TXAdvance

User manual

Compasseur.com

TXAdvance user manual

1) Introduction

TXAdvance is a wireless transmitters coordination software for the Android mobile platform. It can scan the radio frequency spectrum using the SDR technology from 50 to 1300 Mhz with a resolution of 5 kHz and the appropriate hardware*. Coordination allows user to select the optimal frequencies by avoiding intermodulation.

TXAdvance is not particularily ressource intensive for smartphone, although with a large number of microphones and/or large scans, calculation time can be increased. It is important to let the app finish calculation and writing to database. Do not quit the app when progress bars are present as it could lead to some data not being written to the database and misbehavior.

Through this manual :
- TX = transmitters
- TX list = list of transmitters
- IM = intermodulation
- 2T3O = two transmitters third order intermodulation
- 3T3O = three transmitters third order intermodulation
- 2T5O = two transmitters fifht order intermodulation
- 2T7O = two transmitters seventh order intermodulation

The app can be purchased and downloaded through the Google Play Store.
You can find help or ask question by going to the Facebook page :
https://web.facebook.com/txadvance or the official website : https://www.compasseur.com

User manual revision history

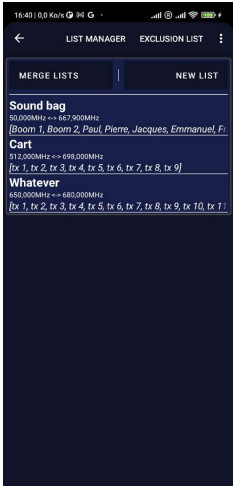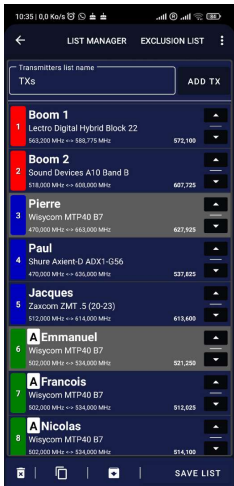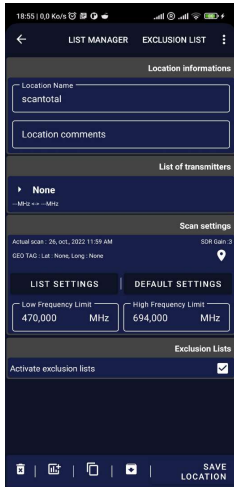| 1.0 (TXA v4.5)	09/2022	First version
1.1 (TXA v4.7)	10/2022	Added tx List CSV export and TX groups
1.2 (TXA v4.8)	11/2022	Added multi scans
1.3 (TXA v4.9)	11/2022	TX colors - Multiple Rows Live check - Australian TV
1.4 (TXA v4.91)	11/2022	Group auto mode
1.5 (TXA v5.00)	02/2023	TX monitor

2) Screens

General settings
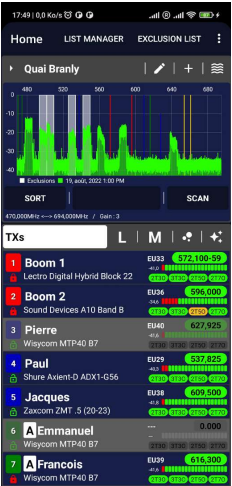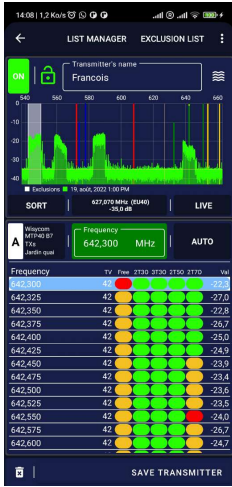

Home

List manager

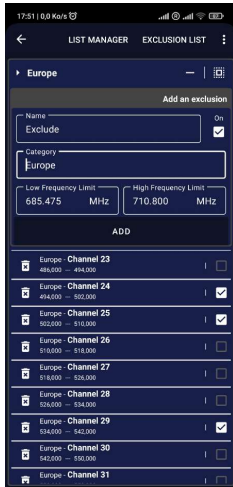

TX list

TX parameters

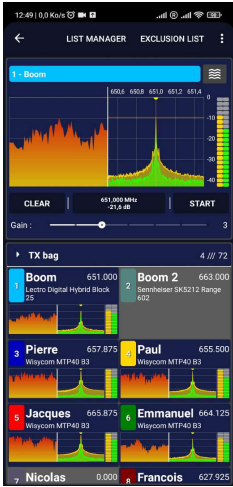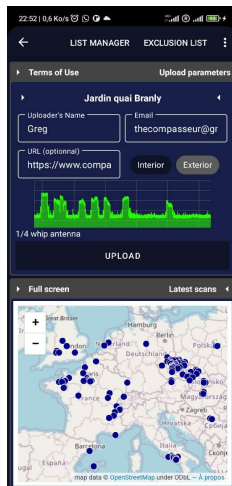Location

TX frequency

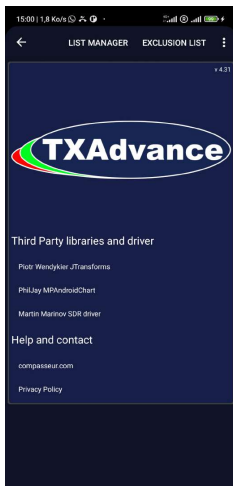Exclusion list

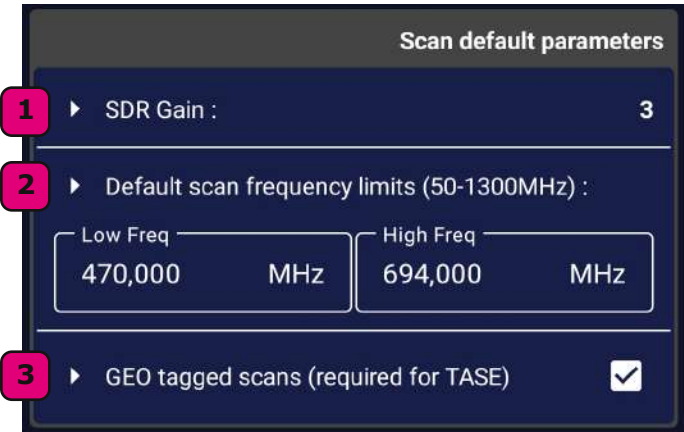Live check

TX monitor

Import

TASE

About

3) General settings

The general settings will affect every location, scan, TX list, TX and list of frequencies.
To access the Settings, press on « … » at the top right corner of the app and then « Settings ».

a. Scan default parameters

1. Choose the gain value for the SDR dongle :

Setting	Corresponding value
1	0.9 dB
2	7.7 dB
3	12.5 dB
4	22.9 dB
5	28.0 dB
6	40.2 dB
7	48.0 dB

Default value is 3 (12.5 dB).
This gain setting will be applied to the next scans. For Live check mode, the gain settings is independant and saved only for this mode.

2. Choose the default scan frequency limits for new locations. Apply those default scan settings by clicking on the « Default settings » button in the « Scan settings » section of the location edit screen (8.c.4).
Minimum frequency is 50 MHz and maximum is 1300 MHz.
TXAdvance will automatically round the low and high frequencies to the closest MHz.

