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OWNERS MANUAL

PACE SIDETALK 1000M
SSB/AM TRANSCEIVER
27 MHz CITIZENS RADIO SERVICE



PATHCOM INC.

PACE TWO-WAY RADIO PRODUCTS
2409 S. Frampton Ave., Harbor City., California 90710



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**LIMITED WARRANTY
APPLICABLE TO CITIZENS BAND, SCANNING MONITORS,
& AM BUSINESS RADIO PRODUCTS**

PATHCOM, INC., PACE TWO-WAY RADIO PRODUCTS, warrants each new Citizens Band, Scanning Monitors, & AM Business Radio product to be free from defects in material and workmanship, and if it is found to be defective within 90 days from date of user purchase, the factory will either, at its discretion, repair or replace it, provided the unit is delivered by the owner to the factory intact for examination with shipping charges prepaid and provided that such examination discloses, in the factory's judgment, that it is defective under warranty. This warranty does not apply if the unit has been subjected to physical abuse, improper installation or unauthorized modifications. This warranty does not apply to carrying cases, covers, or other dress parts. To place warranty in effect, the unit must be warranty registered with the factory within 10 days from the date of purchase.

**LIMITED 2-YEAR FACTORY SERVICE PROGRAM
APPLICABLE TO CITIZENS BAND, SCANNING MONITORS,
& AM BUSINESS RADIO PRODUCTS**

Also available is a continuing service program applying to transceivers and scanning monitors which extends protection after the 90-day warranty period for two years after the date of purchase. If requiring service under this program, the unit must be returned to the factory, shipping charges prepaid, for check-out and service. There is a \$14.95 inspection and handling charge per return. Labor and replacement parts are free. Service performed under this program is warranted for 90 days. When \$14.95 is submitted with the unit, the factory will pay for the return shipping charges.

CONGRATULATIONS!

You have now joined the proud family of PACE communications equipment owners.

Your PACE SIDETALK 1000M SSB/AM Transceiver embodies the latest in high frequency transceiver design techniques. The PACE SIDETALK is designed to operate on either AM (Amplitude Modulation), Upper Single Sideband (USB), or Lower Single Sideband (LSB). Twenty-three channel operation is made possible with 10 crystals in a highly stable synthesizing circuit.

The following extra features are built into every PACE SIDETALK 1000M Transceiver.

- * Full range RF GAIN control and a full netting CLARIFIER provide maximum performance.
- * PACE's exclusive limiting circuitry in AM and noise blanking provision in SSB means quieter and more sensitive performance on receive.
- * A precision meter accurately measures incoming signal strength in "S" units, plus outgoing power in a relative reading and center scale.
- * Receives and transmits on 69 channels; 23 AM and 46 SSB.
- * Public address facility, with front panel control and separate speaker jack.

This owners manual has been provided to give you all the necessary information for installation and operation of your SIDETALK 1000M SSB/AM Transceiver. Please take a few minutes to read it before operating your PACE SIDETALK Transceiver.

SOME WORDS ON SINGLE SIDEBAND

AM has been the standard method of Citizens Band reception and transmission for many years and most of the existing transceivers being used today are AM. Technically, AM is Double Sideband (DSB) with full carrier. In this method of operation, a carrier modulated or interrupted by voice on both sides of the carrier frequency is transmitted.

SSB is relatively new in Citizens Band communications but has been highly effective in commercial, amateur and military usage for many years. It is a superior means of wireless communications allowing transmissions of greater distances with a minimum amount of interference and noise.

There are two types of single sideband transmissions, USB and LSB. These might be described as half signals and due to the narrow bandwidth required, will travel over greater distances at lower power than ordinary AM signals.

In the actual transmission of either USB or LSB, the carrier is removed. All of the modulation for a transmission is concentrated in either the upper or lower sideband. In the receiver, the carrier is reconstructed and the intelligence or modulated voice is then detected, amplified and converted into an audible sound heard at the speaker.

