APPI-Com$_{LR}$ Full-Duplex Hands-Free VoiceCom system

CE MODELS: BS-APC2-0x and BS-APC2-Ax
FCC/IC MODELS: BS-APC2U-0x/Bx
Singapore MODELS: BS-APC2S-0x/Bx

USER's MANUAL
Version 3.0

Introduction : Thank you for choosing APPI-Com !

The APPI-Com$_{LR}$ kit (**"Long Range"** Series, from Rev. 2.0) allows communication in a "hands free & conference mode" over several free-band channels for the mobile team members. No "Base", Relay or "Master unit": thanks to the Syncall® Technology (exclusive patent), **the signal loss of any of the kit43's module does not affect the communication between the others**, and the "lost" one can return at any time into the dialogue: a guarantee of safety and efficiency for the team!

The modules of a kit should be set to the same channel to communicate: the kit establishes a full-duplex dialogue on any of the 16 available channels (US Version), allowing the simultaneous use of several kits in the same area.

Several usages are possible: the "natural" **TALK** mode allows full-duplex conversation while the **LISTEN** mode enables listen to the team members but not participate to the conversation. Each module can be used interchangeably in "***Talk***" or in "***Listen***". The **MULTIplex** configuration allows create teams of more than 3 members: in this case, the "priority" pair can have a full-duplex hands-free conversation while any other team member can intervene, only one at a time, to ensure that only one conversation takes place on the used channel.

APPI-Com modules are **IP66** certified (dust and water) and use frequencies set in the ISM free bands (CE or FCC/IC certified). The use of APPI-Com in several countries could be restricted: users must comply with standards in the country of use.

ATEX Version (Atmosphere EXplosive): model BS-APC2-Ax

The **ATEX** version of the device is different from the standard one: one can clearly identify it with it special front side marked with the ATEX symbol
ATEX certification class:
CE II 3G/D Eex is T6 **IP67**

ATEX certification: usage limitations & compliance with ATEX regulation

1. Usage temperature limits : -10°C à +60°C
2. Authorized for use **in a zone 2** (GAS) and **zone 22** (DUST)
3. Authorized for use with the provided ATEX Audio accessory, exclusively.
4. Authorized for use with the provided rubber cover, exclusively.
5. Authorized for use with the provided internal or pre-fitted external antenna, ex
6. Prohibited to connect or disconnect device peripherals in a zone 2 or 22.
7. Prohibited to remove the pre-fitted external antenna in a zone 2 or 22.
8. Prohibited to remove the rubber cover in a zone 2 or 22.
9. Prohibited to use the device in a zone 1 or 21 and a zone 0 or 20, or if the plastic case is defective.
10. Prohibited to charge the battery in a zone 0, 1 or 2 and zone 20, 21 or 22.

Kit composition

When configured for three persons, the ***APPI-Com*** kit (« APPI-Com ***43*** » i.e. "***For Three***") contains:

- 3 APPI-Com LR radio modules
- 3 Audio accessories, based on the configuration.
- 3 connection USB cables (Recharge / Configuration), not to be used in ATEX zones.
- 1 power charger (220V) - USB X4 and one car charger 2xUSB (both: not to be used in ATEX zones)
- 1 USB replicator 1x4, not to be used in ATEX zones.
- 1 USB key not to be used in ATEX zones: documentation and configuration software.
- 1 transport case, not to be used in ATEX zones.

Usage recommendations

Safety recommendations

It is recommended to take the following safety precautions when using this device:
• *Water and moisture* – Modules are IP66 (Powerful water jets) or IP67 Certified (1m immersion, 30mn) for the ATEX Version. If exposed to more severe conditions (diving, plunge, etc.) turn immediately the power off and return the unit to the service department for a control.
• *Battery* - Do not try to change the battery yourself. Contact the manufacturer or dealer, if necessary, to replace the battery.
• *Antenna* - Never use the modules with external antenna without the antenna properly tightened: the radio range will be considerably decreased, and the water-dust sealed protection is longer assured.
Note: in ATEX or FCC/IC version, the antenna is pre-fitted. Trying to remove it may damage the product.
• Risks - Avoid violent shocks to the modules and prevent scratches to the screen.

Maintenance advices

To maximize comfort and duration of use of this device, we recommend the following guidelines:
• *Cleaning* - Use a soft damp cloth. Do not use liquid cleaners, benzene, solvents or aerosols.
• *Repairs* - Do not attempt to repair or modify the circuitry of the device. In case of problems, contact your dealer. Use only parts and accessories recommended by the manufacturer: use with any other spare part or accessory and opening the module causes the cancellation of the guarantee.

Operating principle of the APPI-Com kit

The ***APPI-Com*** kit consists of several audio terminals (or "modules"), usually operating in "***TALK mode***", i.e. conference mode between 2 or 3 modules: but it is also possible to operate with more than 3 peoples. The APPI-Com LR modules can communicate using one ***"Long Range"*** **channels** (4 in CE version, 16 in FCC/IC version), or (CE version) any of the 12 ***"Short Range"*** ones.

The non-ATEX version of the APPI-Com LR modules can be configured to communicate while charging with its dedicated charging cable.

NOTE: for the FCC/IC version, the word "channel" in this user guide stands for 50 sub radio channels.

IMPORTANT: to initiate communication, just turn on at least **two** modules randomly chosen in the APPI-Com 43 kit (depending on configuration, the set up time could take several seconds). When full-duplex conference began between **three modules**, if one comes out of communication (out of radio range, for example, or switching off the device), the communication between the two other modules will not be disrupted, and the module will be automatically reinstated in the conference as it reaches radio range (SyncAll patent from APPI-Technology SAS).

Using the product

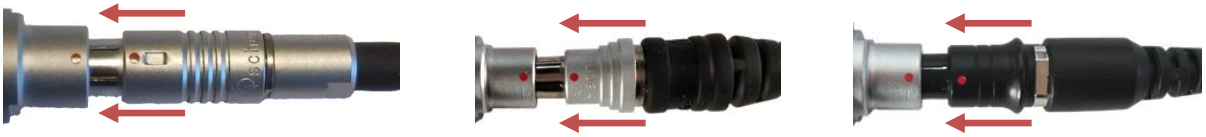
Preparing the equipment

To use the product, connect an audio device that comes with the kit (skull microphone, throat microphone, headphones, etc.). Example for an APPI-Com Kit 43:

- Throat microphone on the two first modules
- Headset-PTT or throat microphone-headset on the third module

USAGE IN ATEX ZONE: CONNECT OR DICONNECT ONLY **OUT** OF THE ATEX ZONE
In ATEX version, connect exclusively the provided ATEX Audio accessory, OUT of the ATEX Zone.

Audio connectors accessories include an automatic lock and are keyed: they can be plugged in the only position where the red dots on the connector and the base are aligned (see figure below).



NEVER FORCE THE CONNECTION, rotate the plug until you find the right position

To disconnect an Audio accessory, pull the connector ring to unlock the connection (see diagram below): If the connector is blocked, you should push slightly before pulling the ring.

DON'T PULL THE CABLE ITSELF: it may damage the connection because of the safety lock.

NOTE: for some audio devices, as in-ear bone conduction M3h, refer to its documentation for optimal use, in particular positioning in the ear. It is also possible to refer to the video: http://www.youtube.com/watch?v=-70K--DqL0g

Positioning the attachment clip (Non ATEX Version)

The modules with an external antenna are provided with an attachment clip.
The clip can be installed in only **ONE position** ➔

NOTE: TOO MUCH FORCE TO PUT ON OR REMOVE THE CLIP CAN DETERIORATE THE HOUSING OF THE MODULE.

Putting the clip on:

- ➔ Insert the module to fit the two notches
- ➔ Press the left side to clip the module in

Removing the clip:

- ➔ Spread the clip's leg out externally with the finger
- ➔ At the same time, lift the module's left side up from the clip
- ➔ When the module's left side is out, remove the module completely

Positioning the mini-clip on the rubber

Install the mini-clip thanks to the plastic rivet, its head inside the rubber as shown

Using the rubber cover (mandatory for the ATEX version)

Rubber covers are available in various colors (red, gray or orange) and can be cleaned with a damp cloth.

APPI-Com module can be inserted into the protective cover after installing the protective glass (transparent sticker): in case of outside antenna, remove the antenna without removing the rubber seal (black), break the seal rubber (pre-drilled), insert and tighten the antenna after installation of the module in the shell.

This cover is particularly effective against dirt, shock and scratches: padded corners offer great mechanical safety while a transparent sheet protects the front and, for a really practical use, the shell is equipped with a belt or pocket clip but can also be used with the neck strap.

NOTE: To use the "neck strap", first attach it to the module, then pass it completely through the dedicated passage (top right), from the inside to the outside, before putting the module into the shell.

It is possible to remove the shell by leaving the lower part of the device, then removing the whole equipment from it.

ATEX version: the device MUST exclusively be used with its rubber cover and its antistatic plastic screen.

⇨ **Prohibited to remove the rubber cover in a zone 2 or 22.**

NOTE ON THE POTENTIAL DANGER OF ELECTROSTATIC CHARGES of the CASE
In use, a charge may appear by rubbing on clothing. The APPI-Com case must be worn underneath or in ATEX clothing as ATEX DIR 89/686/EEC

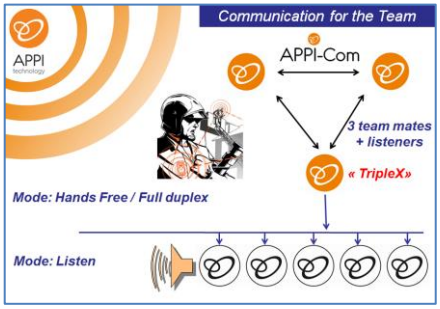
NOTE: APPI-Com module must be used with the provided Clip or Rubber cover (eventually inside the arm band or harness), allowing a minimum distance of 5 mm (clip/rubber cover/armband/harness + garment thickness) with the body (measurement conditions of the SAR "Specific Absorption Rate ").

Product's label / recommendations (FCC-IC Model for USA/Canada)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Usage for three: TRIplex in « *Talk* » Mode

This mode allows the hands-free Audio conference for two or three users. This is only possible if the used module was configured as part of an APPI-Com43 kit (see "***Software setup***"). A kit coming from the factory would, by default, be configured in "***Talk***" mode.



Start-up

To start the module, briefly press the lower button on the keyboard:
Auto start: if no channel change is required, **no further action is needed** to start communicating!
A welcome message appears on the screen and after a few seconds, the channel selection screen:

Note: **Long Range** Channels are noted « 1_{LR}, 2_{LR}, etc. » while the **Short Range** ones are labelled "16*SR*" (example)

The proposed channel ("$\mathbf{1}_{LR}$ " in this example) is the last used channel. The user could, during 5 seconds (countdown), change the channel using the keypad buttons:

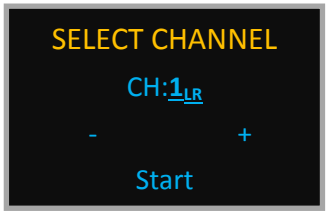
: **Changing the channel**

: Starts communication on the displayed channel

: Changing the utilization Mode (« ***Talk*** » or « ***Listen*** »)

NOTE: the **Mode** change is only possible if the module is set up to operate in both "***Talk***" and "***Listen***" modes. Otherwise, the system skips to the « channel change » menu, allowing 5 second to select the desired channel.
NOTE: with no action on the keyboard for 5 seconds, the displayed channel will be used for communication.

Channel selection menu after pressing the key:



With this menu, one can select one of the 19 channels (1 à 19) with the and keys. When the desired channel is displayed, press to validate and start communicate.

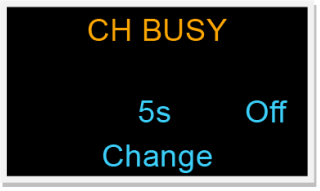
EXAMPLE: the initial channel is "**CH: 3**" and the user wants to switch to channel "**CH: 5**". He must successively press the following keys:

(→CH: **4**) (→CH: **5**) (→Starts communication on the displayed channel number **5**)

Detecting channel occupation

After the channel's selection, the module switches to communication. If it detects that another APPI-Com kit uses the selected channel, it reports it on the screen as follows:

The "***CH BUSY***" message ("Channel Busy") blinks for 5 seconds and then **automatically restarts the module to the next channel**. In the absence of action by the user, the module will then try successively all the channels until it finds one available.



To stop this automatic process, during those five seconds, the user can:

- Press  to switch the module off
- Press  to propose the next channel without waiting 5 seconds

Autonomy extension/ Communication in « charging » mode

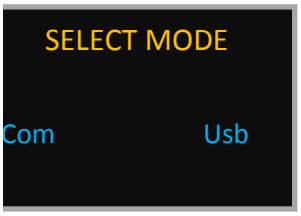
In Bluetooth mode (option), or with using a special cable USB/Audio (ref **BS-APC-CASPLIT01**), the APPI-Com module can be configured to communicate while charging (not possible with ATEX modules). This allows communication always ON for a fixed module or the use of an external portable battery (or wall/car plug charger) to extend the APPI-Com autonomy.

Operation mode:

- The APPI-Com module has to be connected to a power source
- When switching ON, press and hold  until the menu appears:

 : the module communicates while charging

 : the module goes to the USB configuration mode

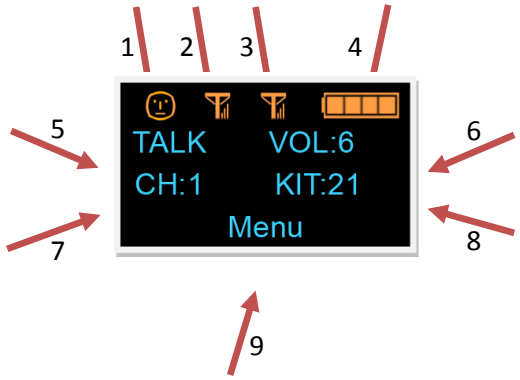


NOTE : this "charging mode" setting will remain after switch-off.

NOTE : in communication mode, do not connect USB on a PC or tablet, the power is not sufficient.
NOTE : NOT available in **ATEX** version

Main screen and Volume control

After the channel's selection phase, the main screen is displayed



1. A « *smiley* » indicates the **module's Rank (1, 2 or 3) in the kit** as displayed on the screen with the arrows 1, 2 et 3 (here room **1** means rank **1**)
2. Radio **reception level** of module number **2**
3. Radio reception level of module number **3**
4. Module's battery level
5. Module's Mode in use. « ***TALK*** » means "conference mode".
6. Sound level: 1 to 10 (***VOL: 6*** in this example). At first startup, this level is set to 6. For other startups, the last set value is proposed.
7. **Channel Number** set during channel selection phase: 1 to 16 (***CH:1*** in this example)
8. Kit number for this module : « ***KIT:21*** » in this example
9. Indicates the access to the *Menu*

During operation, the user **can change the sound volume** with the keyboard:

: decreases the volume of a unit (minimum 1)

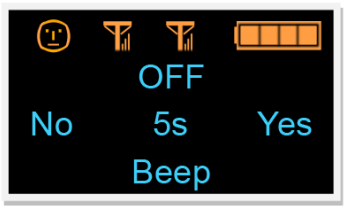
: increases the volume of a unit (maximum 10)

NOTE: it is not possible to change the channel number during a conversation. If necessary, restart the module and go through the channel selection phase.

Switching the module off

To **switch the module off**, one must first press the key:

To avoid any unwanted switch off, a confirmation request is displayed:



The user has 5 seconds (countdown) to proceed:

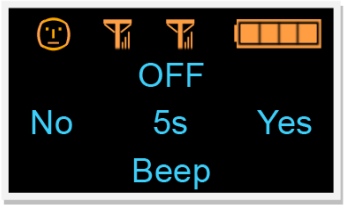
: **Yes = Validates** ➔ the module switches itself off.

: **No** = **Cancel** the switch off procedure and goes back to normal operation.

If the user takes no action, the shutdown procedure is canceled after 5 seconds and the system goes back to the main screen.

Sending out a pager signal : alert / call

The modules are equipped with a "pager" function for emitting a sound signal, regardless of the audio equipment connected or not. Each module can send an audible signal to other modules in the kit **as soon as communication has been established**: to proceed, press once on the button
The following screen is displayed:



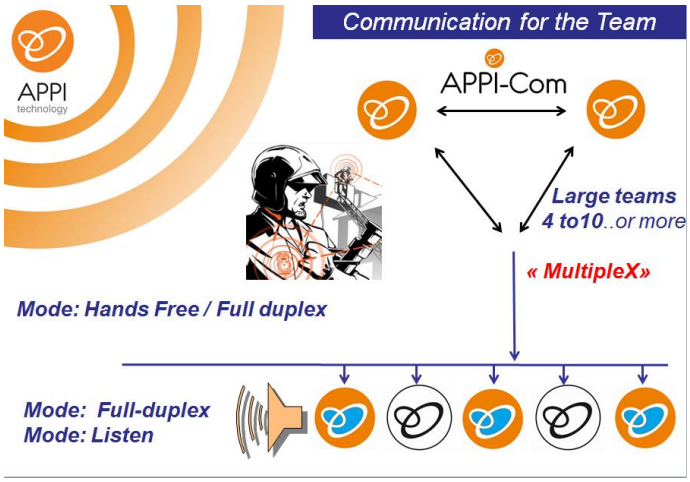
> NOTE: Choosing "YES" by pressing the key would **switch the Module Off**

The user then **has 5 seconds to send the audio signal** to other modules by pressing the button again

If the user takes no action, the paging procedure is canceled after 5 seconds and the system goes back to the main screen.

Using the "MULTIplex" mode

This configuration allows create teams of more than 3 members. In that case, the 2 first modules (rank 1 & 2) are offering a full-duplex hands-free communication in "***Talk***" mode. All other modules in the kit share the third talk slot and can alternatively get into the full-duplex conversation with the two others, but only one at a time: rests of the time, the "***Multiplex***" modules are listening to the conversation.



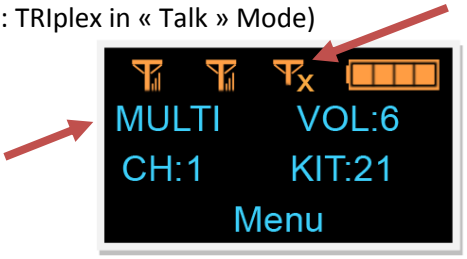
It can be useful that "***Multiplex***" module are connected to an Audio headset **through a PTT**, so that it does not permanently occupy the third slot and prevent the other multiplex modules to intervene in the conversation. Alternatively, they are using the "VOX" mode (see later one) to prevent non desired communication and maintain the communication fluidity.

NOTE: the Multiplex radios enable conversation with several APPI-Com groups. They can address up to 10 groups by switching channels to meet other pre-configured groups (see « *configuration software* ») while the "TALK" radios can only be part of their own single group.

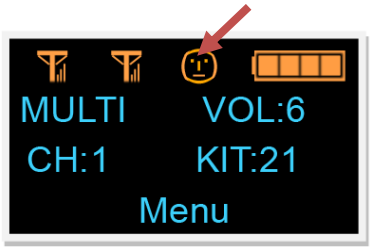
"MULTIplex" modules' special features

The "***Multiplex***" module looks similar to the one in "***Talk***" mode: start, channel selection and automatic synchronization to the other modules in the kit (see Usage for three: TRIplex in « Talk » Mode)

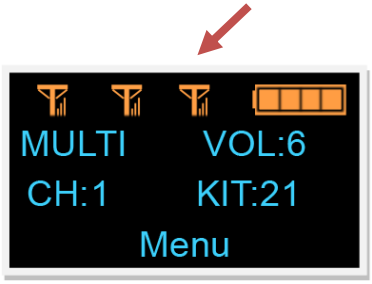
When no "***multiplex***" user talks (no PTT pressed), they all listen to the priority modules: each "***multiplex***" module's screen indicates the used mode and the reception level of the two priority modules (none on 3rd slot):



If no "***multiplex***" module communicates, the user can press his PTT and enter the conversation: his screen then indicates that he's in the loop (smiley on the 3rd slot)

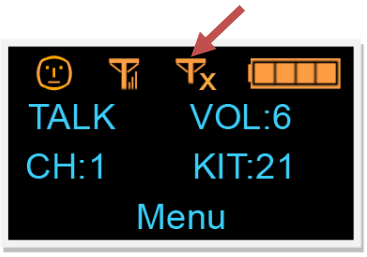


If another "***multiplex***" module communicates, the screen indicates its reception level on the 3rd slot: the user will have to wait until this other user ends his intervention.
If he tries to talk by pressing the PTT, his voice will NOT be sent to the others and an occupancy tone will sound in his loudspeaker.