3. Enabling this settings will make TXAdvance save the position of the phone while scanning a new location through GPS and wireless networks. You will need to allow TXAdvance to access location from your phone and you will need to switch on the GPS on the device parameters.
-> Enabling geo tagging is mandatory for uploading scans to the TASE.

b. Spacing parameters
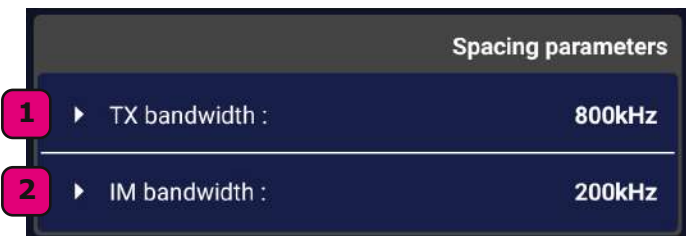
1. The TX bandwidth will define the frequency bandwidth occupied by a TX. This setting will affect :
• the width of the red bar representing TX on charts,
• the number of orange FREE frequency dots on list of frequencies (TX frequency edit 9.b.),
• the background color representing status of frequency on Home screen,
• the auto mode.
The higher the TX bandwidth, the more conservative your frequency coordination will be. The default TX bandwidth is 800 kHz.

2. The IM bandwidth will define the frequency bandwidth taken by an intermodulation. This setting will affect : • the number of orange IM frequency dot on list of frequencies (TX frequency edit 9.b.),
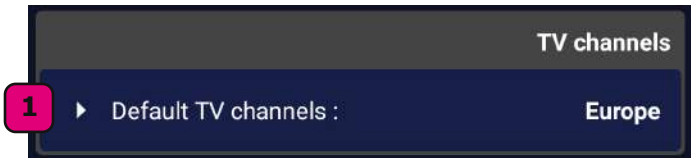• the background color representing IM status on Home screen,
• the auto mode.
The higher the IM bandwidth, the more conservative your frequency coordination will be. The default IM bandwidth is 200 kHz.

c. TV channels

1. Select the default TV channels which will correspond to :
• the frequency selected on a chart,
• the TX frequency on home screen,
• every frequency on the frequency list in TX frequency edit screen.

d. Performance parameters

1. When the bandwidth of the scan of a location is higher to the Low display resolution threshold, the resolution on chart will be lowered to 25 kHz instead of 5 kHz.
A lower chart resolution will make the app run smoother.
This setting does not affect the scan resolution which stays at 5 kHz.

(For example, a scan from 500 to 1000MHz represents 500MHz of bandwidth and 100.000 frequencies to show on charts at a 5kHz resolution and 20.000 at 25kHz.)

e. Display parameters

1. Choose the number of columns for the TX on the home and the TX list edit screens (between 1 and 4).

2. Choose the number of columns for the TX on the Live Check screen (between 1 and 4).

3. Choose the number of columns for the TX on the TX monitor screen (between 1 and 4).


1. Save the settings

4) Home screen

The home screen is the main screen of the app. The upper part of the screen is dedicated to the location and its radio frequency spectrum ; the lower part shows the transmitters from the the TX list. The 2 parts communicate with each other to send the RF noise values from the scan to the TX and the TX informations from the TX list to the chart.
The home screen is meant to display the most important informations and to quickly give access to most parameters, settings and additional informations.

a. Location
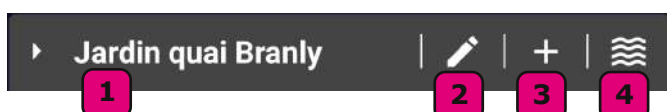
**1.** Choose and load a location with its scan and linked TX list

2. Edit the currently selected location : will open the location edit screen with the current location loaded.

3. Create a new location : will open the location edit screen with a new empty location.

4. Show/hide the chart
(!! tip : a long press on the show/hide chart button will double the height of the chart. Another long press will bring back the height to the default status)

b. Frequency chart
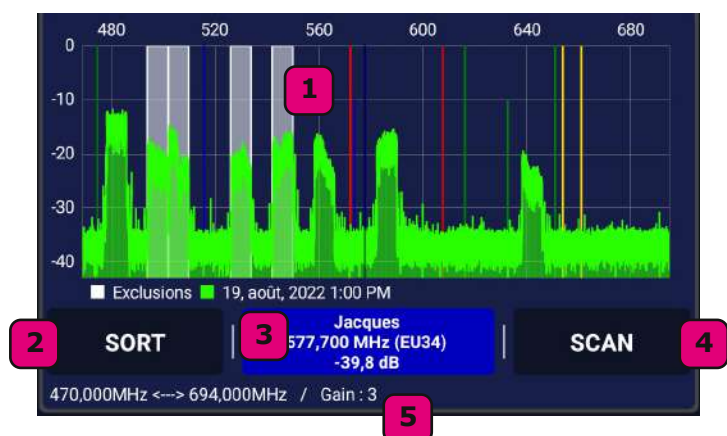
1. The frequency chart will display the RF spectrum previously scanned in green with the frequency on the X Axis and the corresponding noise value on the Y axis .
The red bars represent the TX from the linked TX list. A shorter red bar represents a disabled TX.
The white areas are exclusion lists.
You can zoom in the scan using 2 fingers or by double tapping.
You can zoom out using 2 fingers or fully zoom out by clicking on the frequency box below the chart.

Just below the chart is the legend showing the date of the scan and the TX list name.
Noise values are in dBFS.

2. « Sort » will order the graph by either the frequency on the X axis or the noise value by ascending order.

3. The frequency text box shows the following informations when a frequency is selected on the chart :
• frequency,
• corresponding TV channel (Region can be set up in the General Settings (3.c.1.),
• noise value.Additionnaly, if the frequency is within the range of (a TX frequency +/- TX bandwidth/2), the name of that TX and its color will be displayed.
(!! tip : a click on this box will completely zoom out the chart)

4. « Scan » : will start a new scan with the frequency limits set up in the location edit screen (8.c.5.) and the gain value set up in the general settings (3.a.1.). If enabled in the general settings, geo tagging will be applied to the scan. Performing a new scan will replace any previous scan from this location.

**5.** Scan limits and gain of the current scan.

c. Transmitter list

1. Linked TX list to this location (you can change the linked TX list by editing the location (8.b.1.)). By clicking on the name of the TX list, you will go to the TX list edit screen (6.).

2. Go to Live Check mode (with this TX list) (11.).
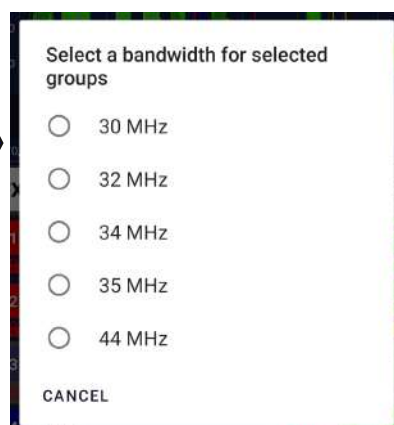
3. Go to TX Monitor mode (with this TX list) (12.).

