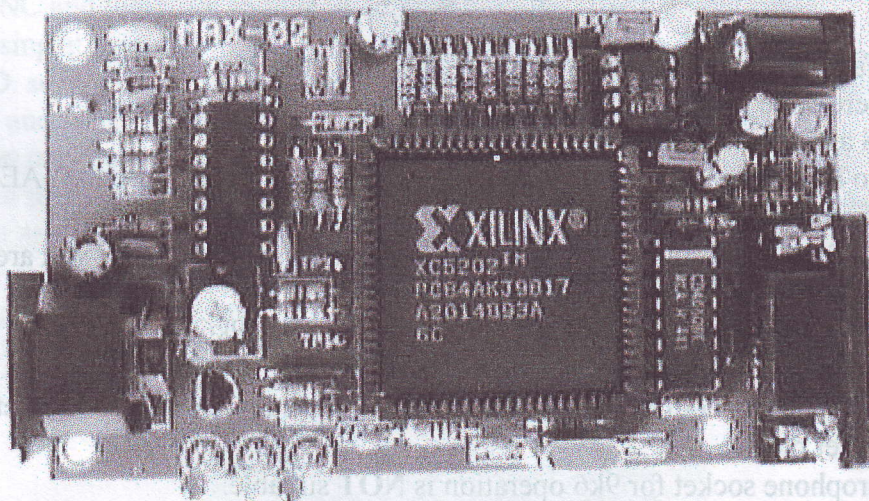


## INDEX

**The MaxPak MAX-02 1k2/9k6 modem for use  
with agw2000 and Winpack in Windows98 & ME  
(With notes about using agw2000 with Windows95)**

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## The MAX-02 modem



**USING THE MAXPAK MAX-02 MODEM ©  
WITH the AGW2000 series software  
and WINPACK in WINDOWS 98& ME**

Before going into the detail, here is a little of the history of what it took to get to the final configuration of Flexnet to work with the MAX-02 in a dual 1k2, 9k6 mode.

Maxpak make this new modem available to cater for the need to be able to operate both 1k2 and 9k6 baud rates according to individual operators requirements.

**If you wish to use agw2000 with Windows95, please read the following paragraph.**

If you are going to use the agw2000 series software with Windows95, you must upgrade the winsock files. This is done by downloading, W95wssetup.exe from the Microsoft web site. [www.Microsoft.com](http://www.Microsoft.com), or obtaining a copy on 3.5" floppy disk from MaxPak.

**If you wish to use flexnet with Windows95, please read the following paragraph.**

The required mode is selected by software and this is done, either by calling up a batch file from DOS, or even more simply, by having a menu which, when the PC boots up, gives you the option to choose the mode you wish to use.

The menu is a very simple addition, which can be typed in by the user. The batch files come in the FlexNet.exe program. A full, line by line example of what is required, is contained in this document. These have been fully tested over a very long period and work without exception. Flexnet does require Windows95 to be installed in the computer. If you wish to use the modem with Windows98, you should use agw2000 software, which MaxPak can supply on request.

**Some considerations have to be made regarding the PC specification.**

1. A reasonably fast processor should be used.  
All the tests were done using a PC with an AMD K6 200mhz CPU installed.
2. 16550 UARTS are more suitable than the older types.
3. It is essential to have a transceiver which is 9k6 compatible. Our tests used a YAESU FT-8100.
4. For 1k2 operation only, almost any rig will do.
5. The audio drive from the YAM modem has to be set to a fairly low level if you are going to use only the 1k2 mode via a transceiver microphone socket.
6. 9k6 operation has to use the special mini DIN socket found on 9k6 ready amateur transceivers.
7. 1k2 operation can also be connected via the 9k6 radio socket.
8. If you are going to use a modified PMR rig, please ask the supplier to give you details about using it for packet radio.
9. Using the microphone socket for 9k6 operation is **NOT** suitable.
10. All ready built modems are fully tested before dispatch.
11. If for any reason you cannot get your home assembled modem to function correctly, please
12. Check for any solder splashes, correct fitting of the IC's and correct placement of all components and only then, return it in a jiffy bag to G4VYA (QTHR), together with a pre postage paid return jiffy bag, who will return it to you as soon as possible.
13. If you do plan on returning it to Joe G4VYA, please advise him at [joe@g4vya.freemove.co.uk](mailto:joe@g4vya.freemove.co.uk) that the package is to be expected.



## Now a word about building the MAX-02 modem.

1. The PCB is of very high-grade material.
2. Please check the components supplied in the kit against the parts list before soldering.
3. Use a temperature controlled soldering iron fitted with a very small pointed bit.
4. After the board has been populated with all the components and **BEFORE** handling the IC's, wear an anti static wrist band or wrap a length of wire round a metal wrist watch band and clip the other end to a good earth. Another useful idea is to plug the PC into a mains socket, but keep the socket switched **OFF**.

Touch any metal part of the PC case to discharge any static you may have picked up.

