

Amp ed RF Technology BLE Mesh Embedded Software



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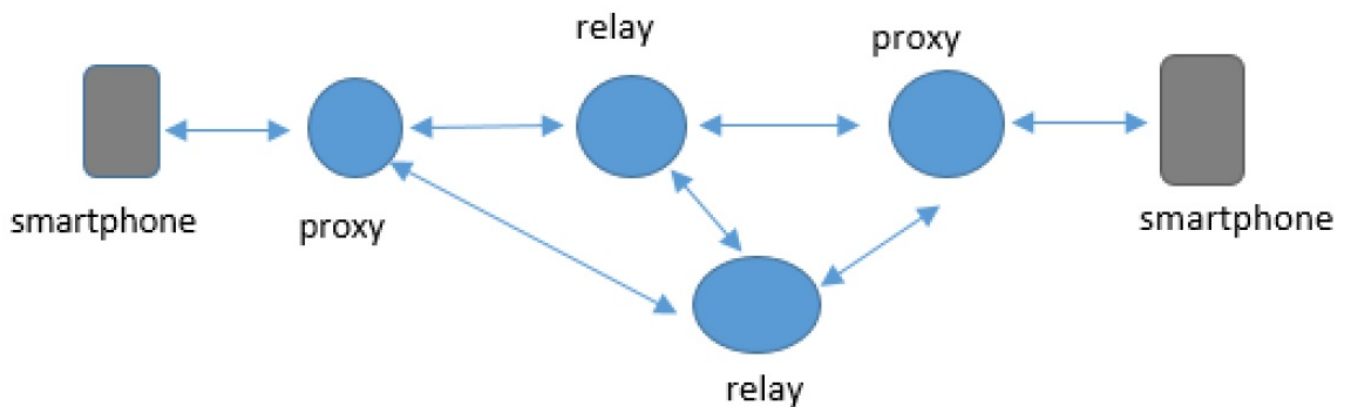


Amp ed RF Technology BLE Mesh Embedded Software



Mesh Network

A typical network setup:



Quick Start Instructions

To demonstrate Mesh with three modules, use the following procedure:

1. Use 0001 node as the on/off switch (client).
2. Use 0003 node as the target (server).
3. Use 0002 node as the relay.
4. Be sure the three encryption keys are set properly. Use the AT command SetKeyPass.
 1. `at+ab SetKeyPass dev [Device]`
 2. `at+ab SetKeyPass app [Application]`
 3. `at+ab SetKeyPass net [Network]`
5. Use distance to separate 0001 and 0003 so that they cannot communicate directly. Alternatively, use the AT Block command to block messages between 0001 and 0003.
 1. `at+ab Block [local BD Address]`

6. The RSSI command can be used to test and determine the strength of the received Mesh messages.
7. Use the AT OnOff command on 0001 to send an On or Off command to 0003. Once the on/off msg is received, 0003 will respond by sending its status to 0001.
8. Since 0001 and 0003 is either too far or have its messages blocked from each other, these messages should be relayed through 0002.

General setup

- Serial COM port settings: 115200/N/8/1
- All AT commands must terminate with a CRLF.
- AT commands may be sent over the BLE link or the COM port/module UART.
- Commands are non-case sensitive, except device names and passwords/passcodes.
- Command parameters use ASCII format, unless stated in ASCII hex format. ASCII hex uses 2 characters per hex byte.

Examples

1. Be sure to use a build version of at least 240411A Mesh.
2. Set all node addresses. See config var92.
3. Set the key passwords using the SetKeyPass AT command.
4. For testing, use the block AT command.
5. The following are the example config settings for Nodes 0001, 0002, and 0003.

