I D4C proudly presents…

Hercules

for controlling SSDR FlexRadio by a
«*Hercules DJControl Starlight*»
console for Windows

V.1.1 20240718

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SLICE A | SLICE B

NEW VERSION 1.1.0

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SLICE A

SLICE B

Installation: https://github.com/dm5xx/xxFlexController/blob/master/README.md

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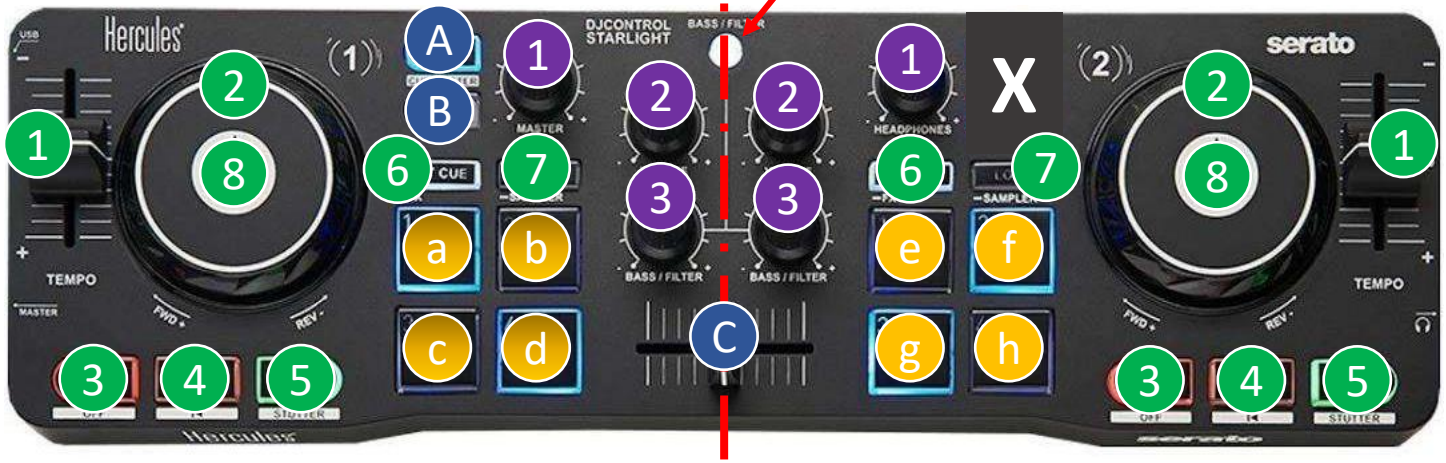
SLICE A

Switch „on“

SLICE B



-1- RIT or XIT (config)
-2- Turn for VFO
-3- PTT Slice X
-4- RX-A/B Tx Antof-A/B
-5- Toggle Tx Ant1/2
-6- Select CueBtns
-7- Select LoopBtns
-8- Tap for center in Pan

Cue-Btns
a) Mode
b) Filter
c) PanBW
d) Step-Size

Loop-Btns Sl.A
a) CWMakro1
b) CWMakro2
c) CWMakro3
d) CWMakro4

Sl.B
e) CWMakro5
f) CWMakro6
g) CWMakro7
h) CWMakro8

-1- AGC-Lev.
-2- Volume
-3- Variable Filter

Global:
-A- MON
-B- Swap Slice A|B<->B|A
-C- Pan L/R Sl.A/B

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«Switch&Control up to 8 different FlexRadios»

Your flex is in your local network? PERFECT!

You think about portforwarding or DynDns? FOREGT IT! SECURITY ISSUE!!!

Take a look at zerotier! With Zerotier, you can have a secure VPN + SmartLink is not needed (Layer-2 VPN, all is running local)

Questions? Mail us!

Configuration-Mode <marked actors only>

A Press to enter config mode

Preparation Step 1: „Adjust public/globals.json“
1. configs => How many configs shd be mapped (1…8)
2. default => which one shd be default? Must be less or equal configs!

Just 1 Flex? Set „configs“ : 1 & „default“ : 1 in globals.json and edit just the file „config1.json“ in Step 2.

