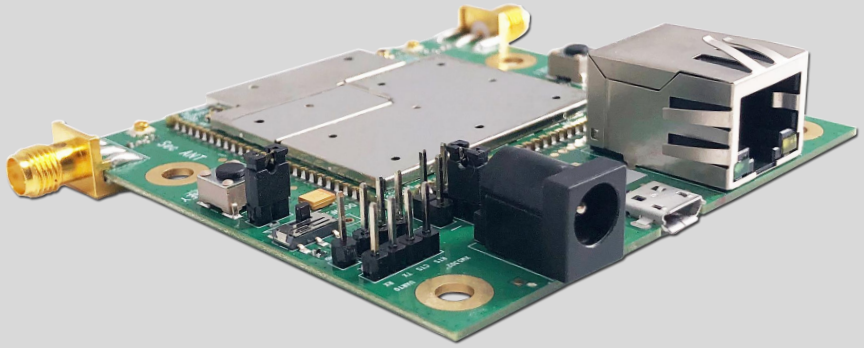
FD-6100 MIMO(2x2) Wireless MESH Ethernet & Full Duplex TTL Serial Data Link



Introduction

- FD-6100 is a wireless transmission product designed by IWAVE based on mature SOC chipset, which is a IP MESH radio

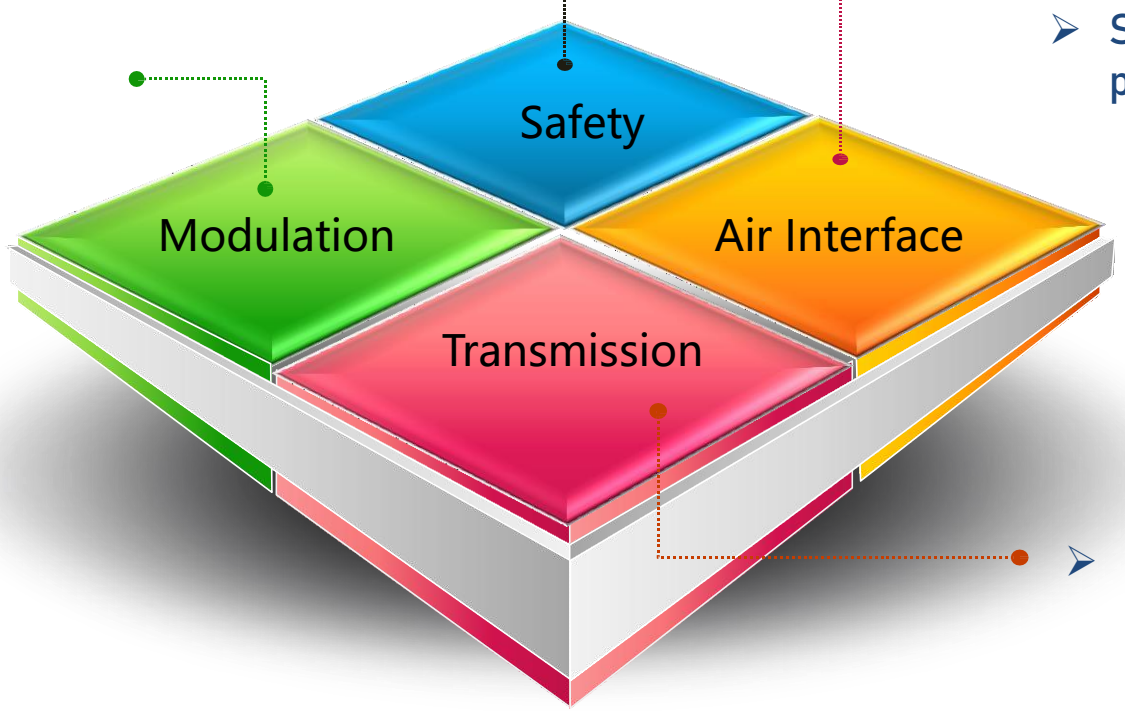
  offering HD video transmission and MIMO capability for high data capacityies
- FD-6100 is designed based on TD-LTE wireless communication standard, OFDM and MIMO technologies. It doesn't rely on any carrier's base station.
- Supports Ethernet and full duplex TTL data transmission. And the control data transmission is higher priority than the network signal.
- It adopt the Automatic frequency hopping technology for anti-interference greatly reduce system power consumption and size of the module.
- Self-forming, self-healing mesh architecture
- Low latency IP communication
- Support WEBUI for network management and parameters configurable.

