SK201E

GigE contactless connectivity

1. Overview

SK201E is a RF module with a pair patch antenna and G-PHY to achieve 1Gbps data rate Ethernet to 60GHz millimeter Wave RF signal conversion. The input of SK201E is RJ45 SGMII Gigabits Ethernet connector, with the output of centimeters distance RF transmission. SK201 module is based on leading edge ST60A2 mmW RF transceiver.

2. Features

- 60GHz V-Band transceiver with ST60A2
- Gigabit Ethernet short range contactless connectivity, preferred 1 cm
- Full duplex, vertical transmission, Auto negotiation
- RJ45 SGMII Ethernet input
- Used in pairs

3. Application

- LED Panels for Modular Display Walls
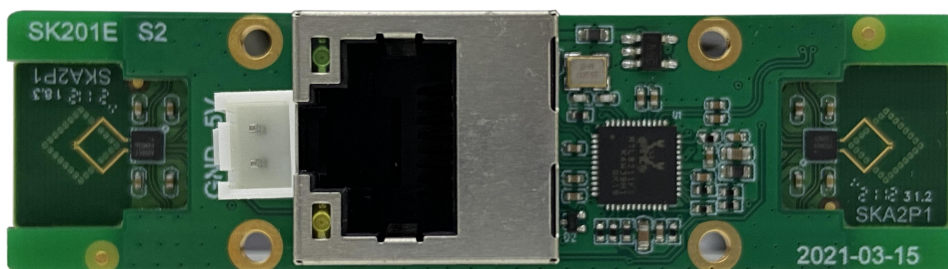- Video Surveillance camera and Robotics
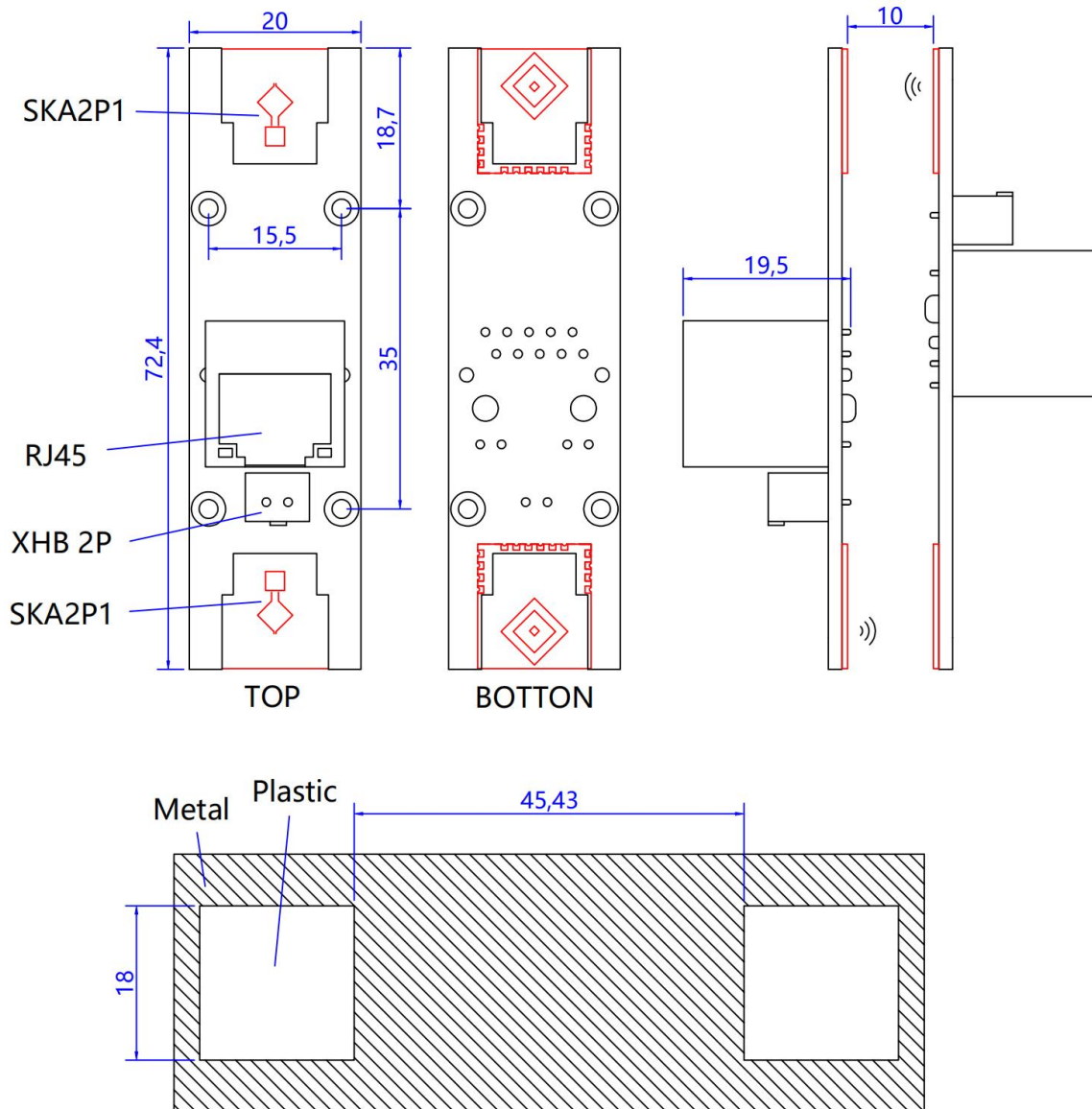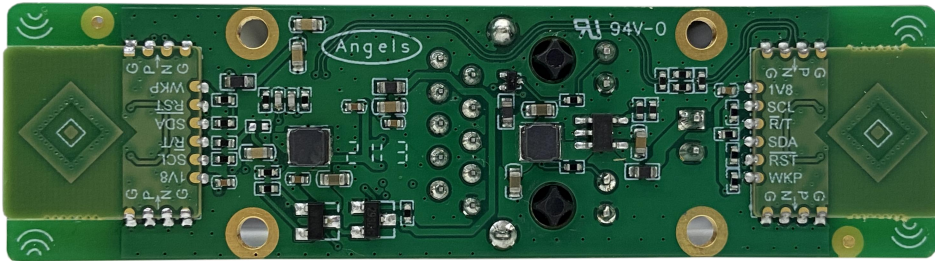- Contactless Ethernet applications