Step 2: „Edit each public/config<nr>.json
1. Edit each of the config<nr> you want to use.
2. Start with config1.json
3. Next config2.json and so on until <nr> = Globals.configs!!!

What must i edit in a config<nr>.json?
„FlexIP“ : „<ipadress of the flex you want to control>“, e.g. „192.168.0.100“

Should i edit the other properies?
Answer:
NO NO NO NO. If you want to remap functions to actors, thats done in the hercules.xlsx. Normally you do not have to change anything! Screw it up on your own ☺

Up to 8 differerent radios!
config<nr>.json for each flex => <nr> starting at 1

C - CUE	**L-Loop**
1,2,3,4	5,6,7,8

After entering configuration mode (base led = PURPLE) and selecting your config, controller is trying to connect to the radio. If there is an error, base led will turn RED.

If all went well, it connects and base led will stay GREEN

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«Layer 1 and Layer 2 – Double your controls! »

ADVANCED

Select Layer off/Layer 1 & blue/Layer 2

B Press to change layer

You want more! More! More?
- Maybe you want to have more functions mapped
- Maybe you want to have on mapping for contest, one mapping for dx
- Maybe you enjoy screwing up everything,hi

Layer 1 will use the mapping in sheet „midimap“ of public/hercules.xlsx

Layer 2 will use the mapping in sheet „midimap2“ of public/hercules.xlsx (default: same as in Layer 1)

WARNING
- Keep in mind: Less is more. This is an add on, not an add-everything-is-possible thing :P
- Not every function can be remapped to everything, especially if it‘s coming down for led-btns-states
- Best praticse: reduce complexity, but extend to 2 layers.
- Having less used or new functionality makes more sense to have on layer2
- We learn from you: Request new funcionality and it might show up soon ☺

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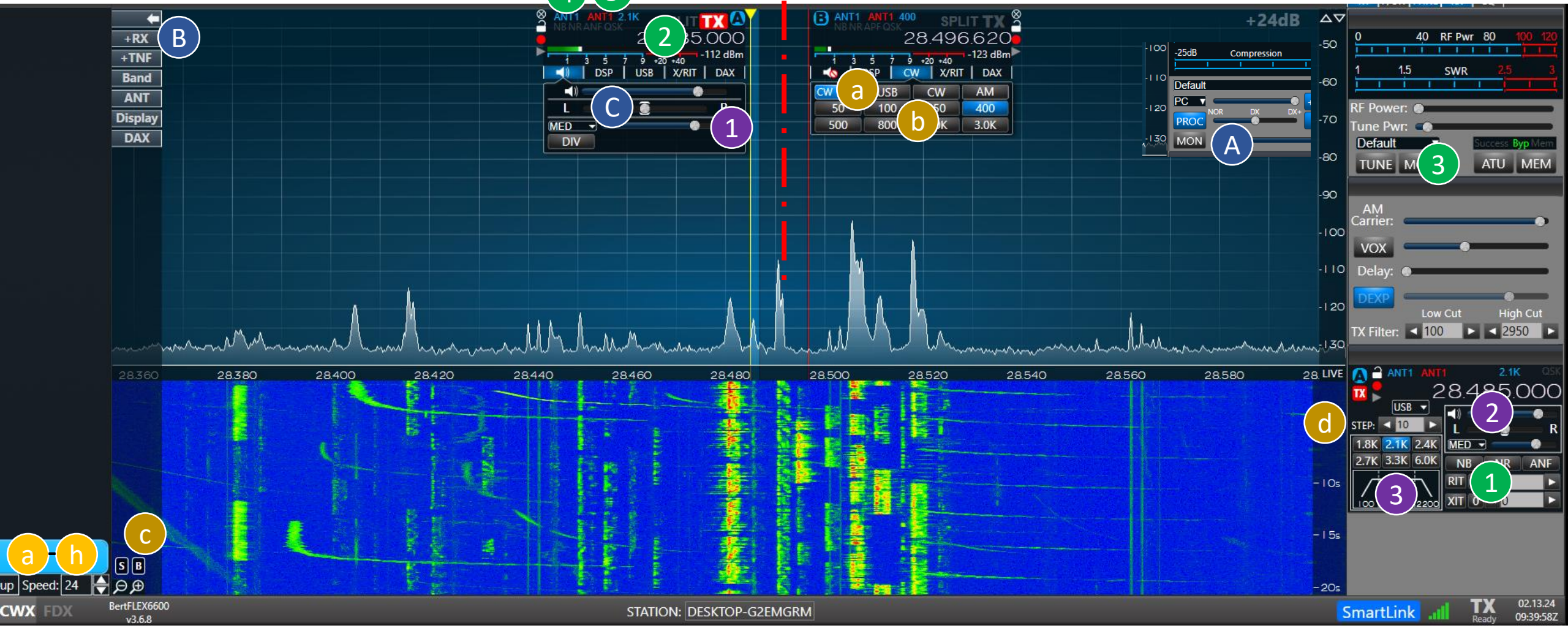
SLICE A | SLICE B



