SYSOLUTION

Sysolution
Security Guard
Multi-Function Card RS5S

Product Specification

Version：Ver.1.3

Update

No.	Version	Brief description of updates	Revision Date
1	Ver.1.0	Initial Release	2021.09.29
2	Ver.1.1	Functional feature modification	2023.03.27
3	Ver.1.2	Update parameters	2023.05.18
4	Ver.1.3	Functional feature modification	2024.05.28
5	Ver.1.4	Content modification	2024.10.15

Note: The content of the document is subject to change without notice.
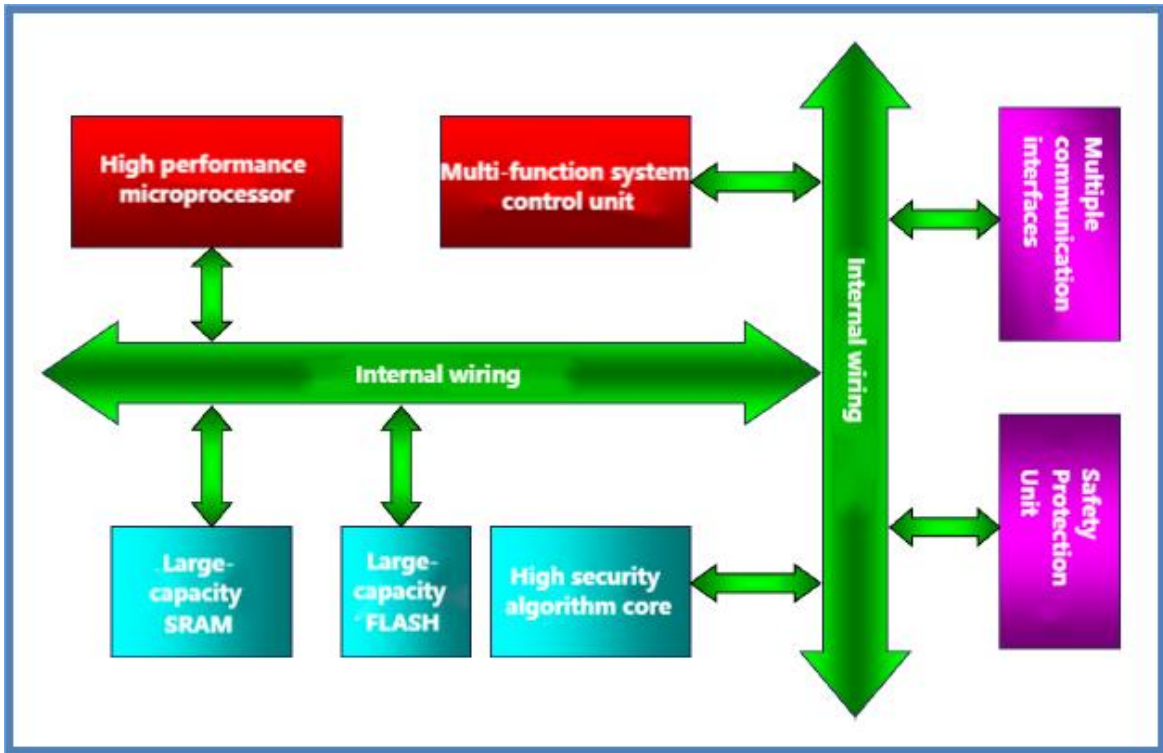
Introduction

Outdoor LED display devices are usually used for advertising, information dissemination and other purposes. The display content may involve trade secrets, copyrighted content and so on. Sysolution has launched a security encryption product for the high security requirements of the scene. In addition to the existing hardware of the same asynchronous control system, a multi-functional card of Security Guard is added to ensure the security of the display content with software logic. The Security Guard Multi-Function Card can be used to protect the device's firmware and software from malicious tampering and takedown. This ensures the authenticity and integrity of the display content and prevents information from being altered or replaced.