4. Group auto-mode : will find the best frequency limits for the TX in the selected group with the selected bandwidth.
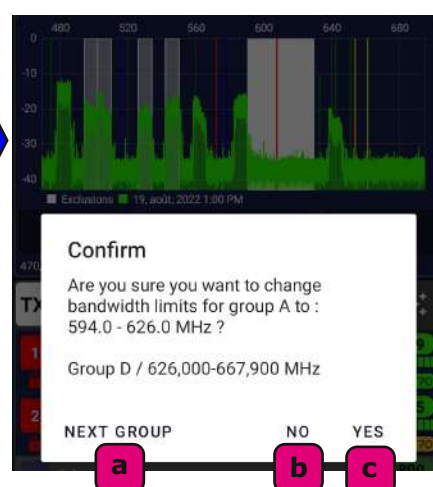Pressing this button will activate the following menu:
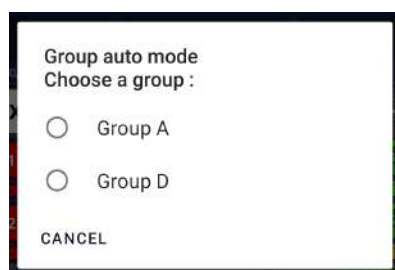
Select the group to modify.

Select the desired bandwidth.

a. Select and display the next suggested group.
b. Cancel.
c. Validate and modify all TX low and high frequency limits from this group.

Notes :
• Group auto mode will take into account the noise value for frequencies, the presence of other groups and the exclusion lists. It will not take into account intermodulations.
• Suggested groups are spaced 1MHz from each other in order to decrease calculation time so you may need/want to slightly adjust the low and high frequency limit of the group.

5. Auto-mode : will find the best frequencies for every TX which is not locked nor disabled by taking into account the noise value of every frequency and its surrounding frequencies, the intermodulation and the proximity of other TX. Frequencies under exclusion lists will be removed from the possible frequencies.
The TX (3.b.1.) and IM (3.b.2.) bandwidth from the general settings will affect the auto mode calculation.

d. List of transmitters

1. Shows the number of a TX with the background color of the TX (which you can set up in the TX edit screen)
Shows the lock status for the auto mode (locked TX will not have their frequency changed by auto mode).

Click on that area to lock/unlock this TX :
🔓 TX is unlocked
🔒 TX is locked

2. This area shows the name of this TX, its optionnal group, its brand and its model.
-> Click on that area to go to the TX frequency edit screen (9.).

3. The TX frequency informations shows :
• The TV channel (US or EU based TV channels is set in the General settings (3.c.1.)) EU35
• The selected frequency for this TX. Additionally, the corresponding hexacode for certain brands (Lectrosonics, Comtek…) will be shown. The selected frequency background colors means :

585,800-E2 TX frequency is clean
581,100-B3 At least 2 TX have the same frequency
581,100-B3 This TX frequency is too close to another TX frequency
581,100-B3 This TX frequency is under an exclusion list

How close is too close can be set in the General Settings (3.b.1.).
• The noise level value of this frequency in this particular location   -40,7 ▌▌▌▌▌▌▌▌▌▌▌▌▌
• The intermodulation status for this frequency depending on the background color :

2T3O 3T3O 2T5O 2T7O All IM are clean
2T3O 3T3O 2T5O 2T7O This TX frequency is exactly on a 3T3O intermodulation
2T3O 3T3O 2T5O 2T7O This TX frequency is too close to a 3T3O intermodulation

How close is too close can be set in the General Settings (3.b.2.).

A grey background on a TX represents a disabled TX.

  TX is enabled

  TX is disabled

-> A single press on a TX will open the TX frequency edit screen (9.)
-> A long press on a TX will display a pop-up with additionnal informations about the intermodulations :
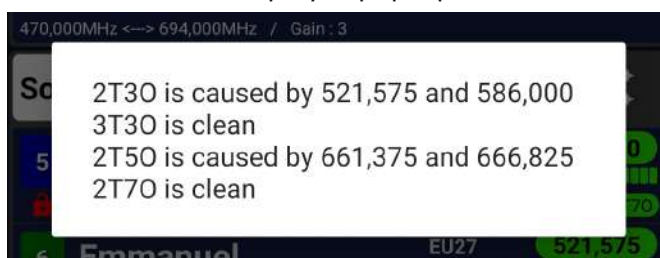
5) List manager

Manage, merge and create TX lists.
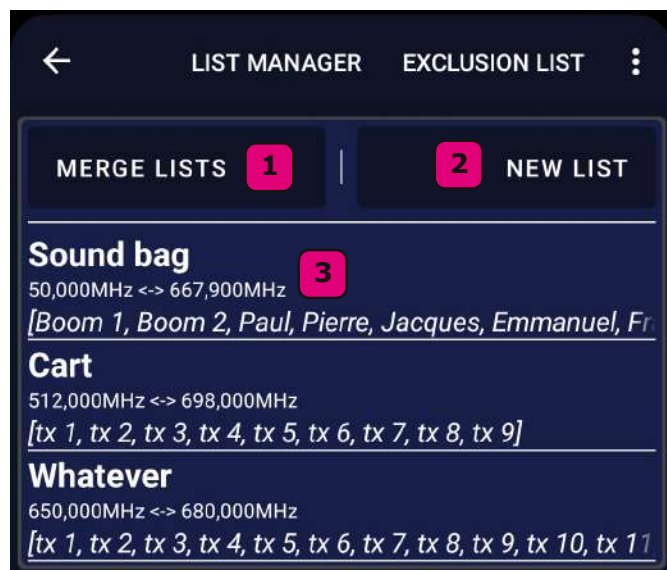
1. Show/hide the merge TX lists box :
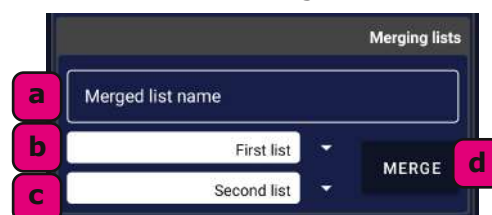
1.a. Name for the new list.
1.b. Press here to select the first list to merge.
1.c. Press here to select the second list to merge.
1.d. After selection of the 2 lists, click here to create a new merge list.

TXs from the first list will be added first.

2. Open an empty TX list edit screen.

3. The list of TX lists displays the following elements for each TX lists :
- TX list name,
- TX list minimal and maximal frequencies,
- List of TX names from this list.

Press on a TX list to open the selected TX list in the TX list edit screen (6.).

6) TX list edit

A TX list can hold several transmitters and is the core element in TXAdvance. Each TX in the list is unique and only belongs to this list. A TX list can be linked to several locations.

1. Choose or modify the name of the TX list. The app will add a « * » at the end if the name is already used by another list.