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«Functions to map: OVERVIEW»

Function			
agc			Modify the AGC slider-Value. Does not change the "Slow/Med/Fast" setting
center			Center the panaroma window to the Frequency of Slice A or Slice B
configMode			Enable/Disable config mode to select up to 8 different config<nr>-jsons using Hot CUE/Loop and Btns1-4
cwxLoopBtnL			Fire CW msgs while Left Loop-Btn is selected using Btns1-4
cwxLoopBtnR			Fire CW msgs while Right Loop-Btn is selected using Btns1-4
fadePan			Use the crossfade to move Slice 1 Audio to the left or Slice 2 Audio to the right. Other audio Slice-Pan-Setting will be untouched
fadeSO2R			Fader complete Left=R1 Both ears. Fader complete Right=R2 Both ears. Fader in between: R1=Left, R2=Right
fadeSO2RMix			Like fadeSO2R, but in between fadePan behavoir
filters			Jump through the different predefined Fiters. Btn press= next filter
freeFilter			Modify the Filter Bandwith with a poti
modes			Jump through the different predefined Modes. Btn press= next filter
monitor			Switch on/of MON
panBW			Jump through the predefined Panoarama-Fall BW
rit			Change the RIT of Slice 0 or 1 with left or right Tempo Fader
setdefault			Remove both Slices and create new (buggy)
steps			Jump through the different predefined step width to make the frequency change
toggleLayer			Toggle the controllers actor settings between layer 1 and layer 2
toggleRXANT			Toggle between RX_A and TX-Ant of Slice A or Toggle between RX_B and TX-Ant of Slice B
toggleTXANT			Toggle between TX-Ant1/2 of Slice A or between Ant2/1 of Slice B
toggleSlices			Toggle order of the two slices
vfo			Change VFO of Slice A / B
volume			Change Audio Volume aof Slice A / B
xmit			Set TX to Slice A and MOX or Set TX to Slice B and MOX

●●●

General Information:

- See hercules.xlsx -> function (sheet) for the newest function
- Only functions mentioned here can be mapped
- Not all functions can be mapped to a different kind of actor (buttons, sliders, crossfader, jogwheel…)
- Keep in mind, that you can also change the behaviour of a button (led), but the behaviour might be in the code
- Normally functions do not change their behaviour, new or different functions will be added (except: bug fixing)
- Not all methods work stable (acually „setdefault“ behaves strange ans was removed from the mapping fix->tbd.)

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«public/global.json »

```
{
    "configs" : 2,
    "default" : 2,
    "publicdirnum" : 1
}
```

New in 1.1.0

How many config<nr> you want to use.
2 means config1.json+config2.json
3 would be config1, config2 &config3
…
(see config<nr>.json slide)

