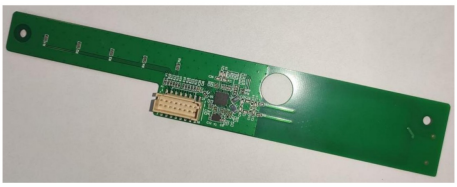

Chargedot LSD1NF-ST39NFC0 RFID Recognition Module User Manual

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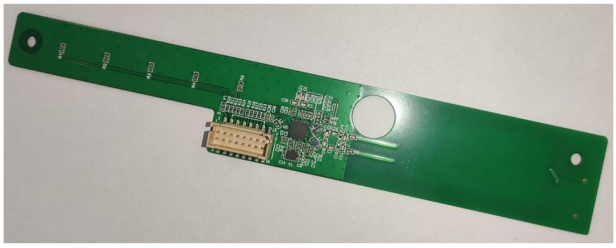


Contents

Revision history

Product Name	LZ RFID Recognition Module	Product Type		LSD1NF-ST39NFC0	
Editor	LuTong Huang	Date		20191014	
No.	Revision record	Modifier	Auditor	Versions	Date
1	Initial release	LuTong Huang		V1.0	20191014
2	Modify some parameters	LuTong Huang		V1.1	20191126
3	Modify the product physical drawing	LuTong Huang		V1.2	20191129
4	1. Updated real object diagram; 2. Update some parameters	LuTong Huang		V1.3	20191220
5	1. Update physical drawings; 2. Hardware version update	LuTong Huang		V1.4	0200426

Information

Part Number	Description	Package Size
LSD1NF-ST39NFC0	The PN is pure hardware without any firmware, and SPI communication interface is reserved	30mm*184mm*8.45 mm

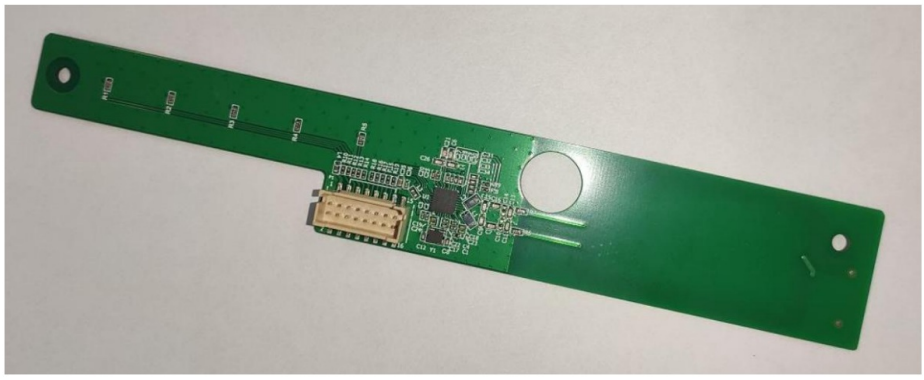
The Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

Features

This NFC module is based on ST ST25R3911B chip research and development of a high-performance NFC module, support ISO 18092 (NFCIP-1) Active P2P/ ISO14443A/ ISO14443B/ FeliCa.The module is aimed at Shanghai joint pile Customized module, according to customer requirements reserved SPI interface, as well as some IO port



Specifications

Table1: Module Parameters

Parameters	performance	Note
Working voltage	2.4V~5.5V	Normal 3.3V
Working temperature ran ge	-20℃~65℃	
Frequency range	13.56MHz	
Tx current	<200mA	The transmitter can be adjusted by so ftware Flow and card-seeking distanc e
Dimensions	30mm*184mm*8.45mm	Length * width * height