NOTE:
The priority modules, in "***Talk***" mode, do also detect the emission of a "***Multiplex***" module. For example, for module nb1, when a "***Multiplex***" module is in the conversation, the screen will show:

In the contrary, if no "***Multiplex***" module talks, the screen will show:



Operational limits of the MULTIplex mode:

- ⇨ The "***Multiplex***" modules alone cannot INITIATE a full duplex conversation: at least one "***Talk***" module needs to be started and reachable at start.
- ⇨ If the TWO priority modules come out of reach of all the multiplex modules, these will be able to communicate for a few minutes between themselves (behaving like Walkie-Talkies) , and then go in an idle mode to wait for a priority module to transmit.
- ⇨ Pager signal. Any "***Multiplex***" module can send out a pager signal (see ***Sending out a pager signal : alert /*** call), but the signal will only be sent if NO OTHER "***Multiplex***" module is emitting at the very moment: if the "line is busy", the occupancy tone would sound.

Using the « *Listen* » Mode

This mode allows the module to select a kit to listen after selecting a radio channel. In this mode, the user hears the conference between the team members of the selected kit, but cannot participate. The system keeps track, for each channel, of the kit number that was selected during the previous use.

NOTE: **this Mode is only available** if the module was configured to permit it (see "***Software setup***").

Start Up – Phase 1: channel selection

To start the module, briefly press the lower button on the keyboard:

Auto start: if no channel or kit number change is required, no further action is needed to start listening!
A welcome message appears on the screen and after a few seconds, the channel selection screen appears:

START

The proposed channel ("**CH 1_{LR}**" in the example) is the last channel in use. The user can, for 5 seconds (countdown), change the channel using the keypad:

- : **Changing the channel**
- : **Confirmation of the displayed channel** and goes to the Kit selection phase
- : **Changing the utilization Mode** (« ***Talk*** » or « ***Listen*** »)

NOTE: the "Mode change" option is only available if the module is configured to operate in two modes "***Talk***" and "***Listen***", otherwise, the system skips to the channel setting menu (with its 5s count down).
With no action for 5 seconds, the displayed channel is selected and the system enters the Kit selection.

Screen displayed after pressing :

One can select the communication channel (cycling from 1 to 16) with the and keys. Press to validate and select the Kit number.

NOTE: changing the channel number stops the countdown ➔ **press** to start the communication.

EXAMPLE: the initial channel is "**CH 1_{LR}**" and the user wants to switch to channel "**CH 3_{LR}**". He must successively press the following keys:

(→CH: **2_{LR}**) (→CH: **$3L_R$**) (→Validates the displayed channel number **3_{LR}**)

Getting Started - Phase 2: kit selection

After confirming the channel choice, the following screen is displayed:

The proposed kit to listen to is the last used on the selected channel (in the example above, this is kit **1**). The user can, for 5 seconds (countdown), modify the kit to listen by using the keyboard buttons:

- : Changing the underlined digit: 0 → 1 → 2 → … → 9 → 0 → …
- : Validates the displayed kit number and starts listening
- : Switches to next left digit: units → dozens → hundreds → thousands → units → …

Without any action on the keyboard 5 seconds, the module will automatically start listening to the kit number displayed on the screen.

NOTE 1: the Kit number should be between **0001** and **4094**: all values outside these limits will be reported as an error that the user should correct.
NOTE 2: when first using the system in Listen Mode, kit number **0001** will be chosen for each channel.
NOTE 3: changing the kit number or moving the digit cursor causes an interruption of the countdown. The user must then press to start the communication.

EXAMPLE SCENARIO: The initial kit is "**0001**" and the user wants to listen to the kit "**0213**". He must successively press the following keys:

0002 0003 0003 0013 0013 0113 0213 Start listening

Detecting selection of a wrong KIT or Channel number

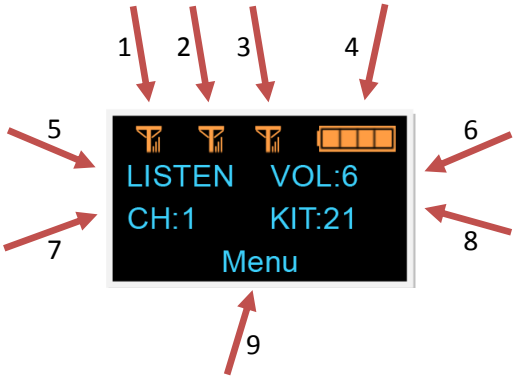
After the kit number selection phase is done, the system goes into listening mode. If it cannot find the specified Kit number on this particular channel, it'll display an error message:

The "***WRONG KIT OR CH***" message blinks and the screen displays the selected Kit and Channel Numbers (Channel **1** and Kit **49** in this example). The user then would:

- Press the key to switch off the module
- Press the key to restart the Channel and Kit selection phases

Main display and volume control

After the kit's selection phase, the main screen is displayed



1. Radio **reception level** of module number **1** in Listen Mode
2. Radio **reception level** of module number **2** in Listen Mode
3. Radio **reception level** of module number **3** in Listen Mode
4. Module's battery level
5. Module's Mode in use. « ***LISTEN*** » means "Listen only" Mode.
6. Sound level: 1 to 10 (***VOL: 6*** in this example). At first startup, this level is set to 6. For other startups, the last set value is displayed.
7. **Channel Number** set during channel selection phase: 1 to 63 (***CH:1*** in this example)
8. **Kit number** being listened to : « **KIT:21** » in this example
9. Indicates the access to the *Menu*

During operation, the user can change the sound level with the keyboard:

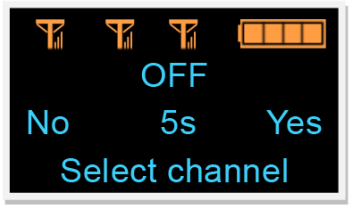
: deceases the volume of a unit (minimum 1)

: increases the volume of a unit (maximum 10)

Switching the module off

To switch the module off, one must first press the key:

To avoid any unwanted switch off, a confirmation request is displayed:



The user has 5 seconds (countdown) to proceed:

: **Yes = Validates the switch-off** action ➔ the module switches itself off.

: **No** = **Cancel** the switch off procedure and goes back to normal operation.

If the user takes no action, the shutdown procedure is canceled after 5 seconds and the system goes back to the main screen.

Switching channel or Kit number during operation

In "*Listen*" Mode, it is possible to change the kit and / or the channel without restarting the module:
Press once on the key

The following **OFF / CH Select** screen is displayed:

> **NOTE**: Choosing "YES" by pressing the key would **switch the Module Off**

The user then has 5 seconds (countdown) to return to the channel selection sequence and then set by pressing the button again:

If the user takes no action, the procedure is canceled after 5 seconds and the module returns to standard mode on the main screen

TIP: as the module keeps track of the kit number listened on each channel, simply changing the channel and validating the proposed kit number allows sequentially listening to several kits in use on different channels.

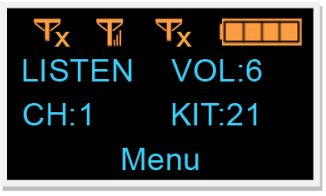
Radio reception level

As soon as the connection is established or lost with a partner, and according the configuration of the radio, messages are played in the audio equipment to indicate this event (see "Connection information").

During operation, whatever the Mode ("***Talk***" or "***Listen***") is, the module displays the radio reception level for each module it's in conference with or listening to.

In case a module does not emit (switched off, out of range, communication on another channel ...), the Radio reception level is replaced by:
For Europe version (***BS-APC2-xx***) on low power channels (5_{sr} à 16_{sr}), when the module detects an intermittent perturbation on the radio channel, a "beep" sound will be played to indicate that it cannot transmit.

EXAMPLE 1: (**LISTEN** Mode) the module receives a signal from module number **2** of kit **21**. The corresponding screen is displayed:



EXAMPLE 2: (**TALK** Mode) the module receives a signal from module number **2** of kit **21** but **no signal** from module number **3**. The corresponding screen is displayed:

Connection information

Depending on the chosen configuration, the radio module can indicate (Audio messages) its connection/disconnection status with other members of the team.
There are 3 possible connection levels (Configuration software):

- **NONE**

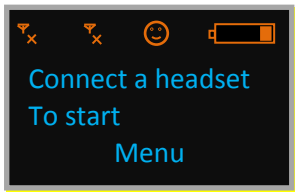
No Audio message is indicated while connection/disconnection happens: the wearer may use this level while working in one area where connection is weak and he doesn't want to hear the connect/disconnect message too often.

- **APPI Network connection (default mode)**

Enables each user know if he's in the communication loop: as soon as connected, he hears the « ***Connected*** » Audio message. When NO OTHER radio module is connected, he'll hear the «***disconnected***» Audio message.

- **Safeline®**

This mode lets the APPI-Com user know in quasi-real time WHICH module is connected in the team. ***CAUTION***: a headset HAS be connected to the APPI-Com module (wired or Bluetooth) to authorize the radio module to sync with the others in the team. If NO headset is detected, the system will ask for one:



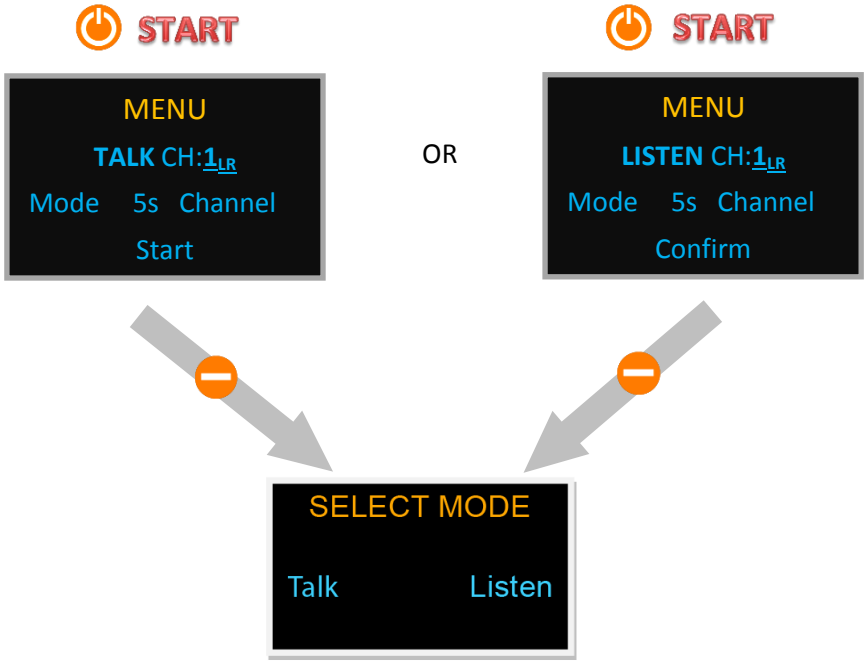
Using TALK modules
If no headset is connected, the radio will NOT sync and only authorize to configure a Bluetooth headset or to switch off.
If a headset is detected, the radio (say #1) will try to connect the others in the group. While receiving a signal from #2 (example) the wearer will hear « ***2 Connected*** »), while user #2 will hear "***1 connected***". When module #3 comes into the conversation both users #1 and #2 will hear « ***3 connected*** » and, user #3 will hear « ***1 Connected*** » and « ***2 Connected***».
Disconnection: if module #1 loses user #3 (doesn't get signal: out of range, stopped, etc.) it'll play « ***3 Disconnected***».
Finally, when all others modules are disconnected, the user will hear « ***APPI-Com disconnected*** ».

Using Multiplex modules (2 TALK and 2 MULTI, as an example)
Say the 2 TALK modules are connected, when the first MULTI *(#3)* comes in *the two TALK modules will play* « ***Multi connected*** », indicating that at least ONE MULTI is in the loop.
If a second MULTI (#4) comes in, only the OTHER MULTI will hear « ***Multi connected***», indicating that another MULTI is in. The two TALK will not play any message.
When one MULTI gets out of the loop, the OTHER MULTI ONLY will hear « « ***Multi disconnected***» indicating that he's the last connected MULTI: the two TALK will not play any message.
When the last MULTI gets out of the communication loop, the two TALK modules will play «***Multi disconnected***» indicating they are now alone in the loop.

NOTE: the connection message indicates to the user that he receives signals transmitted by others, but doesn't imply that he's heard by them (potential asymmetrical emission/reception cases)
NOTE: the **Safeline®** mode is not to be used when users are reaching the range limit as they may hear too many connection/disconnection messages.
NOTE: as soon as the module loses connection to its headset, it'll drop the radio signal and disconnect to the group, making the others hearing the disconnection message (usually less than 1 second for a TALK module, up to 5 for a MULTI). If **using a Bluetooth** headset, **the delay to hear the disconnection message may last up to 10 seconds**, due the Bluetooth protocol trying to reconnect.

Selecting the operation Mode

In case the module was configured to allow the use of two modes of operation "***Talk***" and "***Listen***" (see "*Software setup*"), it is possible to select the operating mode of the module from the screens channel selection. On startup without user action, the module will always **use the mode used during the last operation**.



As displayed above, pressing key ⊖ allows accessing the Mode selection screen.

Possible actions are:

- ⊕ : Select the « ***Listen*** » Mode
- ⊖ : Select the « ***Talk*** » Mode

⇨ When selecting the "***Talk***" mode, the module immediately starts the conference on the selected channel.

⇨ When selecting the "***Listen***" mode, the module asks the number of the kit to listen to.

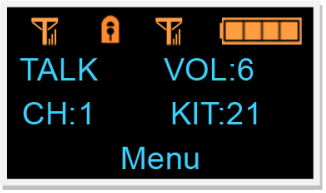
REMINDER: the selected Mode will automatically be used at the next module's start.

Using the « Secret » Mode

The "***Listen***" mode allows any APPI-Com module to listen to a kit during a call. For confidentiality reasons, it is possible to configure a kit in a **secret** mode: thus, no module would be able to listen to conversations coming from this kit. To activate this feature, you must use the "***Configuration Software***".

When a module is in « ***Secret*** » mode, the smiley  representing its rank in a « ***Talk*** » mode would become:  (Locker symbol)

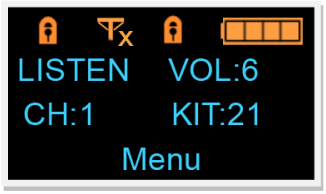
EXAMPLE: Screen of module **2** during a "***Secret***" call:



The user knows that he transmits in a "***Secret***" mode and, consequently, **only the two other modules in the kit** (**21** in our example) can listen while NO other module!

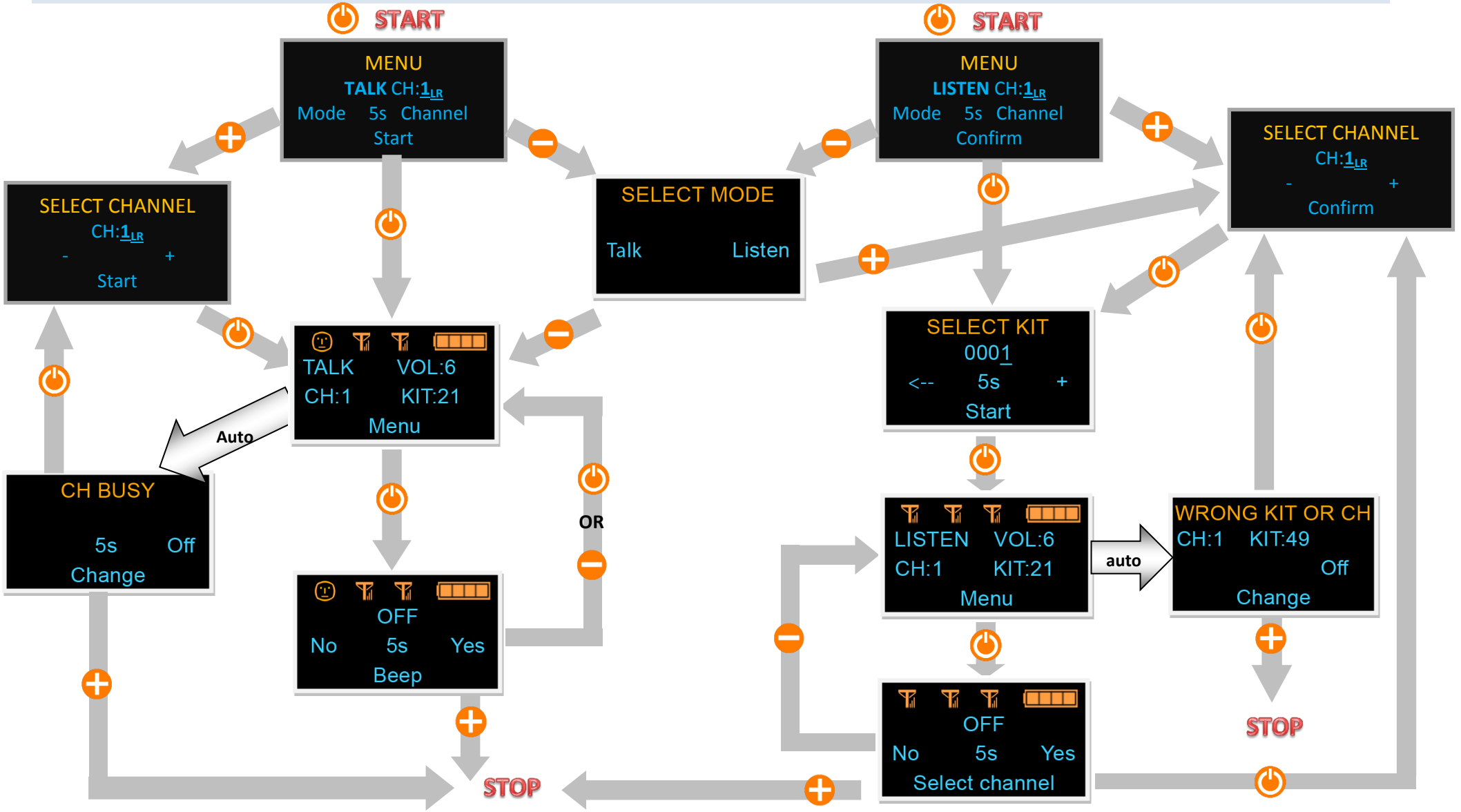
If a module wants to listen to a Kit configured in "***Secret***" mode, every reception symbol  indicating the modules would become 

EXAMPLE: the module is listening to kit **21** configured in "***Secret***" mode. We see modules **1** and **3** are in communication, while module **2** is switched off or out of radio range:



⇨ The user knows that modules **1** and **3** of the kit **21** are operating in a "***Secret***" mode, explaining why he does not hear the conversation!

Screens' Flowchart



Using the “CALL” mode

In this "Call" mode a module remains connected with the others in the kit, but does not participate to the conversation: the user does not hear nor send any sound, like in a “sleep mode”. Upon his request, or in response to a call from one of his teammates, he can join the conversation and, at the end of it, go back to the sleep mode. This is particularly suitable for “controllers” or people that may need to be reached any time, but do not wish to participate permanently in the discussion: they can participate occasionally.
The "Call" mode is activated by the configuration software (see "Software Configuration ") and is available only on the modules configured in **"Talk"** or **"Multiplex"** mode (the Call Mode cannot be activated on the **"Listen"** or **"Pivot"** modules).