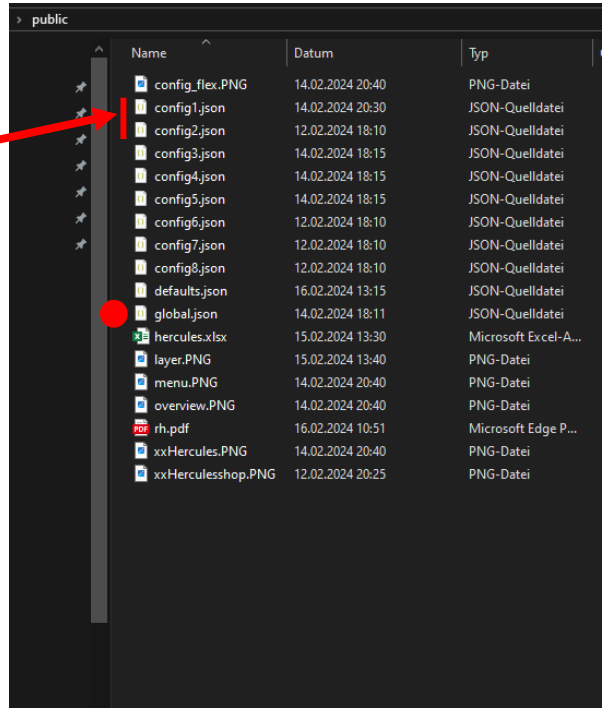
Which of the config<nr>.json should be set as **default** when starting the software.

In which public<nr> are all the config files Hercules shd use? **Hint**: There must be always a dir named „public“: The global.json there rules. Other global.json are ignored.
Use case: Have diffrent config-sets for different remote locations, flexes, contests, … (<nr> is 1 or 2 or 3 or ….)

Use „public1“ -> 1

Use „public“ -> 0

In our example:
- config1.json & config2.json are configured.
- config2.json will be default



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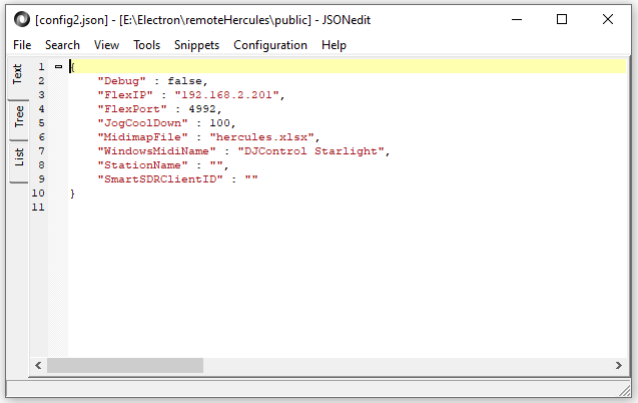
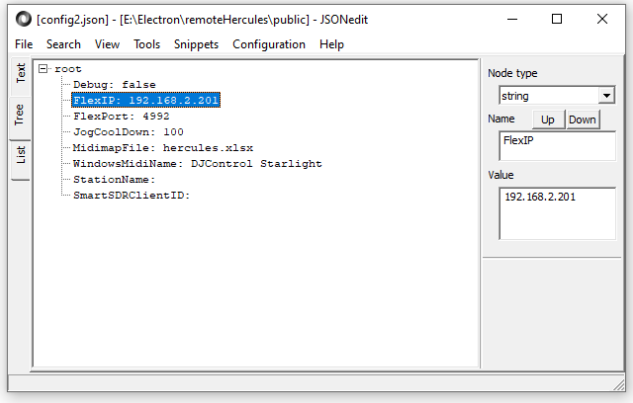
«Editing json files» New in 1.1.0

An easy way to work with json files in your app folder, is the JSONedit.exe program you can find in the project‘s public folder.



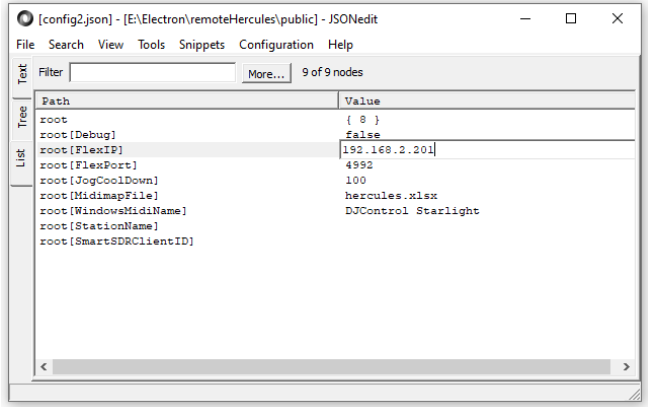
Text-View: Perfect for adding and removing entries (key-value pair). Dont forget the , at the line end!

