

C02_{DSP} / C03_{DSP} / C04_{DSP} RDS ENCODER

QUICK INSTALLATION GUIDE

1 MAINS SUPPLY

Before connecting the C0_xDSP to the mains supply, verify that the supplied C0_xDSP is specified to work with the domestic mains voltage and frequency. Then connect an appropriate supply cable to the IEC and the mains socket. The C0_xDSP should now turn on.

2 CONNECT A PC

For remote control you need an RS-232 connection between the C0_xDSP device and the PC. Devices that are equipped with a TCP/IP interface can also be remote controlled via TCP/IP.

Devices with a TCP/IP interface but without LC Display and jogwheel require an RS-232 connection for the initial setting of the IP address. After the initial setup you are able to use the RS-232 connection or a TCP/IP connection for setup and control.

C02_{DSP}: The IP address of a C02_{DSP} device can be set via the jogwheel - therefore you do not need an RS-232 connection. Please do not connect the device to your network because the IP address is not yet defined.

C03_{DSP}/C04_{DSP} RS-232C connection: Connect the supplied serial RS-232 crossover cable to a COM port of your PC and the [FRONT] connector (see Fig.1). If your PC has no COM port, please use an USB to serial adaptor.

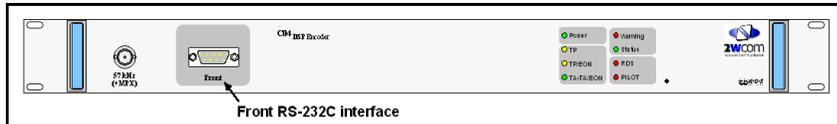


Fig.1; Front RS-232 interface location

3 INSTALL ARCOS CONFIG

Insert the supplied CD-ROM into the CD-ROM drive of your PC. Then open the „setup“ file in the „Arcos Config“ folder and follow the instructions on the screen to install the software.

4 SETUP RS-232 CONNECTION

(Not necessary for C02_{DSP}): Use Arcos Config and select a location folder (e.g. Default COM) in the [Encoder List], then open the corresponding tree by a mouse click on its [+] symbol and right-click an encoder symbol (e.g. default). Select [Properties...] and select [RS-232C connection] from the top drop down menu. Select the COM port that is used at the PC. Click on [Check Connection] so that the baud rate settings can be set automatically. If the communication works, finally click on [OK].

5 SETUP IP CONNECTION (IF APPLICABLE)

Additionally to the RS-232 connection you can use a IP connection for setup and control of the device (if applicable). To setup the TCP/IP connection just follow the steps below. If no IP interface is required or available just skip to step 7.

C03_{DSP}/C04_{DSP}: The first step is to assign an IP-address to the device. To do this you need an RS-232 connection. Configure the RS-232 connection as described above. Then in „Arcos Config“ click on [Load Overview]. After the data is loaded, activate the tab [Hardware Setup] and enter the IP address and the network mask at [Connection] (the port is already set to the default TCP port of 6666). Note that it is important to use an IP-address that is unique in your local network (e.g. IP 192.168.14.90, Net mask 255.255.255.0). Finally click on the button [Send...] to transfer the settings to the encoder.

C02_{DSP}: Use the jogwheel and the LC Display of the device (see Fig. 2) to set the IP-address. To do this just navigate to [Interface]>[TCP/IP]>[IP Address] and set the four parts of the IP address by rotating and pushing the jogwheel. Note that it is important to use an IP-address which is unique in your network. (e.g. IP 192.168.14.90, Net mask 255.255.255.0).

In the same way you are able to setup other necessary settings like the netmask and also a gateway and port number (if applicable).

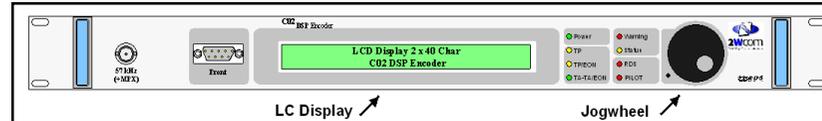


Fig.2; C02_{DSP} LC Display and jogwheel

C02_{DSP}/C03_{DSP}/C04_{DSP}: Now it is necessary to configure „Arcos Config“ for the TCP/IP communication to the device. To do this you need to activate the tab [Encoder List] at the left side of the software window. Then select an encoder symbol as described at Step 4, but select [TCP/IP connection] instead of [RS-232C connection]. Then enter the [IP-Address] and the [TCP port] number (default: 6666) that you assigned before to the device, then click [OK]. Now proceed to step 6.

