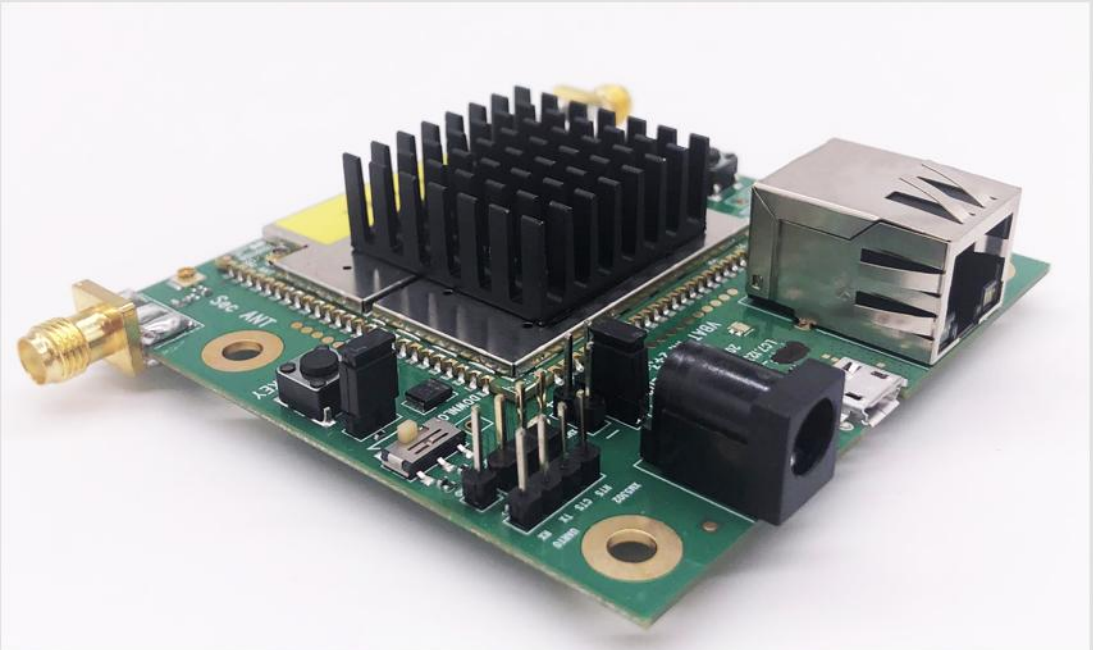
FDM-6600 MIMO(2x2) NLOS Wireless Ethernet & Full Duplex TTL Serial Data Link