Tip: You can *tools* => *Validate text* to see if your json is broken.



Tree-View: Perfect for editing values („Value“) of a existing key („Name“)

Tip: Dont change the „Name“ :P



List-View: Perfect for editing values („Value“) of a existing key („Name“)

Tip: Ignore the root value count - entry

See https://tomeko.net/software/JSONedit/ for more info

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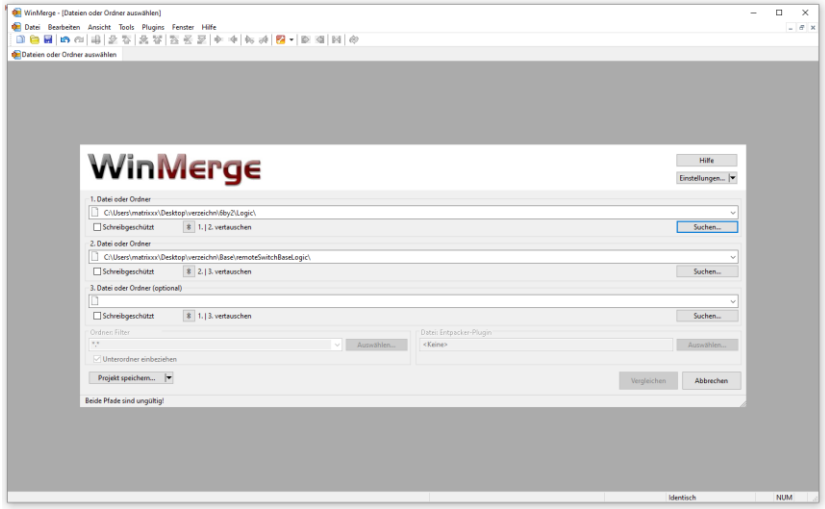
«Merging json files» New in 1.1.0

Normally the json files dont change often. But in the early stage of this project, more and more functions are added and the configs might change. To compare and „choose“ an entry and merge old json with new json using cherry picking is for the lazy guys.

We recommend to take a look at https://portableapps.com/apps/utilities/winmerge_portable
With the help of this little tool, you can pick and merge changed between 2 (3) files: Your old json and the new json



You also see where something changed. Hint: It can compare also files in different/complete folders! ☺

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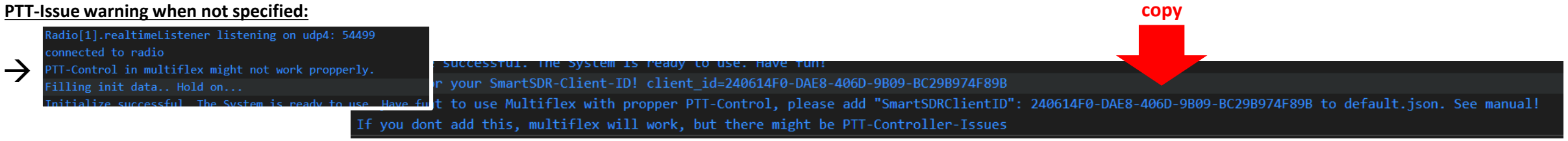
«SmartSDRClientID» New in 1.1.0

More and more Contest-Stations are using Hercules. So time to implement another use case: The Inband Station is remote or seperated and running a different instance of SmartSDR than the main station (on the same Flex-Radio aka Multiflex). Therefore you can now/must specify the SmartSDR-Instance ID of your client you want to control. **If you dont use this, all works before** (but we recommend to determine your SmartSDRClientID and store it in your (all) config<nr>.jsons) as **long as u dont have multiple instances controlling one flex (no Multiflex) on the same band with different slices..**

PTT-Issue warning when not specified:



How to determine your SmartSDRClienID:
Step 0: Make sure, all the Key „SmartSDRClientID“ in your config<nr>.json is empty and looks like this: "SmartSDRClientID" : "" + Flex started
Step 1: Start the BatchStarte.exe **WITHOUT** having SmartSDR started yet. Let it connect („connected to the radio“ + „ptt multiflex“-warning)
Step 2: Now start your SmartSDR instance you want your Hercules to follow.
Step 3: Grab the id from the row shown in the console window: „Following SmartSDR with id ….“ and copy it to your clipboard
Step 4: Add the Id to (all) config<nr>.json to the entry „SmartSDRClientID“.
Your config file‘s entry shd look like "SmartSDRClientID" : "240614F0-DAE8-406D-9B09-BC29B974XXXXX" (example ID!)
Step 5: Save the configs
Step 6: Restart BatchStarter.exe (aka close the Hercules console window and start hecules-software again). Multiflex-Warnign will now disappear and all will work ☺

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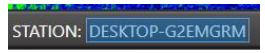
«public/config<nr>.json »

```
{
    "Debug" : false,
    "FlexIP" : "192.168.0.110",    (*)
    "FlexPort" : 4992,
    "JogCoolDown" : 100,
    "MidimapFile" : "hercules.xlsx",
    "WindowsMidiName" : "DJControl Starlight",
    "StationName" : "", (maybe *)
    "SmartSDRClientID" : "240614F0-DAE8-406D-
                9B09-BC29B974F89B"  (maybe *)
}
```

New in 1.1.0

New in 1.1.0



This is the (local) IP to your Flex you want to control. More Flex => u need more configs activated and edited! (*)

FlexPort for Kommunikation, default

JogCoolDown = Testvalue JogWheel

MidimapFile = name of the Mapping-Excel u want to use

WindowsMidiName = Midi-DriverName in your Windows, default

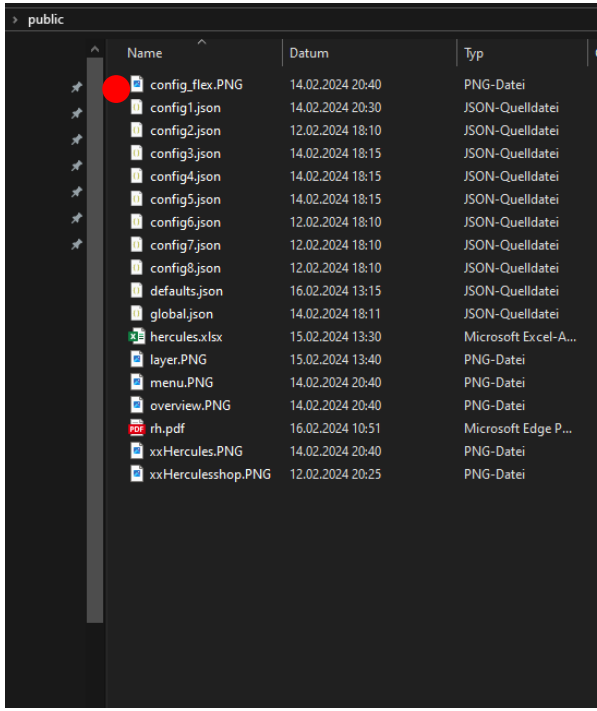
StationName needs to be added , if its NOT your default computers name (moved from global.json!)

SmartSDRClientID = ID of your local SmartSDRClient (NEW – See new Slides)

(*) VALUE YOU MUST/may BE CHANGED
No other properties need to be changes

Example:
config1.json => 1st Flex with 192.168.0.110
config2.json => 2nd Flex with 192.168.0.111
….

Debug = true => Enable Debu e.g. MidiMsg-Output



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«public/defaults.json » (Part1)

{

❶ ~~"StationName" : "",~~ (moved to config<nr>.json => must be deleted here) New in 1.1.0

❷ "CWMakro" : ["DM5XX", "DM1XX", "DM2XX", "DM3XX", "ur 5nn", "tu"],

❸ "NotValidModes" : ["AM", "SAM", "FM", "NFM", "DFM"],

❹ "NotValidSteps" : [1,1000, 2000,3000],

❺ "CWFilter" : [50,100,250,400,500,800,1000,3000],

❻ "Filter" : [1200,1800,2100,2400,2700,2900,3300,4000,6000],

❼ "PanBW" : [0.005, 0.010, 0.050, 0.100, 0.250]