The PACE SIDETALK 1000M is designed to be completely compatible including single sideband (upper or lower), double sideband, or conventional AM and is equipped with separate transmitter circuitry to provide high level AM transmissions and true SSB transmissions. The receiver section is also capable of receiving AM SSB. The mode of operation for both receiver and transmitter sections is programmed by means of the mode selector switch.

TECHNICAL SPECIFICATIONS

GENERAL:

Channels	23 (AM, USB & LSB)
Operating Voltage	12 V DC \pm ground
Frequency Range	26.965 to 27.255 MHz
Microphone	Low impedance, Dynamic
Speaker	3" - 8 Ω
Antenna Impedance	50 Ω
Size	7-1/2" X 2-1/4" X 10"
Weight	10 pounds (with accessories)

RECEIVER:

Sensitivity	1 μ V for 10 dB $\frac{s+n}{n}$ (AM)
	0.5 μ V for 10 dB $\frac{s+n}{n}$ (SSB)
Selectivity	\pm 2.1 kHz @ -6 dB
	\pm 10 kHz @ -40 dB
Clarifier	\pm 500 Hz
Squelch Range	1-500 μ V
Audio Output	3 W

TRANSMITTER:

Compliance	Type Number 42417, Part 95
Power Output	4 W (AM)
	12 W P.E.P. (SSB)
Harmonic Suppression	50 dB minimum
Carrier Suppression	40 dB minimum (SSB)
Unwanted Sideband Suppression	40 dB minimum (SSB)
AM Modulation	High Level Class B
SSB Generation	Balanced Modulator/Crystal Lattice Filter

RECEIVING INSPECTION

The Model SIDETALK1000M is fully assembled and operationally checked prior to shipment from the factory. All units are individually packaged in accordance with standard practices for electronic equipment. Every precaution is taken to insure that each transceiver leaving the factory is complete and ready for installation. However, it is recommended that each unit be inspected upon receipt for in-transit damage.

Inspect the shipping container for evidence of in-transit damage (such as being dropped, crushed, or punctured) before opening the container. If damage is evident, contact the carrier and the manufacturer immediately specifying the nature and extent of the damage. Open the shipping container and remove the contents only if there is no apparent shipping damage. Check the items removed from the container to verify the contents. If a packing shortage is evident, contact your dealer immediately.

The following items are contained in the package:

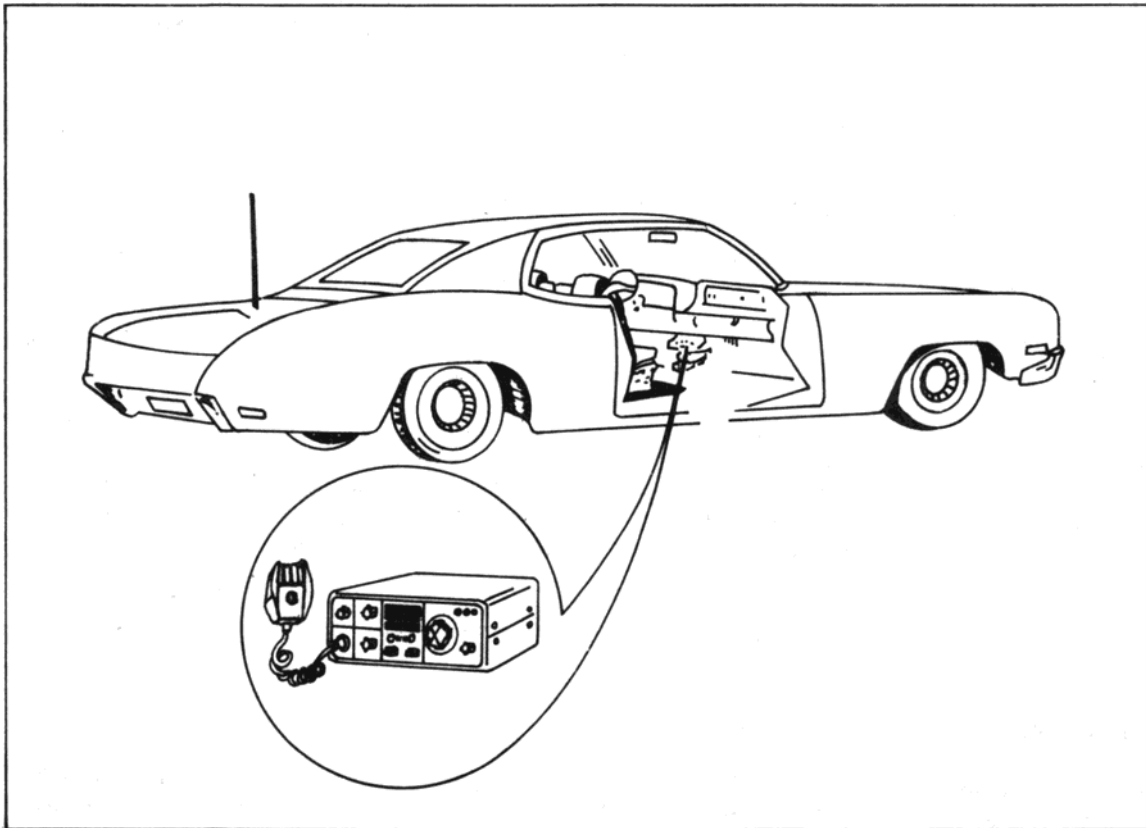
1. The transceiver unit on its mounting bracket with power cables attached.
2. Microphone.
3. Microphone hanger bracket with mounting screws.
4. Owners Manual.