Sysolution Security Guard Multi-function Card RS5S is a 32-bit CUP system level security device with domestic support for state secret algorithms. Supports RSA, ECC (SM2) for digital signature and authentication. Supports SM3, SHA hardware-level digest algorithm. Also supports SM1, SM4 and DES symmetric encryption algorithms. Built-in encryption device, not soft encryption but hardware encryption algorithms, is a dedicated device specifically for data and identity security. The Secure Guard Multi-Function Card securely stores one or more keys and uses them in data encryption. And allows users to securely perform end-to-end encryption.
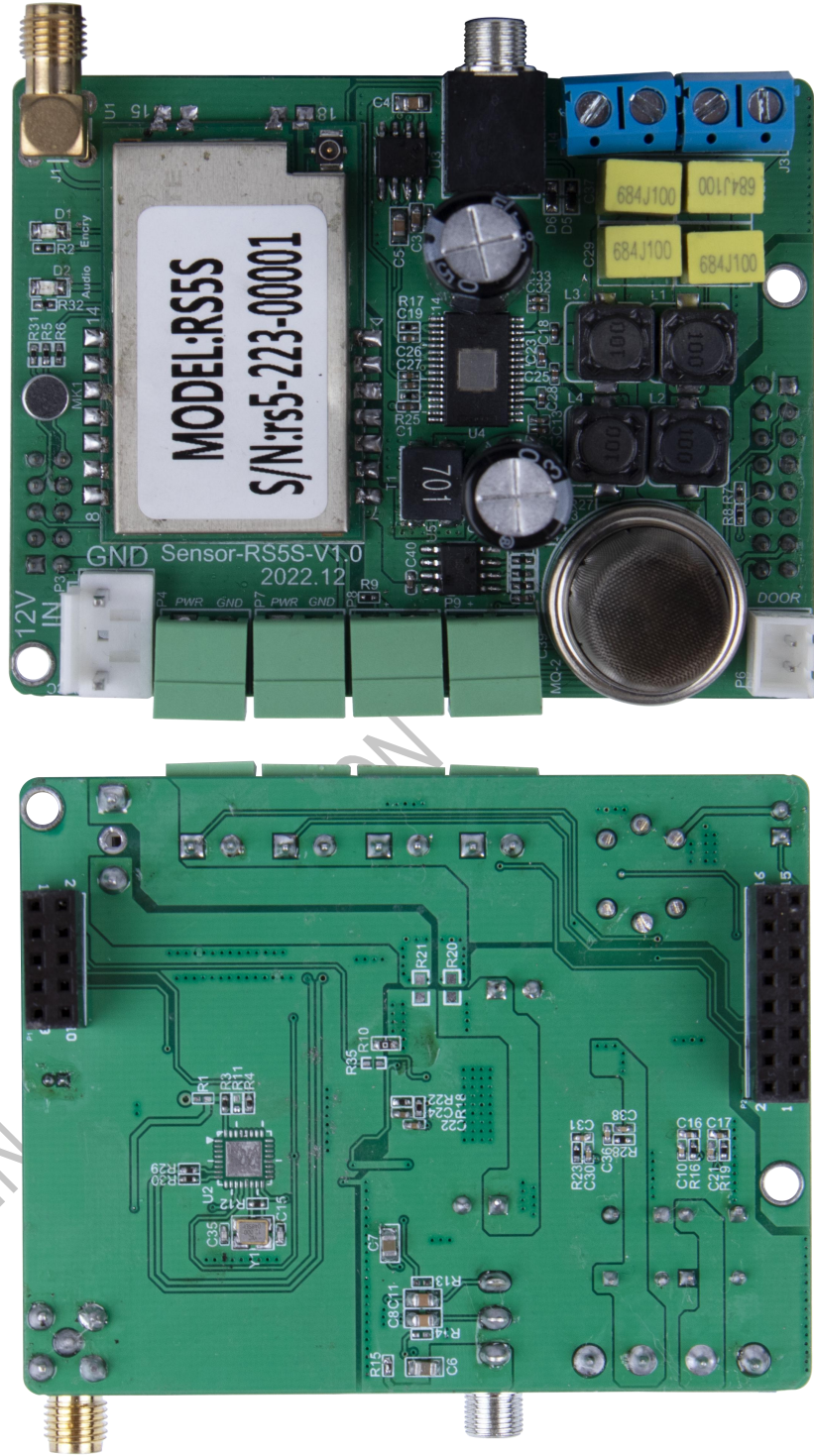
Widely used in equipment anti-cloning, IoT identification, medical, industrial and production management security.