…

New in 1.1.0

❶ **!!BREAKING CHANGE, you must update your old defaults.json and config<nr>.json-files!!**

❷ up to 8 CW-Msg (mapped to Loop a,b,c,d and e,f,g,h) (**) **CHANGE THEM**

❸ not valid modes for CUE-a

❹ not valid step size for CUE-d

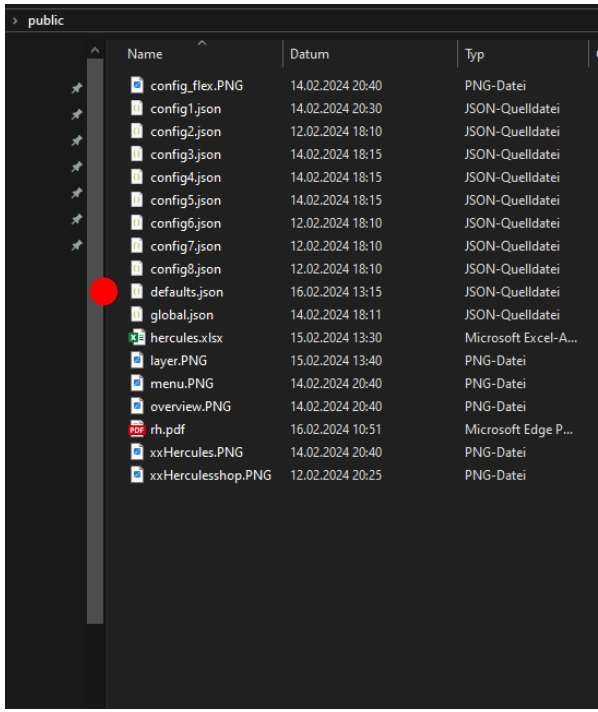
❺ valid CW-Filter BW for CUE-b

❻ valid Filter BW for CUE-b

❼ valid Pan BW for CUE-c

(*) My Comp.Name = DESKTOP-G2EMGRM = „STATION“ => **StationName ""**
If it changed SmartSDR STATION to "10M RUN" => **StationName "10M RUN"**

(**) comma separated "DM5XX " – up to 8 strings.



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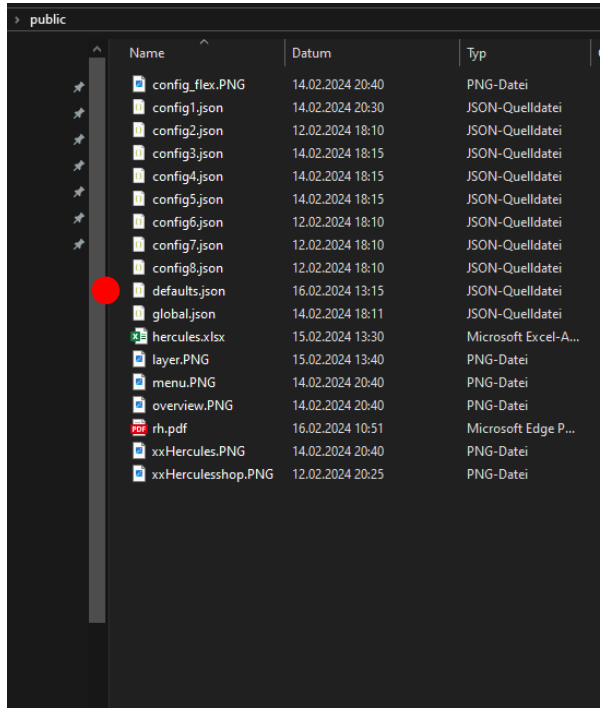
«public/defaults.json » (Part 2)

```
...
  "RitFreq" : [2500, 250]
}
```

+- Freq for Rit/Xit 1st: Phone e.g. 2500hz, 2nd: CW e.g. 250hz



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«public/hercules.xlsx »