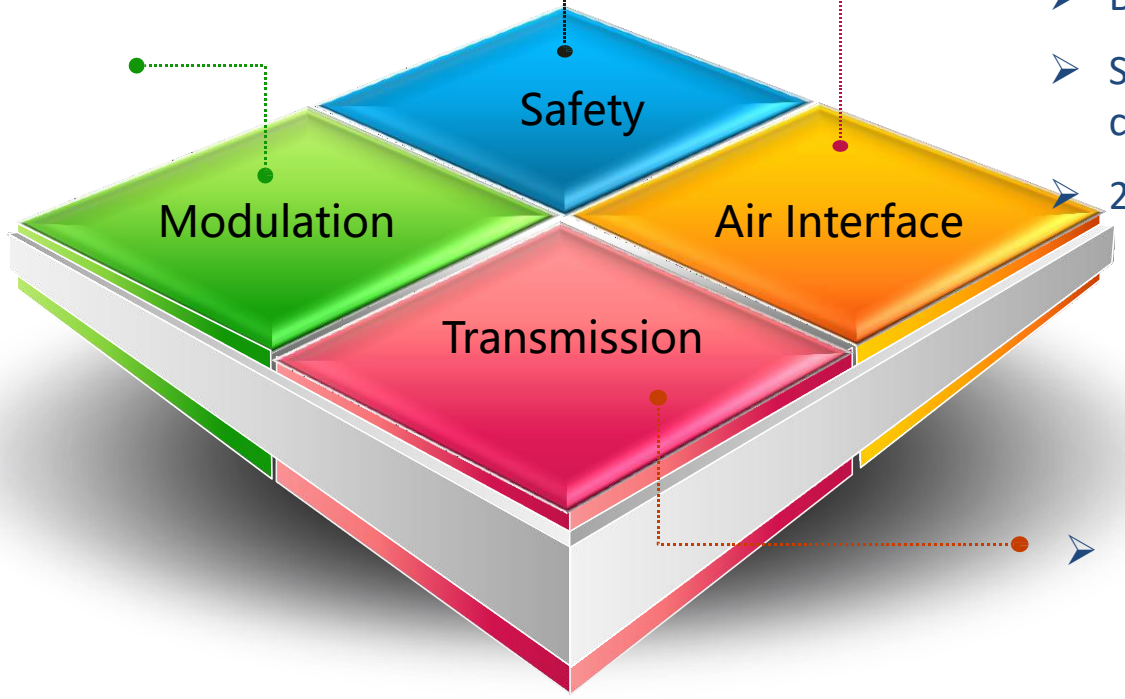
Introduction

- FDM-6600 is a wireless transmission product designed by IWAVE based on mature SOC chipset, which supports point to point and point to multi-point. 1 maseter node supports up to 16 sub-nodes to shares 30Mbps bandwidth for 1080P video transmitting.
- FDM-6600 is designed based on TD-LTE wireless communication standard, OFDM and MIMO technologies. It doesn't rely on any carrier's base station.
- Speical design for NLOS environment HD video and Control data transmitting.