Security Guard Multi-Function Card RS5S Built-in Encryption Device Structure Diagram

Product Images

Function Characteristics

Sysolution Technology Security Guard Multi-Function Card RS5S, with the following features:

1.Running indicator light is used to indicate whether the sensor is in normal working condition;

2. Wireless calibration of screen-to-screen time, so that the playback screen switching is completely synchronized, within 10ms error (subject to the actual environmental impact of the reference value may be deviated, the naked eye can not see the delay);

3. Use with Y50 control card to realize security encryption, IP broadcast and audio playback;

4. Maximum support for 4-way power supply voltage detection function;

5. Standardly equipped with smoke, switch door and other detection interfaces.

6. On-chip key management (including key generation, storage, update, etc.)

7. On-chip RSA, ECC SM2) coprocessor, digital signatures and identity certification

8. On-chip SM3, SHA hardware algorithm core

9. On-chip S M1, SM4 and DES T DES hardware algorithm cores.

Topological diagram

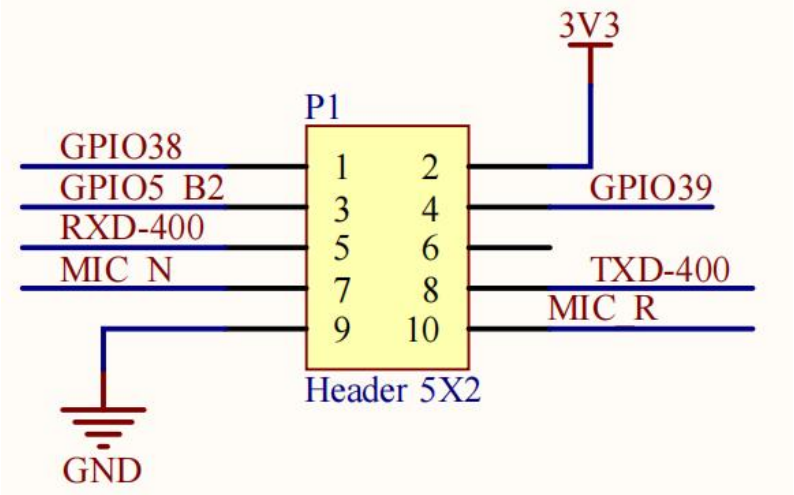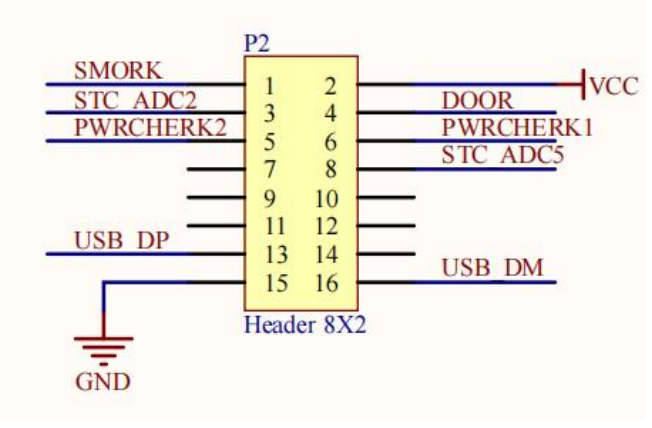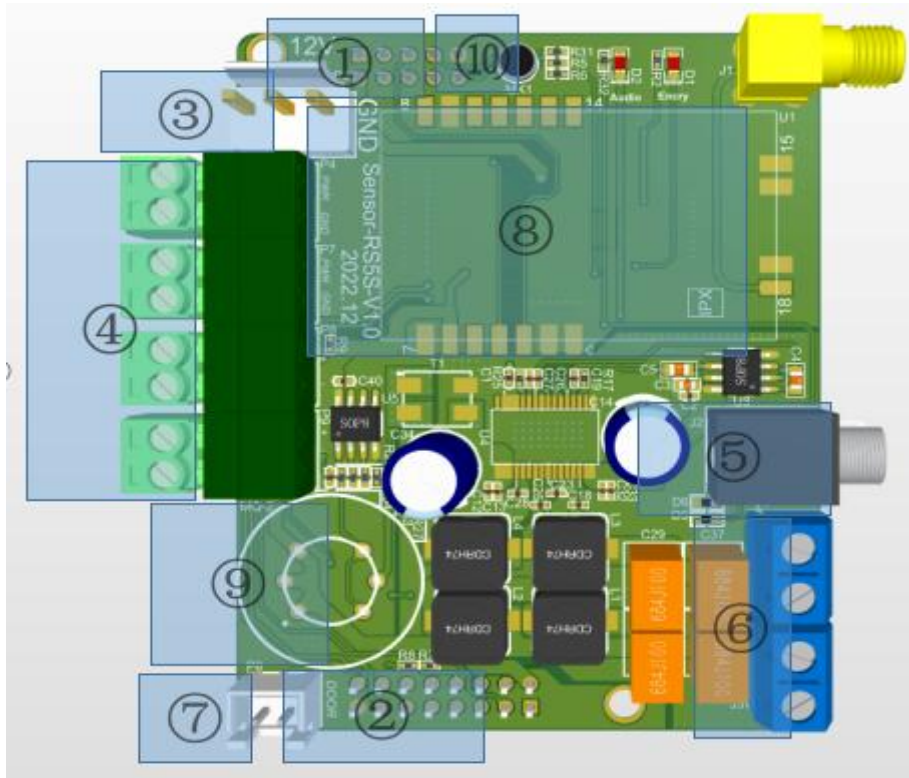Asynchronous Card Y50 with Security Guard Function Card RS5S
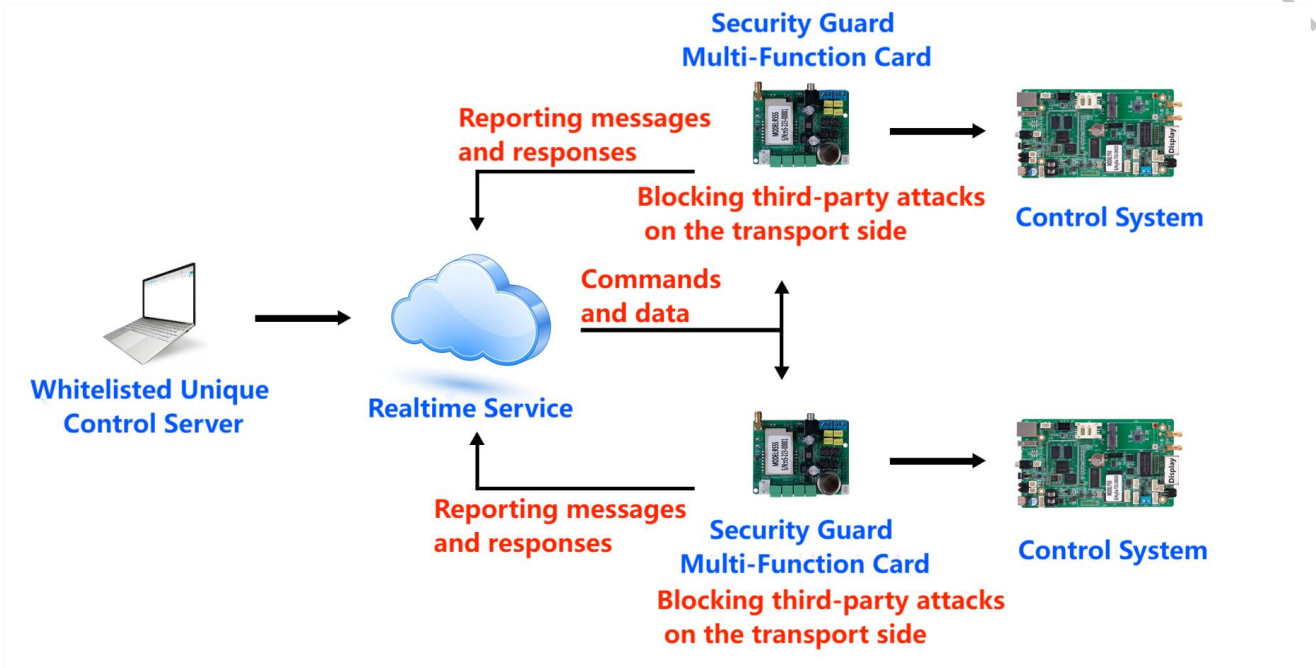
Schematic
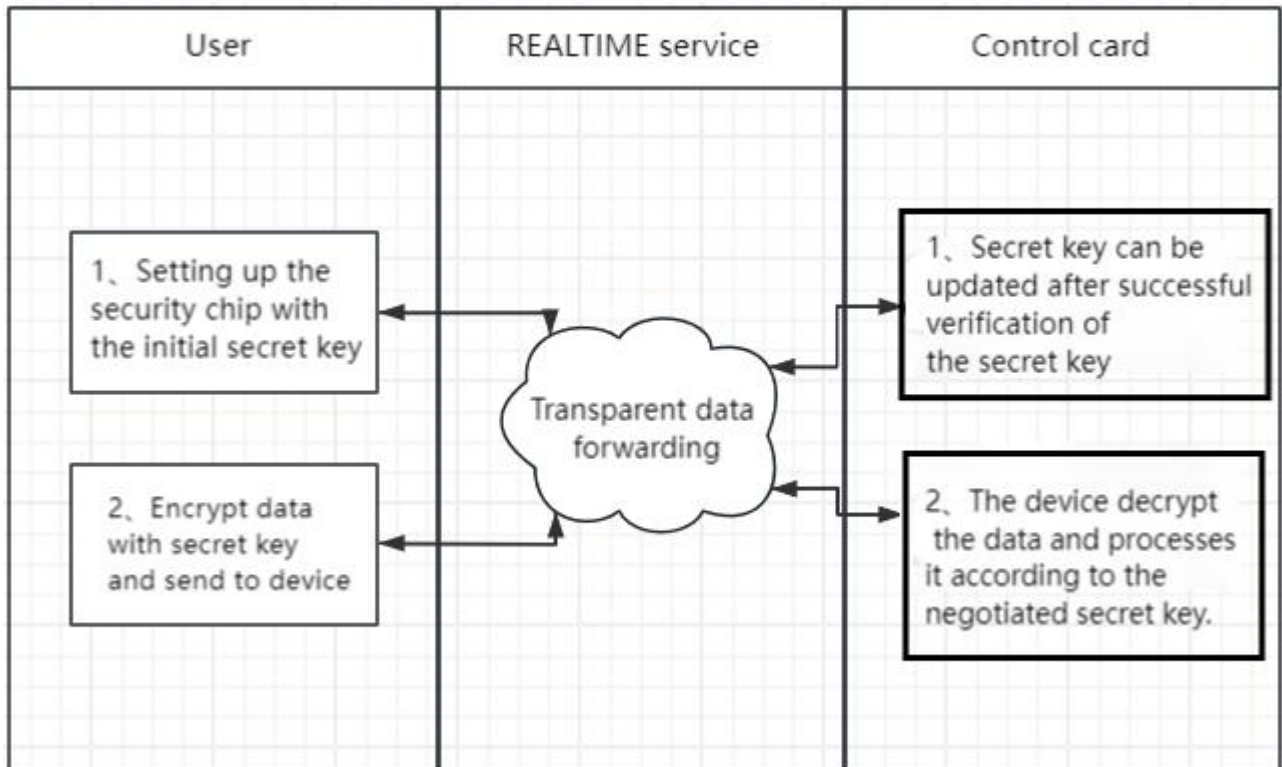
Interface Definitions