Node 0001

- System Configuration Settings – Version 1.7
- var01 BuildVersion = 240411A Mesh
- var02 BD_ADDR = 00043e260777
- var03 DeviceName = Art Mesh
- var04 StreamingSerial = true
- var05 PIN = 0000
- var06 UartBaudrate = 115200
- var07 UartParity = none
- var08 UartDataBits = 8
- var09 UartStopBits = 1
- var10 UartTimeout = 16
- var11 HostShallowSleepEn = true
- var12 HostDeepSleepEn = false
- var13 GPIO_HostKeepAwake = none
- var14 GPIO_HostWakeup = none
- var15 UseSmallPackets = false
- var16 EnableAFH = true
- var17 ATReply = AT-AB
- var18 QoS_Latency = 20

- var19 CpuMHz = 50
- var20 HciBaudrate = 230400
- var21 COD = 250540
- var22 HostEvents = true
- var23 BondingAllowed = true
- var24 PageScan = true
- var25 InquiryScan = true
- var28 DefaultAuth = 5
- var29 EnableIAP = false
- var30 EnableSPP = true
- var31 EnableHID = true
- var33 iAPAppID = A1B2C3D4E5
- var34 iAPAppIDStr = com.AmpedRFTech.Demo
- var35 iAPProtocolStrMain = com.AmpedRFTech.Demo
- var36 iAPProtocolStrAlt = com.AmpedRFTech.ProtocolAlt
- var37 CPI2CMode = 3
- var40 HardwareType = BT24B
- var42 CreditMax = 11
- var43 AccName = ART
- var44 AccManufacturer = ART
- var45 AccModelNumber = Demo
- var46 AccSerialNumber = Amp'ed Up!
- var47 MITMEvent = false
- var48 ProfileRole = p

var49	AdvIntMin	=	256
var50	AdvIntMax	=	512
var51	ScanInt	=	32
var52	ScanWindow	=	18
var53	ConnectIntMin	=	912
var54	ConnectIntMax	=	1000
var58	BatteryEnable	=	true
var59	CharacteristicMax	=	4
var60	ServiceUUID	=	26cc3fc06241f5b4534763a3097f6764
var85	MeshVersion	=	0x0001
var86	MeshRelay	=	true
var87	MeshProxy	=	true
var88	MeshBle	=	false
var89	MeshFriend	=	false
var90	MeshLPN	=	false
var91	MaxTTL	=	4
var92	NodeAddr	=	0001
var93	PublishAddr	=	0000
var94	SubscribeAddr	=	0000

Node 0002

- System Configuration Settings – Version 1.7
- var01 BuildVersion = 240411A Mesh
- var02 BD_ADDR = 00043e850b83
- var03 DeviceName = Art Mesh
- var04 StreamingSerial = true
- var05 PIN = 0000
- var06 UartBaudrate = 115200
- var07 UartParity = none
- var08 UartDataBits = 8
- var09 UartStopBits = 1
- var10 UartTimeout = 16
- var11 HostShallowSleepEn = true
- var12 HostDeepSleepEn = false
- var13 GPIO_HostKeepAwake = none
- var14 GPIO_HostWakeup = none
- var15 UseSmallPackets = false

- var16 EnableAFH = true
- var17 ATReply = AT-AB
- var18 QoS_Latency = 20
- var19 CpuMHz = 50
- var20 HciBaudrate = 230400
- var21 COD = 250540
- var22 HostEvents = true
- var23 BondingAllowed = true
- var24 PageScan = true
- var25 InquiryScan = true
- var28 DefaultAuth = 5
- var29 EnableIAP = false
- var30 EnableSPP = true
- var31 EnableHID = true
- var33 iAPAppID = A1B2C3D4E5
- var34 iAPAppIDStr = com.AmpedRFTech.Demo
- var35 iAPProtocolStrMain = com.AmpedRFTech.Demo
- var36 iAPProtocolStrAlt = com.AmpedRFTech.ProtocolAlt
- var37 CPI2CMode = 3
- var40 HardwareType = BT24B
- var42 CreditMax = 11
- var43 AccName = ART
- var44 AccManufacturer = ART
- var45 AccModelNumber = Demo