2. Add a new TX to the list. Every new TX will get the parameters of the last added TX and be added at end.

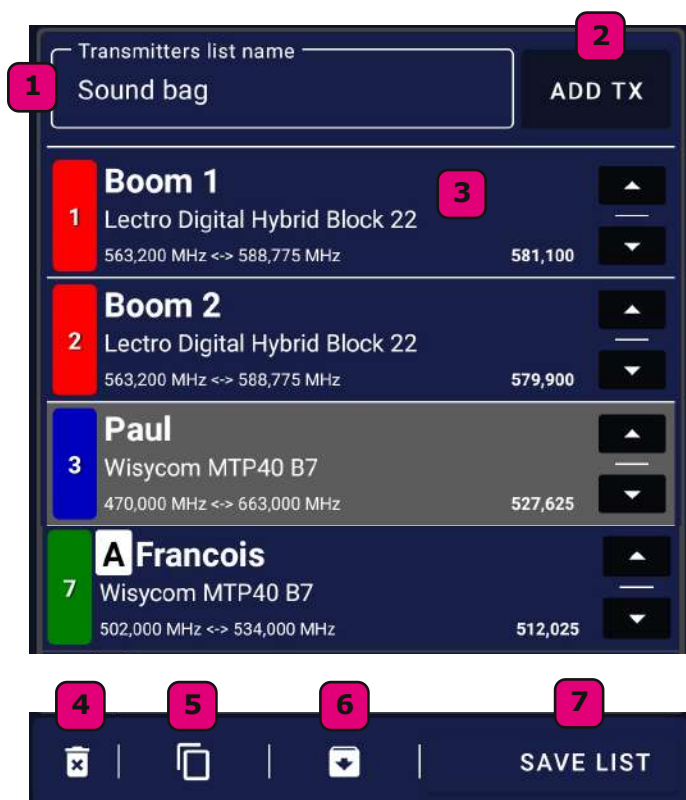**3.** For every TX in the list, the following informations are shown :
- The TX color and its number,
- The optionnal TX group,
- The name,
- The brand and model,
- The frequency limits,
- The frequency.

The up and down arrows allow to move a TX up or down in the list.

4. Delete the TX list, all its TX and all the intermodulations created by this TX list.
Let the app delete all the data. When done, the app will automatically redirect you to the Home Screen (4.).

5. Duplicate the TX list : it will copy the TX list, its TXs and recalculate the intermodulations for the new TX list.
Let the app calculate intermodulations. When done, the app will automatically redirect you to the TX list edit Screen (6.) with the newly created list loaded.

6. Export this TX list :
TXA : export the TX list in a proprietary .txa format. The created TXA file can then be saved, shared, sent and imported (12.) in TXAdvance.
CSV : export the TX list in a CSV file which can be read by anyone.
A TX list CSV file can not be imported in TXAdvance.

7. Save the TX list.

7) TX parameters edit

A TX is unique and belongs to only one TX list.

1. Enable/disable this TX. A disabled TX will not have its frequency takken into account in the intermodulation calculations and will not be affected by the auto mode on the home screen. The red bar representing this TX on chart will be shorter and the background of the TX in TX list will be greyed out.

ON TX is enabled   **OFF** TX is disabled

2. Transmitter's name.
Several TX can have the same name.

3. TX list name which holds this TX (6.1.).

4. Transmitter's color (chosen in 7.9.).

5. Choose a color for this TX.

6. Choose a group for this TX (optionnal).
Grouped TX in a TX list will have the following parameters linked :
- Brand
- Model
- Low frequency limit
- High frequency limit
- Frequency step

Changing any of those parameters in any of the TX from the group will change those parameters to all the TX from this group.

Note :
• Changing the group parameters may set the frequency of some TX to 0 MHz if the frequency is now out ot the TX frequency range.
• Groups are linked to a TX list and will not affect groups from other TX lists.
• The number of TX in a group is unlimited
• TX in a group will be marked on the home, TX list and tx frequency screens with the group letter :
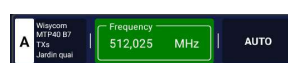
7. Brand of this TX (drop-down menu) (will affect every TX of the same group).

8. Model of this TX (drop-down menu) (will affect every TX of the same group).

9. Automatically adds the corresponding number in MHz to the low frequency in the high frequency limit box (will affect every TX of the same group).

10. Low and high frequency limits for this TX. You can edit those values as long as they are within the default limits from this brand and model. The app will automatically round the frequency to the closest 5 kHz (will affect every TX of the same group).

11. Choose the frequency step between every frequency. A smaller frequency step will increase the number of potential frequencies but also the loading and calculation time through the app.
The « default » button will select the default value from the internal database. Usually, this default value is coming from the manufacturer (will affect every TX of the same group).

12. Delete this TX and all the intermodulation it had created. It is important to not quit the app while the IM are removed from the database.

13. Save this TX.

Notes :
• Changing the brand and/or a model of a TX may reset its frequency to 0MHz.
• Some model of transmitters (Comtek and some older Audio Limited, Micron…) have a fixed list of frequencies so the « frequency step » will not affect their list of frequencies.
• If you can not find your TX in the internal database, contact me through https://www.compasseur.com In the meantime, you can create a custom TX by selecting « CUSTOM » as a brand (at the last position in the drop down menu) and « TX » as a model.

8) Location edit

Every location can have only one scan and one TX list associated at a time. The location can be duplicated and the TX list can be changed at any time.

a. Location informations

1. The app will add a « * » at the end if the name is already used by another location.

2. The location comment will also appear in the TASE (13.) if you upload this scan.

b. List of transmitters

1. Link a TX list to this location. A TX list can be linked to several locations but a location has only one TX list ; you can however modify a location or duplicate a location and change the TX list in the copied location.
Under the TX list name are shown the minium and maximum possible frequencies from the TX list.

c. Scan settings

1. Date and time of the scan and the gain value used.

2. Coordinates of the scan if geo-tagging was activated when scanning. A scan must have been geo-tagged to be uploaded on the TASE (13.).
        -> Click on the pin to open the TASE map centered at those coordinates.

3. This button will automatically detect the minimal and maximal frequencies of the linked TX list and fill those values in the « Low Frequency Limit » and « High Frequency Limit » text box below (8.c.5.).

4. This button will fill the default values set up in the general settings (3.a.2.) of the app in the « Low Frequency Limit » and « High Frequency Limit » text box below (8.c.5.).

5. Those are the frequency limits of the next scan for this location. TXAdvance will add at least 1MHz of bandwidth at the beggining and at the end while scanning so that the auto mode can use this data to find the best frequencies.
The minimum frequency is 50 MHz and the maximum is 1300 MHz.

d. <u>Exclusion lists</u>
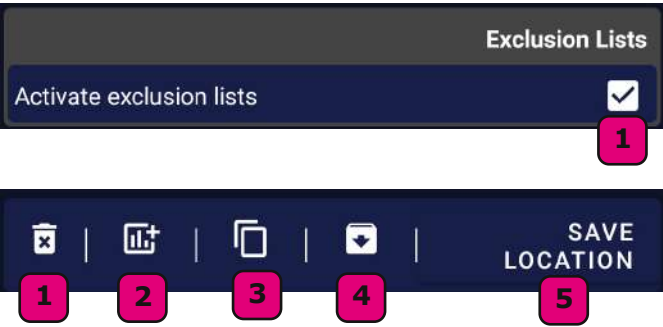
1. Will enable the exclusion lists for this location. Exclusion lists can be set up in the « Exclusion lists » menu (10.).