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

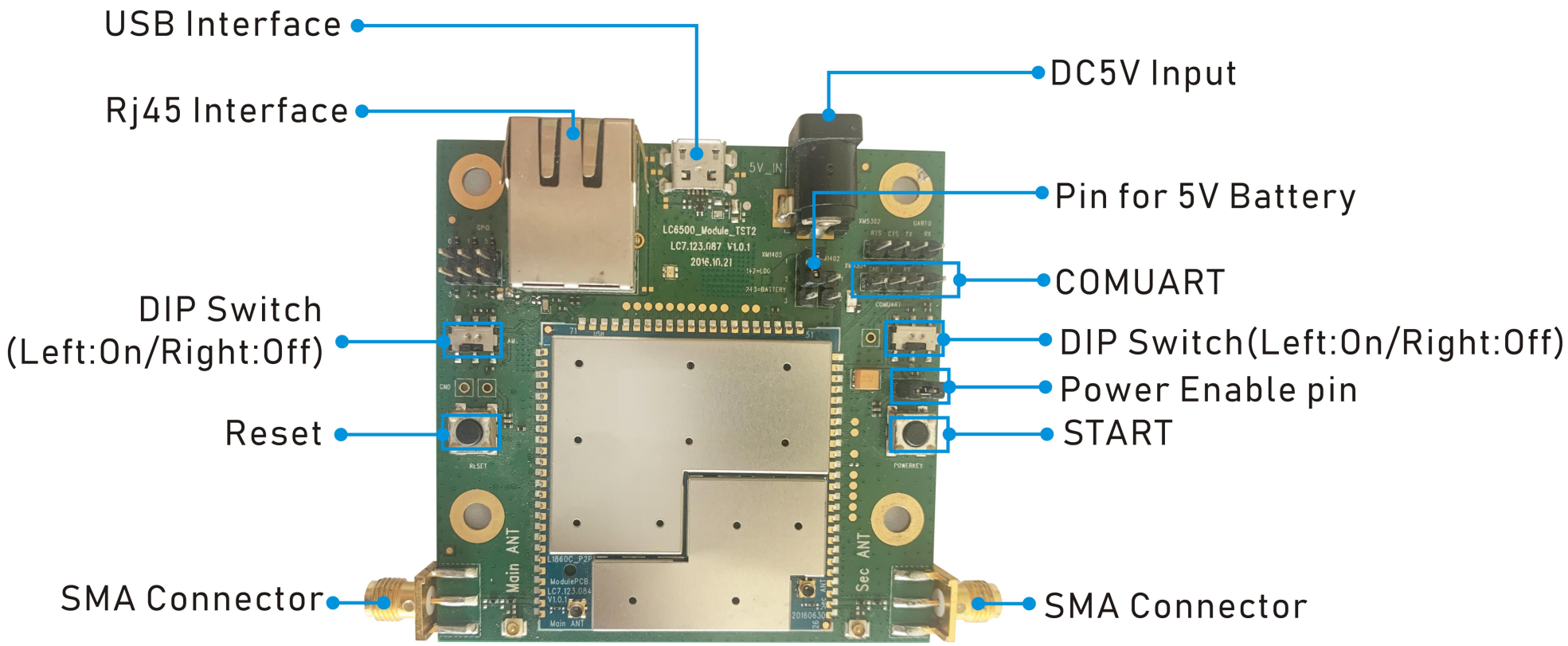
- 800MHz/1.4GHz/2.4GHz for option
- Bandwidth: 5/10/20Mhz
- Support frequency/rf power/appearance customized design