Interface Description	
Number	Type
①	10PIN interface: connect Lora module, microphone

|	
②	16PIN interface: connection to smoke, ADC detection, switching gate, USB
③	Power interface: 12V power supply
④	4-channel voltage detection
⑤	3.5mm audio input port
⑥	Amplifier Audio Outputs
⑦	Door opening and closing detection interface

| ⑧	Lora Module
⑨	Smoke Module
⑩	Microphones

Product parameter

Product Model	Parameter
Multi-function Card RS5S	1. Synchronized radiation radius of 2KM (the distance may be deviated by the actual use environment); 2. Reserved interfaces for smoke, door opening and closing detection and power voltage detection; 3. Used with the Y50, no need to open another hole for fixing. 4.Storage Temperature: -40℃~125℃ 5. Environmental (normal) temperature: -25℃~85℃

Dimensional Drawing
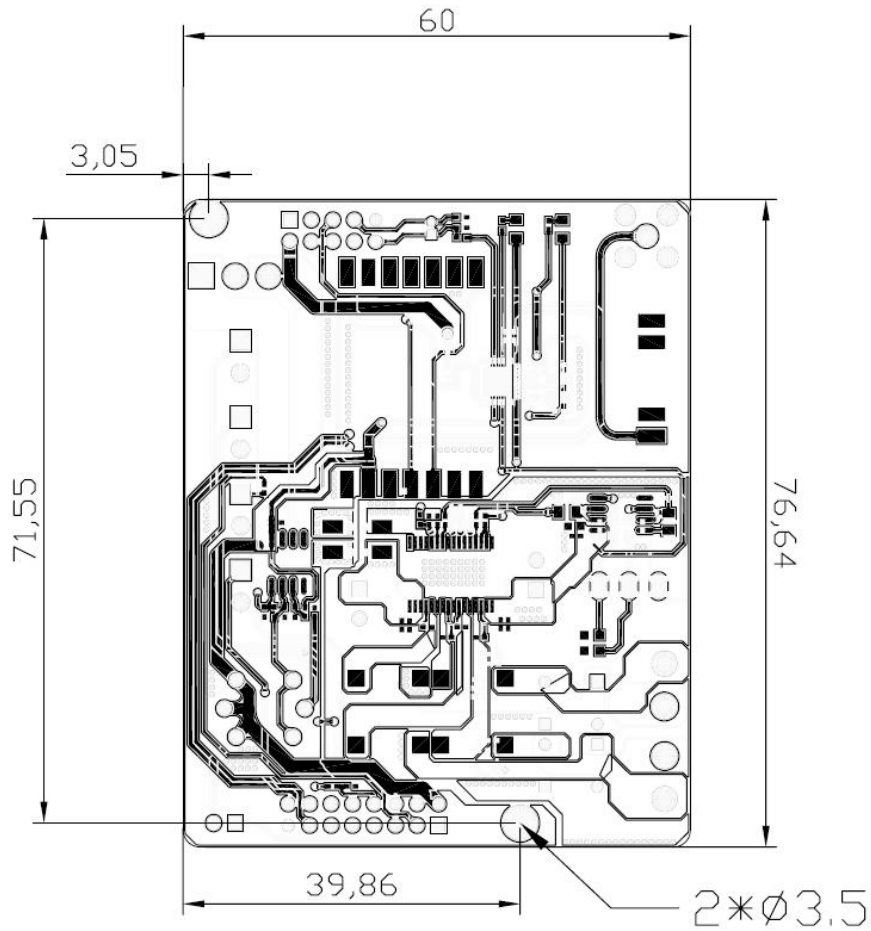
Unit：mm

Lora synchronized antenna using glue stick antenna must be added to the antenna extension cable fixed to the outside of the box, the extension of the antenna fixed hole aperture size as shown below:
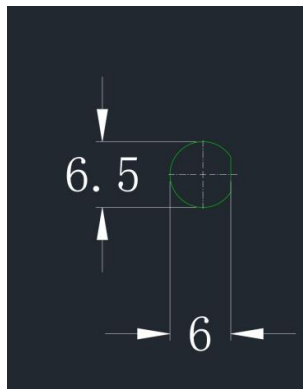
Notes

1. Be careful of waterproof.

2. It is strictly forbidden to plug and unplug the connecting wires with electricity.

3. It is strictly forbidden to touch the AC220V terminal of the relay.

4. Try not to touch the chip and its pins on the product to prevent electrostatic damage.