

MSA **SAFECONFIG™** **RF Configurator**

Instruction Manual

⚠ WARNING

THIS MANUAL MUST BE CAREFULLY READ BY ALL INDIVIDUALS WHO HAVE OR WILL HAVE THE RESPONSIBILITY FOR USING OR SERVICING THE PRODUCT. Like any piece of complex equipment, this instrument will perform as designed only if it is used and serviced in accordance with the manufacturer's instructions. OTHERWISE, IT COULD FAIL TO PERFORM AS DESIGNED AND PERSONS WHO RELY ON THIS PRODUCT FOR THEIR SAFETY COULD SUSTAIN SEVERE PERSONAL INJURY OR DEATH.

The warranties made by Mine Safety Appliances Company with respect to the product are voided if the product is not used and serviced in accordance with the instructions in this manual. Please protect yourself and others by following them. We encourage our customers to write or call regarding this equipment prior to use or for any additional information relative to use or repairs.

In North America, to contact your nearest stocking location, dial toll-free 1-800-MSA-INST
To contact MSA International, dial 1-412-967-3354

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Manufactured by

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General Warnings and Cautions

⚠ WARNING

1. The SAFECONFIG RF Configurator described in this manual must be installed, operated and maintained in strict accordance with its labels, cautions, warnings, instructions, and within the limitations stated.
2. The SAFECONFIG RF Configurator is designed to be connected to and operate with SAFESITE Multi-Threat Detection System components. The SAFECONFIG RF Configurator is incompatible and will not work with other types of radio networks.
3. For proper operation, the SAFECONFIG RF Configurator must be installed and configured properly.
4. As with all radio-equipped instrumentation of these types, certain radio frequency emission source and exposure to radio interference may cause degradation in radio communication reliability. Consequently, radio diagnostics must be included as part of the routine inspection of the system.

Failure to follow the above can result in serious personal injury or death.

⚠ CAUTION

1. Protect the SAFECOM from extreme vibration. Do not mount the instrument in direct sunlight as this may cause overheating of its components.

Failure to follow the above can result in serious personal injury or death.

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Chapter 1, General Information

General Description

The SAFECONFIG RF Configurator:

- is designed to set up and remove repeaters and repeated SAFEMTX units in a SAFESITE Multi-Threat Detection system
- is designed to move SAFEMTX units from one system to another
- is able to detect errors in radio parameters.

Purpose

This Instruction Manual:

- is intended for users with an understanding of the Microsoft Windows operating system
- describes how to deploy repeater and repeated units and to operate the SAFECONFIG RF Configurator software
- describes how to move SAFEMTX Detectors from one system to another
- is to be used in conjunction with the instruction manual for the SAFEMTX Multi-Threat Detector (P/N 10067906) and SAFESITE Multi-Threat Detection System/SAFECON Command Center (P/N 100507028).

SAFEMTX Multi-Threat Detector Unit

The SAFEMTX Multi-Threat Detector:

- is a transportable device capable of detecting selected hazardous threats
- communicates wirelessly to the SAFECON Command Center, which connects to the SAFECONFIG RF Configurator unit where the data is collected.

NOTE: Refer to SAFEMTX Multi-Threat Detector Instruction Manual for operation guidelines.

SAFECONFIG RF Configurator Unit

- The SAFECONFIG RF Configurator is capable of communicating to up to 16 SAFEMTX units spread around the perimeter area.
- The SAFECONFIG RF Configurator software is capable of monitoring up to two SAFECOM systems, named by default as Alpha and Bravo systems.



