Adeunis RF
Wireless products & solutions

Audio version*

Kit content

	CLASS2
Part Numbers	**ARF32**
Version	**ARF7213B**
	Data & Audio
Demoboard	1
Evaluation module	1
RS232 cable	1
Power supply	1
Headset	1

Demoboard description

For ARF7213B version

RS232 connector **(1)**

(3) Headset connector

Power supply micro jack **(2)**
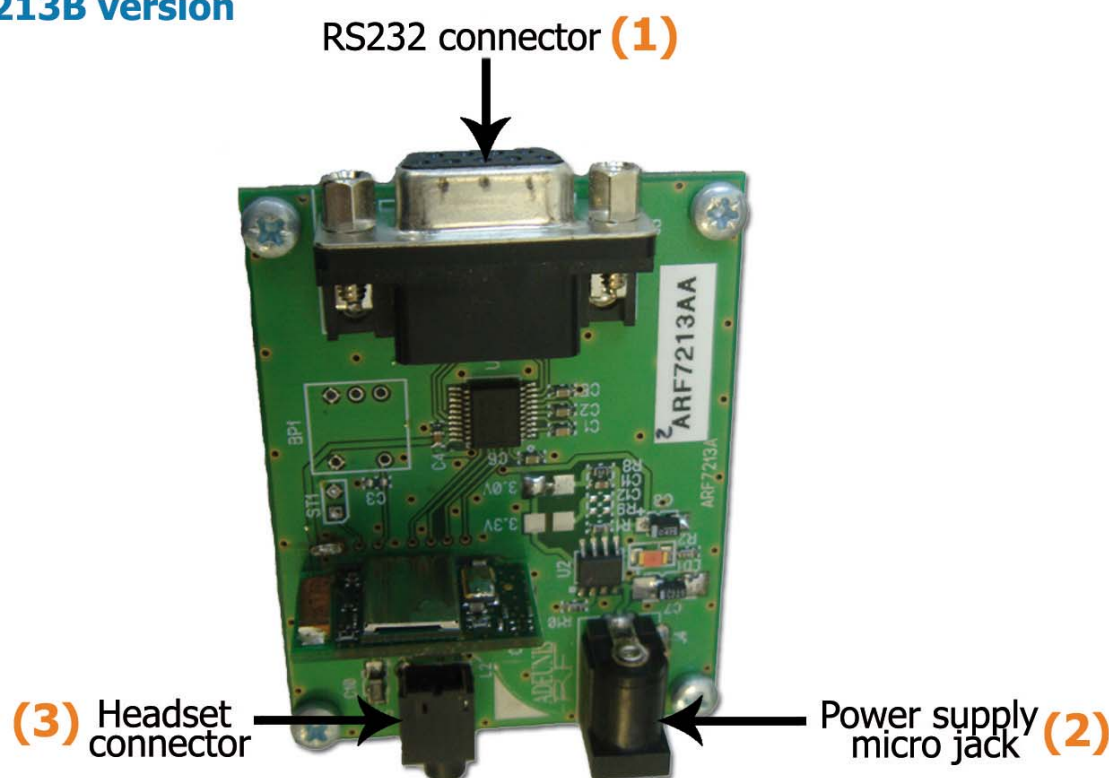
*also available in Data version

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1st Plug the radio module

For ARF7213B version,
the radio module is already soldered

2nd Plug the RS-232 cable and the Mains adaptor + Headset

Headset (3)

Mains adaptor (2)