MOUNTING SUGGESTIONS

The Model SIDETALK 1000M can be mounted in any position without affecting its performance. The desired method and location of mounting should be determined before attempting the installation.

When selecting the mounting position, keep the following in mind:

1. The controls must be convenient and visible.
2. The location should not interfere with the driver's or operator's normal functions.
3. The transceiver should not be mounted in the way of heater ducts, air-conditioning outlets, or direct blast air inlets.
4. The transceiver should be protected from rain and spray.



TYPICAL MOBILE INSTALLATION

INSTALLATION

To those readily familiar with transistorized CB radio equipment, there is a tendency to install and operate the equipment without reading the details in the manual instructions. To avoid disappointment and improper performance, a thorough study of this manual is recommended. In particular, the following precautionary notes should be strictly observed.

DO NOT attempt to connect the power cord to a primary power source with the power switch on. Determine system polarity before connection. The SIDETALK 1000M is wired for positive or negative ground.

DO NOT connect the antenna with the power on.

DO NOT key the transmitter without an antenna connected.

DO NOT replace the fuse with any other type (3 AG-2-1/2 ampere).

DO NOT attempt alignment of the transmitter to the antenna. Loss of modulation power and inefficient operation possibly resulting in transistor burnout will occur unless the factory prescribed tuning procedure is followed. Maximum efficiency of an installation will result when the antenna has a VSWR of less than 1.5:1. The antenna should be tuned, trimmed, or replaced, if necessary, to achieve this.

ANTENNA INSTALLATION

No other single part of the system can be as significant a factor in complete success or total failure of performance as the antenna installation. It is advisable not to experiment, but rather to use performance proven antennas. Many new "miracle" antennas appear on the market from time to time, but most of them disappear after a short period. Bumper mounts are inadvisable because of their extreme directivity. Consult your dealer for the correct type and installation.

For runs of over 20 feet, use RG-8/U antenna transmission line. RG-58/U may be used for 20 feet or less. Connect the antenna to the coaxial cable connector located on the rear panel.

The length of the cable from the antenna to the radio is, contrary to popular belief, not important. What is important is that the antenna have low VSWR. If a shortened type of antenna is used, it is mandatory that the VSWR be checked. A PACE P5403A VSWR bridge or similar instrument can be used. If the VSWR is greater than 1.5:1, the antenna must be adjusted in accordance with the manufacturer's instructions. If the antenna is a 1/4 wave nonadjustable type, the cable connections and the ground to vehicle at the antenna mount should be checked.

Do not attempt VSWR checks if the vehicle is parked closer than 35 feet from a large fence, metal building, etc.