4. Block Diagram

Board outlook:

5. Assembly

PCB installation:

SKA2P1

20

18,7

15,5

72,4

35

RJ45

XHB 2P

SKA2P1

19,5

10

TOP

BOTTON

Metal Plastic

45,43

18

Unit: mm

Note:

(1) If a metal cover is used, a window should be added for microwave signal. Plastic or other microwave insensitive materials can be used to fill the window.

(2) The distance between the two modules is determined by the speed of the data and the assembly environment. It is recommended that the installation distance be less than 10mm

Pin assignment

PIN	DESCRIPTION
RJ45: for gigabits ethernet	
XH 2P: for power supply	
1	5V
2	Ground

6. Power supply

SYMBOL	DESCRIPTION	MAX	TYP	MIN
Vin	Power supply	5.5V	5V	3.5V
Cin	Current		0.12A	
P	Total Power consumption	-	0.6W	-

7. Auto-negotiation

The Ethernet PHY supports 1Gbps, 100Mbps and 10Mbps speeds. In order for two Ethernet modules to communicate correctly, care must be taken that the PHY on both modules negotiate the same speed. The auto-negotiation is always enabled on the Realtek PHY. It takes place independently between a module and the device connected on its RJ45 port. It is the responsibility of the application to ensure the auto-negotiation result is the same for both Ethernet modules.

For example if one module is connected to a 100Mbps modem, the PC connected on the other module should be configured to guarantee the auto-negotiation result is also 100Mbps.

8. Temperature

SYMBOL	DESCRIPTION	MAX	TYP	MIN	UNIT
T_A	Ambient Operation Temperature	70	-	0	℃

NOTE: If the temperature range does not meet the requirements, -40~85℃ is also possible, please contact the supplier.

9. Part number

Part number	DESCRIPTION
SK201E	GigE contactless module with Realtek RTL8211F, Patch antenna

Revision History

Date	Version	Changes
MAR 17 2021	1.5	Update PCB installation
APR 03 2020	1.4	Add temperature range description
NOV 11 2019	1.3	First Draft, based on SK20x_SPEC_1.3version