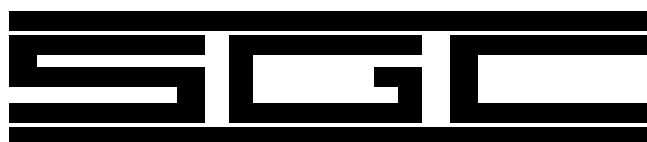


SG-7200 SMARTMODEM TEST PROCEDURE

JULY 1999

VERSION 1

USER MANUAL



"No Compromise Communications"



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1.0 Purpose

The purpose of this test is to familiarize new users with this product and allow full understanding of its operation prior to field use. This test is divided into two sections. The first test is performed "back to back" and eliminates all other external parameters involved with HF communications. This test requires only two modems and their respective computers. When the first test has been successfully completed with proper data transfer in all required modes, then proceed with the second test. The second test involves the HF radio transceivers and must be done with careful attention to the correct frequency and power settings. Power output setting must not exceed 70 watts, as higher power settings will only reduce reliability and will not enhance communications.

2.0 Supplied Items

DC Power cable with 2.1 mm connector at one end
Audio cable
Serial extension cable RS-232 (9 conductor male one end - female other end)
DIN 8 pin plug with cable attached
Procomm 2.0 for DOS shareware communications software
GUI (Graphical User Interface) V1.67 for Windows Operating System

3.0 Installation Procedure for Back to Back Testing

Connect RADIO 1 Port of one Modem to RADIO 1 Port of the other using 8 Pin connector (cable supplied). Connect 9 pin straight thru cable supplied to HOST COMPUTER connector and a PC comm port. Connect DC voltage to both modems using the supplied cables. See figure 1 on page 2.

4.0 Program Setup

The following are the steps required to install the SG-7200 GUI control program. This program requires either Window 3.1 or Windows 95/98.

4.1 Program Requirements

This program requires a 386/16mhz or faster CPU, 8 Mega byte of memory and Windows 3.1 or Windows 95/98 (preferred). At least 2 megabyte of available hard disk space is required for program installation.

4.2 Software Installation

The following steps should be followed for program installation.

1. Place distribution disk into the floppy drive.
2. Using the Run Option in the Files Menu (Win3.1) or the Start Button (Win95/98), select the floppy drive and execute the SGCXXX.EXE

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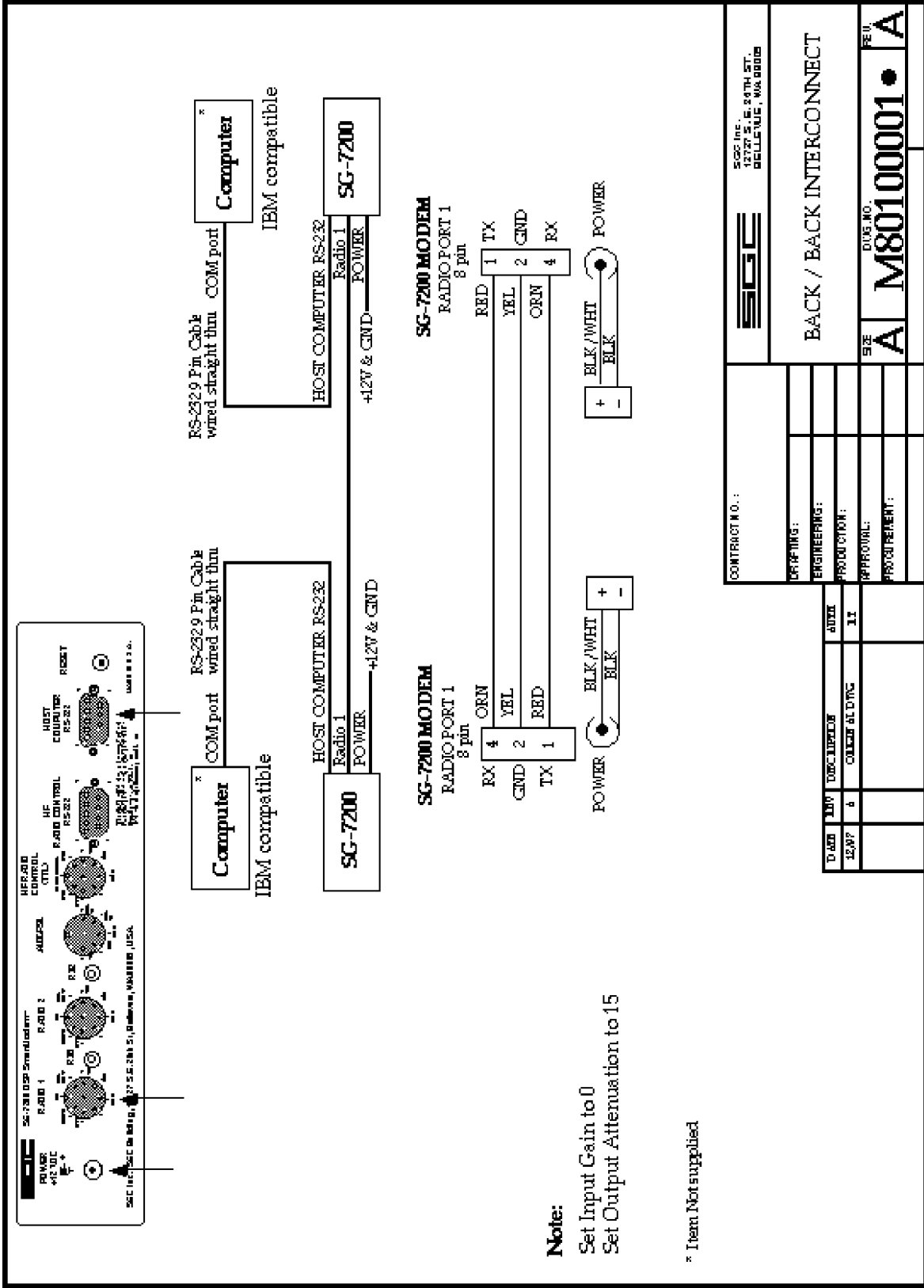