- OFDMA
- TDD
- 64QAM、16QAM、QPSK

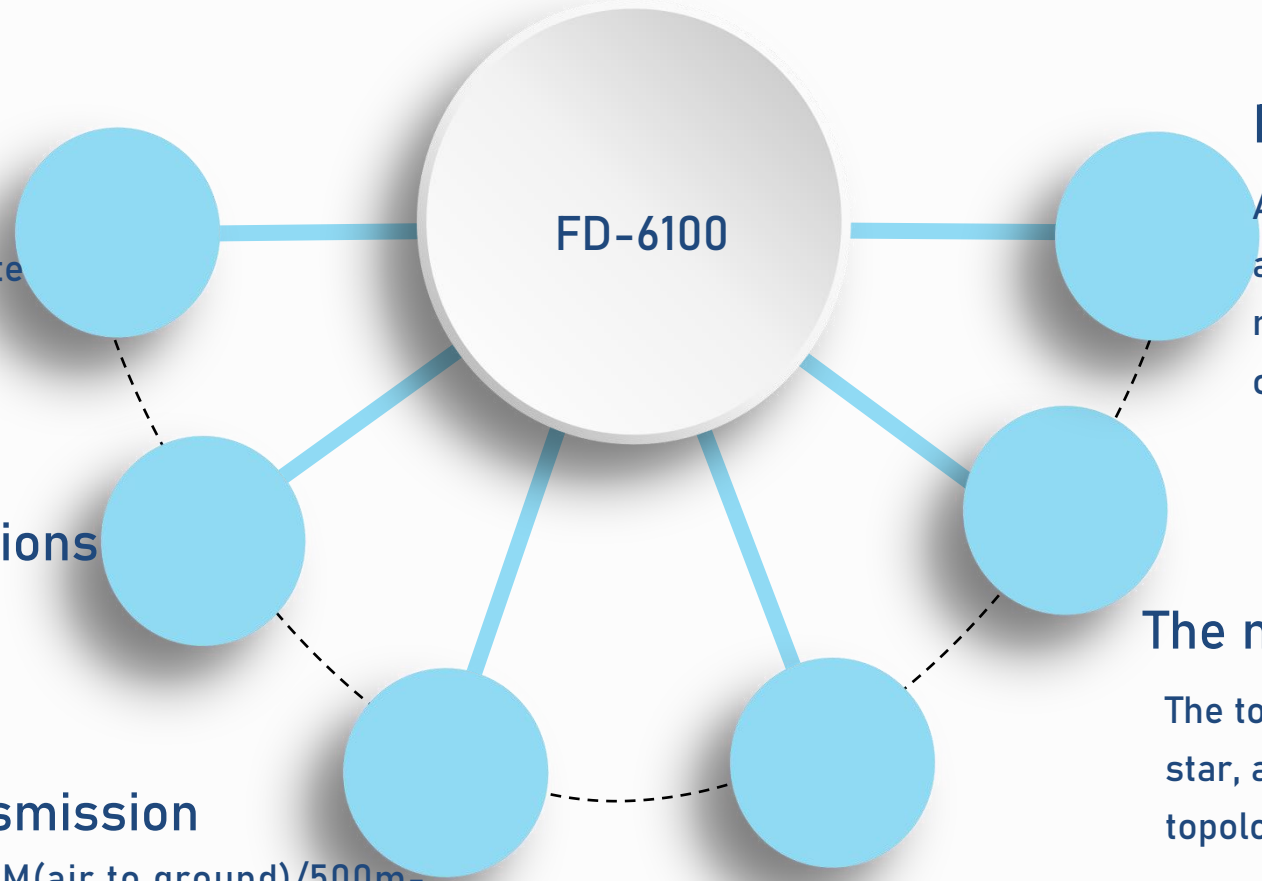


- 30Mbps data rate

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 32 nodes

Any node can freely communicate

Power 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

The network topology is variable

The topology can be switched between linear, star, and mesh topologies or multiple topologies coexisting

Long Distance Transmission

One hop distance up to 17KM(air to ground)/500m-3KM(NLOS ground to ground)

Intelligent routing

The network automatically switches routes based on factors such as the number of transceiving and channel environment.

Technical Specification

GENERAL		SENSITIVITY		
TECHNOLOGY	MESH base on TD-LTE Wireless technology standard	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
NODE	32 nodes	1.4GHZ	20MHZ	-100dBm
MIMO	2X2 MIMO		10MHZ	-103dBm
POWER	23dBm±2 (2w or 10w options)		5MHZ	-104dBm
LATENCY	One Hop Transmission≤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			
Note: The freqeuncy band supports customized				

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 FD-6100 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≥10000hr					
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	1x COMUART					
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
- hd video transmission for NLOS/LOS

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