1. Delete this location and its scan. It will not delete any TX list nor TX.

2. Opens the multi scans menu : select several scans and merge them into one. For each frequency, the maximum noise value from any of the scans will be saved.
It is recommended to merge only scans from the same SDR dongle type and the same gain.
Creating a multi scan will erase any previous scan from the current location (if any).
Scans do not need to have the same frequency bandwidth limits.
Geo tag data and scan gain will be erased for the new scan.
A multi scan can not be uploaded to the TASE.
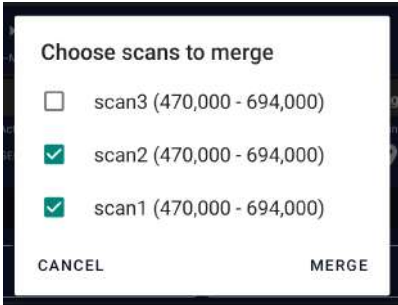
3. Show/hide the duplicate location menu :

You can copy the full spectrum or extract a part of it.
This can be useful if you received or downloaded a scan from the TASE or another TXAdvance user.
The different settings of this menu have the same purpose as in 8.c although frequency limits have to be within the limits of the original scan.

4. Export this location/scan
The proprietary TXA format will include all the parameters of this location and can be saved, sent, shared and imported (12.) in the TXAdvance app.
Exporting to the CSV format will convert the frequency noise values in dBm. The conversion from dBFS to dBm is approximate so the dBm value will not be accurate. The relative values will be accurate though.
The CSV file can then be imported in third party softwares like Shure Wireless Workbench or Lectrosonics Wireless Designer.
All informations (name, comments, time and date, geo-tagging…) except for the frequencies and their noise values will be lost when exporting to CSV.
At the moment, a CSV file can not be imported in TXAdvance.

5. Save this location.
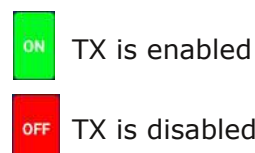
9) TX frequency edit

This is where a frequency is chosen for a TX (or through the auto mode on the Home screen (4.c.2.)). The frequency chart will show the frequencies from the scan, the TX, the exclusion list and the frequency of this TX. The list of frequencies show all the compatible frequencies for this TX and their status.
To access the TX frequency edit screen, you need to press on the desired TX on the Home screen (4.d.2.).

a. Frequency chart
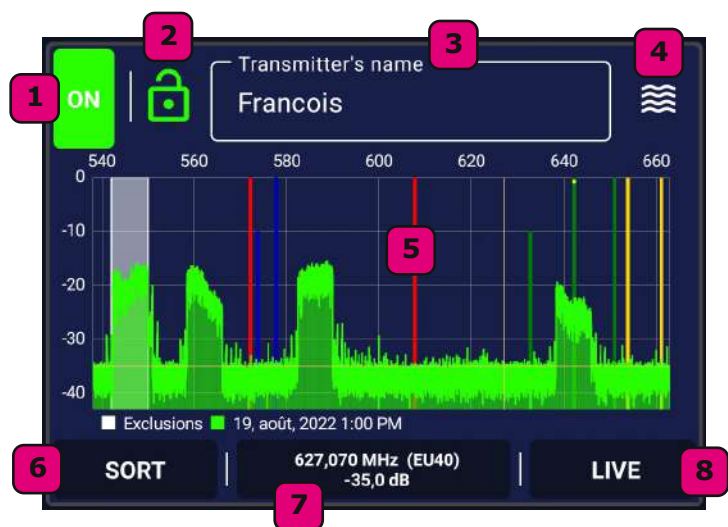
1. Enable/disable this TX. A disabled TX will not have its frequency takken into account in the intermodulation calculations and will not be affected by the auto mode on the home screen. The red bar representing this TX on chart will be shorter and the background of the TX in TX list will be greyed out.

TX is enabled

TX is disabled

2. Lock/unlock a TX. When locked, a TX will not have its frequency changed by the main auto mode on the home screen. However you can still change its frequency in this TX frequency edit screen.
　　TX is unlocked
　　TX is locked
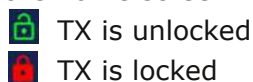
3. TX name.
Several TX can have the same name.

4. Show/hide the chart.
(!! tip : a long press on the show/hide chart button will double the height of the chart. Another long press will bring back the height to the default status).

5. The frequency chart will display the RF spectrum previously scanned in green with the noise value on the Y axis and the frequency on the X Axis (you can order the frequencies by noise value on the XAxis by pressing « Sort » -> /6).
The red bars represent the TX from the linked TX list. A shorter red bar represents a disabled TX.
The white areas are exclusion lists.
The yellow dot at the top is the currently selected frequency.
You can zoom in the scan using 2 fingers or by double tapping.
You can zoom out using 2 fingers or fully zoom out by clicking on the frequency box below the chart.
Just below the chart is the legend showing the date of the scan and the TX list name.
Noise values are in dBFS.
(!! tip : Selecting a frequency on the chart will move the list of frequencies to this frequency.)
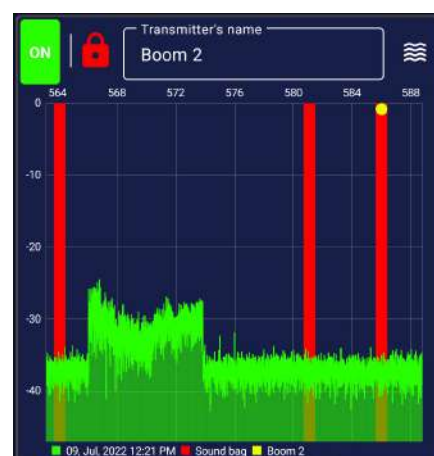
6. « Sort » will order the chart (9.a.5.) by either the frequency on the X axis or the noise value by ascending order.

7. The frequency text box shows the following informations when a frequency is selected on the chart :
• frequency,
• corresponding TV channel,
• noise value.
Additionnaly, if the frequency is within the range of (a TX frequency +/- TX bandwidth/2), the name of that TX and its color will be displayed.
(!! tip : a click on this box will completely zoom out the chart)

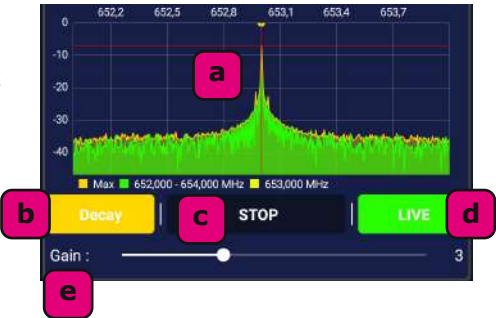**8.** Start/stop the Live Check mode and requires the SDR USB dongle plugged in.

    8-a. Chart showing a real time spectrum analyser with a 2MHz bandwidth. You can scroll in the chart to change the center frequency and zoom in/out pinching in/out the chart. The real time data is shown in green and the maximum values are shown in yellow (see 9.a.8-b.).

    8-b. Enable/disable decay mode : when ON, the decay will slowly decrease the Max chart (yellow chart). When OFF, the Max chart will keep the maximum value for every frequency.

    8-c. Start/stop the Live Check mode.

    8-d. Leave the Live Check mode and go back to the RF spectrum scan chart.