RS-232 cable (1)
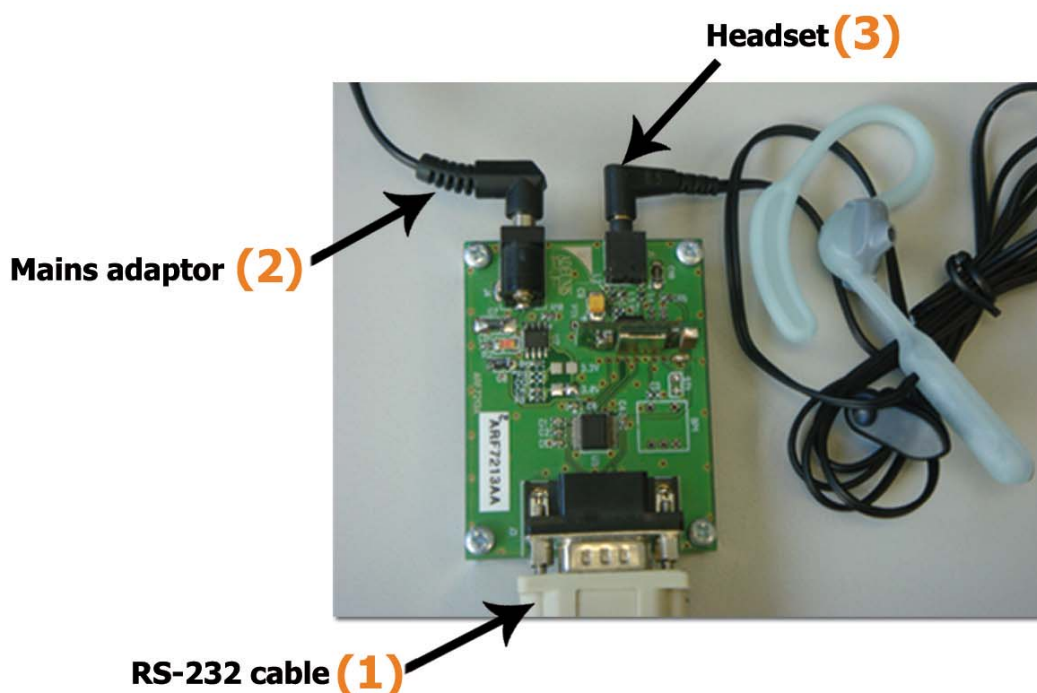
Precautions

Like most evaluation kits, this product is designed for use in office and laboratory environments. The following practices will help ensure its proper operation. This product uses low power CMOS circuits which can be damaged by electrostatic discharge. Partially damaged circuits can function erroneously, leading to misleading results. Observe ESD precautions at all times when handling this product. This product is not approved to any EMC or other regulatory standard. Users are advisedto observe local statutory requirements which may apply to this product and the radio frequency signals which may emanate from it.

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Setting up an direct AUDIO link over SCO/SPP between two ARF32 modules

Quick start using "Simply Blue Commander" SBC software (*) :

Connect one module with the RS232 link to a PC supporting SBC software. Setup "SBC Configuration / Transport layer" at the current baudrate (default 9600), 8 bits, 1 stop, no parity, "Low level driver" & "CTS output flow control" enabled.Power up the two Bluetooth® modules. SBC must return :

  < Rx: Event: SimplyBlue Ready, SW Version: 0212

It means Master Module, serial port setup and connection are OK

Open "SBC ARF32 AUDIO over SCO/SPP quick start" commands sub directory.

> *> Click "BT environment inquiry" & "Send"*
> * < All BT devices nearby send their own BDADDR & Class of Device*
> *(SPP modules class of devices = 000000)*
> *> Click "SPP link establishment", replace FFs with slave **BDADDR** & "Send"*
> ***In bold** : address of the target Bluetooth® module, discovered during previous step.*
> * < Target module will confirm the connection (State has to be 00)*
> *> Click "SCO link establishment", replace FFs with slave BDADDR & "Send"*
> *In bold : address of the target Bluetooth® module, discovered during previous step.*
> * < Target module will confirm the connection (State has to be 00)*

Now the full duplex AUDIO link is open between the two ARF32 modules. DATA link over SPP is still usable

> *> "(Enter SPP transparent mode)"*
> *You're still able to exchange data or files between modules (parallel to audio link)*
> *> "(Set CODEC to WINBOND)"*
> *Set audio settings to WINBOND codec (after "restore factory settings", default = OKI)*
> *> "Release SCO link" & "Release SPP link"*
> *Usable to close AUDIO over SCO and / or DATA&AUDIO over SPP link*

(*) : SBC software zip package is downloadable from www.adeunis-rf.com web site.