- Supports TCPIP/UDP and full duplex TTL data transmission. And the control data transmission is higher priority than network signal.
- It adopts the Automatic frequency hopping technology for anti-interference greatly reduce system power consumption and size of the module.
- Tri-band frequency: 800Mhz/1.4Ghz/2.4Ghz selectable on software.

Core Technology of Digital Transmission Scheme

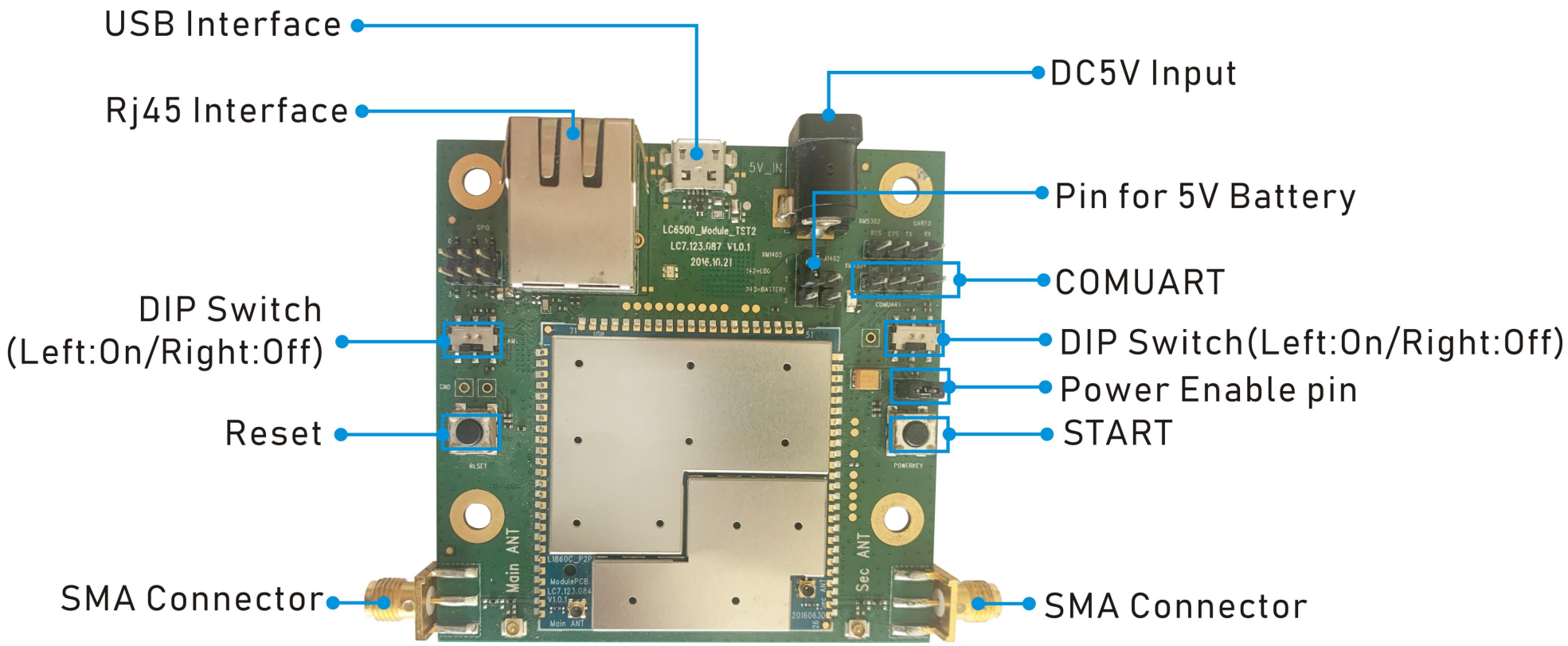
- Access authentication to prevent illegal access
- Support user-defined encryption
- Band scanning to avoid interference
- In-band frequency hopping reduces interference effects