    8-e. Set the gain of the SDR. The setting of this Live Check gain will not affect the gain set in the general settings (3.a.1.). You can check the corresponding gain value in dB in the section 3.a.1.

    b. Frequency list

1. Shows the TX group (optionnal), the brand and model of this TX, the TX list it belongs to and the location this TX list is associated to.
(!! tip : you can click on this text box to go to the TX edit screen)

2. Frequency box : shows the frequency set for this TX.
Selecting a frequency from the list of frequency below (9.b.4.) will update this frequency box. You can also manually enter a frequency through it. The app will automatically round the number to the closest possible frequency for this TX.
The frequency from this text box is the frequency which will be saved when pressing « SAVE TRANSMITTER ».

3. Pressing « auto » will launch the auto algorithm. When calculation is done, the list of frequencies will be updated with a list of the best frequencies in ascending order. Press on a frequency to select it : the background of the frequency will turn light blue and the frequency will be updated in the frequency box (9.b.2.).

The auto mode will take into account the radio frequency spectrum and the TX list from this TX.

4. The frequency list will show all the possible frequencies for this TX from its low frequency limit to its high frequency limit (7.7.) spaced by the frequency step (7.8.).

For each frequency is shown :

• frequency,

• for some TX (Lectrosonics, Comtek…), the corresponding hexacode,

• corresponding TV channel (Region is set up in the general settings : 3.c.),

• free : other TXs status,

• 2T3O : 2 transmitters 3rd order intermodulation status,

• 3T3O : 3 transmitters 3rd order intermodulation status,

• 2T5O : 2 transmitters 5th order intermodulation status,

• 2T7O : 2 transmitters 3th order intermodulation status,

• noise value.

     Frequency is clear

     Frequency is too close from an intermodulation or another TX

     Frequency is occupied by an intermodulation or another TX

       -> Press on a frequency to select it : the background of the frequency will turn light blue and the frequency will be updated in the frequency box (9.b.2.).

5. Delete this TX and all the intermodulation it had created. It is important to not quit the app while the IM are removed from the database.

6. Save this TX. When saving the TX, if the frequency has changed, the app will calculate all the intermodulation created by this TX and the other TXs from the TX list. Do not quit the app or leave the screen while the progress bar is running. When done, you will automatically be brought back to the Home screen (4.).
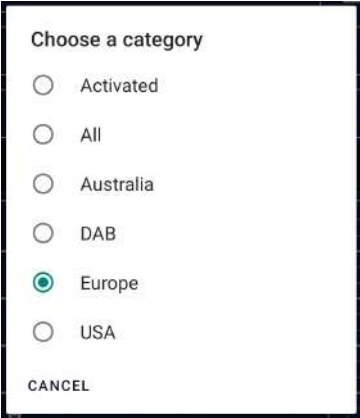
10) Exclusion list

Exclusion lists are bands of frequencies which will be excluded from list of frequencies and the auto mode (but will still be scanned). Those bands are shown in white on RF spectrum charts and the background color of a TX frequency is white when it is under exclusion.
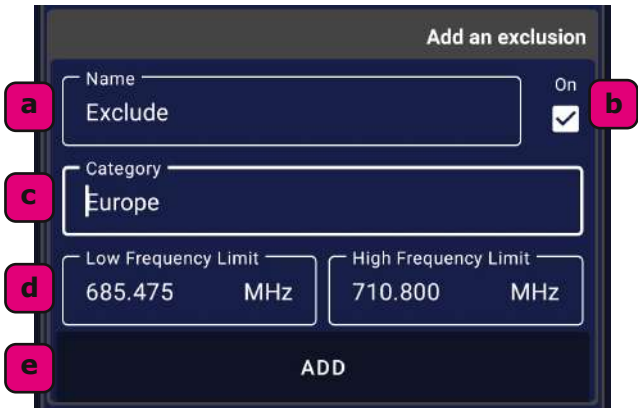(!! Tip : the only way to select a frequency which is under exclusion is to manually enter it in the frequency box from the frequency edit screen (9.b.2.))
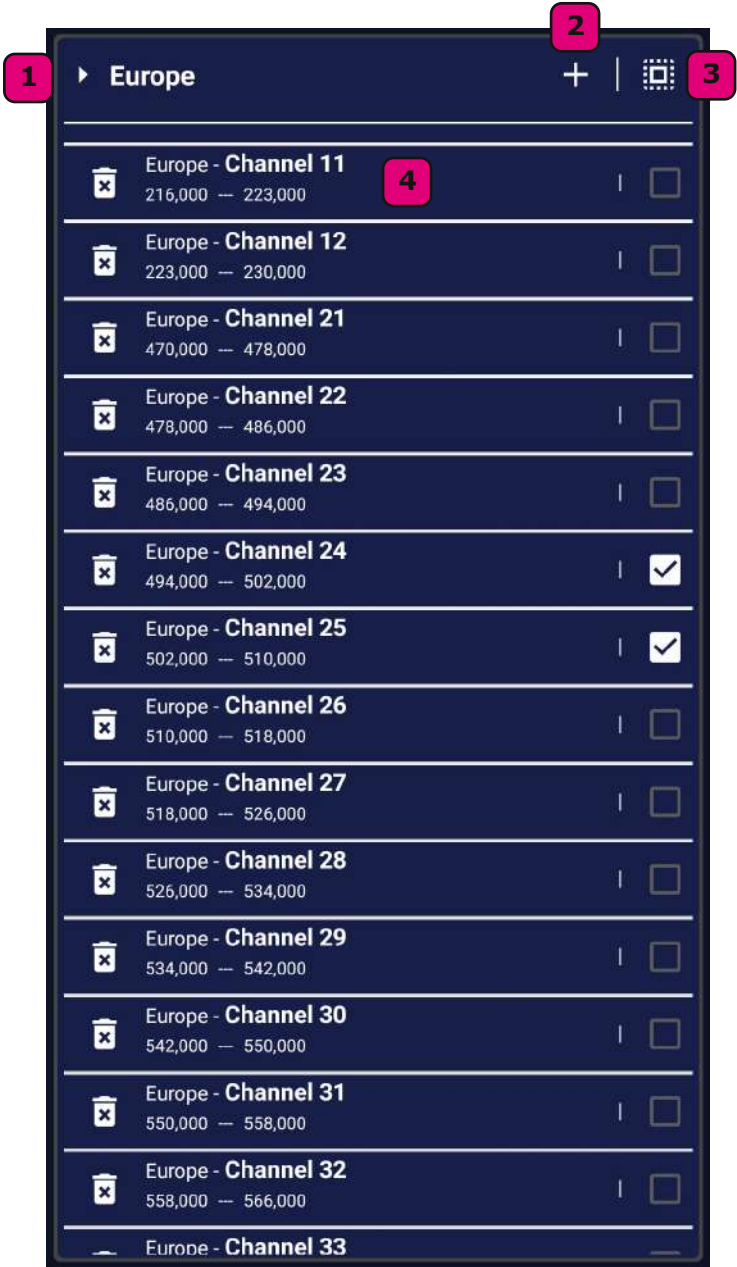
1. Select the category of exclusion lists :

2. Show/hide the add a custom exclusion list menu :

2.a. Name of this custom exclusion list.
2.b. By default, the category name will be the currently selected category. Adding a new category name will automatically create a new category.
2.c. Enable/disable this exclusion list.
2.d. Frequency limits of this exclusion list. All frequencies between the low and high frequency limits will be excluded.
2.e. Add this exclusion list to the database.