Hardware

Outline Dimesional Drawing

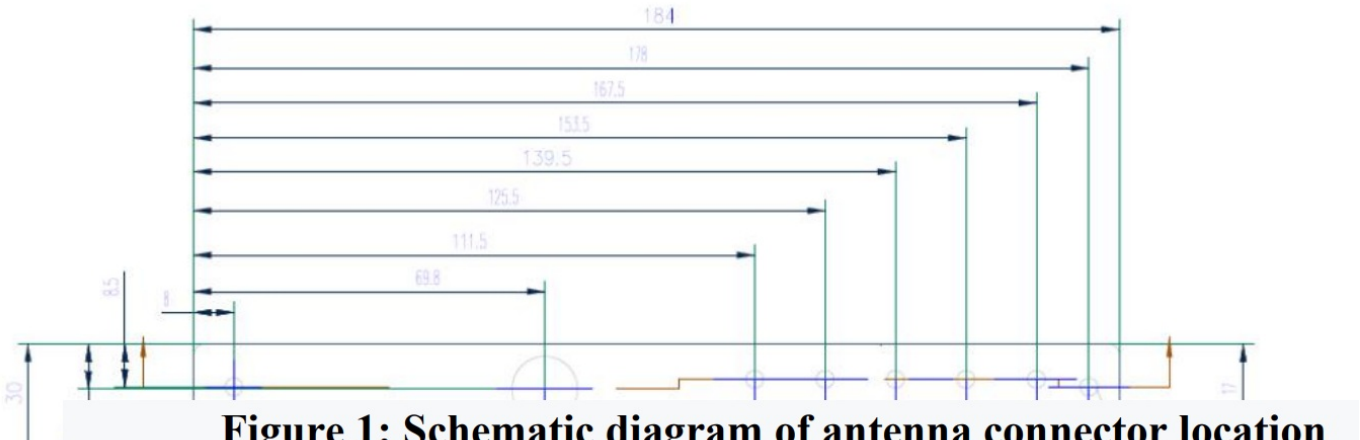


Figure 1: Schematic diagram of antenna connector location

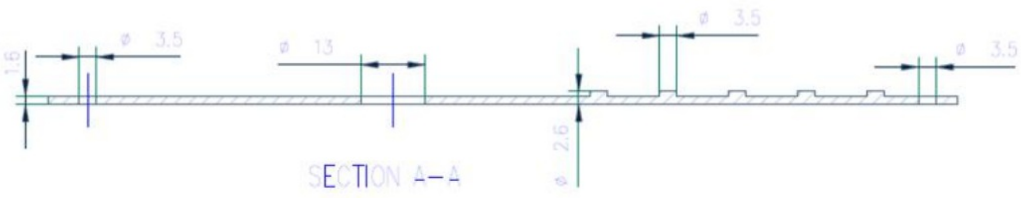


Figure 2: Drawing of lamp board dimensions

Pin Description

Pin Number	Pin Name	Type	Description
1	GND	P	Ground reference
2	VCC_3V3	P	Led lighting power supply
3	LED2	–	Low level drive
4	LED1	–	Low level drive
5	LED4	–	Low level drive
6	LED3	–	Low level drive
7	SPI_CS	I	SPI Control
8	LED5	–	–
9	SPI_CLK	I	SPI Control clk
10	SPI_DO	O	SPI Control miso
11	NC	–	–
12	SPI_DI	I	SPI Control mosi
13	INT	–	interrupt
14	NFC_3V3	–	NFC power supply
15	KEY2	I	No connect
16	KEY1	I	No connect

Applications

NOTE

In order to ensure the RF performance of the module in the application to maximize its effectiveness, users should follow the following rules in use Principle:

1. The card searching distance can be adjusted by software;
2. The power supply capacity of the module must be greater than 200mA;

Using an internal LDO increases sensitivity, but system power consumption will be slightly higher.

