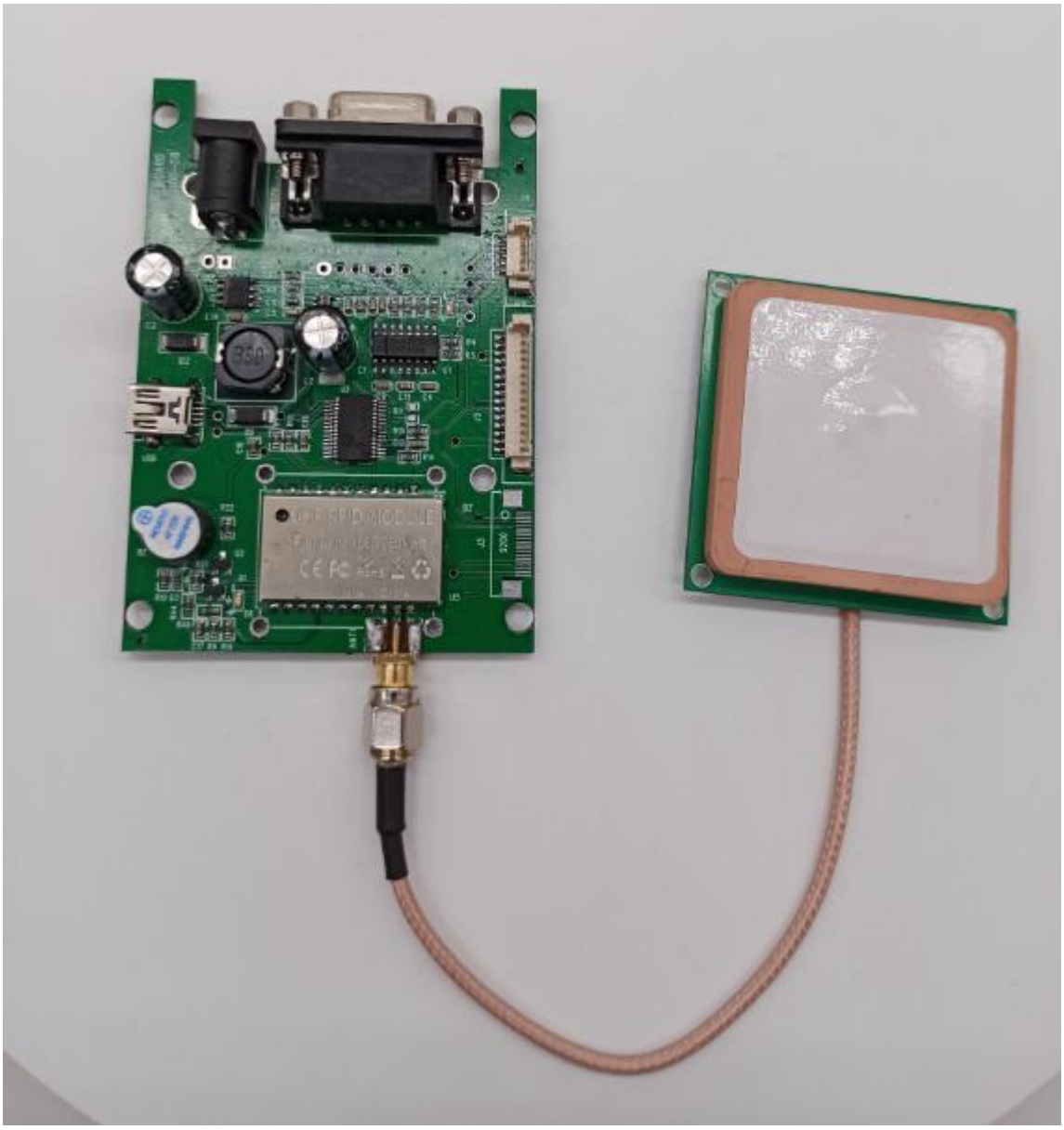
DATASHEET

UHF RFID Reader Module plus for ISO-18000-6C Protocol

FM-503 UHF RFID module



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Conditions
Max storage temperature	$T_{STOREmax}$	+120℃
Min storage temperature	$T_{STOREmin}$	-60℃
Power supply voltage	VIN	16V
Electrostatic discharge	V_{ESD}	1KV

Recommend Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply voltage	VIN	9	12	16	V
Operating Temperature	T_a	0	-	+50	℃
Storage Temperature	T_s	-40		+85	℃

System Characteristics

Parameter	Description
Interface	UART
RFID protocol	ISO-18000-6C/ EPC class1 gen2
ANT port impedance	50Ω
Operation range	Around 2m, dependent on TAG

