WRPlus V1.04 & SatControl Configuration

For Use with FCD

If you are confident your FCD is working correctly please skip to "Firmware". If not, before proceeding with any of the following setup, please test your FCD. It is suggested that you use the Spectravue program. A setup guide can be found in the files section of the FunCube User Group or Download section of the FCD web site.

Firmware

Your FCD must have version 18c (or later) firmware installed to function correctly in this configuration. If not, you MUST update it. The firmware and an update guide are available from the locations given above.

Download

From the FunCube User Group, download the WRPlus V1.04 and SatControl_FCD zip files. Create a new, empty folder and extract the contents of the zip files into it. The contents of the folder will include the files shown below except for the "fcd" file which will be automatically created later. There will also be a history.txt file and two pdf files containing instructions for WRPlus.



Open the "sat" file by double clicking on it and edit the "QTH =" line by entering your locator in place of the existing one. Save and close the file.

This step is only necessary if you want to control the FCD frequency manually via WRPlus otherwise skip this step.

From your folder run WRPlus and click on "Show Options" at the top left, then "Select Input". You should see the boxes shown below.

ShowOptions Select S	Sou	nd Card	Select Sample	Rate
Gain			Contrast	
Select Input	Þ	WAV f	ile	
Palette type	•	Sound FCD -	Card GOMJW Control	
Window type	٠	Open 3	Input Mixer	-
✓ Lock Volume		-		
✓ Look - ahead AGC				
High Process Priority				
 Normal Process Priority 				
• WMME 16 bit drivers				
ASIO 24 bit drivers				
Mode				
Swap I and Q channels		9957	20 S	99580
Channel Skew Calibration				
Show Status				
Reset Default Settings				
-50 -60				

Select "FCD – G0MJW Control" by clicking on it, the black dot shows it's selected and the following box should appear on the screen. The numbers in the "Frequency", "IF" and "Error" boxes may differ but the information displayed should be similar.

FCD Control - GOMJW		
Frequency (MHz) IF (kHz) Error 99.6 0 -100	ppm) Vendor ID 1240 Product ID 64342 Serial Number 1033	~
Save Settings	Manufacturer Hanlincrest Ltd. Product FUNcube Dongle V1.0	
🖵 Debug	FCD in Application mode	~

Click on "Save Settings" to automatically create the "fcd" file mentioned previously.

Start here if you skipped the previous step

Click on "Select Sound Card", the box shown below will open.

Dutput Sound Card SigmaTel Audio Virtual Cable 1	Virtual Cable 1 SigmaTel Audio	
Dutput Sound Card SigmaTel Audio Virtual Cable 1	FUNcube Dongle V1.U	
Dutput Sound Card SigmaTel Audio Virtual Cable 1		
SigmaTel Audio Virtual Cable 1		
Virtual Cable 1	Output Sound Card	
	Output Sound Card	
	Output Sound Card SigmaTel Audio Virtual Cable 1	
	Output Sound Card SigmaTel Audio Virtual Cable 1	
	Output Sound Card SigmaTel Audio Virtual Cable 1	
	Output Sound Card SigmaTel Audio Virtual Cable 1	
	Output Sound Card SigmaTel Audio Virtual Cable 1	

The content may not be identical but FUNcube Dongle V1.0 will appear in the top section and the bottom section will show your system sound card. Select these two items and click OK.

Click on "Select Sample Rate". The following menu will be seen.

rd	Select Samp	ole Rate				
	Sampling rates					
	Input	Output				
	8000	8000				
	11025	11025				
	16000	12000				
	22050	24000				
	24000	48000				
	32000					
	44100					
	48000					
-	88200					
99571	96000		9			
	176400					
	192000	Close				

Make the selections as shown and click on "Close". That completes the setup of WRPlus.

From your folder run	"satcontrol	_fcd", the	following	window w	ill open.
----------------------	-------------	------------	-----------	----------	-----------

🖄 Doppler	Correction for FCD					
File CAT In	nfo					
28 January	2011 2:22 UTC		Time to LOS 1 900250 0	: 00:03:50 11007.417645	FAST1	- 539-4 0 00479
Satellite —		1	2 90025 07	1.9722 033.6811 0018	738 223.8131 136.1515 14.76	JNcube dongle
Elevation Height	47.51 * 8.48 * 635.883 km	Doppler shift	99.10 dB -2340.72 Hz	437	342 63	R N
Sat Long Sat Lat Distance	34.89 * (34* 53" 17') 59.15 *N (59* 09" 04') 1976.335 km	Sun Angle Illumination Info	-48.03 * 0.0 % satellite in eclipse	1		437345 000
Epoche Orbit #	028.91831019 1030	MA-Value	207 (291.83 *) TLE's are 21.5 days old	<u>-1000</u> <u>-100</u>	-10 offset (KHz): 0.00	reset
- next 24 hou 28.01.22 29.01.21 29.01.21 29.01.22 29.01.22 29.01.22 29.01.22	#3 011 22:02 (Az 049°) -> 011 23:35 (Az 337°) -> 011 01:15 (Az 323°) -> 011 02:58 (Az 280°) -> 011 13:54 (Az 160°) -> 011 15:32 (Az 215°) -> 011 17:14 (Az 265°) ->	22:06 (Az 0 23:49 (Az 1 01:28 (Az 1 03:01 (Az 2 14:06 (Az 0 15:46 (Az 0 17:25 (Az 0	JN49LR 183°) maxEl: 08° .34°) maxEl: 08° .81°) maxEl: 29° .54°) maxEl: 00° 137°) maxEl: 18° 126°) maxEl: 58° 119° maxEl: 13°	Elevation		4.6 min
29.01.20 29.01.20 28/01/2011 28/01/2011	011 18:58 (Az 319*) -> 011 20:40 (Az 342*) -> 22:01:36: synced date (GMT): 22:01:36: system clock synchron	19:05 (Az 0 20:48 (Az 0 28/01/2011	122") maxEl: 03" 153") maxEl: 04" 1 22:01:36	00. 20.		

The content will differ but the system clock should show synchronised as can be seen on the bottom line of the image above. You should see the frequency and various other content changing.

Above the main frequency display is a check box "connect FUNcube dongle". Selecting it will open this box and connect to your FCD.

🛃 FCD Control - GOMJ	w		
Frequency (MHz) IF (kHz) 437.338256 0	Error (ppm)	Vendor ID 1240 Product ID 64342 Serial Number 1033	>
Save Settings		Manufacturer Hanlincrest Ltd. Product FUNcube Dongle V1.0	
🖵 Debug		FCD in Application mode	~

Content will be similar to that shown. The frequency will be tracking that seen in your Satcontrol window and is the centre frequency of your FCD.

Using WRPlus with Satcontrol and your FCD

If you are unfamiliar with the operation of WRPlus it is suggested that you review the instructions which were included as pdf files in the original download.

With WRPlus open click on "Start" to set WRPlus running. A waterfall display should be seen and noise should be heard from your loudspeakers.

Important Notes

With Satcontrol running and connected to your FCD the frequency of the FCD will be under its control. The frequency shown in WRPlus will NOT be updated by Satcontrol and must be ignored.

Start	Minimize About	Exit		
	099,591	937 Tune	Lo 099,600,0	00

Remember, the centre frequency of the FCD is that shown in Satcontrol's window. Signals at this frequency appear at the centre of the spectrum display in WRPlus.

For optimum results WRPlus requires your display resolution to be set to 1024 * 768 or higher. The use of 1024 * 768 may prohibit the display of all the windows you require however it will not prevent correct operation.