Figure 1-1.
SAFECONFIG RF Configurator System

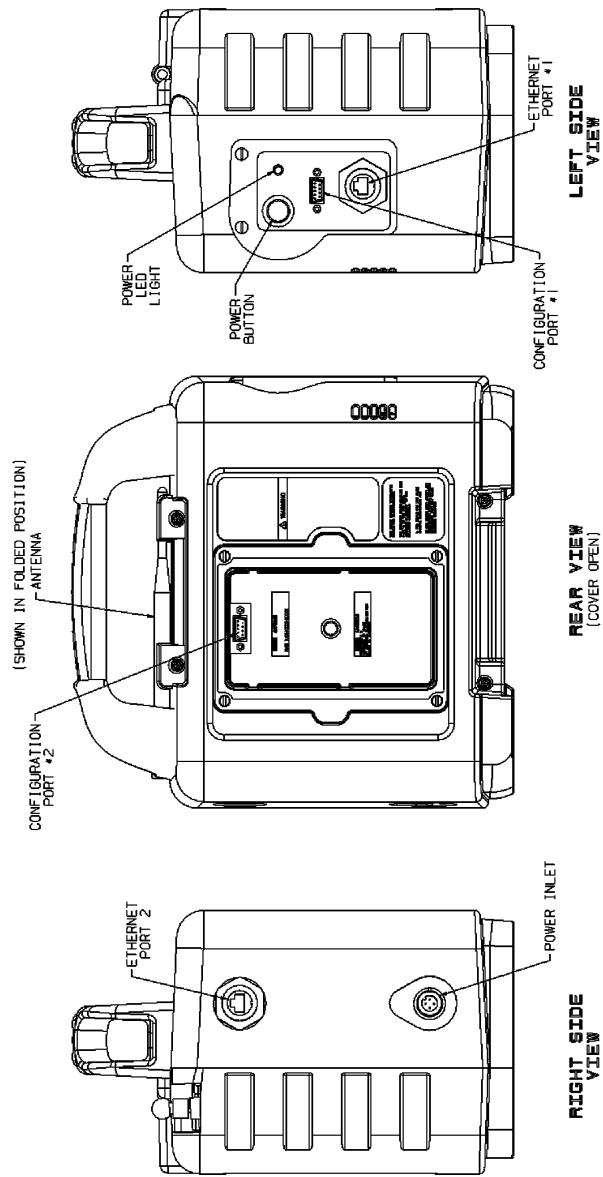


Figure 1-2.
SAFECOM Detailed Views

SAFECOM Left Side View

POWER BUTTON

- Press the POWER button to turn the SAFECOM unit ON or OFF.

POWER LED Light

- The green POWER LED light turns ON when you turn ON the SAFECOM unit.

Configuration Port 1

- This is a Serial communication port to access the radio transceiver module in order to configure the radio or to change its parameters.
- The port settings are 19200 baud, 8 data bits, no parity, 1 stop bit, hardware flow control.
- This is for connection of the SAFECONFIG RF Configurator.

Ethernet Port 1

- This is one of the two available Ethernet ports, connected to the Ethernet hub inside.

Antenna

- Make sure that the antenna is folded up and pointing upward when operating the system.

SAFECOM Right Side View

Ethernet Port 2

- This is one of the two available Ethernet ports, connected to the Ethernet hub inside.

Power Inlet

- This connects to the SAFECOM power supply.
- The SAFECOM power supply converts AC power (or 12 VDC power, when equipped with a cigarette lighter adapter plug) to the DC power required by the SAFECOM unit.
- When connecting the SAFECOM power supply:
 - Notice that the connector is keyed and can only be inserted one way.

- Plug in the four-pin connector of the SAFECOM power supply.
- Twist the connector cap several times to tighten the connection and prevent water or moisture from entering the connector.

SAFECOM Rear View (Cover Opened)

Configuration Port 2

- This is a Serial communication port to configure the SAFECOM unit.
- The port settings are 57600 baud, 8 data bits, no parity, 1 stop bit, XON/XOFF flow control.

Terminology and Definitions

Master Device:

- The SAFECOM Command Center is a master device in the SAFECONFIG RF Configurator system.

Slave Device:

- These devices only communicate to their designated SAFECOM unit, the master device in the system.

Slave Repeater:

- These devices communicate to their master and to repeated slaves.

Repeated Slave:

- These devices communicate to Slave/Repeater devices.

Network ID and Frequency Numbers:

- The SAFEMTX units designated to communicate to their master device (a SAFECOM unit) are assigned with matching Network ID and Frequency Number prior to shipment.
- All system devices must have the same Network ID and Frequency Number for proper system operation.

SAFEMTX Address Setting:

- Each SAFEMTX Multi-Threat Detector unit in a system must have

a unique address number, ranging from 1 to 16.

- The address is configured in the factory and can be displayed on the SAFEMTX screen.
- Refer to the SAFEMTX Multi-Threat Detector Instruction Manual for more information on its address configuration.

Radio Information

The SAFECOM and SAFEMTX units contain transmitter modules with FCC ID: KNY-6231812519. The device complies with Part 15 of the FCC rules.

