review
	3	20	22-04-19	04:	14:17	50.5 / 50	0.0	P	review
	4	20	22-04-19	04:	15:51	50.5 / 50	0.0	F	review
	5	20	22-04-19	04:	16:41	50.6 / 50	0.0	F	review
	6	20	22-04-19	04:	18:27	50.8 / 50	0.0	F	review
	7	20	22-04-19	04:	21:02	52.1 / 50	0.0	F	review

• Click the "Basic" column, it can directly modify the device location information.

• Click "Open Playback" to view the historical alarm playback video.

• Click the "Basic" Information column to modify the color, dynamic range, and frequency range of the device cloud map; set the cloud map threshold, and automatically alarm when the threshold exceeds the monitoring range.

"Alarm Statistics" records the number of device alarms, and "dB line graph" records the monitoring sound pressure level curve.

Technical Indicators

Device Model	CRY2623M
Number of Microphone Channels	128 channels
Test Frequency Range	2kHz ~ 48kHz
Camera Resolution	800W
Frame Rate	25FPS
Test Distance	0.5~50-m
Weight	About 1.3kg
Size	183mm X 169mm X 85.35mm
Storage	8G internal storage, 64G TF card expansion storage
Operating Temperature	-10℃~+50℃
Supply Voltage	DC12-20V
Power Consumption	About 14W
IP Degree of Protection	IP56
Fixed way	Bottom 1/4 -20UNC thread/M5 screw fixing
Explosion-proof certification	Ex IC IIC T4 Gc

Intrinsically Safe Power Supply

Explosion-proof Type	[Exlb] IIC
Intrinsically safe maximum open circuit voltage	DC 6.5V
Intrinsically safe maximum output current	2.0A

Digital Signal Barrier

Explosion-proof Type	[Exlb] IIC
F. I	Um=250V AC/DC,Uo=6V,Io=505mA,Po=0.75W
Explosion-proof parameters	IIC: Co=28μF, Lo=0.12mH
Operating Voltage	5V
Maximum withstand voltage	6V
Terminal resistance	12Ω
Polarity	Dual Polarity
Weight	About 110g
Applicable equipment wiring	Two-wire, three-wire, four-wire
Explosion-proof certification	Zone 0, Zone 1, Zone 2; IIA, IIB, IIC, T4-T6
Environmental Conditions	Continuous use temperature -20~60°C; Storage temperature -40~80°C;

Declaration of «CE» Conformity

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<u>Manufacturer's EU Declaration of Conformity</u> (conform to ISO/IEC 17050-1) Manufacturer: HANGZHOU CRYSOUND ELECTRONICS CO.,LTD. Address: No.10, Xianqiao Road, Zhongtai Street, Yuhang District, Hangzhou, Zhejiang, China

Declares, under its own responsibility that the CRYSOUND products:

CRY2620	Industrial Acoustic Imager
CRY2623	Industrial Acoustic Imager

are built in conformity with the following European Directives:

Directive	Title
2011/65/EU	Restriction of Hazardous Substances (RoHS)
2014/30/EU	Electromagnetic Compatibility Directive/Annex II (EMC)

Standards applied:

Norm	Title
IEC 62221 1:2012	Determination of certain substances in electrotechnical products - Part 1:
IEC 02321-1:2013	Introduction and overview
150 (2221 2.2012	Determination of certain substances in electrotechnical products - Part 2:
IEC 62321-2:2013	Disassembly, disjunction and mechanical sample preparation
	Determination of certain substances in electrotechnical products - Part 3-1:
IEC 62321-3-1:2013	Screening - Lead, mercury, cadmium, total chromium and total bromine using
	X-ray fluorescence spectrometry
	Determination of certain substances in electrotechnical products - 3-2: Screening -
IEC 62321-3-2:2013	Total bromine in polymers and electronics by Combustion - Ion Chromatography
	CSV Determination of certain substances in electrotechnical products - Part 4:
	Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and
62321-4:2013+AMD1:2017	ICP-MS
	Determination of certain substances in electrotechnical products - Part 5:
IEC 62321-5:2013	Cadmium, lead and chromium in polymers and electronics and cadmium and lead
	in metals by AAS, AFS, ICP-OES and ICP-MS
	Determination of certain substances in electrotechnical products - Part 6:
IEC 62321-6:2015	Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas
	chromatograhy -mass spectometry (GC-MS)
	Determination of certain substances in electrotechnical products - Part 7-1:
IEC 62321-7-1:2015	Hexavalent chromium - Presence of hexavalent chromium (Cr(VI)) in colorless and
	colored corrosion-protected coatings on metals by the colorimetric method
	Determination of certain substances in electrotechnical products - Part 7-2:
IEC 62321-7-2:2017	Hexavalent chromium - Determination of hexavalent chromium (Cr(VI)) in
	polymers and electronics by the colorimetric method
	Determination of certain substances in electrotechnical products - Part 8:
IEC 62221 9.2017	Phthalates in polymers by gas chromatography-mass spectrometry (GC-MS), gas
IEC 02321-0.2017	chromatography-mass spectrometry using a pyrolyzer/thermal desorption
	accessory (Py-TD-GC-MS)
EN 61326-1-2021	Electrical equipment for measurement, control and laboratory use –EMC

	requirements –Part 1: General requirements
	Electromagnetic compatibility (EMC) -
EN 61000-4-2:2009	Part 4-2: Testing and measurement techniques -
	Electrostatic discharge immunity test
EN 61000 4 2:2006 -	Electromagnetic compatibility (EMC)
EN 01000-4-3.2000 +	Part 4-3: Testing and measurement techniques -
A1.2008 + A2.2010	Radiated, radio-frequency, electromagnetic field immunity test

