GLXSS SE
W5-AIR

Product introduction and specification

Product team
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GLXSS SE (W5 AIR) is a robust smart glasses device independently developed by Sotech With versatile functions including HD video shooting, AI recognition, remote video collaboration, etc. In structure, it adopts three- proofing design, which makes it easy to clean and durable; in hardware, glasses is embedded with a power efficient VPU chip, which makes it fast in object detection and

recognition with high accuracy; in software, there are a variety of SDKs to support customers' dedicated business.

GLXSS SE connects to android host through USB cable for both power supply and data transmission. Corresponding programs are installed on the android host, which realizes innovative first-perspective human-computer interaction with video, audio, AI content and other data, at the same time liberates the hands of operators. GLXSS SE smart glasses do not have batteries and wireless radiation and is suitable for long-term use.

General introduction

GLXSS SE smart glasses mainly consists of two parts: smart glasses and smart glasses service program (GLXSS SDK), which are described below.

Smart glasses use a new type integrated main control chip and embedded vector processor and support localized deep learning and computer vision computing. The camera uses Sony 13-megapixel high sensitivity light sensor, combining with professional ISP image processor to ensure high-quality image data acquisition. The display part uses an OLED display with a 640x400 pixel dot matrix and refracting plus reflecting resin prism to provide a high-quality near-eye display effect. Smart glasses also contain a speaker and a microphone for sound interaction. In addition, smart glasses are designed with a physical button for quick operation. It connects with intelligent terminal through USB2.0 interface to realize networking, storage, and customized applications.

GLXSS service program (GLXSS SDK) is a smart glasses develop suite containing GLXSS device driver and services. The precondition for running the SDK on a mobile phone is that the phone system should be with Android version higher than 5.1 and with OTG function. Please make sure that this APP is resident in memory and trusted by the system and would not be cleared when it's hibernating. If the APP developed by users tries to obtain the resources of Smart Glasses by calling the services of GLXSS Suite, such APP needs to be monitored for service validity in order to perform exception handling when the service is lost.

GLXSS SDK is divided into basic version and pro version. The basic version has simple functions, only including audio, video and data interaction related API interfaces, which is suitable for the use of audio and video interaction scenarios; the pro version has AI capabilities, including all the functions of the basic version, as well as the deep learning framework (Laffe) and the attached face2.0 human face detection, tracking and recognition model. Laffe framework enables third-party models to run on glasses to meet customization requirements. The face 2.0 algorithm model can capture face continuously, which is suitable for police, bank and other scenes requiring face recognition.

Appearance



Figure 1： GLXSS SE Appearance

Shown as above, GLXSS SE mainly consists of:

1. Glasses frame
2. Intelligent module
3. Data cable

The GLXSS SE themselves do not have a battery and do not use wireless protocols to communicate with other devices. After the glasses are inserted into the smart terminal or the mobile phone, the smart glasses are powered through the connection cable, and the data connection is performed at the same time. We can also see in the figure above that the camera and the display of the GLXSS SE are in the front position close to the human eye for easy viewing. The smart glasses adopt magnetic design between the intelligent module and the glasses frame for easy wearing and storage. The glasses frame can be adapted to different nose holders, myopia lenses, sunglasses and industrial goggles, and can be worn alone.

Function introduction

All the functions of the GLXSS SE are designed and optimized for the aims of “Freeing Hands, Increasing Efficiency, Remote Collaboration, and Intelligent Recognition”. Different applications can be installed on mobile phone such as cameras, facial recognition, and remote collaboration for corresponding application. Users can transmit and upload the videos and photos shot by GLXSS by operating in mobile phone app.

APP name	Function	Note
Camera	Snapshot, video record	Free
GLXSS Arise	Dual-way communication, AR mark, message, pictures	Need to purchase accounts
GLXSS FORCE	Face detection, recognition, command dispatch	Need to purchase accounts

Temperature index

The typical working scene of GLXSS SE is continuous video recording or remote video transmission, and the maximum power consumption scene is continuous face detection. The following is the temperature index of each part of the smart glasses. The test conditions are as follows:

- Environment temperature：25℃
- Environment humidity：75%
- Position：Placed on a standard head mold

GLXSS SE temperature is in compliance with following data：

Part （℃）	glass （Finger）	Plastic （Face）	Plastic （Finger）	Metal （Finger）	Scenario
Slight use	40	36	40	38	Standby
Typical use	43	39	45	40	A/V recording
Heavy use	46	42	50	42	Face recognition