3. Select/unselect all the exclusion from this category.

4. Exclusion lists
    4.a. Delete this exclusion list.
    Note : only custom created exclusion lists can be deleted.
    4.b. Exclusion list category, name/channel and bandwith.
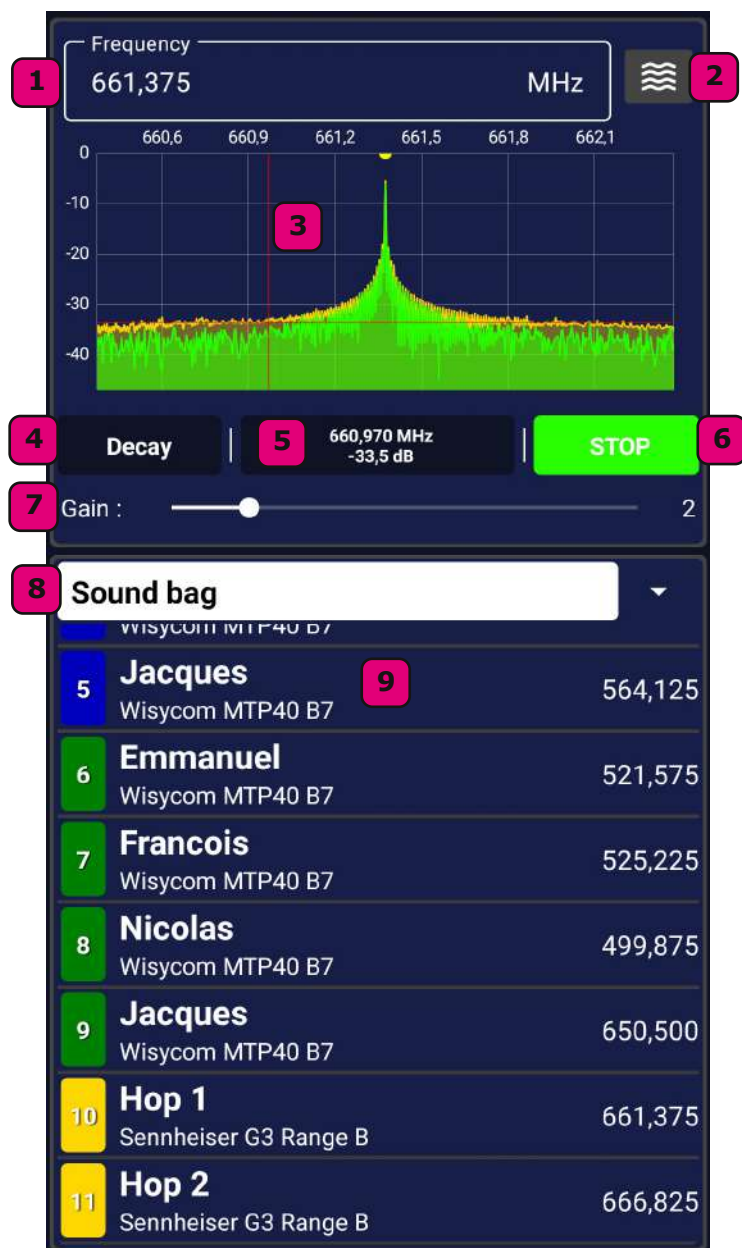   **4.c.** Enable/disable exclusion list.

11) Live check

The live check mode is a real time RF spectrum analyser with a 2 MHz bandwidth and a 5 kHz resolution. It requires to have the SDR USB dongle plugged in.
The app will save the last used center frequency, TX list and gain.
        -> Watch your device battery level while using the Live Check mode.

1. Center frequency of the analyser. It can be set :
        • manually,
        • by selecting a frequency in the TX list below (8.),
        • by scrolling in the chart (11.3.).
The app will automatically round the frequency to the closest 5 kHz.

2. Increase/decrease chart heigth.
(!! tip : a long press on the show/hide chart button will double the height of the chart. Another long press will bring back the height to the default status.)

3. Chart showing a real time spectrum analysis. You can scroll in the chart to change the center frequency and zoom in/out pinching in/out the chart. The real time data is shown in green and the maximum values are shown in yellow. The yellow dot in the center represents the center frequency (11.1.).

4. Enable/disable decay mode : when ON, the decay will slowly decrease the Max chart (yellow chart). When OFF, the Max chart will keep the maximum value for every frequency.

5. Frequency and corresponding noise value selected from the chart (3.).
(!! tip : a click on this box will completely zoom out the chart)

6. Start/stop the Live Check mode for this TX.

7. Set the gain of the SDR. The setting of this Live Check gain will not affect the gain set in the general settings (3.a.1.) of the app. You can check the corresponding gain value in dB in the section 3.a.1.

8. TX list selection.

9. Transmitters from the TX list. Click on a TX to set its frequency as the center frequency of the SDR.

12) TX monitor

The TX monitor mode allows to scan continuously every TX of a TX list, showing the current and maximal RF spectrum with a 1 MHz bandwidth and a 5 kHz resolution and the last 100 RF level values of the TX frequency. It requires to have the SDR USB dongle plugged in.
The app will save the last used TX list and gain.

       -> Watch your device battery level while using the TX monitor mode.
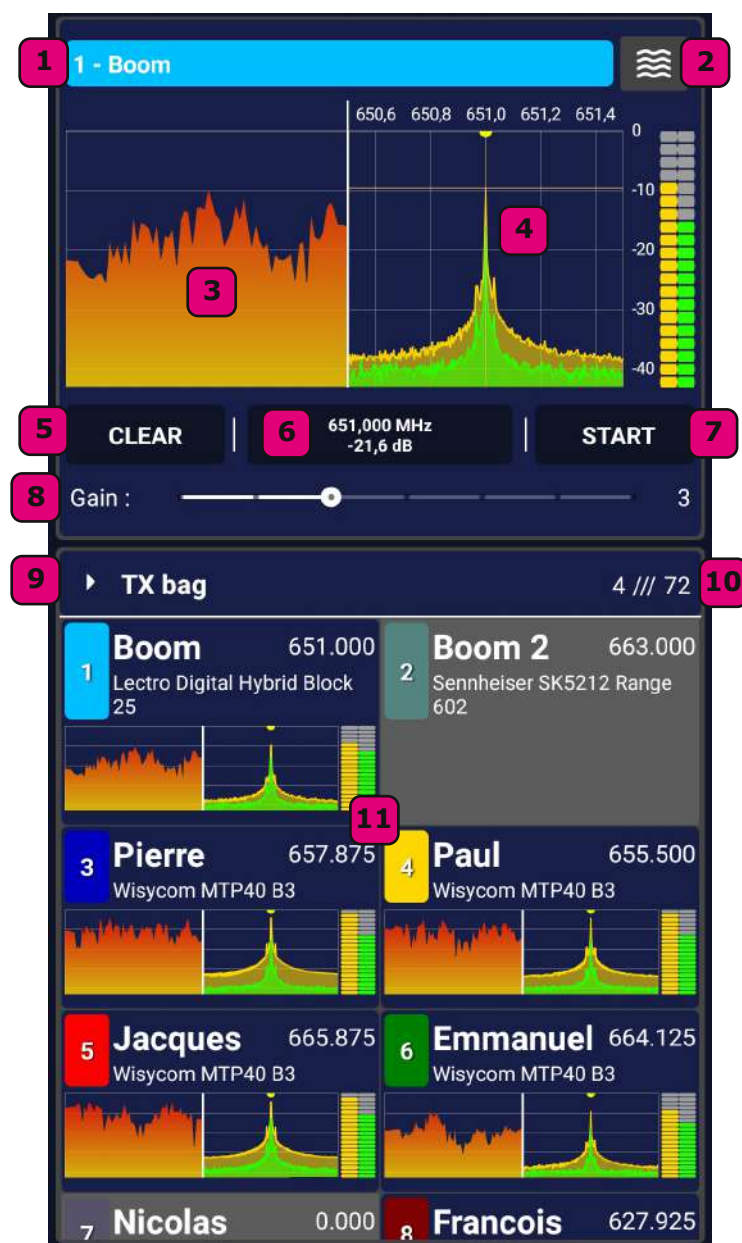
1. Currently selected TX from the list.