<u>Manufacturer's EU Declaration of Conformity</u> (conform to ISO/IEC 17050-1) Manufacturer: HANGZHOU CRYSOUND ELECTRONICS CO.,LTD. Address: No.10, Xianqiao Road, Zhongtai Street, Yuhang District, Hangzhou, Zhejiang, China

Declares, under its own responsibility that the CRYSOUND products:

CRY2624 Industrial Acoustic Imager	· · ·	· ·
	CRY2624	Industrial Acoustic Imager

are built in conformity with the following European Directives:

Directive	Title
2011/65/EU	Restriction of Hazardous Substances (RoHS)
2014/30/EU	Electromagnetic Compatibility Directive/Annex II (EMC)
2014/34/EU	ATEX directive
	"EC type examination certificate N° TI22ATEX 570 X delivered by Technická
	inšpekcia, a. s., as Notify Body No. 1354

Standards applied:

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IEC 62221 1:2012	Determination of certain substances in electrotechnical products - Part 1:
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IEC 62221 2.2012	Determination of certain substances in electrotechnical products - Part 2:
IEC 02521-2.2015	Disassembly, disjunction and mechanical sample preparation
	Determination of certain substances in electrotechnical products - Part 3-1:
IEC 62321-3-1:2013	Screening - Lead, mercury, cadmium, total chromium and total bromine using
	X-ray fluorescence spectrometry
IEC 62221 2 2:2012	Determination of certain substances in electrotechnical products - 3-2: Screening -
IEC 02521-5-2.2015	Total bromine in polymers and electronics by Combustion - Ion Chromatography
	CSV Determination of certain substances in electrotechnical products - Part 4:
1EC 62221 4-2012 - AMD1-2017	Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and
02321-4.2013+AWD1.2017	ICP-MS
	Determination of certain substances in electrotechnical products - Part 5:
IEC 62321-5:2013	Cadmium, lead and chromium in polymers and electronics and cadmium and lead
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	Determination of certain substances in electrotechnical products - Part 6:
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	Determination of certain substances in electrotechnical products - Part 7-1:
IEC 62321-7-1:2015	Hexavalent chromium - Presence of hexavalent chromium (Cr(VI)) in colorless and
	colored corrosion-protected coatings on metals by the colorimetric method
	Determination of certain substances in electrotechnical products - Part 7-2:
IEC 62321-7-2:2017	Hexavalent chromium - Determination of hexavalent chromium (Cr(VI)) in
	polymers and electronics by the colorimetric method
	Determination of certain substances in electrotechnical products - Part 8:
IEC 62321-8:2017	Phthalates in polymers by gas chromatography-mass spectrometry (GC-MS), gas
	chromatography-mass spectrometry using a pyrolyzer/thermal desorption

	accessory (Py-TD-GC-MS)
EN 61326-1-2021	Electrical equipment for measurement, control and laboratory use –EMC
	requirements –Part 1: General requirements
EN 61000-4-2:2009	Electromagnetic compatibility (EMC) -
	Part 4-2: Testing and measurement techniques -
	Electrostatic discharge immunity test
EN 61000-4-3:2006 + A1:2008 + A2:2010	Electromagnetic compatibility (EMC)
	Part 4-3: Testing and measurement techniques -
	Radiated, radio-frequency, electromagnetic field immunity test
EN 60079-0:	Explosive atmospheres Part 0: Equipment – General requirements (IEC
2018/AC:2020-02	60079-0:2017)
EN 60079-11: 2012	Explosive atmospheres –Part 11: Equipment protection by intrinsic safety "i"

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CRY2623M	Fixed Acoustic Imager
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IEC 62221 2 2:2012	Determination of certain substances in electrotechnical products - 3-2: Screening -
IEC 02521-5-2.2015	Total bromine in polymers and electronics by Combustion - Ion Chromatography
	CSV Determination of certain substances in electrotechnical products - Part 4:
62221 4·2012+AMD1·2017	Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and
02521-4.2015+AIVID1.2017	ICP-MS
	Determination of certain substances in electrotechnical products - Part 5:
IEC 62321-5:2013	Cadmium, lead and chromium in polymers and electronics and cadmium and lead
	in metals by AAS, AFS, ICP-OES and ICP-MS
	Determination of certain substances in electrotechnical products - Part 6:
IEC 62321-6:2015	Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas
	chromatograhy -mass spectometry (GC-MS)
	Determination of certain substances in electrotechnical products - Part 7-1:
IEC 62321-7-1:2015	Hexavalent chromium - Presence of hexavalent chromium (Cr(VI)) in colorless and
	colored corrosion-protected coatings on metals by the colorimetric method
	Determination of certain substances in electrotechnical products - Part 7-2:
IEC 62321-7-2:2017	Hexavalent chromium - Determination of hexavalent chromium (Cr(VI)) in
	polymers and electronics by the colorimetric method
IEC 62321-8:2017	Determination of certain substances in electrotechnical products - Part 8:
	Phthalates in polymers by gas chromatography-mass spectrometry (GC-MS), gas
	chromatography-mass spectrometry using a pyrolyzer/thermal desorption
	accessory (Py-TD-GC-MS)
EN 61326-1-2021	Electrical equipment for measurement, control and laboratory use -EMC
EIN 01320-1-2021	requirements – Part 1: General requirements

