

Bluetooth Module – Antenna Information

Used Bluetooth Module: [Proteus-I Bluetooth® LE 4.2 Modul](#) (AMB2621)

Antenna: Integrated PCB Antenna

General Properties:

Properties		Test conditions	Value	Unit
Communication Protocol/Standard	RF _{prot}		Bluetooth Smart 4.2 (BLE)	
Antenna Connector Type	ANT _{Conn}		Integrated PCB	
Microcontroller	µC		SoC	
Radio Chipset	RF-IC		Nordic - nRF52832	
Memory Size (Flash)			524288	B
Memory Size (RAM)			65536	B
Radio channel min.			0	
Radio channel max.			39	
Interface 1	IO ₁		UART	
Interface 1 Bitrate Range	IO ₁ Bitrate	latest FW revision	115.2	kbps
Number of I/O Ports	IO _{Ports}		2	

Electrical Properties:

Properties		Test conditions	Value	Unit
Operating Supply Voltage Min.	V _{DD min.}	TAMB = 25 °C, RH = 60 %	1.8	V
Operating Supply Voltage Max.	V _{DD max.}	TAMB = 25 °C, RH = 60 %	3.6	V
Recommended Supply Voltage	V _{DD typ.}	TAMB = 25 °C, RH = 60 %	3	V
Supply Current Sleep	I _{sleep}	VDD,typ,TAMB = 25 °C, RH = 60 %	0.4	µA

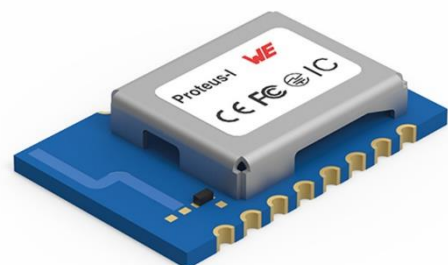
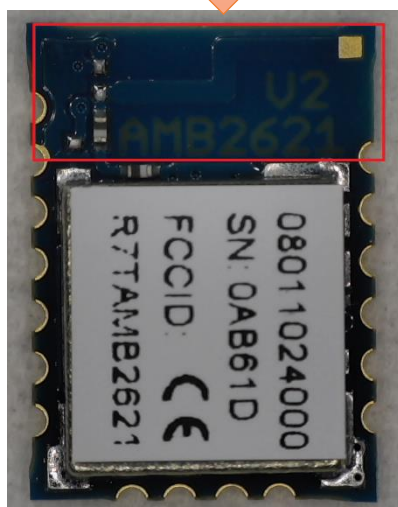
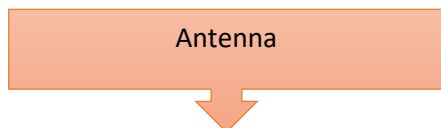
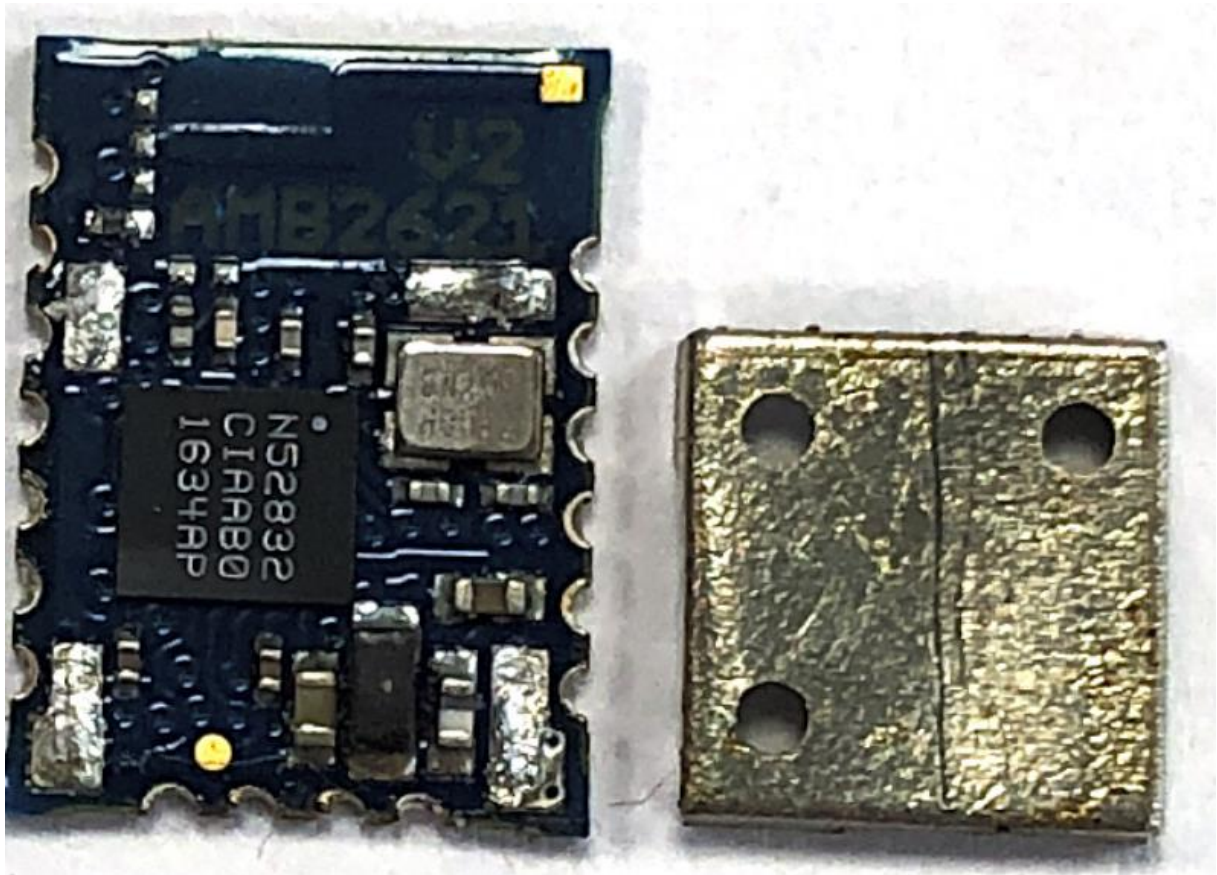
Additional General Information:

Ambient Temperature (referring to I _R)	-40 up to +85 °C
Operating Temperature	-40 up to +85 °C
Storage Conditions (in original packaging)	< 40 °C ; < 90 % RH
Moisture Sensitivity Level (MSL)	3

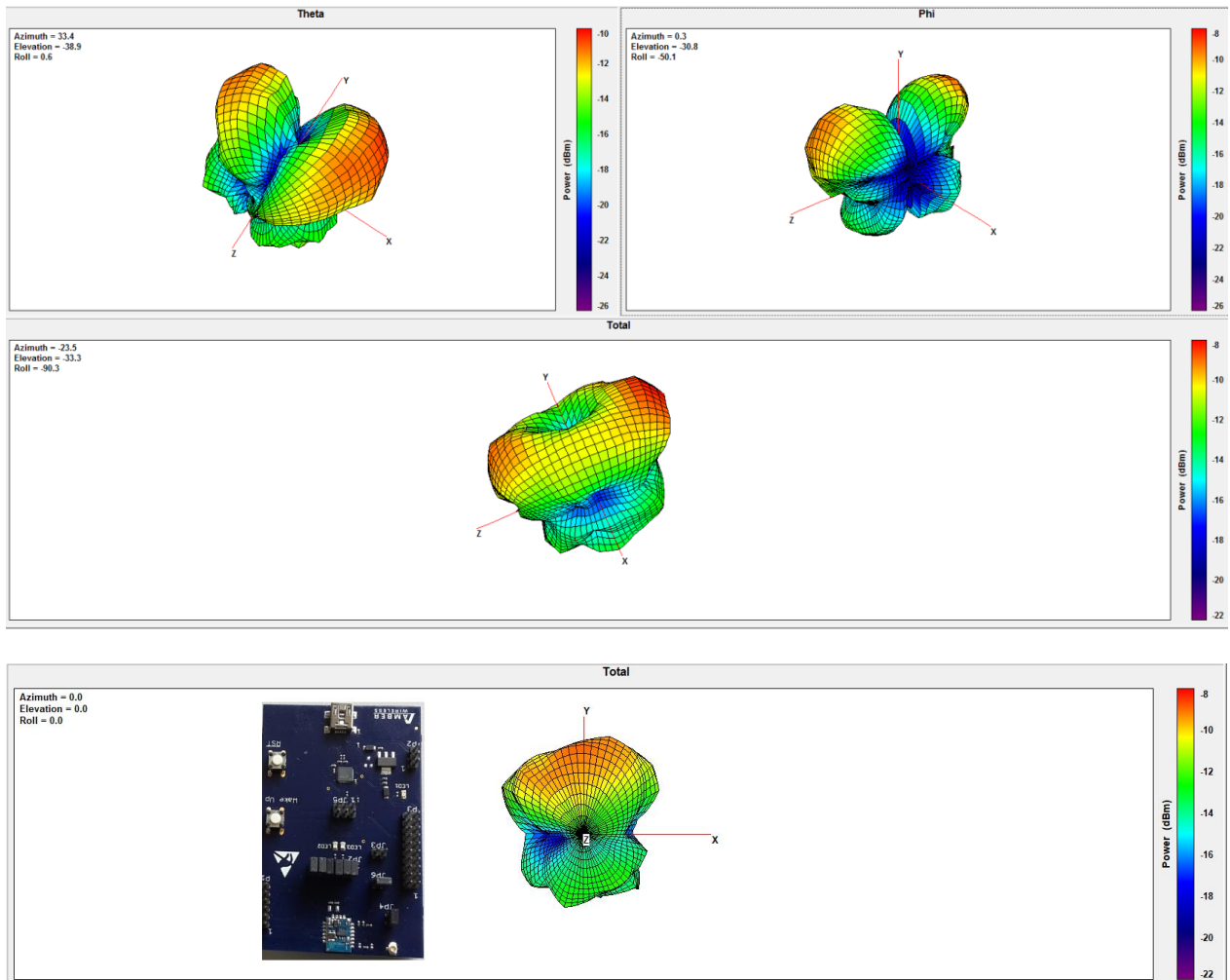
RF-Electrical Properties:

Properties		Test conditions	Value	Unit
Frequency min.	f _{min.}	VDD,typ,TAMB = 25 °C, RH = 60 %	2402	MHz
Frequency max.	f _{max.}	VDD,typ,TAMB = 25 °C, RH = 60 %	2480	MHz
Line of Sight Range		Two-ray ground-reflection model	50	m
Line of Sight Conditions: Antenna Height			2	m
RF Bitrate max.	R _{b, max.}	latest FW revision	1000	kbps
Supply Current Transmitting	I _{TX}	VDD,typ,TAMB = 25 °C, RH = 60 %	7.5	mA
Supply Current Receiving	I _{RX}	VDD,typ,TAMB = 25 °C, RH = 60 %	5.4	mA
Output Power e.r.p.	P _{tx}	VDD,typ,TAMB = 25 °C, RH = 60 %	-2	dBm
RX sensitivity Condition Bitrate	R _{x sens, kbps}	latest FW revision	1000	kbps
RX sensitivity e.r.p.	R _{x sens}	50 Ω	-91	dBm

Detailed Pictures of the module:



Antenna diagram



Antenna gain:

- Antenna Gain: -6,3dBi
- Operating Frequency Range: 2402 MHz to 2480 MHz
- RF Output Power -2 dBm.
- Power Spectral Density -12.3
- Duty cycle, Tx-Sequence, Tx-gap 20 %
- Medium Utilization < +10dBm
- Adaptivity & Receiver Blocking Receiver category 2 pass
- Nominal Channel Bandwidth 2MHz