Figure 1

(XXX Version number) file on the disk. This will start the installation process.

3. Follow the on screen prompts to complete the program installation.

4.3 Configuring the Software

During the configuration process the user will have to make several selections. Be careful when making these settings to ensure proper program operation.

4.3.1 Setting the Communication Parameters

Use the following settings when configuring the program

- 9600 baud (this is the only value that is currently supported by the 7200.
- COM Port. The SG-7200 is connected to which com port of the computer. Be careful to select the proper port. The program supports ports 1 to 8.
- 8 data bits
- 1 stop bit
- No Parity

4.4 Un-installing the Software

If necessary to un-install the software, use the Un-install icon in the SG-7200 program group. This will remove all program files from the system.

4.5 Starting the software

To start the software, turn on the modem and wait for it to initialize (the LCD display will read "CMD: Enter command") then select the SG-7200 DSP SmartModem icon in the SGC program group.

Note: Modem must be turned on first and allowed to initialize before starting software. The Modem can be initialized by using the Reset Button also.

5.0 Introduction

When checking out an operating mode refer to the Modem Manual Control Program Users Guide Section. **Under TNC Menu, set Input Gain to 0 and Output Attenuator to 15 when testing two modems connected back to back to prevent overdriving the modem.**

5.1 Selecting the Operating Mode

The program has two different operating modes. These are Amateur

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operation and SITOR Operation. Amateur operation gives the user the ability to select between AMTOR, ASCII, BAUDOT and PACTOR I operation. The SITOR option is designed for Ship to Shore operation.

5.1.1 Baudot/ASCII

In back to back configuration the Transmit and Receive Polarity of one of the modems must be reversed.

5.1.2 AMTOR

In back to back configuration the Transmit and Receive Polarity of each modem must be the same.

5.1.3 PACTOR I

In back to back configuration the Transmit and Receive Polarity of each modem must be the same.

5.1.4 SITOR Maritime Mobile Marine CCIR 476/625

This mode is entered through the Configuration icon in the SG-7200 program group. In back to back configuration the Transmit and Receive Polarity of each modem must be the same.

6.0 Procedure for Testing with Transceiver

See figure 2 on the following page for an installation that can be used to test two systems in the same room. The two systems should be installed on two benches that are separated by at least 10 to 20 feet to eliminate undesirable RF feedthrough. For proper operation **never** exceed 70 watts out of the transmitter to avoid overloading the receiver. If the receiver is overloaded try reducing the power output, moving the two systems further apart, or using a lower test frequency such as 2 MHz instead of 12 or 20 MHz. Set the SG-2000 to the A3J (SSB) mode, set internal jumper P201 on the Exciter PCB to 'ALE' mode, select 'TLX' audio filter to eliminate AGC (see SG-2000 Manual page 54 'VOC-TLX'), and the modem in Baudot transmit. Under the TNC Menu, use the Output Attenuator setting to adjust the output power of the radio. The Input Gain should be set in receive mode so the far left and right LED's of the LED Tuning Display just barely light.

7.0 Field Installation

Proceed with field installation only after the two initial laboratory tests have been completed successfully. When proceeding with the field installation please use the HF Installation Golden Rules described on page 6.