When the « Call » mode is activated, the or symbol replaces the symbol on top of the screen:

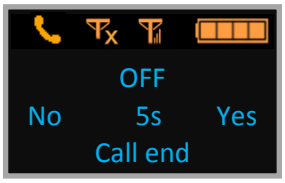
: Means that voice chat is disabled

: Means that voice chat is active

Receiving a call

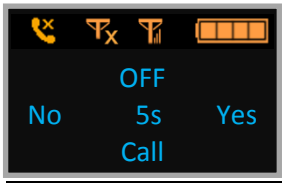
When a team member of the group makes a call (see "Sending a sound signal "), a blue phone flashes on the screen and the audio message "Incoming Call channel x" is broadcast in the user's audio device: If the user does not wish to take part in the conversation, he would press and the display would return to the normal. If the user does accept the call, he would press : the symbol would then replace the symbol showing that the audio communication is enabled.

To end the audio communication, you should press , to access the next menu: To **confirm** the desire to end up the audio communication, you would press again. The symbol would reappear, showing that the audio communication is disabled.



Join the ongoing conversation

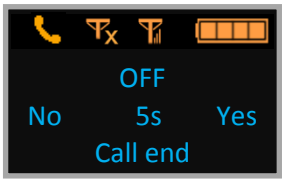
The user can choose to join the discussion by pressing , it accesses the following menu screen: pressing again, he would join the discussion: the symbol replaces then the symbol, showing that the audio communication is enabled.



To end the audio call, press to access this menu screen:

To confirm the end of the audio call, you must press again .

The symbol reappears to confirm that the audio communication is disabled.



Lone Worker Protection « LWP » (Safety Pack Option)

The APPI-Com modules are equipped with a motion sensor for **detecting the immobility of the wearer**. By software configuration (see "***Software Configuration***"), for each in "***Talk***" module, it is possible to activate the "**LWP**" feature. With this function activated, the device sends a voice message to all other modules of the Kit ("***Talk***", "***Listen***" or "***Multiplex***") **indicating the immobility of the wearer.**

Here's how it works:

- If no motion is detected during the **pre-alert period**: a warning beep sounds in the audio equipment of the wearer to report its immobility and encourage him to move to cancel the alarm, but no alert is sent at this stage.
- Following this pre-alert, if motion is still not detected during the **alert period**, a voice message is sent to all modules in the kit. This message indicates the rank of the module in the kit (1, 2 or 3) and an intermittent audio signal is played in the audio device of the wearer to indicate that an alert is sent.

EXAMPLE: the wearer with module **#2** in the kit does not move. After 30 seconds (**pre-alert period**), a signal sounds at the audio device. 5 seconds later (**alert period**), if the wearer has still not moved, the module sends a vocal alert to the other modules that will broadcast "**APPI Com 2 immobile**".

NOTE: the LWP function is active only if the module of the wearer is in communication with at least one other module.
NOTE: any movement detected cancels the alert, and the pre-alert timer is reset to 0.

Setting the LWP parameters for the Alert emission

When the LWP function is enabled on the module (see « ***Configuration software*** »), the wearer is aware thanks to the Ⓟ logo on the screen:

NOTE: when the module sends immobility alert, the  symbol is replaced by a blinking Ⓟ on the screen of the immobile module.

The parameters (see « ***configuration software*** ») of the LWP are:

- **Pre-alert period** (in seconds): maximum immobility time before pre-alert.
- **Alert period**: (in seconds): maximum immobility time **after** the pre-alert time before the alert is sent out.
- Authorizing the LWP function to be temporarily disabled by the wearer (Yes / No) (see « ***Advanced configuration*** »)

Setting the LWP parameters for Alert reception

When a module in LWP mode sends an immobility alert, each module of the kit, whatever its mode of operation and whether its LWP function is enabled or not, will play the alert message by:

- **Playing the vocal message** "APPI Com 2 immobile" in the audio device in the language of the module's configuration.
- **Activating the Buzzer** in continuous mode for a few seconds
- Replacing the  reception symbol of the immobile module by **the blinking** Ⓟ **symbol** during the whole immobility period.

IMPORTANT NOTE: to make sure the alert is heard; the vocal alert stops and replaces the conversation.

Depending on the module's configuration, the vocal alert and the Buzzer may be played **several times** (every 30 seconds, as an example) or **only once**.

When the alert stops (motion detected on the wearer's module), all the alert messages stop. If the same module sends a new alert, it'll be treated as if it were the first one.

The parameters (see « ***configuration software*** ») of the LWP alert messages are:

- Language (French or English)
- Number of time the message (buzzer and vocal alert) is played: not repeated (played only once), or repetition period, in seconds or minutes.

IMPORTANT NOTE: the LWP system is based on an accelerometer whose function may be impaired by excessive shock. It is necessary **to test the function at startup.**

IMPORTANT NOTE: the receipt of immobility alert assumes that the radio link is established between the immobile module and one of those who should receive the alert. Any obstacle to the proper radio communication between APPI-Com modules **can disable the receipt of the immobility alert.**

Advanced configuration

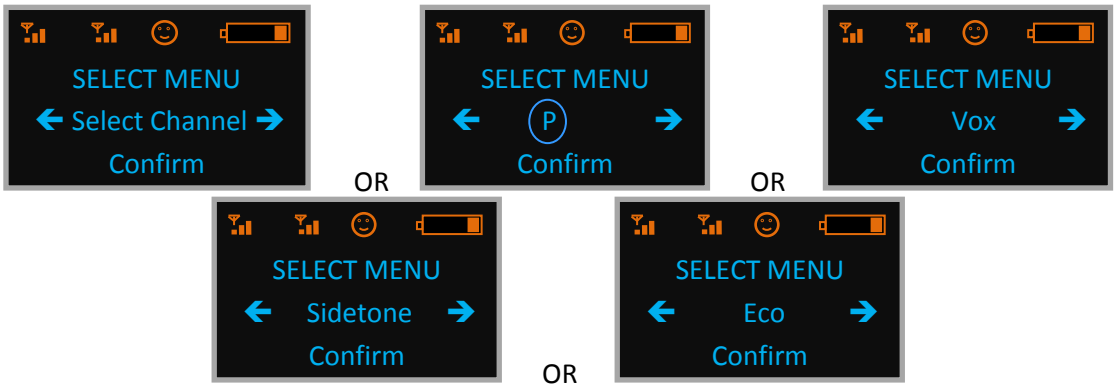
Depending on the modules' configuration (see« ***Configuration software*** »), you may be able to access the advanced configuration. The available settings are:

- Quick channel change
- Temporary disabling the LPW function : Ⓟ
- Setting the microphone's sensitivity (voice transmission trigger) : **VOX**
- Setting the **Sidetone**
- Activate the **ECO** mode

Access to the advanced configuration is done by holding the ⏻ key **for 3 seconds**

NOTE: if no advanced setting is permitted on the module, this action displays the same screen (***Switching the module off***) as a short press on the button.

If all advanced settings are allowed on the module, one of the following selection screens setting appears:



Simply select the desired setting with the ⊖ or ⊕ keys, then confirm your choice with pressing ⏻. The corresponding configuration screen is displayed.

NOTE: If only **one** advanced settings configuration is allowed, this selection step is ignored and the authorized setting screen is automatically displayed.

Quick channel change

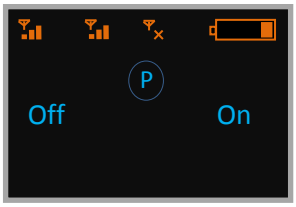
Select channel (1 - 16) ⊖ and ⊕, then press ⏻ to start communication.

Temporary enabling/disabling the LWP function

The screen below authorizes to ***temporarily enable or disable*** the LWP function on a module:

Press the ⊖ key to disable or ⊕ to enable it.

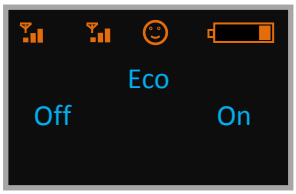
NOTE: **at start up, the LWP function is enabled** if the module has been ***configured*** to use it.



Activating the ECO mode

To enhance autonomy, the ECO mode reduces the emission power of the LR channels when a 800/1000m radio range is enough for the application: the battery life then gets to around 8h. When « ECO » is activated, the « LR » sign becomes « ECO » on the screen for the Long Range channels:
Example: $\mathbf{3}_{\mathbf{Eco}}$ instead of $\mathbf{3}_{\mathbf{LR}}$
NOTE: the ECO mode does NOT affect the SR channels (CE).

: activate the Eco mode
: disable the Eco mode



NOTE: the Eco mode status (activated/disabled) remains when switching the module off.

Setting the microphone's (VOX) sensitivity

This screen allows you to change the microphone's sensitivity (***voice transmission's trigger***). In a noisy environment, it may be useful to reduce this sensitivity level to avoid transmitting ambient noise. At the contrary, in a very quiet place, the user can increase the sensitivity level if he wants to be heard when whispering.

The factory setting is set to 0. This corresponds to an average sensitivity for both isolation to high noise and still not requiring shouting to trigger the voice transmission.

This setup screen allows you to independently control the sensitivity trigger: the symbol is displayed **when the trigger is reached by voice or noise** to help setting the right value. If this symbol appears in a noisy environment when the user does not speak, it means that the sensitivity is too high and needs to be reduced.

One can change this sensitivity with the or keys from -10 to +10, the **lowest value (-10)** requiring the **higher sound to trigger,** and the **maximum sensitivity (+10)**, requiring the **lowest sound**.

When the setting is done, press to validate. This setting is stored and **will apply for ALL following uses**.

IMPORTANT NOTE: do NOT swap with another headset during setting

RECOMMENDATION: the user must set the VOX trigger with **the headset** and in **the very place** he will use the system, in real usage condition.

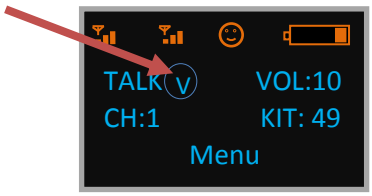
NOTE: the user can change the VOX settings during a conference.

NOTE: the VOX settings are linked to a headset type. It may happen that they are NOT correct with a different headset and have to be changed.

NOTE: a "too high" sensitivity may have several consequences:

- An ***echo*** may appear, depending on the headset, or the ***breathing noise*** of your colleague.
- The ***battery autonomy*** may decrease as each noise will trigger the microphone and be emitted.

NOTE: when the sensitivity level **is *NOT* « 0 », the "V" symbol appears on the screen**



Setting the SideTone level

For most of the Audio peripherals (this feature is not available with a bone conduction microphone, a remote speaker and an intercom cable) one can set the « side tone », i.e. the level of the user's own voice being bounced back to its speaker. By default, a sidetone is only set « ON » when using a Muff headset.

The Side Tone level is adjusted with the ⊖ and ⊕ keys, from 0 to 9
0 : no Sidetone (spare the muff-headsets)
n : Sidetone's level

NOTE: for muff headset, this level is ADDED to the default value.

Battery Level

APPI-Com modules are equipped with a rechargeable battery (max charging time is 2 hours on a wall plug). With full batteries, the modules have autonomy of about:

- 7:30h in « *Talk* » mode on ***LR*** channels
- 8:00 in « *Talk* » mode with ***Eco*** mode
- 9:30 in « *Talk* » mode on ***SR*** channels
- 10h in « *Listen* » mode

The battery level is displayed at the top of the screen.

When the battery level becomes low, three audio warnings are heard, one after the other:

1. "**Low battery 20%**": the last indication bare flashes and an Audio alert will be played ➔ there is power for about 45 minutes.
2. "**Low battery 5%**": new vocal alert ➔ Approximately 5 minutes left!
3. **Automatic shutdown**: the "**NO BATTERY**" message appears on the screen and generates a "beep" **every second** ➔ the module will switch itself off in 5 seconds.

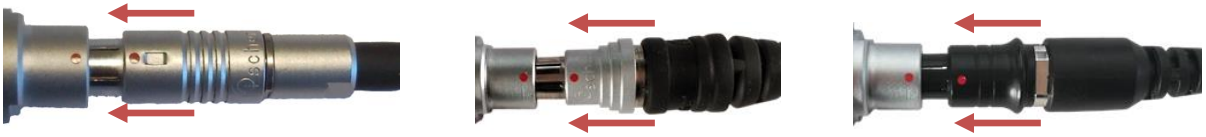
This screen indicates the status a few seconds before switching off, its battery being at minimum level

NOTE 1: If it starts with a low battery level, the module notifies the user by with an alert through the Audio accessory, if connected.

NOTE 2: If it starts with a TOO low battery level, the "**NO BATTERY**" message is displayed and the module turns off without allowing any access to the menu.

Charging the battery (Out of the ATEX Zone)

To charge the module, plug the USB cable to it on one side and to the USB charger on the other (cable and USB charger supplied with the kit). On the module side, the connector has a locking function and an alignment key: it can only be plugged in one position. The red dots should perfectly match to plug the connector.



NEVER FORCE THE CONNECTION, rotate the plug until you find the right position

To disconnect an Audio accessory, pull the connector ring to unlock the connection (see diagram below):
If the connector is blocked, you should slightly push before pulling the ring.

NEVER PULL ON THE CABLE, it may damage the connection because of the safety lock.

The maximum charging time (fully discharged battery) can vary from 1H45 (220VAC adapter supplied) to 6H (on the USB port on a PC) according to the method used.

To control the charging level, turn the module on when plugged into the USB:

- If the “squares” of the battery indicator blink, the module is still in charge.
- If the “square” of the battery indicator are all lit continuously, the battery is full.

NOTE: the system is protected against overload and would “**beep**” when the battery is full.

IMPORTANT NOTE: when a USB cable is connected to the module, the module goes into the "USB Mode" and exits the "communication". It does not emit or receive any information and displays its serial number (M-7 in the example below).

⇨ To reinstate the "communication" mode, disconnect the USB cable and turn the module on.

ATEX version: **it is prohibited to charge the battery in an ATEX zone.**

Using a Bluetooth device (BT Option)

A Bluetooth ("BT") device can be connected to an APPI-Com module using the configuration software (version > V2.1) and the Bluetooth option has to be enabled from factory.
The Bluetooth is "ON" when no wired headset is connected and if at least one BT device is paired.
Two kinds of devices can be connected:

- **Communication devices (Phone, radio…):** this allows link your APPI-Com to a network.
- **Bluetooth headset:** this allows replace you wired headset by a BT headset.

The default mode is "Headset", but it could be changed to "com device" with the configuration software.

The Bluetooth state is indicated by the logo near the battery level:
The logo can has two statuses:

- **Blinking**: the module try to connect to previously paired devices.
- **Fixed** : the module is connected to a device.

NOTE: if the logo is not printed that probably means that no device is paired.
IMPORTANT: If a headset cable is connected, the Bluetooth communication will stop!

➔When connecting a BT headset, its name appears on the screen, at the bottom line.
IMPORTANT: it is better to start the module before the audio headset

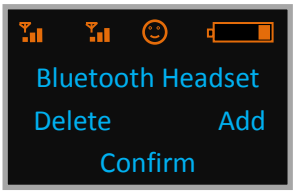
Bluetooth configuration menu

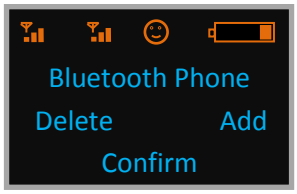
The Bluetooth device can be paired or unpaired from the Bluetooth menu. The Bluetooth menu is available from the advanced configuration.

Access to the advanced configuration is done by holding the key **for 3 seconds**

Simply select the Bluetooth setting with the or keys, then confirm your choice with pressing .
The Bluetooth menu will be printed according to the Bluetooth mode.

Then select
: Delete
: Add
: Return in communication mode.



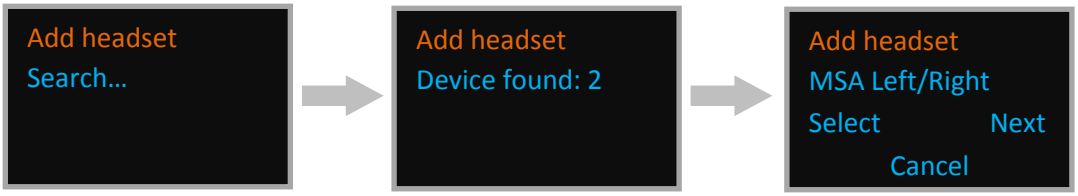


Add a Bluetooth Headset

The APPI-Com will start to search a discoverable headset (a few seconds).

IMPORTANT: the headset has to be in "discoverable mode" or it may not be seen by the APPI-com.

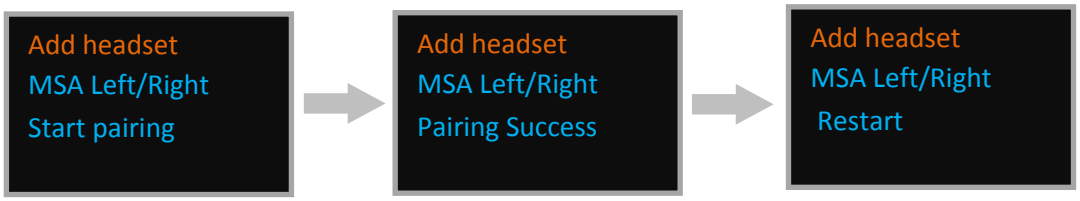
When the search ends, APPI-Com will display the number of detected headsets and go in the select Menu.



This menu will display the first detected device on the second line.

The headset to add is selected by pressing . Once the device is selected, your choice is confirmed by pressing . You can also leave the menu by pressing .

When the choice is confirmed, APPI-Com will try to pair with the headset. Finally the module will restart and connect itself to the headset.



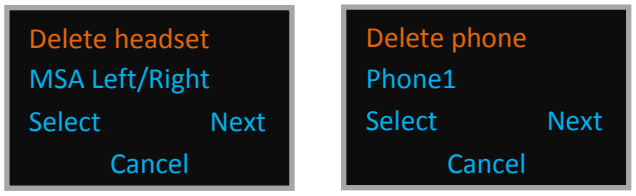
NOTE: up to four headsets can be paired with the APPI-Com module. When this limit is reached, some paired headsets have to be removed before add new headsets.

Add a communication device

When selecting to add a new communication device, the module will go in pairing menu.
The module turns into "discovery mode": you will see it on your device with the name "*APPI-Com-xxxx*".
Once the APPI-Com is selected on your device, it will go through the different steps. You can leave this menu by pressing .

Delete Bluetooth headset

For the two Bluetooth modes, the delete menu is available from the Bluetooth menu by pressing .



The menu propose to delete the first device paired, its name is printed on the second line.
The device to delete has to be selected by pressing the . Once the device is selected, your choice is confirmed by pressed . You can also leave the menu by pressing .

NOTE: At start the APPI-Com will try to connect to the paired headsets, until connected.
To make the connection faster, it is recommended to delete the unused devices.

Radio Range

The radio range (Line Of Sight) in open space between two APPI-Com LR modules using a ½ wave antenna **is around 2Km using a Long Range channel** (around 900m in Eco mode), and around 300m using a **SR** "Short Range" channel, but this distance can vary depending on the environment: obstacles, working within in a building, EM perturbations, etc. It is also reduced when using a **¼ Wave or an internal antenna**.

Operation Incidents

Some operation incidents may occur. Here is a list with the corrective actions:

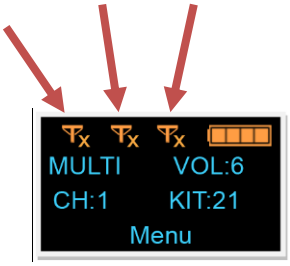
1. **The module switches on and off only seconds** after displaying "NO BATTERY" ➔ the battery is low: charge the module.

2. **The module turns on but remains in search mode** of communication more than 30 seconds (symbol not received for all other modules in the kit):

   - The other module(s) of the kit are off ➔ start the other module(s)
   - The other module(s) of the kit are out of radio range ➔ bring the modules in range
   - The module **is not configured on the same channel than** the other modules of the kit

   ➔ Restart the module and select the correct channel
   - The module is not part of the kit which is in communication on this channel (different kit number) ➔ Use the "***Configuration Software***" to integrate the module into the kit.

3. **The « Multiplex » module turn on but stay in search mode :**



   - No « priority » module (in « TALK » mode) is ON or at radio reach ➔ start at least one of them to initiate conversation: « Multiplex » modules cannot start conversation between them alone.

