

ISOTERM-MULTICON

USB

INSTRUCTIONS FOR CP-2102 Model

DATA INTERFACE

de G3LIV

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Welcome to the World of PSK-31.

I want to make it easy for you to get going on DATA modes.
DIGIPAN for XP or AIRLINK EXPRESS for Win7 or XP will help me to help you.
Note. The writer of Airlink Express will not permit me to add it to my CD.
So it needs to be downloaded from the internet. AE is a good choice for either OS

The ISOTERM, as its name implies, is designed to reduce the change of RF and Earth type feedback problems. This can result in unacceptable signals being radiated. There are no physical connections between the Computer and Rig grounds. This helps reduce any possible earth loop problems.

Both Audio paths between Computer and Rig, are Transformer coupled.
The PTT is coupled through a miniature DIL Relay.

ALL leads IN and OUT of the ISOTERMS are screened. However it is still good practices to keep leads as short as you are able. Good practice, like keeping leads apart from antenna and other computer I/O cables, can only help in obtaining a good clean signal on PSK-31.

Insert the supplied CD in your CD Drive. This contains the drivers for the USB to SERIAL PORT cable. The PTT will not work until drivers are loaded correctly.

- Load the drivers as you would with any usual CD.
- Click on <Win Explorer>
- <My Computer>
- <Select CD Rom drive where the Driver CD is inserted>
- <Select USB-SERIAL Adaptor folder. There is a PDF file to help you.>
- <Then select the PDF required for Windows or Linux>
- Scroll to find the Windows Version you are using. It must be WIN 98 onwards.>
- <Now follow the on-screen installation instructions>
- You then need to choose the USB port you intend to use as standard. Once you have selected it - **ALWAYS USE THE SAME ONE.**
- Plug in the supplied cable to the interface and then your PC.
- The PC should detect that it has found new hardware.

If, as requested, you are setting up in DIGIPAN or AE, you will need to find where the USB drivers have set up the COMS port function. It may be any between 1 and 8 usually.

- Set up the selected software with personal details first.
- Then go to CONFIGURE or SET UP at the top of software tool bar.
- Click on it to get a drop down menu.
- Go thru the list and find the required Coms port number.
- Select RTS then say OK.

The GREEN light should be ON.

With the Interface connected, and software on screen, go to the **TX ICON** at the bottom of the screen. Click on it and the light should change on the Interface from GREEN to RED. If you have the rig cable plugged in at this point, the rig should go into TRANSMIT.

This indicates the USB/Com side is working.

You will, on inspection, see that there is a pair of cables coming out of the ISOTERM with 2 pieces of 3.5 mm Jack plugs on a 2 core screened cable.

- One with a marker **band on it**. This should be inserted into **LINE IN on the SOUNDBOARD** (or Mike on a laptop). It carries the AUDIO from your RX through the ISOTERM to the Soundboard.
- The other 3.5mm Jack should be inserted into **LINE OUT on the SOUNDBOARD** (or HEADPHONE on a laptop). This carries the AUDIO OUTPUT of the SOUNDBOARD through the ISOTERM to the figs.

The Rig cable is a replaceable one so as to give choice of rig type used. This is fitted into the 6 Pin Mini Din socket on the rear panel.

The cable is supplied with the correct RIG type as requested.

There are 2 front panel potentiometers fitted as attenuators to reduce the drive voltage from the I/O of the Rigs.

- **The RIGHT Hand Control** is the AUDIO OUTPUT from the receiver audio into the Soundboards LINE IN and used in conjunction with the SOUNDBOARDs LINE IN slider. This will allow correct level of drive to be presented to the WATERFALL.
- **The LEFT Hand Control** is a Transmit level attenuator. This should be set to suit your individual TX drive requirements indicated by power output.

Set both these control is mid way until you have got going and can do final settings.

Also enclosed a CD with various popular programs use either Digipan or Airlink Express. I am more experienced in these programs and more able to help you should you have any problems at first setting up.

On the soundcards control panel, the VOLUME slider controls the amount of signal being fed to the Rig via the ISOTERMS attenuator and the AUX slider the amount of Receiver Audio driving the Soundboard input. A little play with these controls will make their function obvious.