var46	AccSerialNumber	=	Amp'ed Up!
var47	MITMEvent	=	false
var48	ProfileRole	=	p
var49	AdvIntMin	=	256
var50	AdvIntMax	=	512
var51	ScanInt	=	32
var52	ScanWindow	=	18
var53	ConnectIntMin	=	912
var54	ConnectIntMax	=	1000
var58	BatteryEnable	=	true
var59	CharacteristicMax	=	4
var60	ServiceUUID	=	26cc3fc06241f5b4534763a3097f6764
var85	MeshVersion	=	0x0001
var86	MeshRelay	=	true
var87	MeshProxy	=	true
var88	MeshBle	=	false
var89	MeshFriend	=	false
var90	MeshLPN	=	false
var91	MaxTTL	=	4
var92	NodeAddr	=	0002
var93	PublishAddr	=	0000
var94	SubscribeAddr	=	0000

Node 0003

at+ab config

- System Configuration Settings – Version 1.7
- var01 BuildVersion = 240411A Mesh
- var02 BD_ADDR = 00043e260666
- var03 DeviceName = Art Mesh
- var04 StreamingSerial = true
- var05 PIN = 0000
- var06 UartBaudrate = 115200
- var07 UartParity = none
- var08 UartDataBits = 8
- var09 UartStopBits = 1
- var10 UartTimeout = 16

- var11 HostShallowSleepEn = true
- var12 HostDeepSleepEn = false
- var13 GPIO_HostKeepAwake = none
- var14 GPIO_HostWakeup = none
- var15 UseSmallPackets = false
- var16 EnableAFH = true
- var17 ATReply = AT-AB
- var18 QoS_Latency = 20
- var19 CpuMHz = 50
- var20 HciBaudrate = 230400
- var21 COD = 250540
- var22 HostEvents = true
- var23 BondingAllowed = true
- var24 PageScan = true
- var25 InquiryScan = true
- var28 DefaultAuth = 5
- var29 EnableIAP = false
- var30 EnableSPP = true
- var31 EnableHID = true
- var33 iAPAppID = A1B2C3D4E5
- var34 iAPAppIDStr = com.AmpedRFTech.Demo
- var35 iAPProtocolStrMain = com.AmpedRFTech.Demo
- var36 iAPProtocolStrAlt = com.AmpedRFTech.ProtocolAlt
- var37 CPI2CMode = 3
- var40 HardwareType = BT24B
- var42 CreditMax = 11

var43	AccName	=	ART
var44	AccManufacturer	=	ART
var45	AccModelNumber	=	Demo
var46	AccSerialNumber	=	Amp'ed Up!
var47	MITMEvent	=	false
var48	ProfileRole	=	p
var49	AdvIntMin	=	256
var50	AdvIntMax	=	512
var51	ScanInt	=	32
var52	ScanWindow	=	18
var53	ConnectIntMin	=	912
var54	ConnectIntMax	=	1000
var58	BatteryEnable	=	true
var59	CharacteristicMax	=	4
var60	ServiceUUID	=	26cc3fc06241f5b4534763a3097f6764
var85	MeshVersion	=	0x0001
var86	MeshRelay	=	true
var87	MeshProxy	=	true
var88	MeshBle	=	false
var89	MeshFriend	=	false
var90	MeshLPN	=	false
var91	MaxTTL	=	4
var92	NodeAddr	=	0003
var93	PublishAddr	=	0000
var94	SubscribeAddr	=	0000

Testing example User input is shown as bold type

Node	Display
0001	at+ab block 00043e260666 Blocked: 00043E260666 at+ab onoff 0003 setack on >>Sending Msg from 0001 to 0003: Cmd setack to 1 * Relay msg (TTL=3) * 0001 SRC=0001 OnOffStatus state = 01
0002	* Relay msg (TTL=4) * Relay msg (TTL=4)
0003	at+ab block 00043e260777 Blocked: 00043E260777 * Relay msg (TTL=3) WRAPPER STATE = 01 * 0003 SRC=0003 OnOffSet state = 01

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Documents / Resources

	Amp ed RF Technology BLE Mesh Embedded Software [pdf] User Guide 0001, 0002, 0003, BLE Mesh Embedded Software, BLE Mesh, Embedded Software, Software
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References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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