How to configure "handsfree", "audio gateway" or "headset" services using Bluetooth® Audio profiles

When delivered, ARF32 Audio modules don't integrate any Audio profiles because ADEUNIS RF is unable to previously know what the user wants. First operation after powering up the module is to modify default parameters to setup a Bluetooth® audio peripheral interface.

>>> IMPORTANT NOTE : "Embedded profiles" versus "Supported profiles"
- Embedded profiles : GAP, SDAP, SPP where module is standalone usable
- Supported profiles: HFP, HSP, AG where module has to be completed with a CPU in charge of AT commands interfacing management.

Keep in mind ARF32 module is only an audio peripheral interface and not a complete Bluetooth® device or host application !

When connected, ARF32 Audio modules act as a full duplex serial link over SPP (for data) combined with SCO (mainly for PCM audio); the associated host becomes able to use data link to send / receive generic
AT commands and SCO link for audio exchange in order to be able to interface standard Bluetooth® audio peripherals like Headset (module is the Audio Gateway) or Audio Gateway (module becomes the Headset).

Bluetooth® audio profiles setup

Connect the ARF32 module with the RS232 link to a PC supporting SBC software. Setup "SBC Configuration / Transport layer" at the current baudrate (default 9600), 8 bits, 1 stop, no parity, "Low level driver" & "CTS output flow control" enabled.
Power up the ARF32 module; SBC must return :
   < Rx: Event: SimplyBlue Ready, SW Version: 0212
It means Master Module, serial port setup and connection are OK

HEADSET PROFILE SETUP :

Open "SBC ARF32 AUDIO HEADSET ONLY Setup" commands sub directory.

> *> Click "Reset ARF7208 module" & "Send"*
> *   < Rx: Event: SimplyBlue Ready, SW Version: 0212*
> *Module is reset to be sure of the beginning state of operation*
> *> Click "Clear all BT profiles / SDB" & "Send"*
> *   < Module will confirm the deletion (State has to be 00)*
> *No more Profiles inside Module DataBase (default SPP has been cleared)*
> *> Click "Record HEADSET profil / SDB" & "Send"*
> *   < Module will confirm the SDB Store (State has to be 00)*
> *Now DataBase only include HEADSET profile / RFCOMM port 1*
> *> Click "Open RFCOMM port 01 for HSP" & "Send"*
> *   < Module will confirm the opening (State has to be 00)*
> *Connection to RFCOMM port 1 for HEADSET profile now possible*
> *> Click "Store Class of Device HEADSET" & "Send"*
> *   < Module will confirm the CoD store (State has to be 00)*
> *Module is now discoverable as a HEADSET*
> *> Click "Change Device Name for ARF-HEADSET" & "Send"*
> *   < Module will confirm the name change (State has to be 00)*
> *Module is now discoverable under ARF-HEADSET name*

Now the ARF32 module will be discovered with ARF-HEADSET as name, will be connectable as a HEADSET during GAP inquiry, will answer Headset Class of Device during SDAP inquiry.
When associated to a host CPU, it becomes possible to design a Bluetooth® peripheral being able to interface any Bluetooth® device or host supporting corresponding profiles.

OTHER AUDIO PROFILES SETUP :

Please follow exactly the same sequence, using the corresponding Command Directory; "Headset Audio Gateway", "Handsfree" & ""Handsfree Audio Gateway" profiles setup are also available.
(Please refer to LMX9830 SW UG to be able to affect other profiles to different RFCOMM ports)

>>> IMPORTANT NOTE : Host CPU will have to mainly manage discovering & pairing and AT commands exchanges to interface Bluetooth® other devices. Be careful, these operations are very dependant on protocol embedded in associated Bluetooth® device or host.

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Download the Userguide's full version : www.adeunis-rf.com