RISE485 LoRaWAN IO Controller

RISE485 LoRaWAN Serial Controller

General Electrical Specification

Items	Conditions	Min	Typical	Max	Unit
Input voltage	DC	6	12	55	V
	AC	6.8	24	48	V
Power consumption	Normal operation, when RF in TX will have max Power consumption.	0.5	0.8	1.1	W
Power protection	Short and over current protection	Sustained, self-resettable			
Internal Working voltage		2.97	3.3	3.6	V

Communication support

Items	Name	Description
Communication method	RS485	DFU and DMU through RS485
	RS232	DFU and DMU through RS232
	LoRaWAN	DFU and LoRaWAN gateway, RF communication

RF Specification

Items	Conditions	Min	Typical	Max	Unit
Characteristic impedance	--		50		Ohm
Operation frequency	LF	410	--	525	MHz
	HF	779	--	1020	MHz
Frequency tolerance	--	-15		19	PPM
RF TX power	TX @434MHz/470MHz	2	17	14	dMB
	TX @868MHz/915MHz	0	13.5	+15	dMB
RF RX sensitivity	SF12, BW125kHz, 434MHz/470MHz		-139		dMB
	SF12, BW125kHz, 868MHz/915MHz		-137		dMB
Harmonics & Spurious	--		-40	-36	dMB
Max RF input	--			+10	dMB
TX Current of LoRa maximum output	LF, 3.3V current (RF)		120		mA
	HF, 3.3V current (RF)		45		mA
RX Current of LoRa	RX current, 3.3V current(RF)		16		mA
LoRa data bit rate	ADR , adaptive ((Multi SF LoRa)	300		50K	bps

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Interface Specification

Interface type	Item name	Description
Frequency tolerance	Interface terminal	A+, B-
RS485	Interface Part	Isolation, pluggable terminal header block
	Transmission medium	Twisted wire
	Communication mode	Asynchronous, half-duplex, point to point
	Directional control	Data stream auto control the data Direction
	Baud rate	600bps~38.4kbps configurable
	Data bits	7,8 configurable
	Parity	None, Even, Odd
	Stop bit	1
	Wire communication distance	1200m (9600bps)
	Interface Protection level	±4kV ESD Contact
RS232	Interface terminal	TXD, RXD, GND
	Interface Part	DB9 female
	Transmission medium	RS232 Cable
	Communication mode	Asynchronous, duplex, point to point

Interface type	Item name	Description
	Baud rate	600bps~38.4kbps configurable
	Data bits	7,8 configurable
	Parity	None, Even, Odd
	Stop bit	1
	Wire communication distance	20m (9600bps)
	Interface protection level	±4kV ESD Contact
DC-IN	Interface terminal	V+, GND
	Interface Part	DC Power Jack, inner conductor Φ2.0
AC-IN	Interface terminal	V+, V-
	Interface Part	Pluggable terminal header block
Configure	Interface terminal	TXD, RXD, GND
	Interface Part	Pluggable terminal header block
	UART configuration	"9600, 8, n, 1" (Baud rate 9600, 8 bits data, no parity, 1 stop bit)
Upgrade Button	Interface terminal	Tactile switch for firmware up gradation, press and hold the button before power on to enter BOOT mode.

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Interface Specification

Interface type	Item name	Description
Frequency tolerance	Power	Green, power on indication
LED	FCT	R/G Bi-color LED, green for system status, Green for RS485/232 transceiver. Red LED on indicates the system is in BOOT mode, off indicates the system normal mode. Green LED flickering indicates RS485/232 data communication.
	LoRaWan	R/G Bi-color LED: LoRaWAN TX, Red LED flickering; LoRaWAN RX, Green LED flickering.
RF interface	Interface terminal	SMA connector, 50Ω, for LoRaWan antenan.
LoRaWAN antenna	Interface port	SMA male
	Dimension	Φ10.7*115.5mm
	Center frequency	LF: 434MHz or 480MHz HF: 868MHz or 920MHz
	Gain	-0.9dBi
	Efficiency	33.87%
	Material	TPE
	Color	Black

Isolation Specification

Items	Conditions	Min	Typical	Max	Unit
Isolation Voltage	Dielectric Withstand Voltage Tester, load DC voltage for 1 minute, the leakage current < 1mA		1.5		KV
Insulation Resistance	Isolation Voltage 500VDC, 1 minute, test with High resistance meter		1000		MΩ

Mechanical Specification

Names	Items	Description
Mechanical specification	Dimension	94.4*84*25mm
	Material	Aluminum
	Color	Black
	Weight	150g
	Installation	Use screw

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Operation Environment

Names	Items	Description
Operation Environment	Operation temperature	-40c~+ 85c
	Humidity	5%～95% RH, No condensation.
	Storage temperature	-40c~+ 85c