Reference manual

st25r3911b.pdf

Federal Communications Commission (FCC) Interference Statement

FCC Statement

This device complies with part 15 of the FCC rules Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

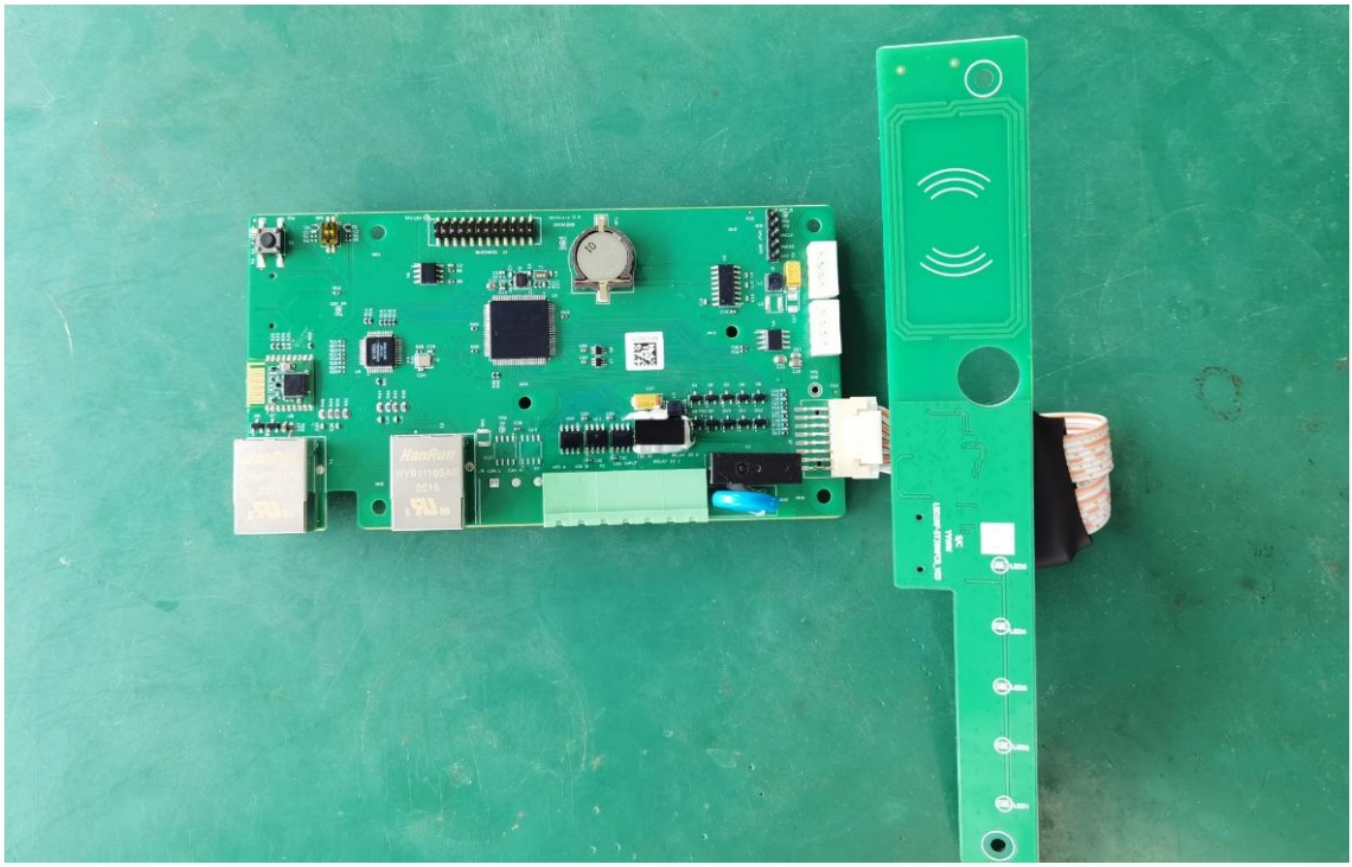
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help
- This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

RF Exposure Information and Statement :
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

Instructions to the OEM/Integrator:
This module has been granted modular approval for mobile applications. OEM integrators for host products may use the module in their final products without additional FCC certification ifthey meet the following conditions. Otherwise, Additional FCC approvals must be obtained.