Component introduction：

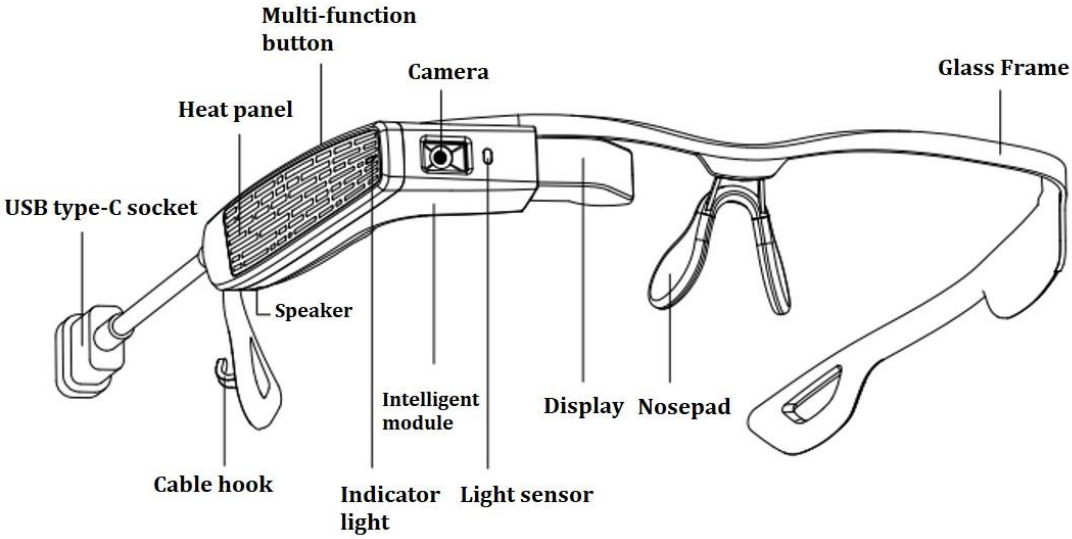
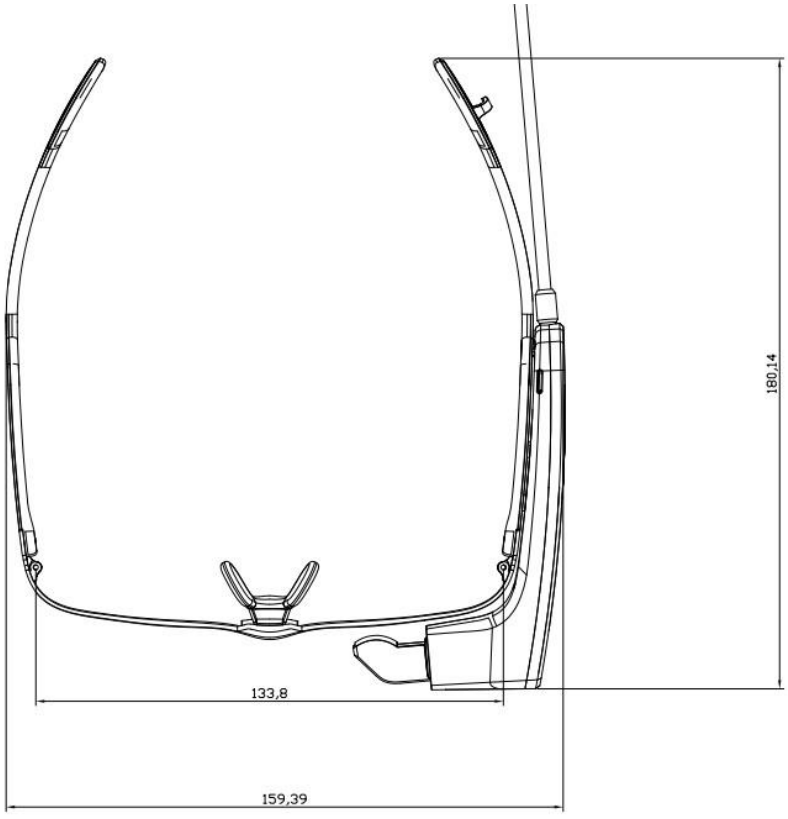


Figure 2：Smart glasses component diagram

GLXSS Size chart：



GLXSS SE Detailed Specification：

Item	Content		Detailed parameter
Processor	Movidius® Myriad2		2 LEON Cores @600MHz
RAM	512MB DDR3		933MHz PoP
Camera	Pictures	USB 2.0	8M pixels
	Recording	USB 2.0	1280x720(16:9) @15/30fps 1920x1080(16:9) @ 15fps
	Shooting indicator light		Support
Audio	Microphone		Single digital microphone
	Speaker		Single speaker
Display	Resolution		640x400 nHD+
	Luminance auto-adaption		Support
	Optical structure		Refracting plus reflecting resin prism
	Display module angle adaption		Support
Sensors	Acceleration sensor		Support
	Gyroscope		Support
	Light sensor		Support
Power	Battery		None
	Rated voltage		5V
	Protective voltage		5.83V
	Minimum voltage		4.5V
	Rated current		400mA
	Power rating		2.0W
Interface	USB type C		USB2.0 slave device
	Double-sided insert		Support
	USB 2.0		Support
Frame design	Glasses frame		Beta Titanium alloy frame
	Lenses		Resin lenses and lens frames
	Legs		TR90 nylon material
	Nose pads		Resin nose pad
	Fasten belt		Support
Other	Weight		30g
	Working temperature		-20~50°C
	Storage temperature		-30~70°C
	Drop resistance		1.5 meter