EN 61000-4-2:2009	Electromagnetic compatibility (EMC) -
	Part 4-2: Testing and measurement techniques -
	Electrostatic discharge immunity test
EN 61000-4-3:2006 + A1:2008 + A2:2010	Electromagnetic compatibility (EMC)
	Part 4-3: Testing and measurement techniques -
	Radiated, radio-frequency, electromagnetic field immunity test

<u>Manufacturer's EU Declaration of Conformity</u> (conform to ISO/IEC 17050-1) Manufacturer: HANGZHOU CRYSOUND ELECTRONICS CO.,LTD. Address: No.10, Xianqiao Road, Zhongtai Street, Yuhang District, Hangzhou, Zhejiang, China

Declares, under its own responsibility that the CRYSOUND products:

UES60LCP-200300SPC	Switching Power Adaptor
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are built in conformity with the following European Directives:

Directive	Title
2014/30/EU	Electromagnetic Compatibility Directive/Annex II (EMC)
2014/35/EU	Low Voltage Directive (LVD)

Standards applied:

Norm	Title
EN 55032:2015	Electromagnetic compatibility of multimedia equipment - Emission Requirements
EN 55035:2017	Electromagnetic compatibility of multimedia equipment - Immunity requirements
EN 61000-3-2:2019	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current
	emissions (equipment input current \leqslant 16 A per phase)
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage
	changes, voltEN 55024:2010age fluctuations and flicker in public low-voltage
	supply systems, for equipment with rated current <= 16 A per phase and not
	subject to conditional connection
EN 55024:2010	Information technology equipment - Immunity characteristics - Limits and
	methods of measurement
EN 62368-1:2014	Audio/video, information and communication technology equipment - Part 1:
	Safety requirements (IEC 62368-1:2014, modified)

<u>Manufacturer's EU Declaration of Conformity</u> (conform to ISO/IEC 17050-1) Manufacturer: HANGZHOU CRYSOUND ELECTRONICS CO.,LTD. Address: No.10, Xianqiao Road, Zhongtai Street, Yuhang District, Hangzhou, Zhejiang, China

Declares, under its own responsibility that the CRYSOUND products:

GSB2S243	Battery

are built in conformity with the following European Directives:

Directive	Title
2011/65/EU	Restriction of Hazardous Substances (RoHS)

Standards applied:

Norm	Title
IEC 62321-1:2013	Determination of certain substances in electrotechnical products - Part 1: Introduction
	and overview
150 (2221 2.2012	Determination of certain substances in electrotechnical products - Part 2: Disassembly,
IEC 02321-2.2013	disjunction and mechanical sample preparation
	Determination of certain substances in electrotechnical products - Part 3-1: Screening -
IEC 62321-3-1:2013	Lead, mercury, cadmium, total chromium and total bromine using X-ray fluorescence
	spectrometry
150 (2221 2 2.2012	Determination of certain substances in electrotechnical products - 3-2: Screening - Total
IEC 02321-3-2:2013	bromine in polymers and electronics by Combustion - Ion Chromatography
IEC	CSV Determination of certain substances in electrotechnical products - Part 4: Mercury in
62321-4:2013+AMD1:2017	polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and ICP-MS
	Determination of certain substances in electrotechnical products - Part 5: Cadmium, lead
IEC 62321-5:2013	and chromium in polymers and electronics and cadmium and lead in metals by AAS, AFS,
	ICP-OES and ICP-MS
	Determination of certain substances in electrotechnical products - Part 6:
IEC 62321-6:2015	Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas
	chromatograhy -mass spectometry (GC-MS)
IEC 62321-7-1:2015	Determination of certain substances in electrotechnical products - Part 7-1: Hexavalent
	chromium - Presence of hexavalent chromium (Cr(VI)) in colorless and colored
	corrosion-protected coatings on metals by the colorimetric method
IEC 62321-7-2:2017	Determination of certain substances in electrotechnical products - Part 7-2: Hexavalent
	chromium - Determination of hexavalent chromium (Cr(VI)) in polymers and electronics
	by the colorimetric method
150 (2221 0:2017	Determination of certain substances in electrotechnical products - Part 8: Phthalates in
	polymers by gas chromatography-mass spectrometry (GC-MS), gas
1002321-0.2017	chromatography-mass spectrometry using a pyrolyzer/thermal desorption accessory
	(Py-TD-GC-MS)