4. **The radio range between modules is poor:**
   - External antenna missing or loose on some modules ➔ Install or tighten the antenna
   - Another APPI-Com kit is running too close ➔ use two non-adjacent channels (1 and 3 instead of 1 and 2 for example) and / or get away from the kit's modules.

Configuration software

Configuration's objectives

An APPI-Com module can only communicate with modules **having the same kit number**, this number being displayed on the screen.

In factory configuration, the three modules of an APPI-Com 43 are configured with the same kit number: **there is therefore no need to configure**.

Thereafter, the user may wish to change the configuration of the modules in the following cases:

- Replace a module in a kit with a new module
- Establish new kits (for example, have 3 kits of 2 modules from 2 kits of 3 modules)
- Enable / disable the "**Secret**" mode for a kit
- Chose to enable or disable the "**Talk**" and / or "**Listen**" modes for a Kit.
- Etc.

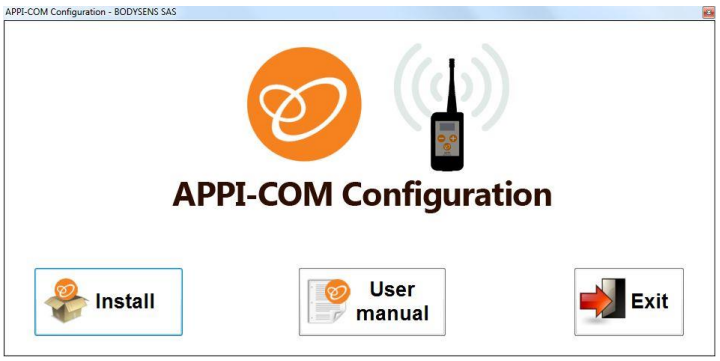
REMINDER:
The standard kits (besides MULTIplex) may consist of:

- 3 modules
- 2 modules

The ***APPI-Com configuration software***, provided on the USB Key, allows configuring the modules.

Installing the PC configuration software

⇨ Insert the USB drive and run the **Autorun.exe** program:



⇨ Click on the Install button to launch the APPI-Com Configuration installation software.

NOTE: you must be "administrator" to install the PC software.

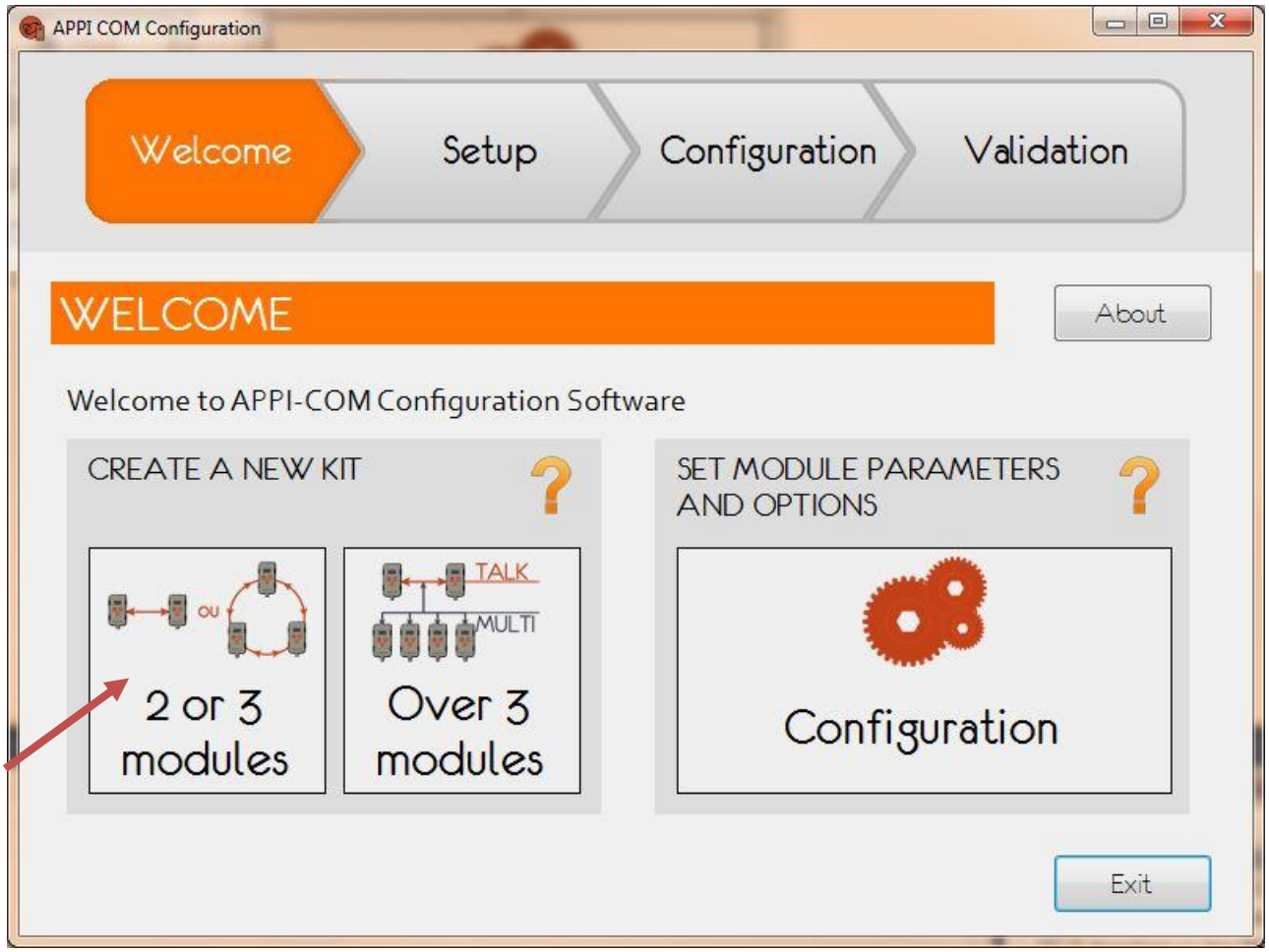
NOTE: installing drivers for the modules is done in a window on black background: **do not close it**; it will close automatically when the process ends.

When the software is installed, an icon will appear on the desktop to launch the software:

APPI-Com 43 LR Kit configuration – Tutorial

The purpose of the example described below is to create a **kit consisting of 3 modules**:

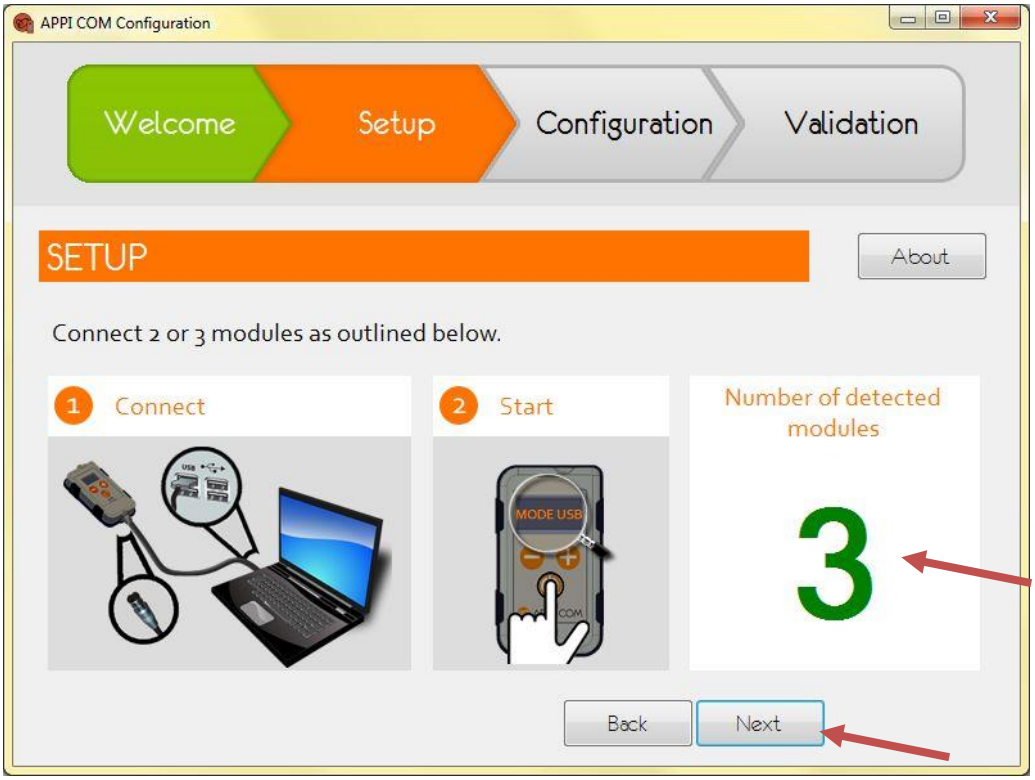
1. Launch the APPI-Com Configuration software
2. The software proposes to create a Kit or an advanced configuration:



3. After clicking on "2 or 3 modules", the software requests to connect the modules and indicates the number of detected modules.
4. Connect **only** the three modules of the new kit to configure, using the provided USB cables: directly on three USB free ports of the PC or through the provided 1X4 Port Replicator.
5. Switch on the modules

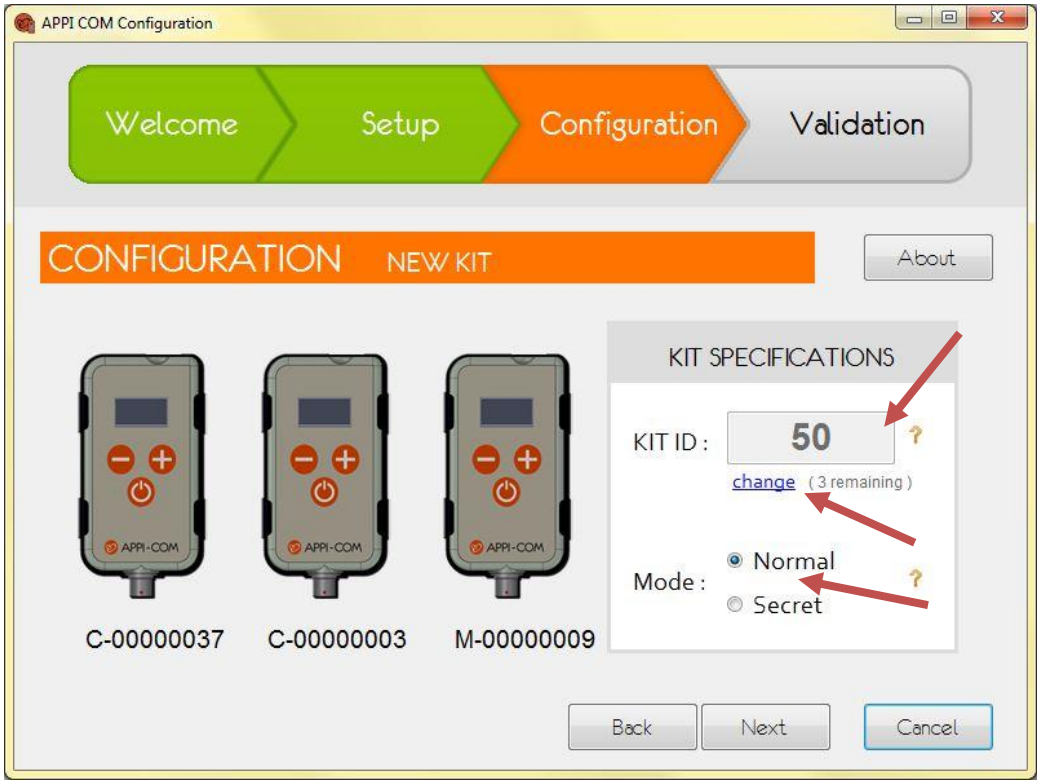
NOTE: the modules will go to the USB mode:

NOTE: detection by the computer could take more than a minute.



NOTE: « *Next* » would only be accessible when 2 or 3 modules are detected.

6. Click on "Next" if the detected number of module is correct:

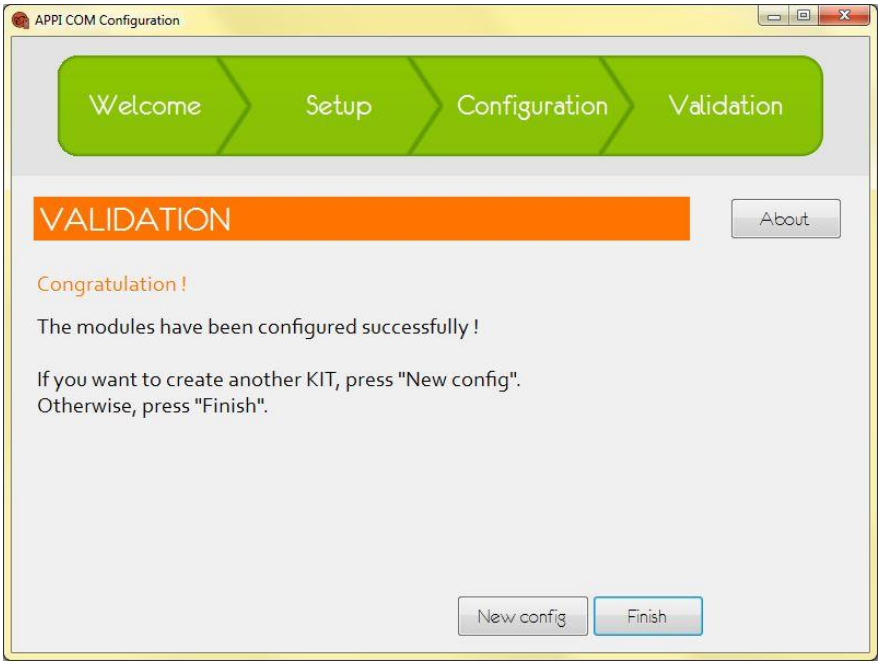


Standard Mode: the modules of the kit may be heard by an APPI-Com module in Listen Mode.

Secret Mode: NO other module would be able to listen to the modules of this kit

PARTICULAR CASE: it can happen that the proposed Kit number already exists in the group. One may ask for another kit number by clicking “change”. For confidentiality reasons, you may only request 3 changes.

7. Click “Next” to validate the configuration.



After a few seconds, this screen will confirm the configuration OK. In this example, modules **C-00000003**, **C-00000037** and **M-00000009** are part of kit **50** and can be heard by any user of an APPI-Com module in ***Listen*** mode, if he knows your kit number. At next start, the modules will run in conference mode, indicating their kit number: **50**.

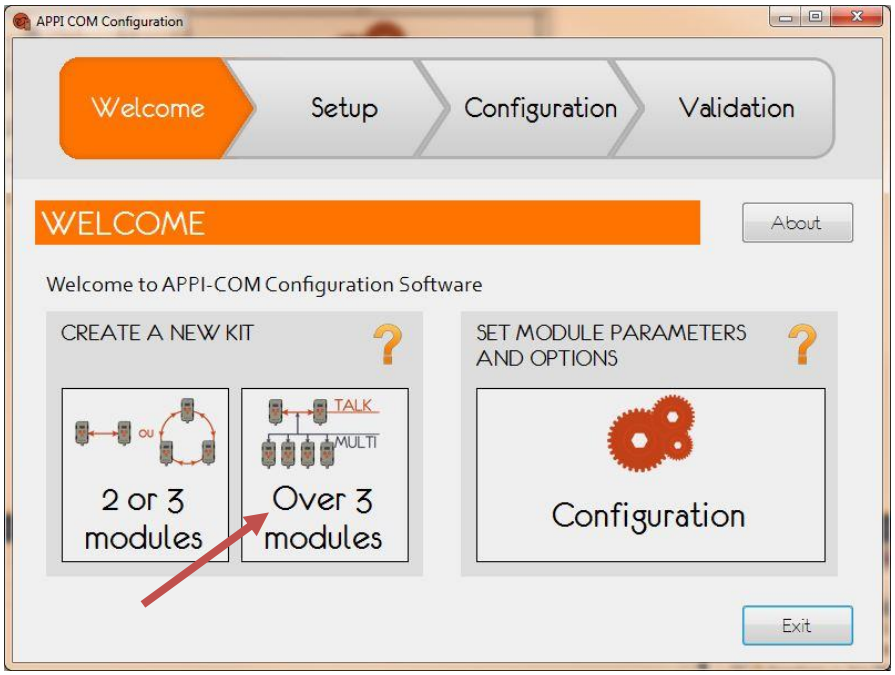
IMPORTANT: note that all modules will start on channel 1.

REMINDER: it is also possible to create kits with 2 modules.

APPI-Com LR: MULTIplex configuration tutorial (more than 3 modules)

The purpose of the example described below is to create an APPI-Com44 **kit, i.e. consisting of 4 modules**:

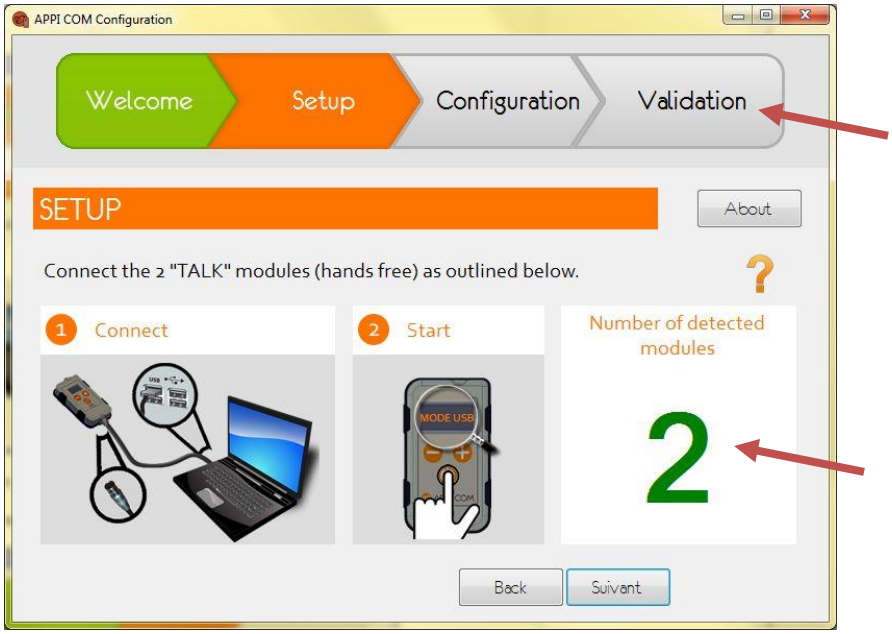
1. Launch the ***APPI-Com Configuration software***
2. The software proposes to create a Kit or an advanced configuration:



3. After clicking “More than 3 modules”, the software requests to connect the modules and displays the number of recognized ones:
4. Connect only the 2 “Talk” modules of the kit to configure, using the provided USB cables: directly on three USB free ports of the PC or through the provided 1X4 Port Replicator.
5. Switch on the modules

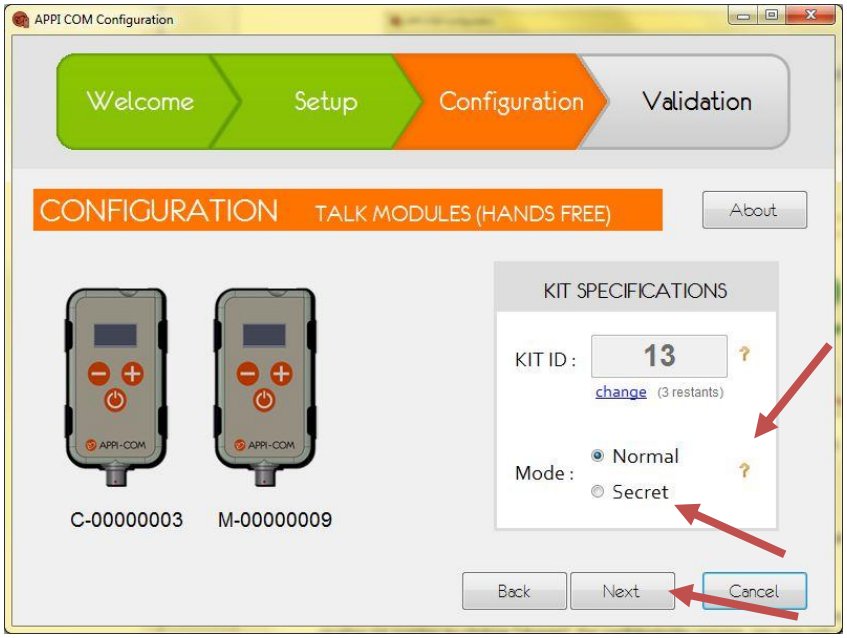
NOTE: the modules will go to the USB mode:

NOTE: detection by the computer could take more than a minute.