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6 CONNECT IP PATCHCABLE (IF APPLICABLE)

If you decided to use TCP/IP as connection to the device, just follow the instructions below. Otherwise just skip to step 7.

Connect the supplied RJ-45 patchcable to your IP network and to the TCP/IP jack ([10/100 Base-T]) on the rear side of the device (see Fig.3).

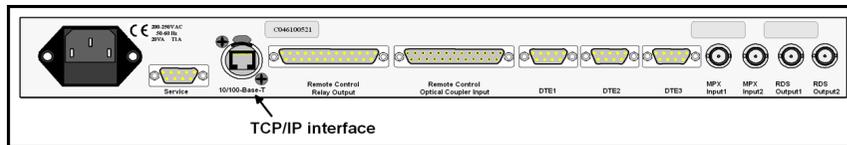


Fig.3; Location of the TCP/IP interface jack

7 SETUP THE RDS PARAMETER

All parameter of the C0x_{DSP} can be setup via the „Arcos Config“ PC software. Just use the tabs with the required settings and send the altered data to the connected C0x_{DSP} with the [Send...] button. The data of the device is read if required. If you want to read all data of the device at once click on [Load all data]. Make sure that your settings are according to the RDS specification (IEC 62106) and the radio regulation authorities.

8 CONNECT THE RDS ENCODER

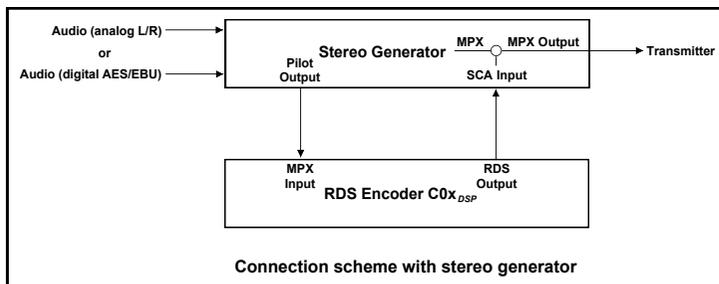


Fig.4; Connection to stereo system

For a summation of the MPX signal and the RDS signal inside the stereo generator (e.g. 2wcom S02), the MPX bypass of the C0x_{DSP} needs to be turned off (not necessary for devices without summation feature). To do this, use the 2wcom PC software „Arcos Config“. Check the tab [General] to see if the „MPX Bypass“ checkbox is deactivated; if not, deactivate it by a mouse click and click on the [Send] button. Then the pilot signal is used for synchronisation only and only the RDS signal is at the output of the C0x_{DSP}.

Connect the C0x_{DSP} to your system as shown on Fig.4.

9 CHECK MODULATION

Finally it is good practice to perform a check of the phase between the pilot signal (19 kHz) and the RDS signal (57 kHz). This ensures to have the lowest possible deviation for RDS.

To do this: Measure the MPX signal at the MPX output of the stereo generator with an oscilloscope. Note that the program signal (voice/music) needs to be turned off during the measurement. If you do not measure a symmetric signal like in Fig. 5, you can adjust the phase setting of the C0x_{DSP} via „Arcos Config“ to achieve a symmetric signal.

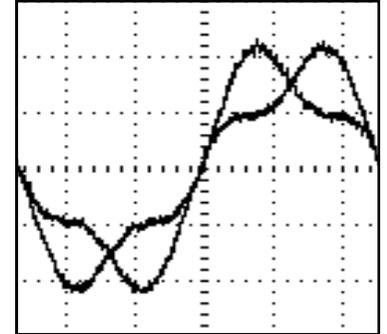


Fig. 5; Symmetric signal

(Note: Waveform readability depends on RDS/Pilot signal voltage ratio).

Of course you should also check the resulting FM deviation of the complete MPX signal as well as other relevant parameter for conformity of the total signal at the transmitter output.