- OFDMA
- TDD
- 64QAM、16QAM、QPSK

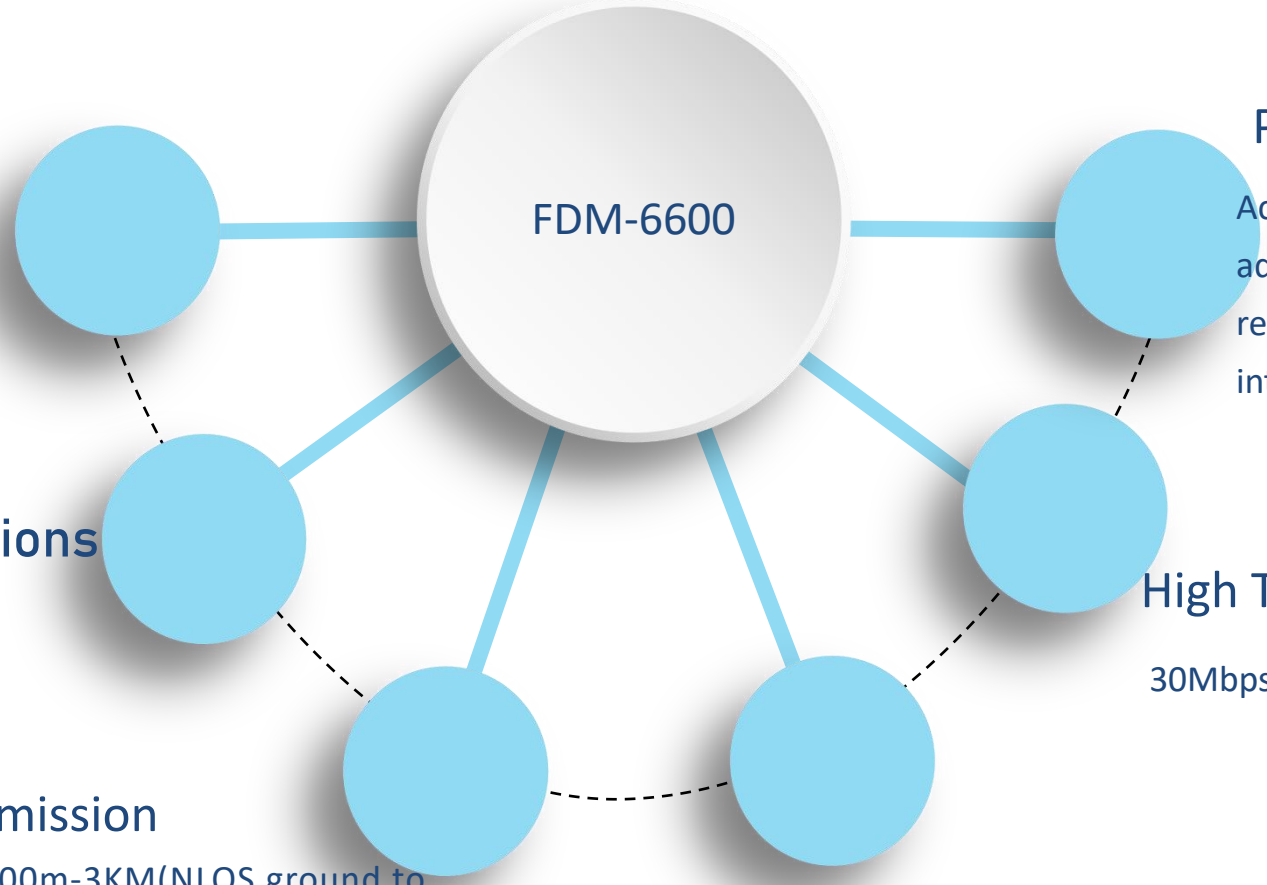


- 800MHz/1.4GHz/2.4Ghz Selective by software
- Bandwidth: 3/5/10/20Mhz
- Support frequency/rf power/appearance customized design
- 23dbm RF Power(Adjustable)
- 30Mbps data rate

Interfaces


USB Interface
Rj45 Interface
DC5V Input
Pin for 5V Battery
COMUART
DIP Switch
(Left:On/Right:Off)
DIP Switch(Left:On/Right:Off)
Power Enable pin
Reset
START
SMA Connector
SMA Connector

Advantages



Support 16 nodes

1 Central node support 16 units sub nodes nodes

Power Self-adaptive

According to the channel conditions, adaptively adjust the transmitting and receiving power to reduce power consumption and network interference