NOTE: the « Next » button is only available if the 2 « Talk » modules are connected.

6. Click on « Next » when the number of modules is OK:

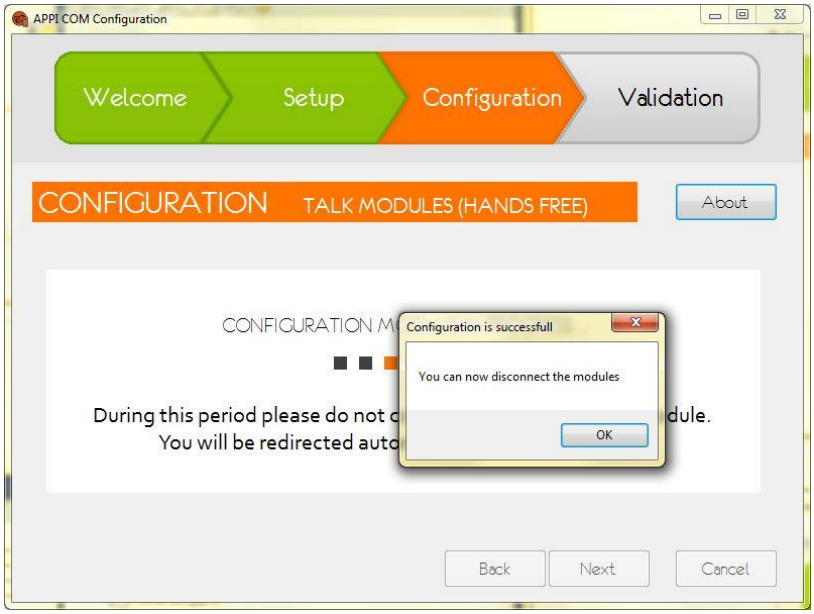


Standard Mode: the modules of the kit may be heard by an APPI-Com module in Listen Mode.

Secret Mode: NO other module would be able to listen to the modules of this kit

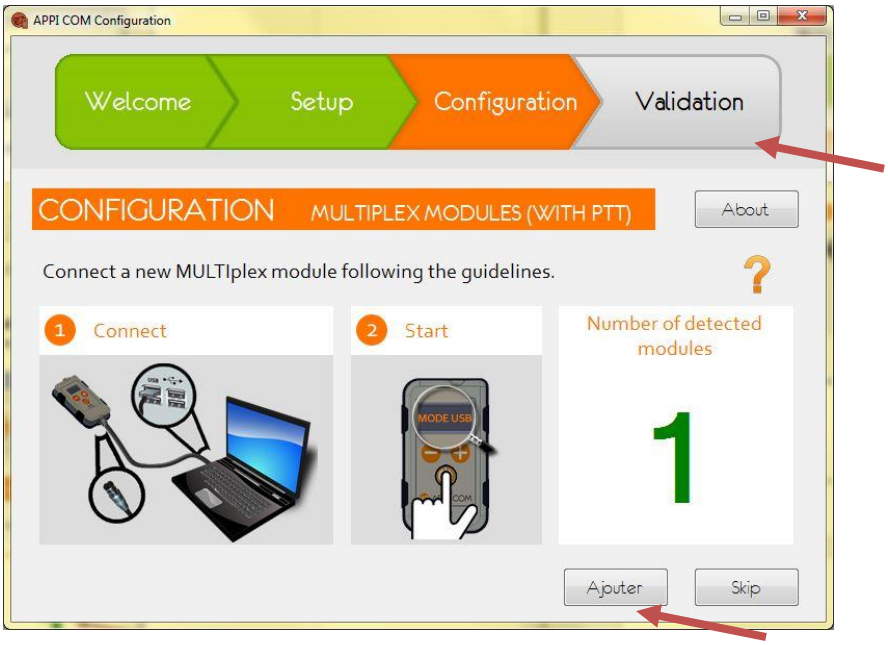
PARTICULAR CASE: it can happen that the proposed Kit number already exists in the group. One may ask for another kit number by clicking “change”. For confidentiality reasons, you may only request 3 changes.

7. Click “Next” to validate the configuration.

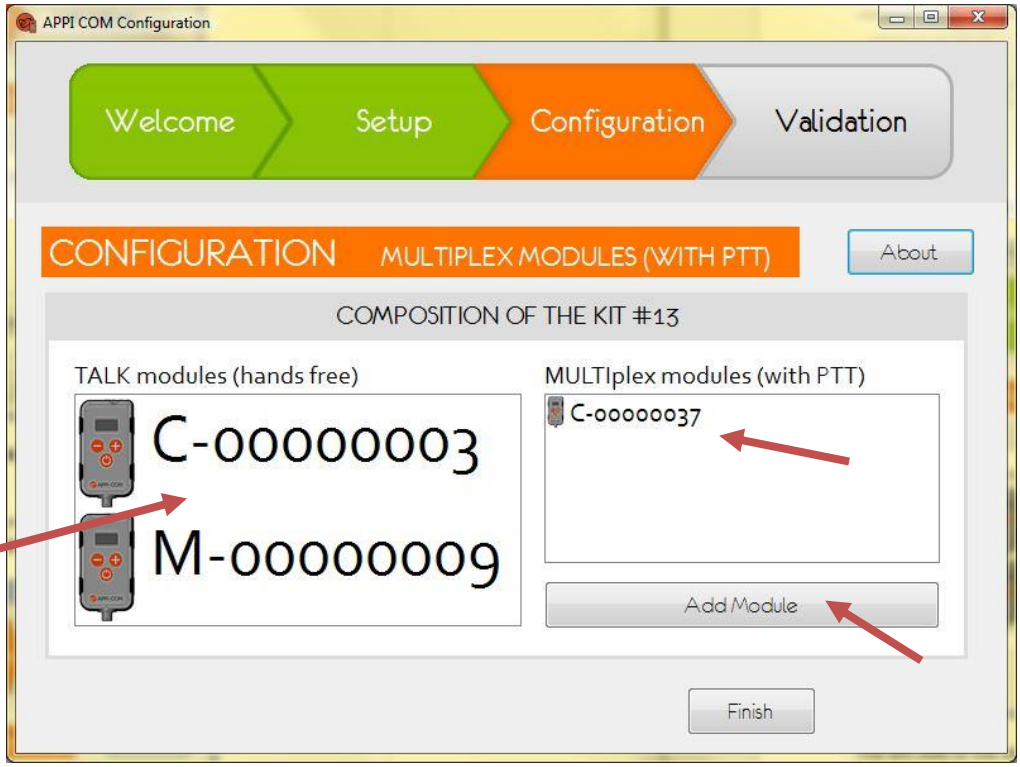


The two “Talk” modules are set up: you may disconnect them and Press “OK”

8. The software requests to connect the first “***MULTIplex***” module: the “Add” button is only valid when only ONE module to add is connected.

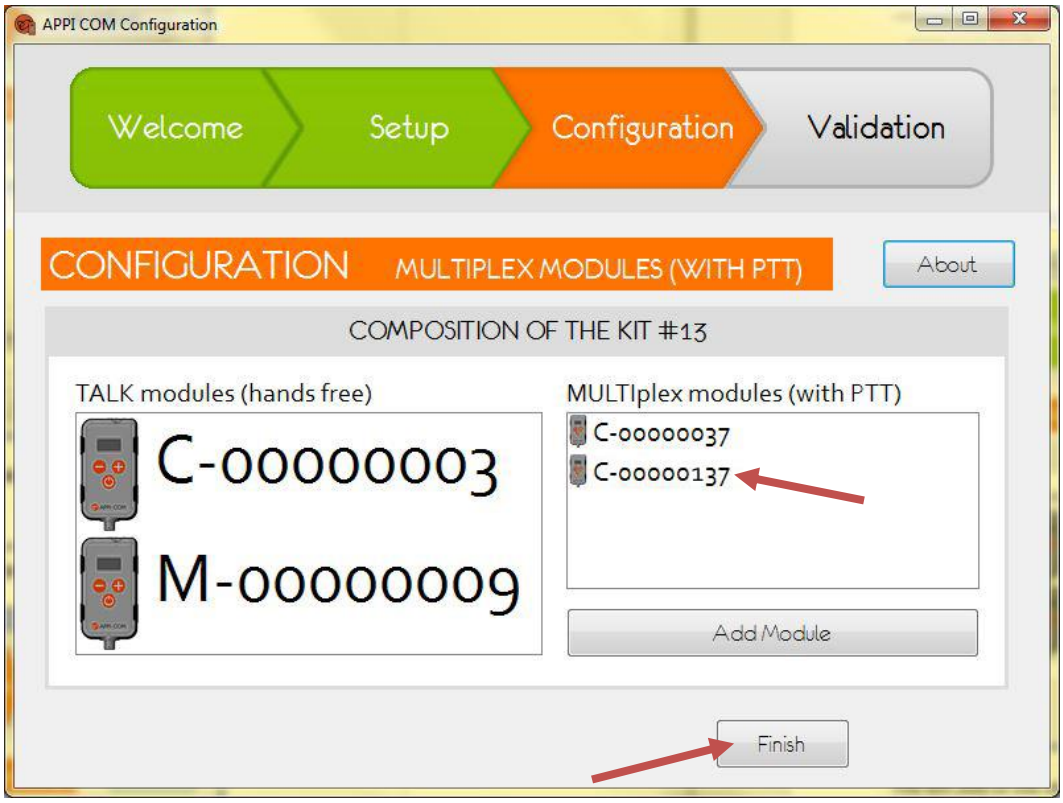


9. After clicking on “Add”, the window displays:

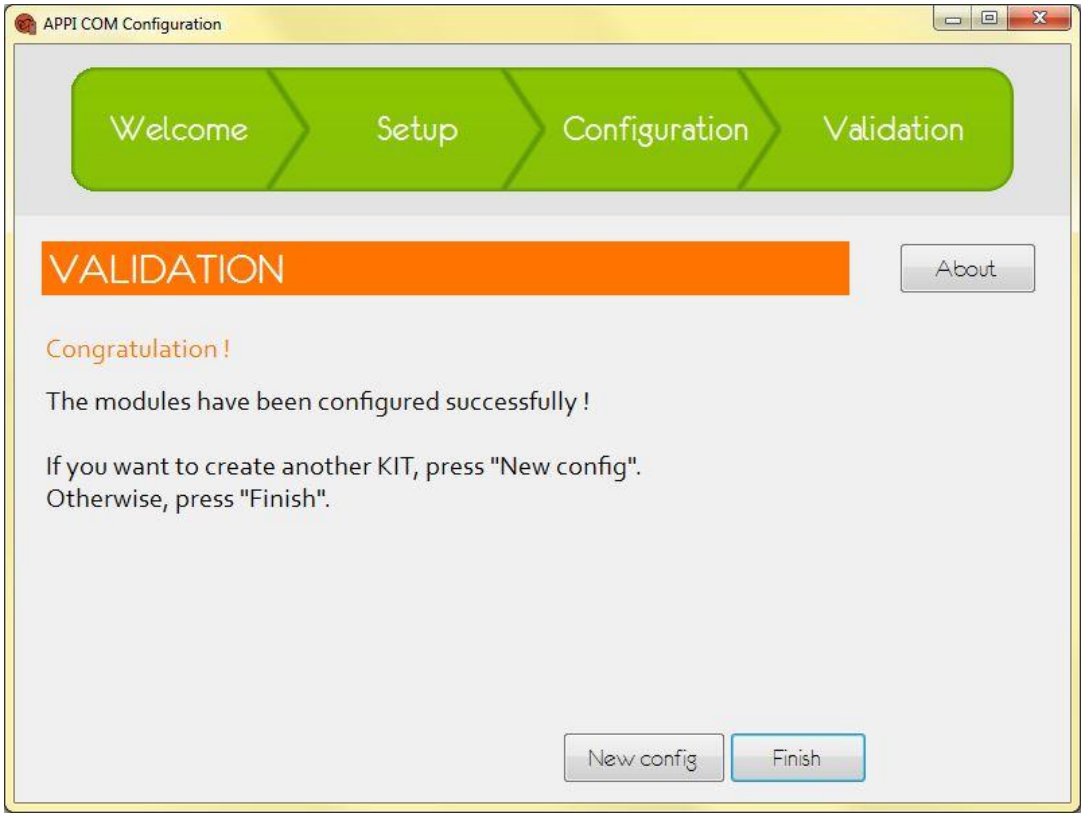


The left side of the window shows the ID of the two “Talk” modules, while the left side zone displays all the ***“Multiplex”*** modules added to the kit.

10. After clicking on “Add”, you go back to step 8 which ends with the new added ***“Multiplex”*** module being listed:



11. After clicking on “EXIT”, the window displays:



In this example, module number **C-00000003**, **C-00000037, C-00000137** and **M-00000009 are part of kit #13,** et can be heard by any APPI-Com kit in Listen mode provided they enter the right kit number (13).
Module **C-00000003** and **M-00000009** are the priority ones and can be used with hands free Audio accessories (no PTT), while module **C-00000037** and **C-00000137** are used in “Multiplex” mode and must be connected to an Audio accessory with PTT.

At next start all modules will be in conference mode as Kit #13.

IMPORTANT: note that all modules will start on **channel 1**

NOTE: if a problem occurs when adding a « ***Multiplex*** » module, all previous configurations are stored. As an example, if the 2 « Talk » and 2 « multiplex » modules are configured together, if a problem occurs when adding a third one, only this last one will not be part of the kit: the 2 Talk and 2 multiplex modules will be usable. In that case, the software proposes to end the configuration process or retry adding another Multiplex module.

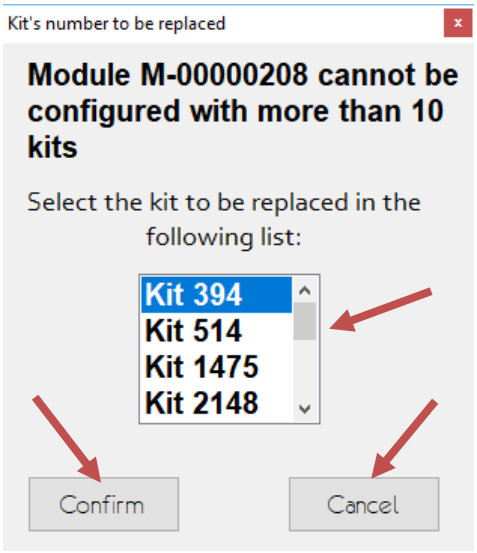
NOTE: It is possible to add as many Multiplex modules as desired, but, for operational reasons, it is advised **to limit to 8 so that all users may have a chance to talk**.

NOTE: It is NOT permitted to configure one of the 2 « ***Talk*** » modules of the kit to a « ***Multiplex*** » one. The software will return an error message.

NOTE: a « ***Multiplex*** » radio can be part of up to 10 groups

NOTE: If a Multiplex radio is configured in a group with the « secret » option, then, in another, without this option, th1475en the default mode (no secret!) will prevail for this radio, whatever group it's talking with.

If, while trying to configure a module to be part of a group, the Multiplex radio is already configured with 10 groups the following window will appear:



One must select the **group to remove** from the Multiplex list: the radio would thus NOT be able to access this group.

Advance configuration – Tutorial

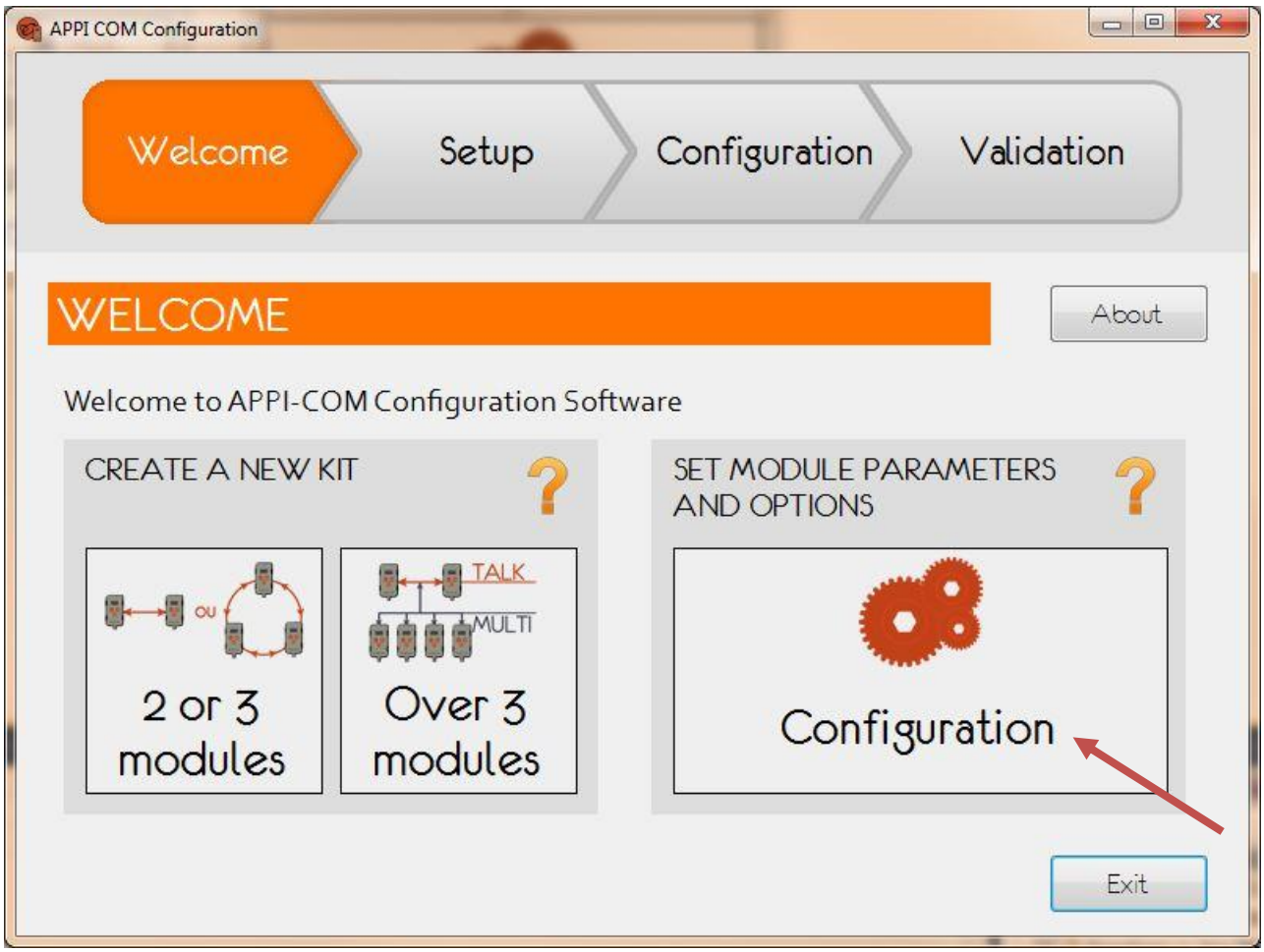
The objective here is to configure 3 APPI-Com modules.
We want to set the module # **C-00000045** as such:

- Activate the « ***Talk + Listen*** » modes, to authorize conversation AND Listen only
- Activate the LWP mode with the following parameters :
    - Pre-alert period : 40 seconds
    - Alert period: 10 seconds
    - No authorization to disable the LWP function
- Playing the Alert messages every 2 minutes
- Choosing "English" as the language for the vocal alert
- Activate the **SafeLine** mode

Then we'd like to replicate this very configuration to module # **C-00000089**.
Finally, on module # **M-00000007**, we want to:

- Activate « ***Call*** » mode
- authorize the user to disable the **LWP** function
- authorize **Vox** sensibility settings
- authorize **Sidetone** settings
- authorize **Eco** mode activation
- authorize **Quick channel change**

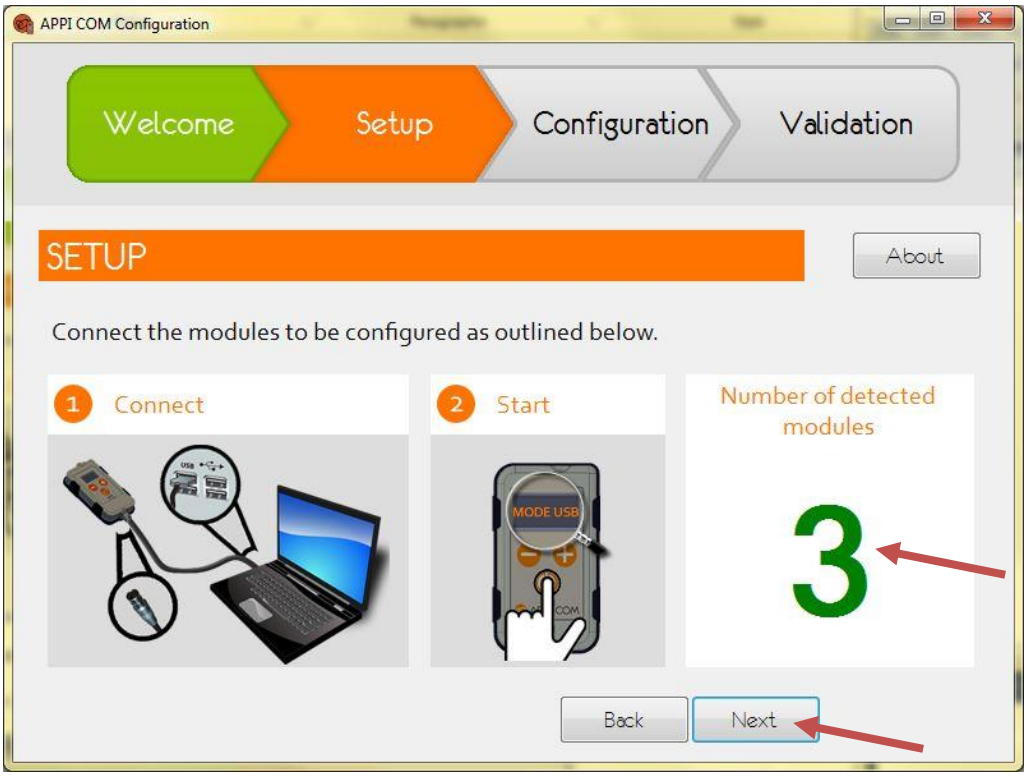
1. Launch the ***APPI-Com Configuration*** software
2. The software proposes to create a Kit or an advanced configuration:



3. After clicking “Advanced configuration”, the software requests to connect the modules and displays the number of recognized ones:
4. Connect only the 3 modules of the kit to configure, using the provided USB cables: directly on three USB free ports of the PC or through the provided 1X4 Port Replicator.
5. Switch on the modules

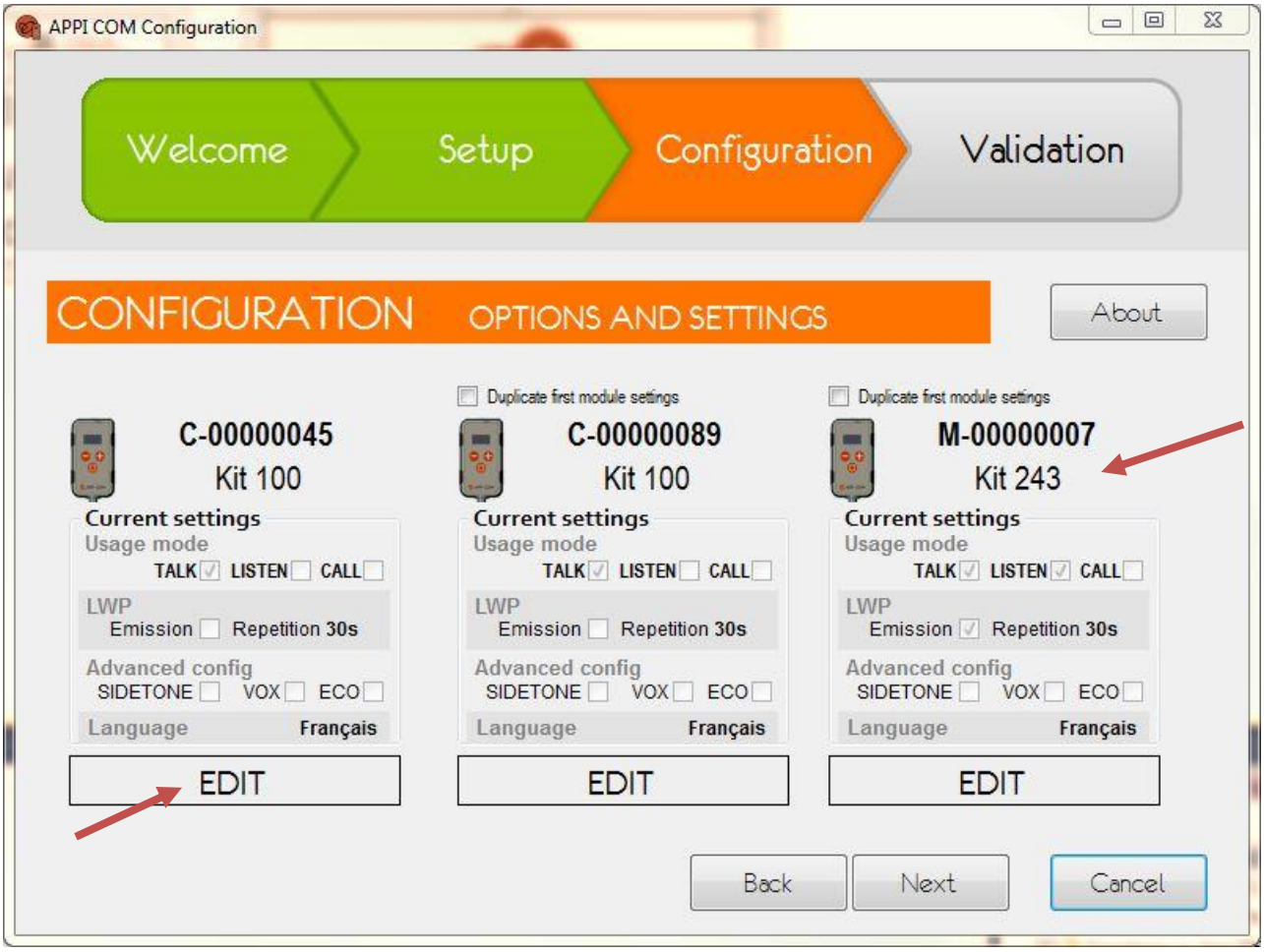
NOTE: the modules will go to the USB mode:

NOTE: detection by the computer may take more than a minute.



NOTE: the « *Next*» button is only accessible if 1, 2 or 3 modules are connected

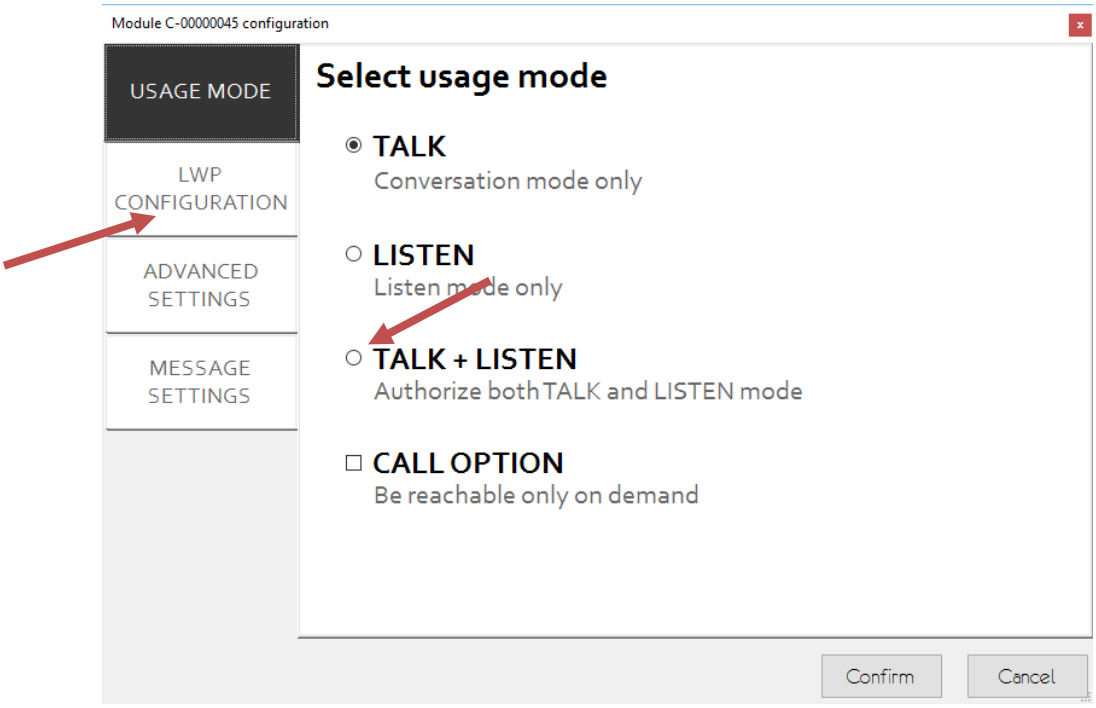
6. Click on « *Next* » when the number of modules is OK. :



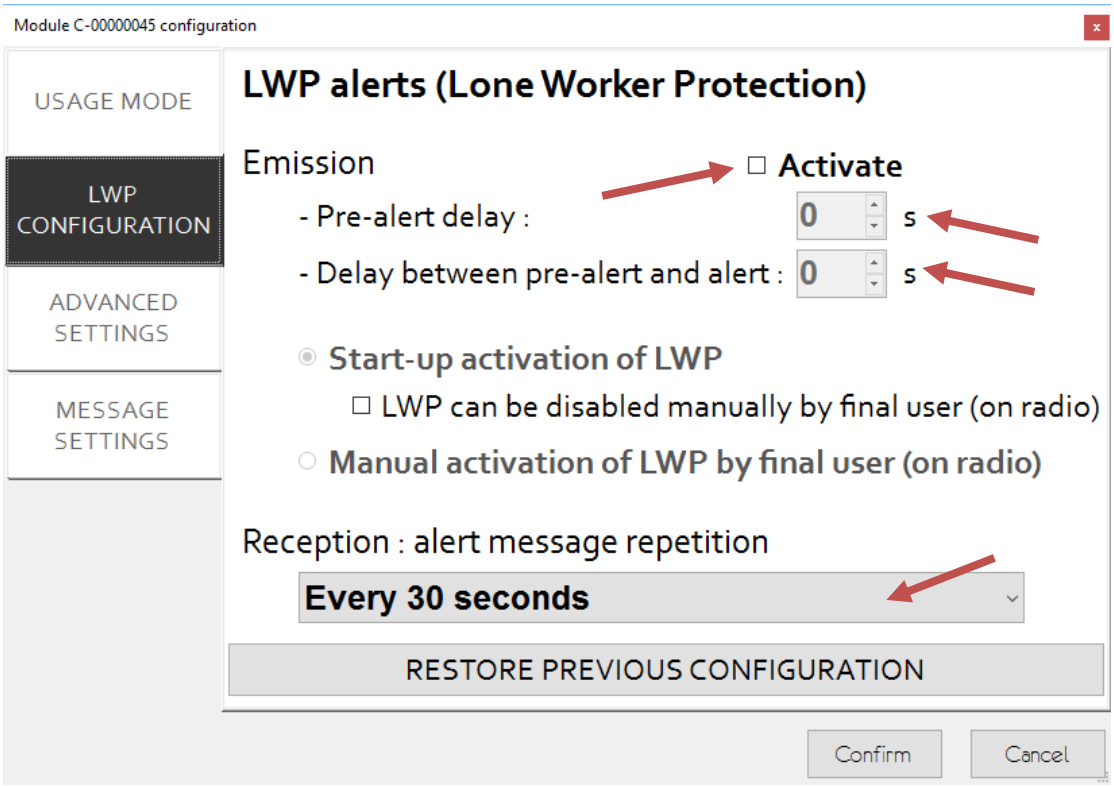
For each module, the current options and settings are displayed.
Example, module # **M-00000007** is configured as:

- **TALK** and **LISTEN** mode: allowing using both conversation and Listen Only mode.
- **CALL** mode disabled
- **LWP** Function : activated
- Alert message repetition period : 30 seconds
- **SIDETONE** sensibility tuning authorization : disabled
- **VOX** sensibility tuning authorization : disabled
- **ECO** mode authorization : disabled
- Language used for the vocal messages : French

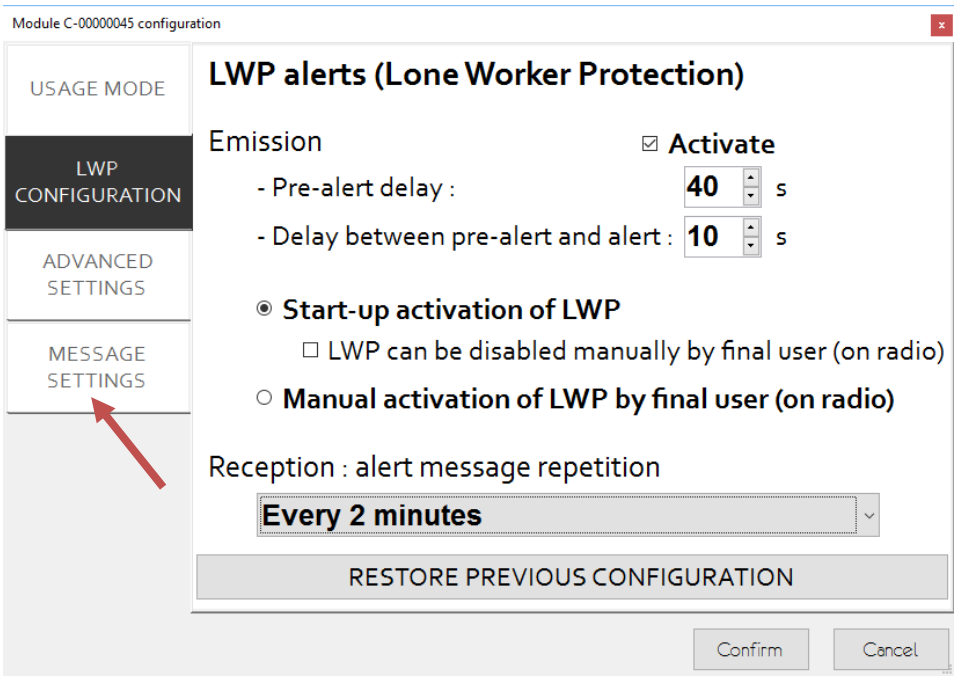
7. Then click on « ***EDIT*** » to change the parameters on module **C-00000045**. You may then see the following window :



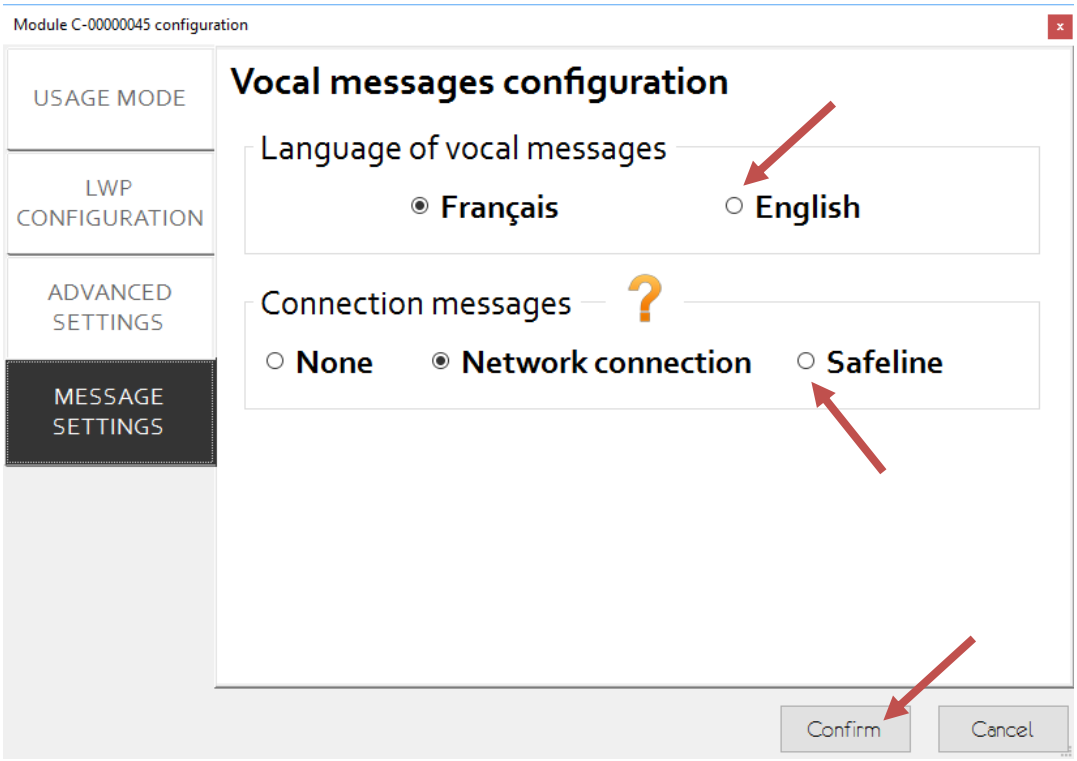
On first tab, you may choose the usage mode. In this example, we choose « **TALK + LISTEN** ».
Then we click on the « **LWP CONFIGURATION** » tab:



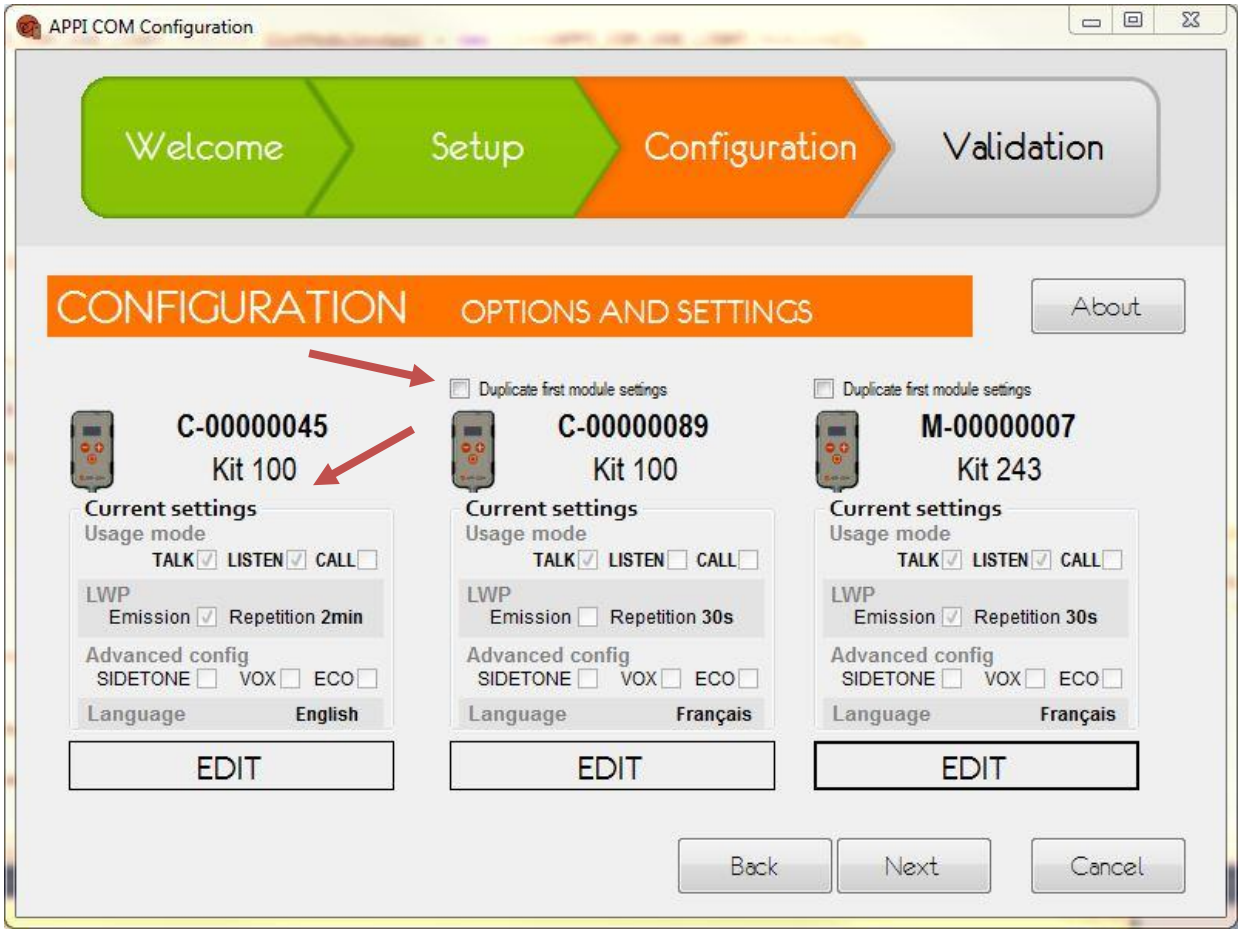
This window allows activate the LWP function and set the parameters up:



Then click on « **MESSAGE SETTINGS** » to configure « English » as the vocal alert's language and activate the **Safeline** mode

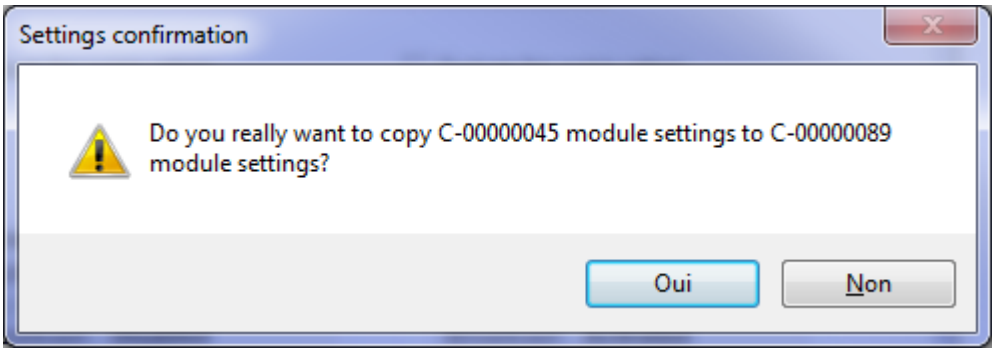


8. The desired configuration of module **C-00000045** is complete. By clicking "***Confirm***" you will freeze the parameters you wish to apply to the module:



NOTE: at this stage, the modifications have NOT been stored in the module, **thus the module is NOT configured yet!**

9. To duplicate the same configuration to module **C-00000089**, you need to click on « ***Copy the configuration of first module*** » :

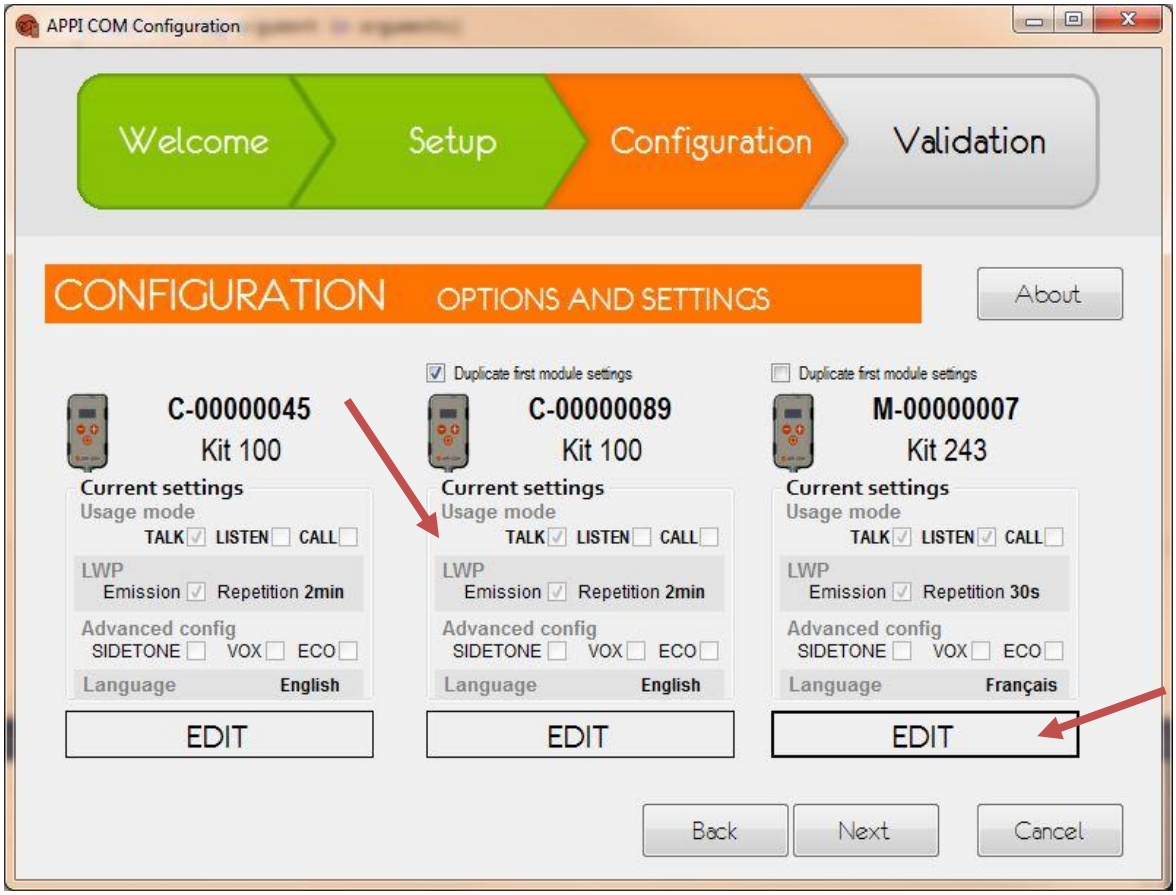


By clicking « ***Yes***», the configuration is copied from module **C-00000045** to module **C-00000089**.

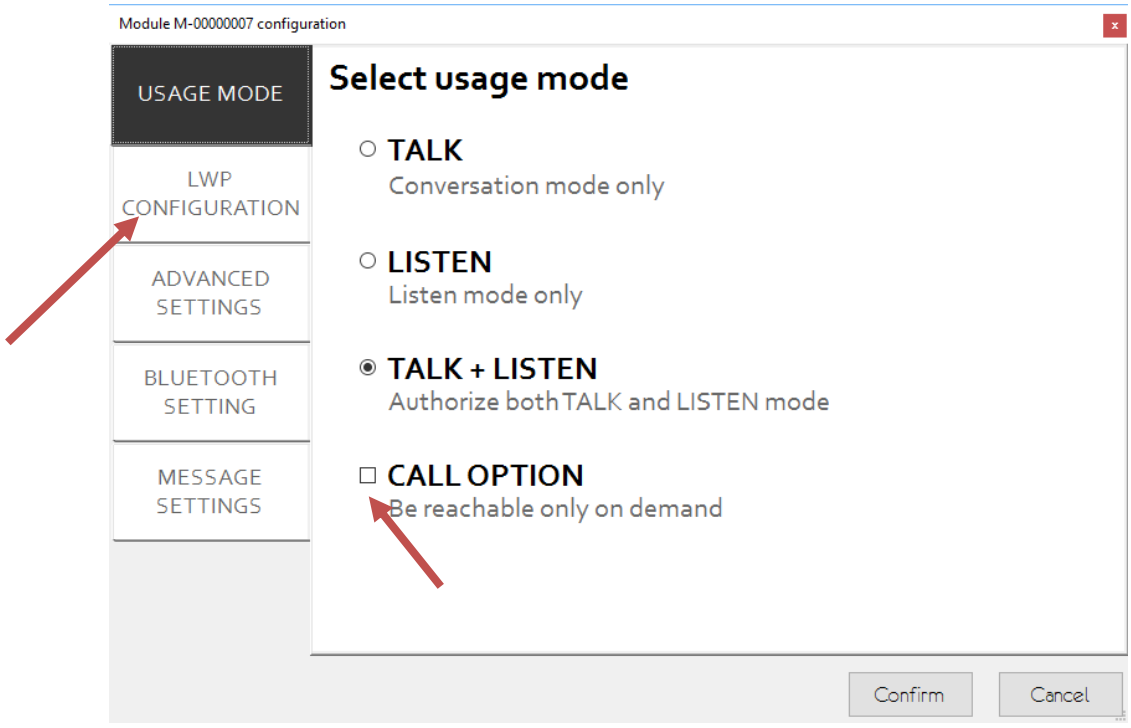
NOTE: any modification made on configuration of module **C-00000045** will be replicated on module **C-00000089**.

REMINDER: at this stage, the modifications have NOT been stored in the module, **thus the module is NOT configured yet!**

10. Change module **M-00000007** options and settings, click « **EDIT** »:

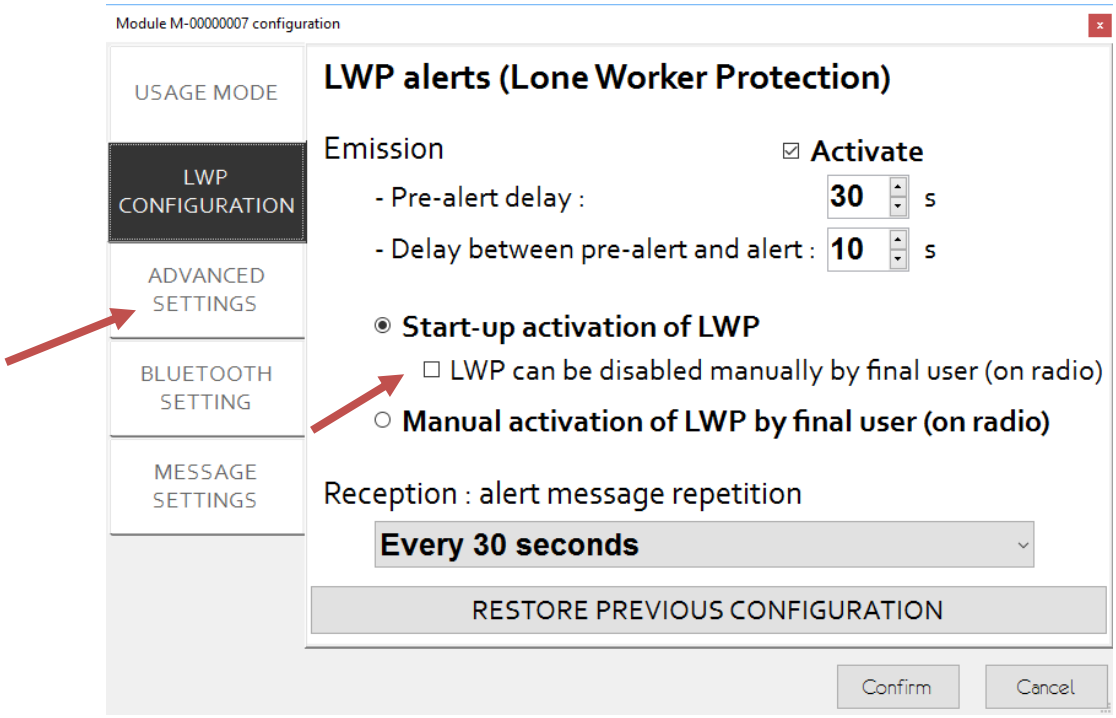


11. Activation of the « ***Call*** » mode in tab « **USAGE MODE** »

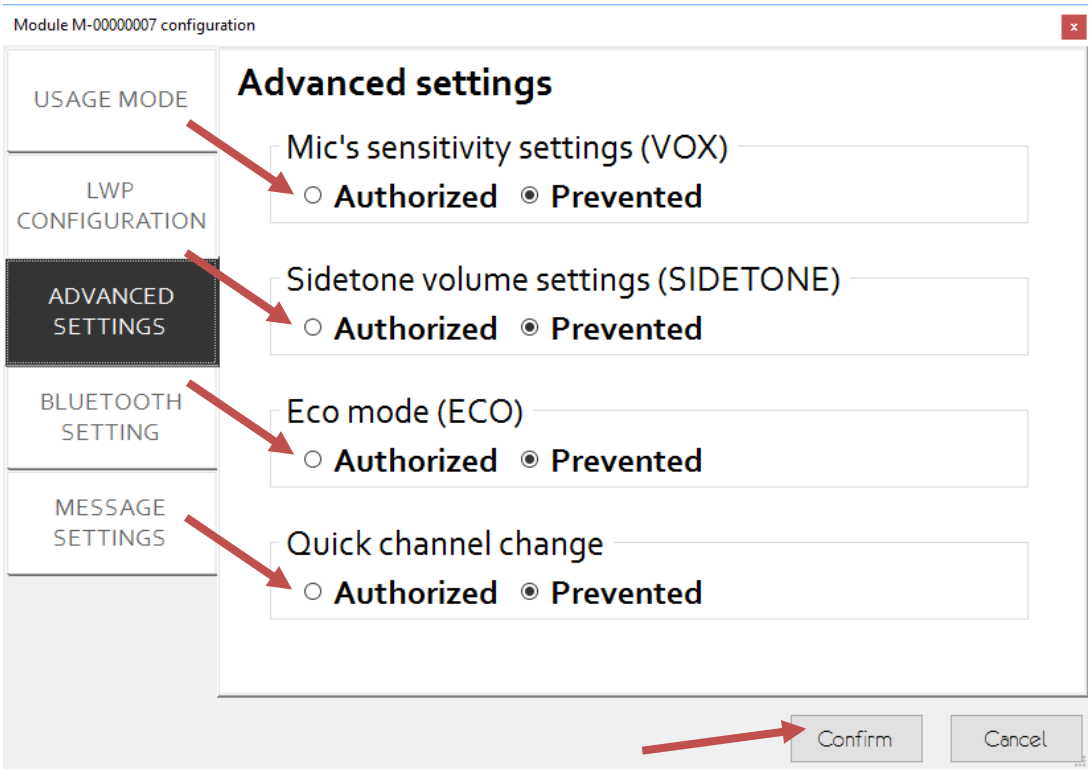


Check the box « **CALL OPTION** ».

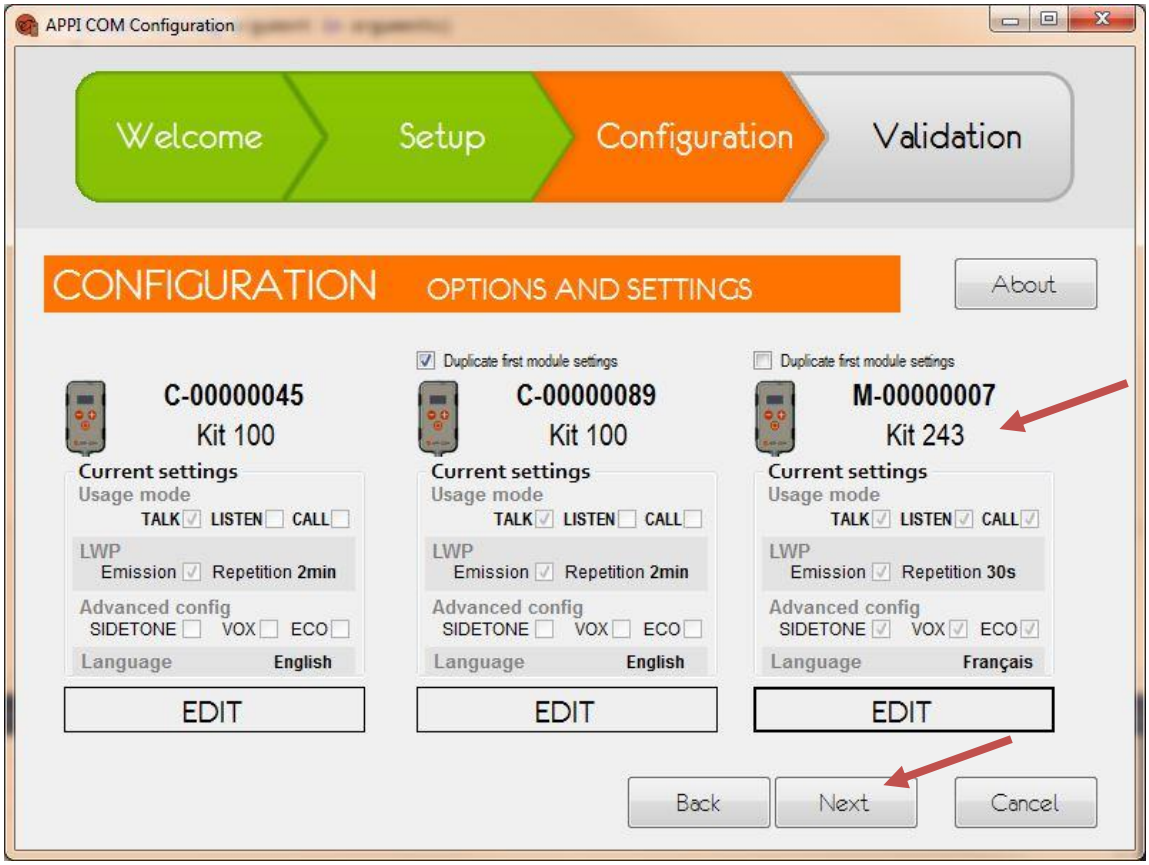
12. On the above window, go to tab « **LWP CONFIGURATION** » and check box « **LWP can be disabled by final user** »:



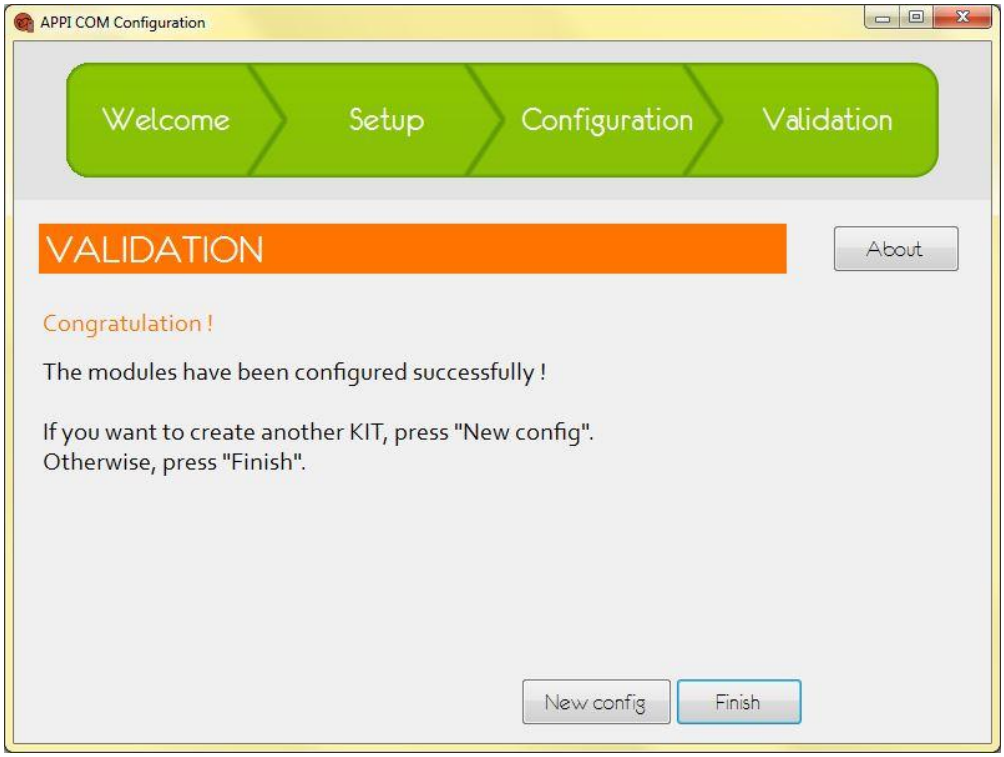
13. Chose tab « **ADVANCED SETTINGS** », check the 4 options, then click « **confirm** »