2. Increase/decrease chart heigth.
(!! tip : a long press on the show/hide chart button will double the height of the chart. Another long press will bring back the height to the default status.)

3. Chart showing the last 100 values of the currently selected TX RF level.

4. Chart showing the spectrum analysis of the currently selected TX. You can scroll in the chart and zoom in/out pinching in/out the chart. The last scan data is shown in green and the maximum values are shown in yellow. The yellow dot in the center represents the frequency of the currently selected TX.

5. Clear all the charts at the next pass. (Button will display "..." until clear is complete).

6. Frequency and corresponding noise value selected from the chart (4.).
(!! tip : a click on this box will completely zoom out the chart)

**7.** Start/stop the TX monitor mode for this TX list.

8. Set the gain of the SDR. The setting of this TX monitork gain will not affect the gain set in the general settings (3.a.1.) of the app. You can check the corresponding gain value in dB in the section 3.a.1.

9. TX list selection.

10. Shows the position of the TX currently being scanned and the total number of pass for this TX list.

11. Transmitters from the TX list. For every TX is shown the current and maximal RF spectrum with a 1 MHz bandwidth and a 5 kHz resolution and the last 100 RF level values of this TX frequency.
Click on a TX to set its frequency as the center frequency of the SDR.

13) Import
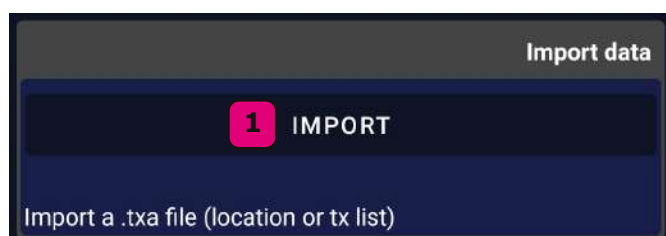
1. Open a file browser to import a .txa file. It can be either a location file or a TX list file. The app will automatically detect the type and import the file in its internal database. Alternatively, you can select a .txa file from a file browser on your device and it automatically open TXAdvance and import the file.

-> Let the app finish the import and the calculation. You will be brought back to the Home screen (4.) when it is done.

14) TXAdvance Scan Exchange

The TXAdvance Scan Exchange platform is a tool to share geo-tagged and time-stamped RF spectrum scans from around the world. Any TXAdvance user can upload a scan and anybody can download them.

Only geo-tagged (through the phone location service : GPS ad network) can be uploaded.

It is recommended to only upload scans with enough gain so that possible RF interferences (like DTV channels) can be detected and with a large enough bandwidth to cover the local legal frequencies.

Also do not upload scans with your personnal transmitters switched on while scanning.

<u>Note</u> : to delete a scan, send an email to thecompasseur@gmail.com with the email used to upload the scan.

1. Open the web browser to the TXAdvance Scan Exchange Terms of Use.

2. Open the location selection menu. Selecting a location will load it and prepare it for the upload.

**3.** Enter uploader's name. The name will be public and is mandatory.

4. Enter uploader's email. The email will be hidden and is mandatory.

5. Enter uploader's website. The website URL will be public and is optionnal.

6. Choose if the scan was performed in an interior or exterior environement.

7. Chart representing the RF spectrum from the selected location (2.). The comments section from this location is shown below the chart.

8. Upload this location. First, the app will process the data and then upload it as .txa file. It can take a moment. You need to be connected to the Internet. When done, the scan will appear on the map in the next 5 to 10 minutes.
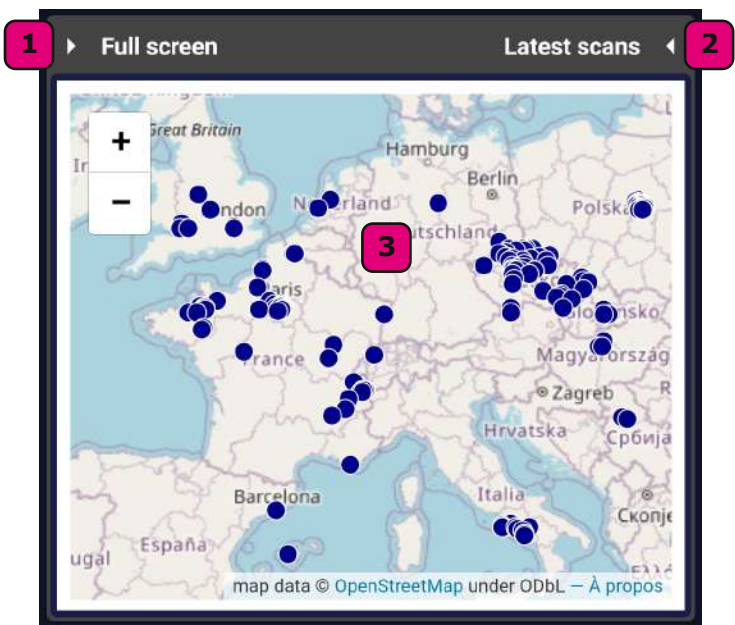
1. Open the TASE page in the web browser.

2. Show the list of the last uploaded scans.

3. Map showing all the scans. You can zoom in/out and move around in the map. Press on a blue dot to open the location details :

3.a. Location name.
3.b. RF spectrum screenshot.
3.c. Scan informations :
- Uploader's name (with optional link to uploader's website),
- Date and time of scan,
- Bandwidth of the scan,
- Source and gain of the scan. Interior/exterior,
- Comments
3.d. Link to download the scan.

1. Show the list of the last uploaded scans.

2. List of the last uploaded scans with the following informations :
- Country and city
- Uploader's name
- Date of upload
- RF spectrum screenshot
-> Click to open the TASE map at this location.

15) About

1. TXAdvance version number.

2. Piotr Wendykier JTransforms license.

3. PhilJay MPAndroidChart license.

4. Martin Marinov SDR driver's Play Store page.

5. Compasseur's homepage.

6. TXAdvance's privacy policy.