FCC Notification

This radio complies with part 15 of the FCC rules. Operation is subject to the following two conditions: 1) This device may not cause harmful interference and 2) this device must accept any interference received, including interference that may cause undesired operation.

⚠ CAUTION

The radio has a maximum transmitted output power of 955 mW. It is recommended that the transmit antenna be kept at least 23 cm away from nearby persons to satisfy FCC RF exposure requirements.

Chapter 2, Getting Started

This chapter provides information on:

- hardware requirements
- installation of the SAFECONFIG RF Configurator software
- using the software.

Installation Kit

The SAFECONFIG RF Configurator Installation Kit includes SAFECONFIG RF Configurator Install CD (P/N 10073312).

Hardware Requirements

The SAFECONFIG RF Configurator software requires a computer that meets the following requirements:

- Microsoft Windows XP Professional with Service Pack 2 or Windows 2000 with Service Pack 4
- Pentium 900 MHz or faster
- 256 MB RAM minimum
- CD-ROM drive
- Display resolution of 1024 x 768, or higher, with 16-bit color
- Mouse or compatible pointing device
- Serial or USB 2.0 port.

Setting up Connections for Configuration to SAFECOM

There are two modes of connection:

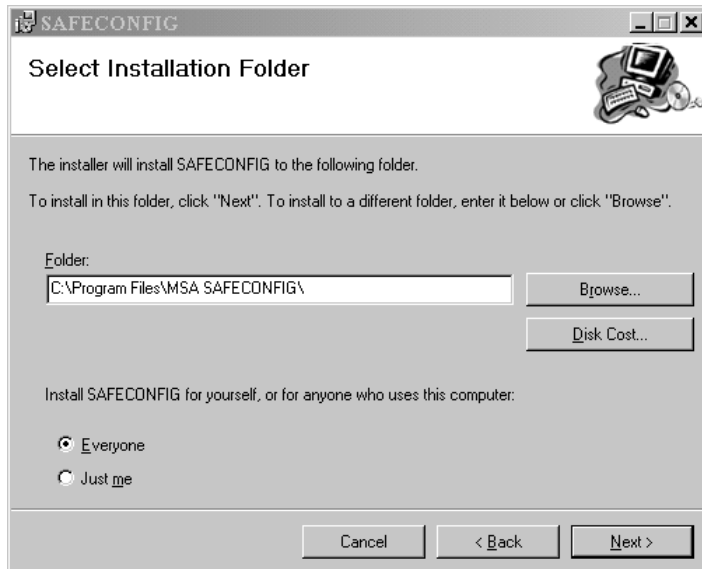
- **USB:**
 1. Connect the RS232 to USB adapter into a USB port on the computer.
 2. Connect the RS232 cable to the USB port and the diagnostics port on the command center.
- **Direct:**
 - Connect the RS232 cable from the computer to the diagnostics port on the command center.

Installing the Software

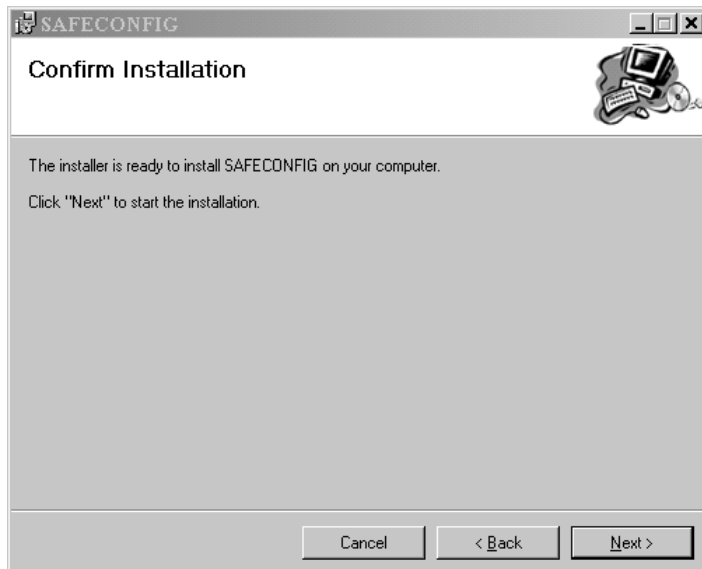
1. Place CD into CD-ROM drive.