14. We then come to the above window:



15. By clicking « **Next** », the new configuration parameters are sent to each module.
After a few seconds the above window appears:



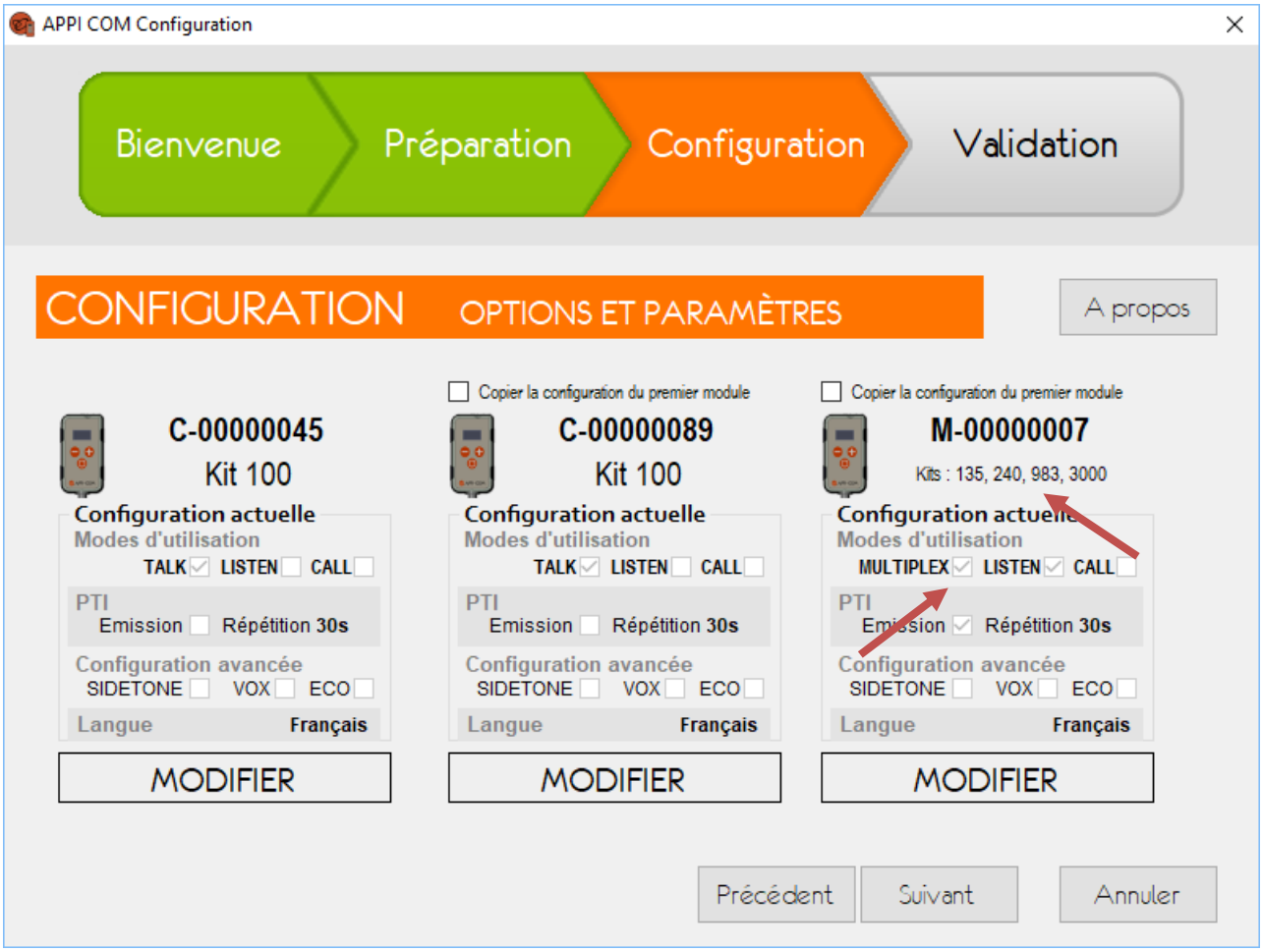
<u>This confirms that the configuration is done!</u>

NOTE: it is possible to simultaneously configure 1, 2 or 3 modules.

NOTE: for a module in « Multiplex » mode, the LWP emission parameters' tab is not accessible.

Particular case: advanced configuration with a Multiplex module

In case a Multiplex module is configured in a kit, the window in step 6 will show it (example with only radio M-0000007 in Multiplex mode:



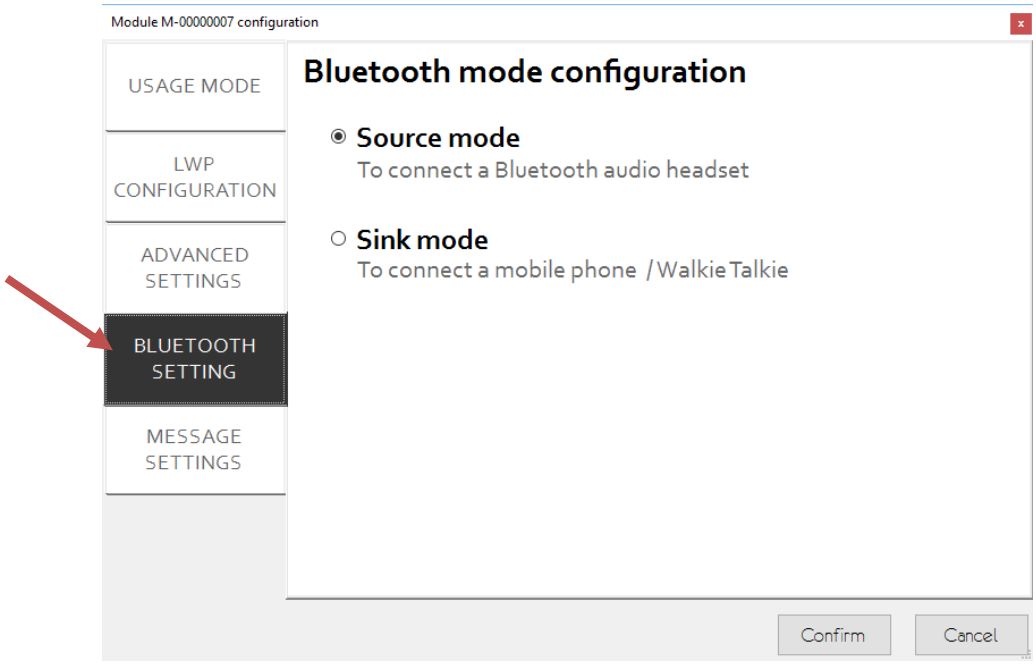
The same principle applies as per the « TALK » radio.

A Multiplex radio can be part of up to 10 differents kits (i.e. groups). The Kit number is replaced by a list with all kit's number the radio can be attached to (example 135, 240, 983 et 3000). This allows check which kits this particular radio can be linked to.

Bluetooth mode configuration

If your APPI-Com module is equipped with the Bluetooth option, you can configure the protocol mode in terms of « Source » or « Sink »:

- **Source Mode**: to connect a Bluetooth headset
- **Sink Mode**: to connect a communication device as a smartphone or Walkie-Talkie, enabling the APPI-Com module to relay the communication to another network.



The new configured mode will be activated by confirming this menu then pressing « next » in the following window (see step 14 and 15)

Contextual help and cancellation

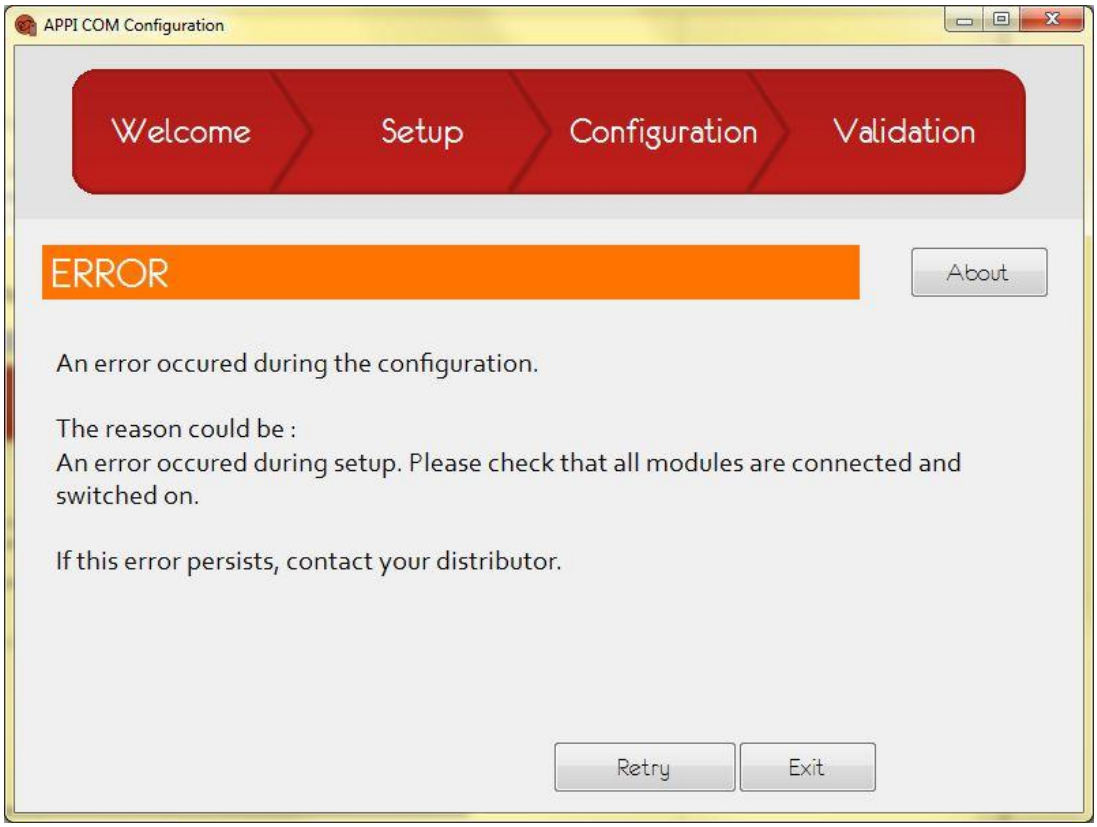
On all screens where symbol  appears, it is possible to access a context-sensitive help with a click.
On each screen, you can cancel the setup process by clicking "**Cancel**": no configuration action is applied to the modules and the program stops.

Configuration incidents

The following problems may be encountered during setup:

- **Connected modules are not detected**, indicated module number doesn't match or the search symbol persists  :
  - The computer may take some time (sometimes several minutes) to recognize the modules via USB ➔ wait until the completion of the recognition and possibly restart the detection module by clicking the ***Refresh*** button. Perform this step several times if necessary.
  - An USB connection cable is loose ➔ attach it correctly and repeat the detection phase by clicking the ***Refresh*** button

- **Configuration could be "impossible"** after the validation :

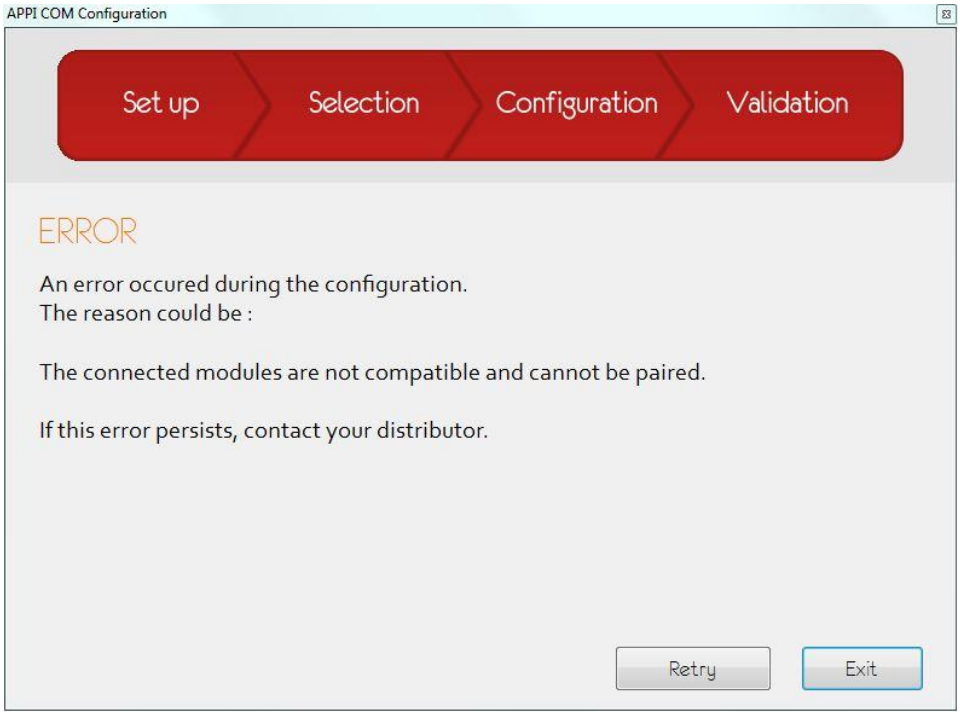


  - The connected modules are no switched on ➔ Switch them on and ***Retry***.
  - Some modules have been switched off during the detection phase➔ reconnect them and switch them on then ***Retry***.
  - Some modules are not running a compatible internal software version and cannot be configured with this software.

NOTE: the module version is displayed at start up.

- During “advanced Configuration” it can be **impossible to modify the operation mode for a module**:
  - If the module has **NEVER** been part of a Kit, it CANNOT operate in Talk mode but only in Listen mode ➔ create a new kit using this particular module so that it could be used in both mode.

- It may be **impossible to create a new kit**:



  - APPI-Com modules can be factory configured with a customer-specific encryption key that prevent them to be integrated in a “common” kit ➔ Contact your distributor.

- Other incident:
  - Please contact your distributor.

Index table

Glossary

LWP:
Lone Worker Protection: immobility detection.

PTT:
Push-To-Talk, button connected to the audio device which activates the microphone.

Full-Duplex:
Bidirectional communication where sending and receiving can be performed simultaneously.

Kit:
Set of 2 or 3 APPI-Com modules linked together and sharing a common number, between 1 and 4094.

Throat microphone:
It is an Audio device that uses throat's vibration to pick up the sound.

Listen Mode:
Operation mode allowing to "***Listen"*** only, not talk.

Module:
It is an APPI-Com terminal.

Talk Mode:
Operation mode allowing to both "***Talk"*** and "***Listen"*** to peoples using APPI-Com modules having the same kit number.

Secret Mode:
It is an Operation Mode that prevents **any module, out of the ones sharing the same kit number**, to hear the conversation.

ATEX Version:

- ATEX : ATmospheres EXplosives
- Zone 0: permanent presence of explosive gas atmosphere, estimated> 1 000h per year.
- Zone 1: occasional presence of explosive gas atmosphere, estimated 10h <x <1 000h per year.
- Zone 2: rare presence of explosive gas atmosphere, estimated <10 hours per year.
- Zone 20: permanent presence of explosive dust atmosphere, estimated> 1 000h per year.
- Zone 21: occasional presence of explosive dust atmosphere, estimated 10h <x <1 000h per year.
- Zone 22: rare presence of explosive dust atmosphere, estimated <10 hours per year
- Letter G: "Gas" / gaseous environment
- Letter D: "Dust" / Dusty

SyncAll® et SafeLine® are registered brands or features described in Patents belonging to APPI-technology SAS.

FCC Version (USA / Canada): notified Body #0536

Portable Communication Device
Radio Parameters ➔FCC Part 15
Electromagnetic compatibility ➔FCC Part 15
Electrical Safety ➔EN 60 950-1, ed.2:2006 +A1:2010 +A11:2009 +A12:2011 +A2:2014 +Opr.1:2012
APPI-Com meets the essential requirements and other relevant provisions of Directive 1999/5/EC.
Ingress Protection (non ATEX version) IP66 according norm EN 60529:2000 (ADETESTS)

Technical specifications of the radio module, model n°BS-APC2U-0x/Bx:

Number of Audio channels : 16	Free Bands : 902 - 928 MHz FHSS
Modulation type: FM	Line of sight range >2000m (LR channel, 2dBi antenna)
Emitted power : <500mW	Audio encryption: « enhanced » D.C.M.
Batteries : Li-Poly 3.7v /rechargeable	Temperature usage range : -20°C/+50°C
Autonomy : 8 to10h (Talk mode)	Recharge time : 2h (wall plug)
Dimensions (HxWxD) : 91×48×15 mm	DSP Based Noise Cancelling function
Weight ≈ 80 g / 3 Oz	SAR : 1.1 to 1.24W/Kg (depends on version)

- **Bluetooth version (Option)**: Internal module WT32i, Class 2

FCC:

Any changes or modifications to this equipment not expressly approved by APPI-TECHNOLOGY may cause, harmful interference and void the FCC authorization to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference's by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and the receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.
This device must be professionally installed
This portable equipment with its antenna complies with FCC's radiation exposure limits set forth for an uncontrolled environment. To maintain compliance, follow the instructions below:
1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. Avoid direct contact to the antenna, or keep contact to a minimum while using this equipment.

IC:

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

CE Version (Europe) certifiied Body (Cofrac) #1-0827

Portable Communication Device Class I: no restriction
Radio Parameters ➔ ETSI EN 300 220-1&2 V3.1.1 :2017
Electromagnetic compatibility ➔ ETSI EN 301 489-1 & ETSI EN 301 489-3
Electrical Safety ➔EN 60 950-1, ed.2:2006 +A1:2010 +A11:2009 +A12:2011 +A2:2014 +Opr.1:2012
APPI-Com meets the essential requirements and other relevant provisions of Directive 1999/5/EC.
Ingress Protection (non ATEX version) IP66 according norm EN 60529:2000 (ADETESTS)

Technical specifications of the radio module, model n°BS-APC2-0x:

Number of Audio channels : 16	Free Bands : 863–868.6/869-870 MHz
Modulation type: FM	Line of sight range >2000m (LR channel, 2dBi antenna)
Emitted power : <500mW	Audio encryption: « enhanced » D.C.M.
Batteries : Li-Poly 3.7v /rechargeable	Temperature usage range : -20°C/+50°C
Autonomy : 8 to10h (Talk mode)	Recharge time : 2h (wall plug)
Dimensions (HxWxD) : 91×48×15 mm	DSP Based Noise Cancelling function
Weight ≈ 80 g / 3 Oz	

- **Bluetooth version (Option)**: Internal module WT32i, Class 2

ATEX certification (for ATEX version only)

ATEX Certification	APPI-Com model BS-APC-Ax
CE II 3G/D Eex is T6 IP67	NF-EN-60079-0 / 2006 - NF-EN-60079-11 / 2011
Usage Temperature limits	-10°C / +60°C
Ingress Protection Index	IP67 per EN 60529: 2000 - ADETESTS (EMITECH Group)
Compliance declaration:	File n° 0552/0189/0278 – C.E.I.P. International.

Technical specifications of the radio module, model n°BS-APC2S-0x/Bx:

Specification difference / CE version:

Singapore Free Radio bands : 920-925MHz	16 Channels : 12 Long Range / 4 Short range

A copy of the declarations of Conformity is available through the APPI Customer Service:

Disclaimer:

Please note that the French and the English versions of this manual are the only ones certified by the manufacturer APPI-technology. Any other variant provided by an authorized distributor should not be used as a reference. This disclaimer is not to be translated in any other language.

About APPI-Technology

By accessing www.appi-technology.com, you can get information about the APPI product line and the APPI-Technology Company, who designs and manufactures the product.

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APPI Products are designed and manufactured in France