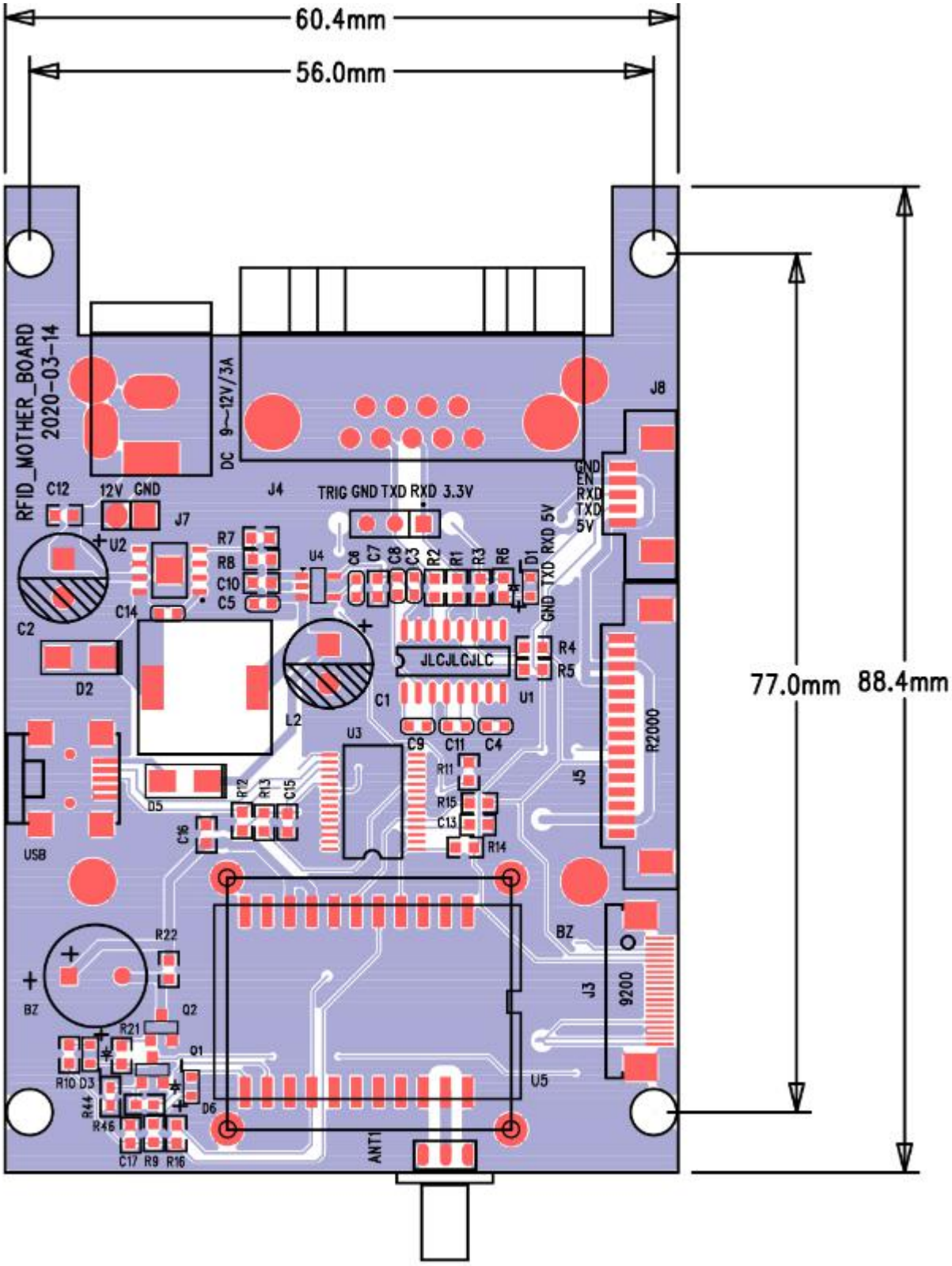
ELECTRICAL CHARACTERISTICS

➔AC Electrical Characteristics (Ta =25℃, VIN =5V, VSS = 0V)

Parameter	Symbol	Min.	Typ.	Max.	Unit
RF Output Frequency for reader	F_c	902	-	928	Mhz
RF Output Power	P_{out}	-	-	26.5	dbm
RF Transmission setup time	T_{RF_OUT}	-	-	0.5	ms
RF Frequency error	F_{error}	-	-	1000	ppm
Interrogator Transmit Spurious Emissions, In-Band	In accordance with local regulations				-
Interrogator Transmit Spurious Emissions, Out of-Band	In accordance with local regulations				-
RF Bandwidth	In accordance with local regulations				-
Transmit data rate	TR_{ate}	-	26K	-	bps
Modulation	ASK				
Modulation depth	90% normally				
Data Coding	PIE				
Demodulation	ASK				
Download data rate	DR_{ate}	-	40K	-	bps
Data encoding	FM0				

➔DC Electrical Characteristics for Reader mode (VIN =5V, VSS= 0V)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Average operating current	I_{OC}	-	280	-	mA
Standby current	I_{SB}	-	-	10	mA
Peak current	I_{peak}	-	300	-	mA
Disable current	I_{dis}		0.7	-	uA
Enable pin high (enabled)	$V_{EN(HI)}$	0.9	-	VIN	V
Enable pin low (disabled)	$V_{EN(LO)}$	0	-	0.4	V


60.4mm
56.0mm
77.0mm
88.4mm
RFID_MOTHER_BOARD
2020-03-14
DC 9~12V/3A
J8
GND
EN
RXD
TXD
5V
J4
TRIG GND TXD RXD 3.3V
J7
12V GND
C12
U2
C2
C14
D2
R7
R8
C10
C5
U4
C6
C7
C8
C3
R2
R1
R3
R6
D1
RXD 5V
GND TXD
R4
R5
JLCJLCJLC
U1
C1
L2
U3
C9
C11
C4
R11
R15
C13
R14
R12
R13
C15
C16
D5
USB
J5
R2000
BZ
R22
Q2
R21
Q1
R10 D3
R44
R46
D6
C17 R9 R16
U5
ANT1
J3
9200