The ISOTERM can of course be used with most Soundboard Data programs. Including RTTY-SSTV-WSPR-WSJT-plus many others.

Although the mike input socket on the front of the rig can be used to pick up PTT and Mike input, I prefer to use the REAR panel I/Os. These are tidier and designed for the job.

Don't forget that the mike should be switched off or unplugged during PSK-31 transmissions.

Unless, as on some rigs, a rear ACC socket can be used.

If correct pin is selected, the Mike is disconnected automatically.

USB is the sideband used and do not have Speech Processors switched on.

COMPUTER CONNECTIONS **Twin Figure 8 with following colours.**

**YELLOW or WHITE CORE 3.5mm Jack plug with BLACK MARKER fitted into
LINE IN of SOUNDBOARD.**

RED or BLACK CORE 3.5mm Jack plug into LINE OUT of SOUNDBOARD.

I hope I have covered most of the necessary details in getting the ISOTERM successfully installed. If you feel any point have not been covered sufficiently, please let me know and I will modify instructions if necessary. So if you have any problem with getting this going.

PSK-31 is a wonderful new mode and requires only quite modest power. Most stations seem to run only 25 to 50 watts. The most popular freq. used at this time, is 14 070 kHz. All of the programs have a waterfall indication of signals that make tuning a simple process.

I would suggest connecting one lead at a time and checking its function as you go. RX audio would seem the first choice. Following by PTT and then Audio to mike input would see a logical progression.

If you feel happy to leave a review on my interface, please go to www.eham.net/reviews/details/1456

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TROUBLE SHOOTING NOTES FOR INTERFACEING OF ISOTERM.

Dear Customer.

It would appear from phone conversations I am having with customers, that a number of people are not reading the instructions supplied either with the ISOTERM or the HELP-file in the used software. I will attempt here to cover the common problems discussed.

IT WONT PUT RIG INTO TRANSMIT. I mean by this the PTT in not being triggered.

Check the **CONFIG file** in the software. It will request that you select the COMs port you want to use. It also asks for you to select RTS or CTS switching. ISOTERM is wired for RTS. If you don't know what COMs port you are using, select one at a time and try each one to see if it will trigger rig into transmit. Also on later rigs with PACKET input socket, make sure you select PACKET or DIGI on front panel depending on the rig model.

IT'S NOT RECEIVING.

Again go to **CONFIG file**. Go to **WATERFALL DRIVE**. You will be presented with slider controls.

- These are Soundboard **LINE IN** controls. Make sure none are **MUTED**.
- Take all controls to **MAX** as you monitor the **WATERFALL**.
- Check the **RIGHT** hand front panel control is not at **ZERO**.
- Usual controls are marked **LINE IN**. Not all Soundboards are marked the same.
- So play around and check the operation on receive.

- Set slider for blue background with yellow streaks

You should be able to see PSK-31 signals as YELLOW streaks. Monitor 14.070 kHz while looking to set up system. Unless band is closed, there are usually a good number of signal around this frequency.

IT'S NOT TRANSMITTING

I mean by this the PA meter on rig is not showing POWER OUT.

Again go to **CONFIG file**. Select **Transmitter Drive**. Again you will see a set of Sliders controlling the soundboard. But don't forget, you must have your mike control on the rig, at least in the position that would drive it for SSB.

ALSO THE ATTENUATION CONTROL ON THE ISOTERM IS FOR YOUR USE.

I can't set it here to suit all rigs. It has been set to suit MY SETUP.

But differing positions of your MIKE GAIN

One other test you can carry out; Plug a set of headphones into the **LINE OUT** jack socket of your soundboard. Go into transmit . You should hear a tone in the headset. Play around with the SLIDERS to find which one turns volume up/down. It is usually **WAVE** and **OUTPUT**. Reconnect the 3.5 mm jack into your LINE OUT and check PA current shown on rig when you go to transmit. Set PA output for maybe 30/40 watts This is sufficient power for PSK31. The rig should be set to FULL POWER and the amount of Audio drive set to show 30/40 watts

So just think what you are trying to achieve and work towards that goal. One step at a time.

Without exception, all cases reporting that the ISOTERM is NOT WORKING have been no other than lack of reading the instructions and ignoring the DIGIPAN help files.