Diverse bandwidth options

1.4M/3M/5M/10M/20Mhz

High Throughput

30Mbps for uplink and downlink at same time

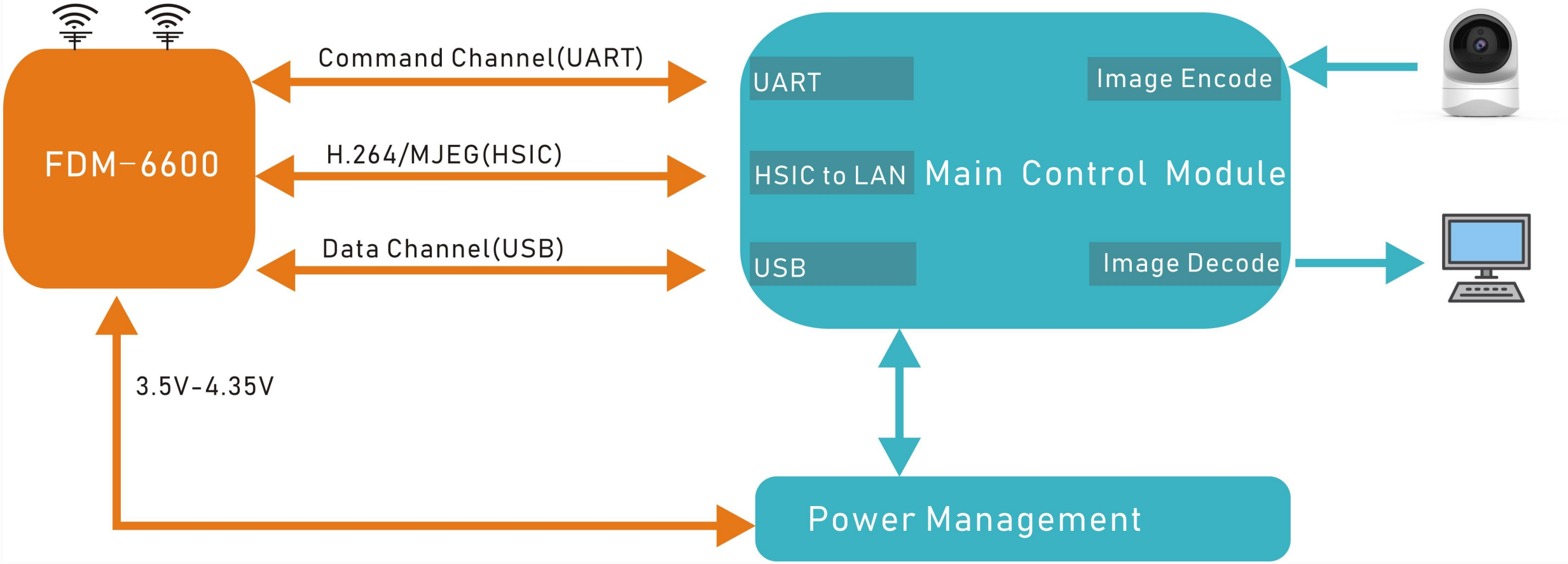
Long Distance Transmission

10-15km(los air to ground)/500m-3KM(NLOS ground to ground)

High Speed Moving

All the nodes can be carried for fasting moving. And the wireless link is stable

Advantages



Data Flow Diagram of FDM-6600

Technical Specification

GENERAL		SENSITIVITY		
TECHNOLOGY	Wireless based on TD-LTE Technology Standards	2.4GHZ	20MHZ	-99dBm
ENCRYPTION	ZUC/SNOW3G/AES(128/256) OptionalLayer-2		10MHZ	-103dBm
DATE RATE	30Mbps(Uplink and Downlink)		5MHZ	-104dBm
RANGE	10km-15km(Air to ground) 500m-3km(NLOS Ground to ground)		3MHZ	-106dBm
PtMP	Point to 16-Point	1.4GHZ	20MHZ	-100dBm
MIMO	2x2 MIMO		10MHZ	-103dBm
POWER	23dBm±2 (2w or 10w options)		5MHZ	-104dBm
LATENCY	End to end≤30ms		3MHZ	-106dBm
MODULATION	QPSK, 16QAM, 64QAM	800MHZ	20MHZ	-100dBm
			10MHZ	-103dBm
ANTI-JAM	Automatically frequency hopping		5MHZ	-104dBm
FREQUENCY BAND			3MHZ	-106dBm
2.4Ghz	2401.5-2481.5 MHz			
1.4Ghz	1427.9-1447.9MHz			
800Mhz	806-826 MHz			

Technical Specification

COMUART	
Electrical Level	2.85V voltage domain and compatible with 3V/3.3V level
Control Data	TTL mode
Baud rate	115200bps
Transmission Mode	Pass-through mode
Priority level	Higher priority than the network port When the signal transmission is crowed, the control data will be transmitted in priority

Note:

1. The data transmitting and receiving is broadcast in the network. After successful networking, each FDM-6600 node can receive serial data.

2. If you want to distinguish between sending, receiving and control, you need to define the format yourself

Technical Specification

MECHANICAL						
TEMPERATURE	-40℃~+80℃					
DIMENSIONS	7.8*10.8*2cm					
WEIGHT	50grams					
STABILITY	MTBF≥500hr					
POWER						
Patameters	Symbol	Description	Min	Type	Max	Unit
System's Main Power Supply	VCC	Input	3.7	3.8	4.35	V
Supply Power To External Terminals	D1V8	Output		1.8		V
Supply Power To External Terminals	D2V85	Output		2.85		V
RTC Battery Power Supply	VSB	Input		3		V
INTERFACES						
RF	2 x TNC					
ETHERNET	1xEthernet					
COMUART	1xCOMUART					
POWER	DC INPUT					
INDICATOR	Tri-COLOR LED					

Robot Mobile Communication

- Drone/robot collaborative networking
- Stable/real-time/long-distance communication
- Supports Point to point/point to multi-point
- Full duplex TTL control data transmission
- hd video transmission for NLOS/LOS

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