POWER CONNECTIONS

The transceiver is designed to operate from a nominal 12 volt DC source. This unit may be installed in vehicles which have either positive or negative ground. Since all passenger vehicles and most trucks use 12 volt negative ground systems, the power line is filtered for best noise limiting under negative ground installations, with the fuse in the red (+) line.

NOTE

When installing in 12 volt positive ground systems, the red lead is still connected to the positive terminal and the black lead to the negative terminal. This means your grounded lead is fused, which will still give you the same over-current protection.

The transceiver will operate over the nominal input voltage range of 10-16 volts continuous operation. Performance varies according to voltage levels, so care should be made in insuring that a 12.5 voltage level is maintained, which is the designed voltage level of this unit for maximum proper performance.

Connect the power cord to a well regulated source, such as an ammeter terminal, ignition accessory terminal, or cigarette lighter. "Tapping off" of dome or convenience light wires is not recommended as these circuits are usually wired very lightly and some power loss would be encountered. Always install the black wire between the radio chassis and vehicle chassis or system ground to reduce noise pickup.

EXTERNAL SPEAKER CONNECTION

The EXT SPKR jack functions in the CB position and can be used to operate an external speaker for receiving purposes. Any suitable speaker of 3 to 8 ohms is satisfactory. The PACE P5514 has been especially designed to overcome vehicle and engine noise in this type of application, and is also weather-resistant. Its acoustic output is much greater than that of normal internal speakers.

NOTE

The P5514 comes equipped with a phone plug on the end. An adapter must be used for the miniature phone jack on the transceiver.

PUBLIC ADDRESS (PA) SPEAKER CONNECTION

A trumpet or horn speaker of 3 to 8 ohms impedance is desirable for this purpose. Connect the speaker to a suitable length of cable using a miniature "phone" plug at the radio end. The phone plug is inserted in the PA jack.

BASE STATION INSTALLATION

Although the PACE SIDETALK 1000M Transceiver is designed for mobile operation, it will work equally well as a base station when connected to a suitable base station power supply.

When the PACE SIDETALK is used as a base station, any Citizens Band beam, dipole, ground plane or vertical antenna may be used. A ground plane type antenna will provide good coverage, and since it is essentially non-directional, it is ideal in base station to mobile operation. From base station to base station or point-to-point operation a directional beam will give greater distance even under adverse conditions. The range of the transceiver also depends on the height of the antenna so whenever possible, select the highest location within the limits of your communication authorities. Generally, a maximum of 26 feet of coax lead-in cable should be used due to line losses, however, a desirable antenna location may justify the loss developed by longer cable lengths.

OPERATING REQUIREMENTS

The PACE SIDETALK 1000M SSB/AM Transceiver is designed to comply with necessary requirements to operate in the Class D Citizens Radio Service in the 27 MHz band. The user is required to be cognizant of, and comply with, Part 95 of the FCC Rules and Regulations which defines operation of this service.

Anyone may operate a duly licensed transmitter, but the licensee is responsible for violations or infractions of the regulations. PACE Division, Pathcom Inc., cannot be held responsible for improper technical adjustments where any unauthorized person has performed any adjustment or used any other than PACE authorized crystals, components, etc. Transmitter adjustments, repairs, and replacement of critical components (crystals, transistors, etc.) which could cause a violation of the FCC Rules and Regulations may only be made by, or under direct supervision of, a person holding a valid commercial first- or second-class Radio Operator License.

LICENSING REGULATIONS

A valid station license and call letters are necessary before operation is permissible. The station license is obtained by submitting a properly and fully completed Station License Application. After receipt of the license, the user must attach a Form 452-C Transmitter Identification Card to the transmitter.

USE OF CHANNELS

In accordance with FCC regulations, Channel 9 has been established for use during an emergency situation. Volunteer teams of monitors are standing by to provide assistance. Other general communications should be conducted on Channels 10 through 15 and Channel 23 when speaking between units of different license. The transceiver also contains a blank selector position between Channels 22 and 23. The position is NOT for Citizens Band use and is internally defeated.