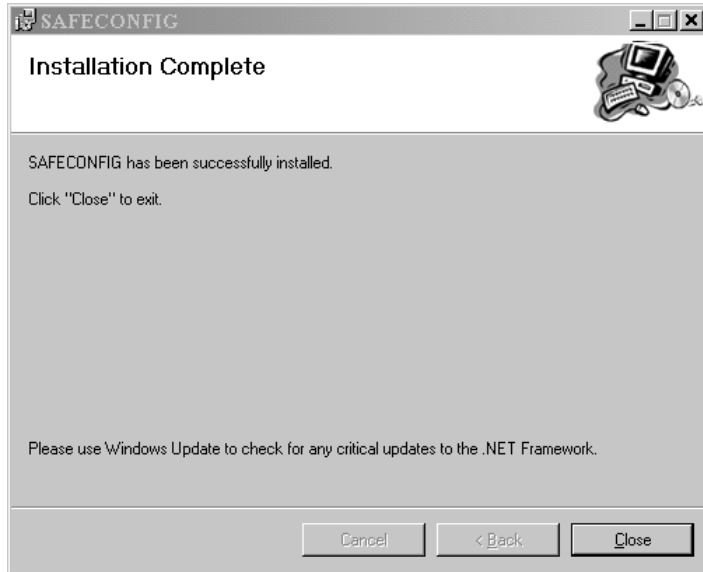
2. Press NEXT.



3. Press NEXT.



4. Press NEXT.



Chapter 3, System Operation

Choosing Locations

The location of the SAFEMTX detectors:

- Must first be surveyed to ensure:
 - Acceptable radio link quality
 - A reliable communication to the SAFECOM
- Must be carefully selected to meet the site's requirements for gas monitoring
- Must have a 110-VAC power source connected to SAFECONFIG RF Configurator power supply when an extended period of operation is required.

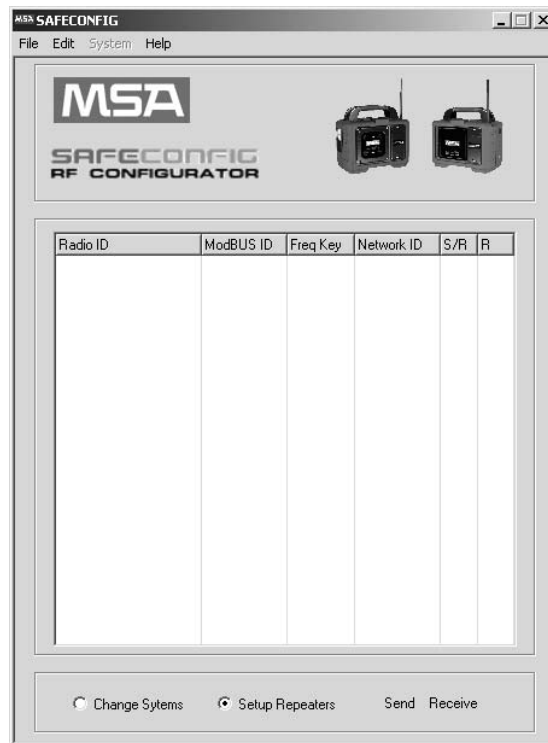
⚠ WARNING

The SAFEMTX detector must be powered from battery only when mounted in a hazardous (Classified) location. Otherwise, an explosion hazard exists, resulting in possible explosion, injury or death.

NOTE: Provide a back-up power source, when necessary.

Understanding the SAFECONFIG RF Configurator Graphical User Interface

The main display of the SAFECONFIG RF Configurator software shows the following screen when the system is started:



Use the following procedure to operate the SAFECONFIG RF Configurator software:

1. Turn ON all of the MTX units in the system.
2. Turn ON the Command Center.
3. Select the MSA SAFECONFIG icon from the desktop or Program menu.
4. Select EDIT from the menu bar.
5. Select CHANGE COMM PORT from the EDIT menu to choose the Comm Port that connects to the SAFECOM.
6. The SAFECONFIG RF Configurator software will proceed to detect the instruments in the system menu. Wait until the number of Radio IDs matches the number of instruments in the system plus the Command Center. See FIGURE 3-1.