PSK-31 is a wonderful mode. Just take your time setting up your rig. By all means if you are having difficulties in getting going, and you have checked out the above advice, please do not hesitate to contact me.

Final notes

On some later rigs with MENU selections, check these out in case various ones need to be set for rear socket use.

TS-570S - if using 13 pin rear socket;

Set Menu # 33 AF IN to 0. Set Menu # 34 AF OUT to 9.

TS-870S - if using 13 pin rear socket;

Set Menu #20 PKT IN to 0.

Set Menu # 21 PKT OUT to 9.

FT-847 - It has been noted that if to high an audio transmit level is used, the PTT will drop out. The Audio IN from computer be raised to obtain required 30/40 watts output, with regard to PTT staying on transmit.

YAESU FT-1000 RANGE - Some rigs in this range will not allow USB to be selected while in PKT mode and using the 5 Pin rear DIN. Select PKT on front panel.

However this really is not a problem as PSK-31 BSPK is not sideband sensitive; one side of QSO can be on USB while the other can be on LSB. Only in QSPK is there a need for both stations to be on the SAME sideband.

YAESU FT-1000MP RANGE

You MUST select PKT on front panel for the 5 Pin DIN on rear to work.

YAESU FT-920 and FT-990 - Check the MENU 45 is set to No Offset

ICOM IC-706MkIIG - Set MENU 29 to 1200 speed and MENU 30 to OFF.

YAESU FT-857 - Set MODE to DIGI.

On some earlier rigs like **FT-990 –FT-920**, they need to be switched to PKT on front panel for 5 Pin ACC ports to be active.

If your rig is a recent designs, it may have a mode marked DIGI. This will need to be selected to bring rear port into use.

RIG CONNECTIONS

It may be that you want to make up extra leads from the interface to other rigs in due course. I am able to supply these.

However, listed below are the connections for the 6 pin mini din socket fitted to the interface.

6 PIN MINI DIN CONNECTIONS:

Pin 1 TRANSMIT AUDIO TONES IN

Pin 2 ALL GROUNDS/SCREENS

Pin 3 PTT. This pin goes to ground when TX is selected in the software

Pin 4 No Connection

Pin 5 INPUT from RECEIVE AUDIO, to DRIVEWATERFALL DISPLAYs

Pin 6 No Connection

If you decide to use 6 pin mini din leads designed for computer use, please make sure they are of the screened variety. Most have no screen. Some are not wired all pins.

Bad RF feedback will noticed if NON screened cables are used

USB Drivers. These are located on the supplied CD

Or are available for CP2102 at

<http://www.silabs.com/products/mcu/pages/usbtouartbridgevcpdrivers.aspx>

<http://tinyurl.com/cp2102exe>

Then follow this following information.

COMs PORT IDENTIFICATION after USB ADAPTOR USED

It is some time difficult to work out after connecting the USB interface to identify which COMs port to use. The following will be of help;

This advice is for Microsoft XP

GO to <START>

RIGHT CLICK <MY COMPUTER>

LEFT CLICK <PROPERTIES>

LEFT CLICK <HARDWARE>

LEFT CLICK <DEVICE MANAGER>

If you now plug in the USB cable connected to the USB Interface.

The Screen will Re-new

And have the COMs port shown in the list

Use that number when asked by programs which port to use

De Johnny – G3LIV

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What is a CABLETIDY ?

They tidy up the usual cable mess; it allows keys to be swapped over. Just unplugging one and plug in a replacement.

CABLETIDYS are available for the following keys and are available in RED or BLACK depending on the model. Some are now GOLD Plated.

VIBROPLEX IAMBIC_VIBROPLEX VIBROCUBE_VIBROPLEX
STRAIGHT VIBROPLEX ORIGINAL BUG_LIONEL/VIBROPLEX J -36



VIBROPLEX BLUE RACER_K8RA PADDLES_JA7GHD PADDLES.

There is also a UNIVERSAL CABLETIDY that fits many other less popular keys Just email me about your keys type. I will help.

See www.g3liv.co.uk Also www.eham.net/reviews/detail/9689

Adverts are also running on EBay, just search Vibroplex Bugs-Keys.

I will be happy to reply to any questions, email Johnny@melvin.com 0191-2843028