5. Be very careful when handling the IC's. They can be damaged by a static charge. Observe the fitting of the 14 and 16 pin chip holders.

The notched end is clearly shown on the PCB overlay.

The IC's must be plugged into the chip holders the right way round.

**Failure to observe this will almost certainly result in destroying the device.**

6. Please refer to the PCB overlay at all times. (See page 4.)
7. Three circuit links are to be made on the component side of PCB. Connecting wire is supplied.
8. Observe the fitting of the 84 pin chip socket.

The 84 pin square chip holder has an arrow in the centre of the base. This should be fitted with the arrow pointing towards the row of 9 resistors R2 - R9 and R12.

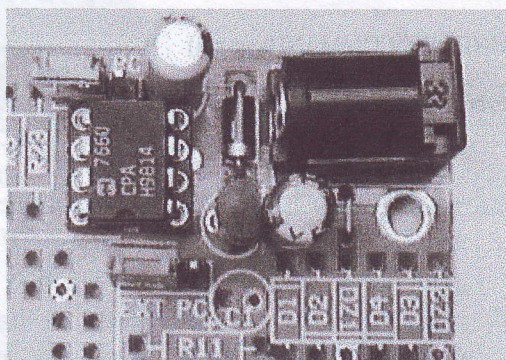
- 3 The 84 pin IC XC5202 requires extra special care when plugging into its socket. On one of the 4 sides you will see there is a small hole which denotes pin 1. The IC should be fitted with this hole facing the 9 resistors R2 - R9 and R12 as shown in the picture included in these instructions. Do not use excessive force. Only even pressure is required.

- 3 Set the potentiometer P1 to the mid way position. This sets the audio level from the modem to the radio. This is a good starting point and you can adjust as necessary, as rigs may vary in the amount of audio drive required to function correctly. The 9k6 setting can be critical!

11. The connections to the 180° 5 pin DIN socket use the same convention as any PacComm TNC and therefore should be compatible with your existing cable you maybe using at present.

12. A standard 'D' serial lead should be used, providing **ALL 9 pins** are correctly wired. 1 to 1, 2 to 2 and so on. Do not use leads where pins 2 and 3 are reversed.

13. For those who may be using a notebook PC that uses power management circuitry, we have provided the facility for a external power source to be used . On the PCB you will find a position to fit an extra 8 pin DIL socket, U5. This is to take a 7660 IC, which reverses a +5v to -5v to supply the OP amps. It is possible to use an external power supply up to +13.8v as the external input supply circuit has a 5v regulator to set the supply to the required +5v level. You will find a position on the PCB to fit a remote input power input socket J3. We can supply an additional kit of parts for this external power facility if required.



View of the power modification kit installed on the PCB



## **This section is if you plan to use flexnet. NOT agw2000!**

What follows is a copy of the set up that was used in the test computer and includes lines that deal with a Creative Sound Blaster card, which may be unnecessary in some other PC's.

### **NOTE**

**Before you start to change the Autoexec.bat file, YOU SHOULD MAKE A STARTUP DISK. In Windows95, click on the control panel icon and then click on the Add and Remove Programs icon, then click on to the Startup Disk tab.**

The menu options cater for,

1. Windows95
2. 1200 baud YAM plus Windows95
3. 9600 baud YAM plus Windows95

Please note option 1, which gives the provision for Windows95 without any other utility that may use TSR programs.

There now follows a description of the suggested additions to the Autoexec.bat file.

```
@ECHO OFF
GOTO%CONFIG%
:WIN95
@ECHO OFF
SET SOUND=C:\PROGRA~1\CREATIVE\CTSND
Mscdex.exe
SET PATH=C:\TRMOUSE;%PATH%
C:\TRMOUSE\TRMOUSE.COM
SET MIDI=SYNTH:1 MAP:E MODE:0
SET BLASTER=A220 I5 D1 H5 P330 E620 T6
mode con codepage prepare=((850) C:\WINDOWS\COMMAND\ega.cpi)
mode con codepage select=850
keyb uk,,C:\WINDOWS\COMMAND\keyboard.sys
WIN
GOTO END
```

```
:YAM9k6
@ECHO OFF
C:\flexnet\flex2.bat
CD\
Mscdex.exe
mode con codepage prepare=((850) C:\WINDOWS\COMMAND\ega.cpi)
mode con codepage select=850
keyb uk,,C:\WINDOWS\COMMAND\keyboard.sys
WIN
GOTO END
```

```
:YAM1k2
@ECHO OFF
C:\flexnet\flex1.bat
CD\
Mscdex.exe
C:\F-PROT\WIRSTOP /COPY
mode con codepage prepare=((850) C:\WINDOWS\COMMAND\ega.cpi)
mode con codepage select=850
keyb uk,,C:\WINDOWS\COMMAND\keyboard.sys
WIN
```

GOTO END

:END

### **NOTE**

THE FILES SHOW THE SET UP ON THE TEST COMPUTER. YOUR ONE MAY NOT BE EXACTLY THE SAME.