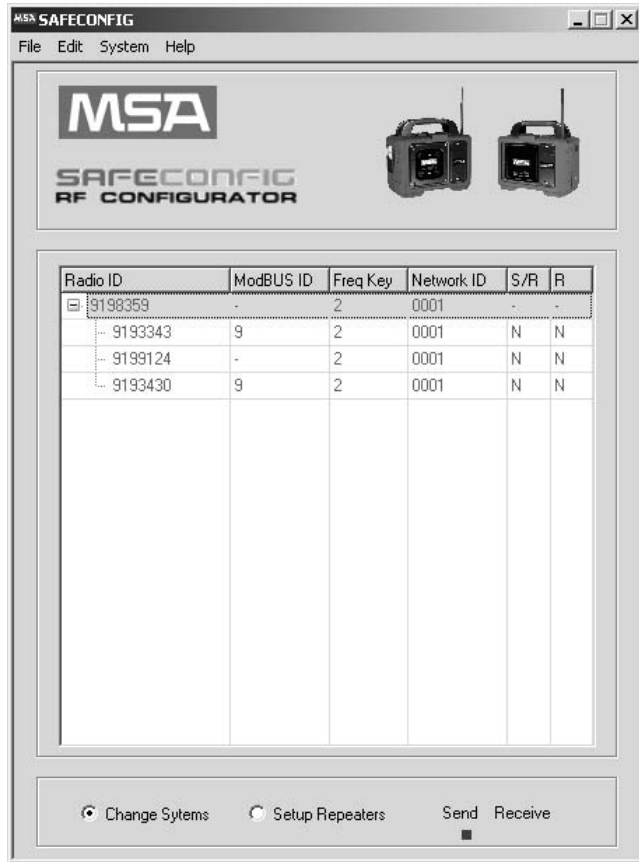


Figure 3-1.
Wait Until the Number of Radio IDs Matches the Number of Instruments in the System Plus the Command Center

- FIGURE 3-1 shows the results of a 3 MTX system (three MTX units and one command center).

NOTE:

If communication is good:	text is green
If communication is poor:	text is red
If a radio parameter is incorrect:	text is blue
If MTX is not found	NO TEXT

7. If the radio IDs of the system are known but do not appear automatically, you can enter them manually by using the SYSTEM ADD RADIO selection.

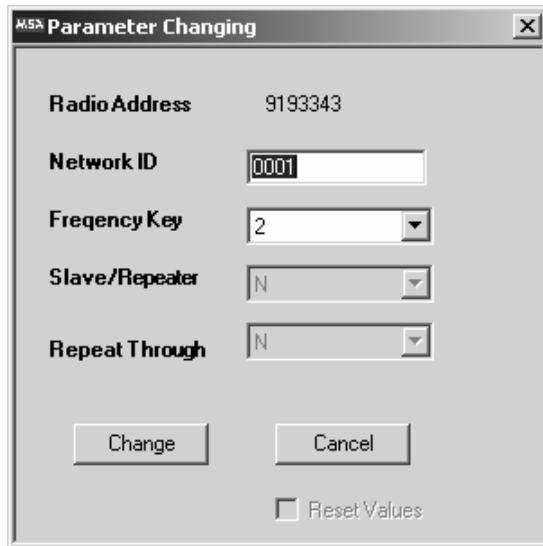
NOTE: If a radio was entered incorrectly, either use the system CLEAR ALL option or use the mouse to select the incorrect radio and press the DELETE key.

8. After all the radios are detected, the following two options are available:
 - a. Change Systems:
 - This option transfers a unit from one system to another.
 - Appears at bottom left of main screen.
 - b. Setup Repeaters:
 - This option allows the setup of up to two repeaters in a system.
 - Appears at bottom center of main screen.

Change System

Use the following procedure to move an MTX unit from one SAFECOM to another:

1. Select the CHANGE SYSTEMS if it is not already selected.
2. Determine the NETWORK ID and FREQ KEY of the system where the MTX unit will be transferred.
 - This is located on the Command center of the destination system (behind the rear access cover).
3. Make sure the MTX unit to be transferred is a unit that is in direct communication with the Master.
 - S/R and R values for the MTX unit must be equal to "N" to transfer an MTX unit.
4. Double click the mouse pointer on the RADIO ID of the MTX unit to transfer. The following screen displays:

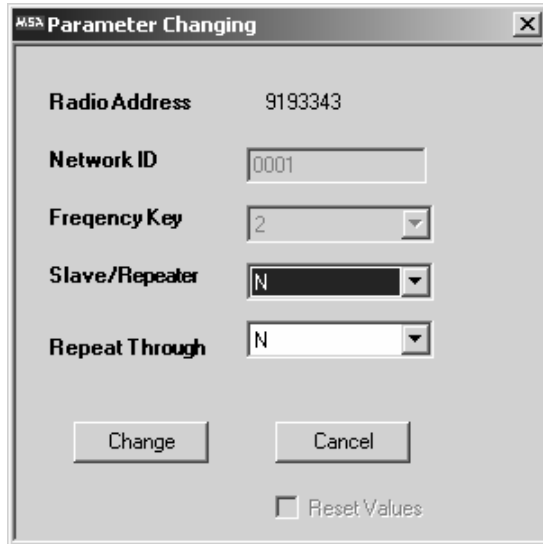


5. Enter the new NETWORK ID and FREQ KEY to match the new SAFECOM.
 - Record these values in the table provided in the back of this manual.
6. Press the CHANGE button to change or the CANCEL button to cancel.
7. Warning will appear. Press the YES button to continue or the NO button to abort.
8. Wait until a CHANGE SUCCESS or RADIO DATA TRANSFER FAILED message displays.
9. Continue with the next unit to be transferred (Step 4).

Setup Repeaters

Use the following procedure to set up or remove repeaters from the system.

1. Select the SETUP REPEATERS if it is not already selected.
2. Determine the RADIO ID of the unit to be changed into a repeater.
3. Double click the mouse pointer on the RADIO ID of the MTX unit to be changed to or from a repeated state. The following screen displays:



4. If "Reset Values" is highlighted:
 - a. Select RESET VALUES and do not make any further changes.
 - b. Press CHANGE to resync data if "Reset Values" is not active.
5. Select the following conditions for the selected unit:

SLAVE/REPEATER	"-"	Invalid unit
	"N"	Slave unit
	"1"	Repeater #1
	"2"	Repeater #2
REPEAT THROUGH	"-"	Invalid unit
	"N"	Communicates directly to the SAFECOM unit
	"1"	Communicates through Repeater #1
	"2"	Communicates through Repeater #2

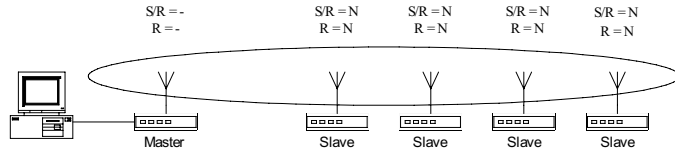
NOTES: There can only be one Repeater #1 and one Repeater #2.
Repeaters must be set first; then Slaves can then be set.
When removing, Slaves must first be returned to direct communication with the SAFECOM unit; then, the Repeater can be changed.

6. Press the CHANGE button to make the change or the CANCEL button to cancel.
7. Wait until a CHANGE SUCCESS or RADIO DATA TRANSFER FAILED message displays.

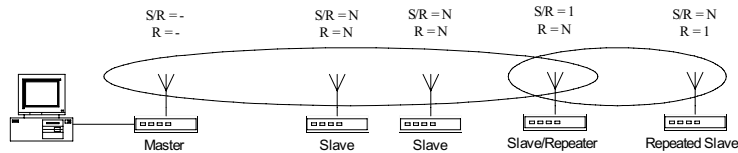
9. Continue with the next unit (Step 3).

NOTE: The main screen creates a tree view that indicates what units are communicating through other devices.

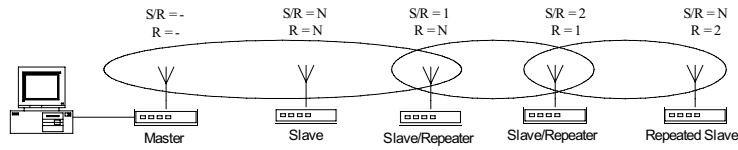
Selectable Configurations



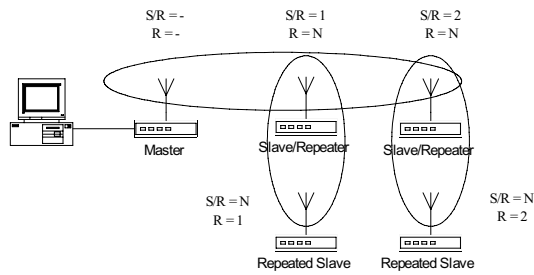
Factory Configured System



Single Repeater Configured System



Dual Series Repeater Configured System



Dual Parallel Repeater Configured System