❶ mapped function ❷ mode ❸ grp-#

	B	C	D	E	F	G	H	I	J	K	L
1	Tempo	Poti	cc						rit	0	0
2	Jog	Jog	cc						vfo	0	0
3	Jog	Jog	cc						vfo	0	0
4	JogBtn	Btn	noteon							0	0
5	Sync	Btn	noteon	1	5	127	0	1|5	xmit	3	1
6	Cue	Btn	noteon	1	6	127	0	1|6	toggleRXANT	2	1
7	Play	Btn	noteon	1	7	127	0	1|7	toggleTXANT	2	1
8	Headphone	Btn	noteon	1	12	127	0	1|12	monitor	1	0
9	Shift	Btn	noteon	0	3	127	0	0|3	setdefault	2	0
10	HotCue	Btn	noteon	1	15	127	0	1|15		0	0
11	Loop	Btn	noteon	1	16	127	0	1|16		0	0
12	CBtn1	Btn	noteon	6	0	127	0	6|0	modes	2	0
13	CBtn2	Btn	noteon	6	1	127	0	6|1	filters	2	0
14	CBtn3	Btn	noteon	6	2	127	0	6|2	panBW	1	0
15	CBtn4	Btn	noteon	6	3	127	0	6|3	steps	2	0
16	LBtn1	Btn	noteon	6	16	127	0	6|16	cwxLoopBtnL	2	2
17	LBtn2	Btn	noteon	6	17	127	0	6|17	cwxLoopBtnL	2	2
18	LBtn3	Btn	noteon	6	18	127	0	6|18	cwxLoopBtnL	2	2
19	LBtn4	Btn	noteon	6	19	127	0	6|19	cwxLoopBtnL	2	2
20	Master	Poti	cc	0	3	127	0	0|3	agc	0	0
21	Volume	Poti	cc	1	0	127	0	1|0	volume	0	0
22	Bass/Fil	Poti	cc	1	1	127	0	1|1	freeFilter	0	0
23	Tempo	Poti	cc	2	8	127	0	2|8	rit	0	0
24	Jog	Jog	cc	2	9	1	127	2|9	vfo	0	0

Controller Midi-Definition

ID

midimap | midimap2 | functions | Legegend

❺

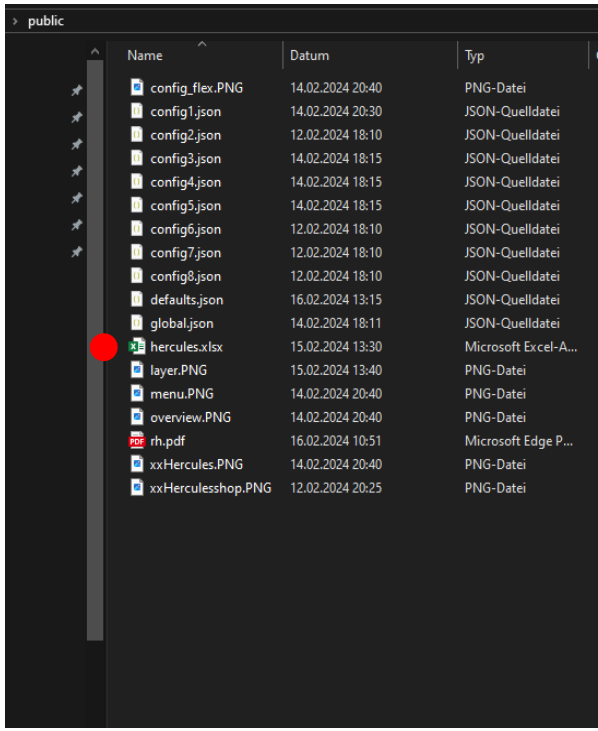
Layer 1 - Layer 2

❹

❶ mapped function for this actor

❷ Led-BTN-mode:
- 0 = no btn/not set
- 1 = Led normal on/off
- 2 = Led stays on f. 0.5s, than off
- 3 = Led stays on as long as pressed

❸ Grouped actors
- 0 = no group
- 1,2,3… = same group
- Group: Only 1 can be „on“.

❹ Config-Sheet for each Layer:
- midimap = Layer 1
- midimap2 = Layer 2

❺ Valid functions to map, more info