- The OEM must comply with the FCC labeling requirements. If the module's label is not visible when installed, then an additional permanent label must be applied on the outside of the finished product which states: "Contains transmitter module FCC ID:2AWGLLSD1NFST39NFC0,Additionally, the following statement should be included onthe label and in the final product's user manual:
  "This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interferences, and (2) this device must accept any interference received, including interference that may cause undesired operation."
- The user's manual for the host product must clearly indicate the operating requirements and conditions that must be observed to ensure compliance with current FCC RF exposure guidelines.
- The final host / module combination may also need to be evaluated against the FCC Part 15 B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.
- This Module is limited modular approval, it is limited to OEM installation ONLY.
- The module is limited to installation in mobile application.
- A separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and difference antenna configurations.
- The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.
- The Grantee will provide guidance to the Host Manufacturer for compliance with the Part 15 B requirements if requested.

NOTE:
This product NFC module is only based on this board to meet FCC certification



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Released by Shanghai Charge Dot New Energy Technology

ORIGINAL EQUIPMENT MANUFACTURER (OEM) NOTES

The OEM must certify the final end product to comply with unintentional radiators before declaring compliance of the final product to Part 15 of the FCC rules and regulations. Integration into devices that are directly or indirectly connected to AC lines must add with Class II Permissive Change.

The OEM must comply with the FCC labeling requirements. If the module's label is not visible when installed, then an additional permanent label must be applied on the outside of the finished product which states:
"Contains transmitter module FCC ID: 2AWGLLSD1NFST39NFC0. Additionally, the following statement should be included on the label and in the final product's user manual:

"This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interferences, and
2. this device must accept any interference received, including interference that may cause undesired operation."

The module is limited to installation in mobile or fixed applications. Separate approval is required for all other operating configurations, including portable configuration with respect to Part 2.1093 and different antenna configurations.

Professional installation:
This module need to be installed under professional guidance, if there is any questions, please contact us.

Test board : NovaX-C-UL-v0.5
Power unit for test board : NovaX-P3B-UL-v0.5

Antenna information Type: PCB antenna; Impedance: 50Ω
The module can work on the host device, it means the driver is matched, different host devices have the different drives. The host device need have RF shielding of the RF part.

The host manufacturer can not get the module drive authorization to remain compliant, until the host device compliance with the requirements.

Note: The module has the antenna schematics, so the host device just provide the antenna connector for this device. The antenna port and connector is designed by OEM, it need to compliance with the 15.203 requirement, and it is not designed for use with high gain directional antennas.

A module or modules can only be used without additional authorizations if they have been tested and granted under the same intended end-use operational conditions, including simultaneous transmission operations.

When they have not been tested and granted in this manner, additional testing and/or FCC application filing may be required. The most straightforward approach to address additional testing conditions is to have the grantee responsible for the certification of at least one of the modules submit a permissive change application.

When having a module grantee file a permissive change is not practical or feasible, the following guidance provides some additional options for host manufacturers.

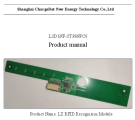
Integrations using modules where additional testing and/or FCC application filing(s) maybe required are: (A) a module used in devices requiring additional RF exposure compliance information (e.g., MPE evaluation or SAR testing); (B) limited and/or split modules not meeting all of the module requirements; and (C) simultaneous transmissions for independent collocated transmitters not previously granted together.

This Module is limited modular approval, it is limited to OEM installation ONLY.
Integration into devices that are directly or indirectly connected to AC lines must add with Class II Permissive Change. (OEM) Integrator has to assure compliance of the entire end product includle the integrated Module.

Additional measurements (15B) and/or equipment authorizations (e.g Verification) may need to be addressed depending on co-location or simultaneous transmission issues if applicable. (OEM) Integrator is reminded to assure that these installation instructions will not be made available to the end user of the final host device.

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization. Any company of the host device which install this modular with limit modular approval should perform the test of radiated emission and spurious emission according to FCC part 15C:15.225 and 15.209 requirement, only if the test result comply with FCC part 15.225 and 15.209 requirement, then the host can be sold legally.

Documents / Resources

	**Chargedot LSD1NF-ST39NFC0 RFID Recognition Module** [pdf] User Manual LSD1NF-ST39NFC0 RFID Recognition Module, FID Recognition Module, Recognition Module, LSD1NF-ST39NFC0