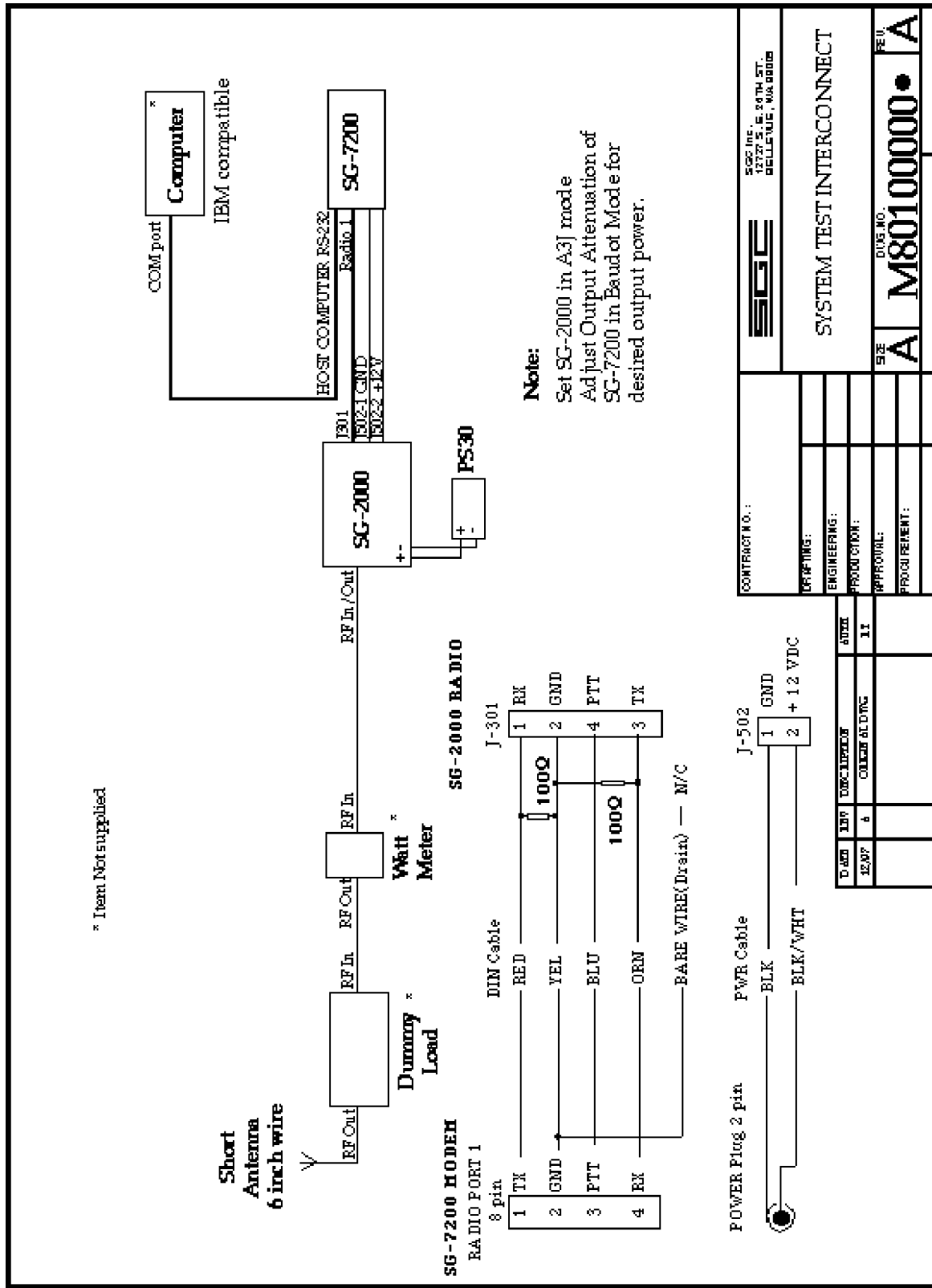


Figure 2

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8.0 HF Installation Golden Rules

These rules apply to all types of stations, including base, mobile, airborne and marine. They are very important for planning and installing your HF system, if you want to achieve good communications.

1. Install transceiver as close to your operation site and to the power supply system as possible (whether it is an external power supply or battery system).
2. The antenna must be installed in an open space and as far as possible from your operating point.
Example, on a sailboat, use the backstay as the antenna, since it is the farthest point away from the rest of the vessel.
3. The antenna coupler must be installed at the base of the antenna.
4. Always create your own ground with radial wire or copper straps. They are the only ones that will guarantee a solid and proper ground system.
5. All cables - power supply, control or coaxial - must always be as short as possible and/or necessary. Any excess cable should be shortened to the proper length - never coiled.

Following these rules will minimize marginal installations and problem sources such as RF feedback in the radio, power supply or cables and "hot" or RF burning microphones. If all 5 above points are followed during the design and installation of your HF system, the operator can expect top performance.

Further information regarding applications, installation and operation can be downloaded from our website <http://www.sgcworld.com>. These publications include:

- * HF User's Guide
- * Go Mobile at 500 Watts
- * Stealth Antennas
- * Smartuner Antenna Coupler Manuals