MASTR II REPEATER STATION

SOUTHERN MAINE COMMUNICATIONS NARROWBAND UPGRADE

INSTALLATION AND USERS MANUAL

DECEMBER 2012

INTRODUCTION

General Electric MASTR II Repeater Stations have proven exceptionally reliable and capable of superior performance when properly maintained. In order to extend the service life of existing Commercial and Public Safety MASTR II infrastructure, Southern Maine Communications Service has developed an Upgrade Path which allows existing station equipment to continue in service after January of 2013 by complying with Narrowband (12.5 kHz) channel parameters and being recertified as type accepted.

DESCRIPTION

Stations selected for upgrade to Narrowband by Southern Maine Communications Service are Continuous Duty Repeater Stations in either the VHF 150.8 – 162.0125 MHz or UHF 450-470 MHz frequency ranges with adjustable RF output power of 22 to 110 watts in VHF or 30 to 100 watts in UHF.

SAFETY CONSIDERATIONS

Stations are to be installed by experienced technicians familiar with Land Mobile radio equipment, OSHA safety procedures regarding exposure to Electromagnetic Energy (EME) and FCC safety procedures regarding exposure to Radio Frequency Energy (RF).

INSTALLATION

Stations are to be installed indoors in suitable permanent locations with permanent structure-mounted antenna equipment and appropriate antenna filtering equipment and cables engineered to meet the licensing and operational needs of the site, including but not limited to: duplexers, tuned cavity filters, isolators, and suitable coaxial cables and connectors.

WARNING STATEMENT

The SMC 125MIIV has been tested and complies with the Federal Communications Commission (FCC) RF exposure limits for Occupational Use/Controlled Exposure Environment. In addition, it complies with the following Standards and Guidelines:

☐ 47 C.F.R 2.1091 and 2.1093.

☐ KDB Guidance Publication 447498.

☐ The antennas for this device are designed to be mounted on permanent outdoor structures which usually provide a separation distance greater than 263 cm (104 inches) for a typical installation consisting a 3 dBi antenna and a 100% duty cycle as stated in the RF exposure report. RF exposure is usually also addressed at the time of licensing.

☐ This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control the exposure limits of passengers and bystanders by maintaining the minimum separation distance shown below.

☐ Failure to observe these restrictions will result in exceeding the FCC RF exposure limits.

☐
• Unsafe Radiation Distance

• SMC 125MIIV

8.64 Feet (2.64m)

MOUNTING

Stations may be 19" Rack Mounted or Cabinet Mounted as indicated by the parameters of each application. Station should be appropriately grounded to the rack or cabinet.

POWER SUPPLY

Stations are powered by 13.8 volts DC from an appropriate power supply which may be cabinet or rack mounted as determined by application. 13.8 volts DC is provided to the Station Shelf via the 9 pin .062 Molex plug P9 (pin 1 Red +) (pin 4 Black -) and should be fused at 5A, and to the RF Power Amplifier via the #8 flying leads (Red +) (Black -) fused at 30A.
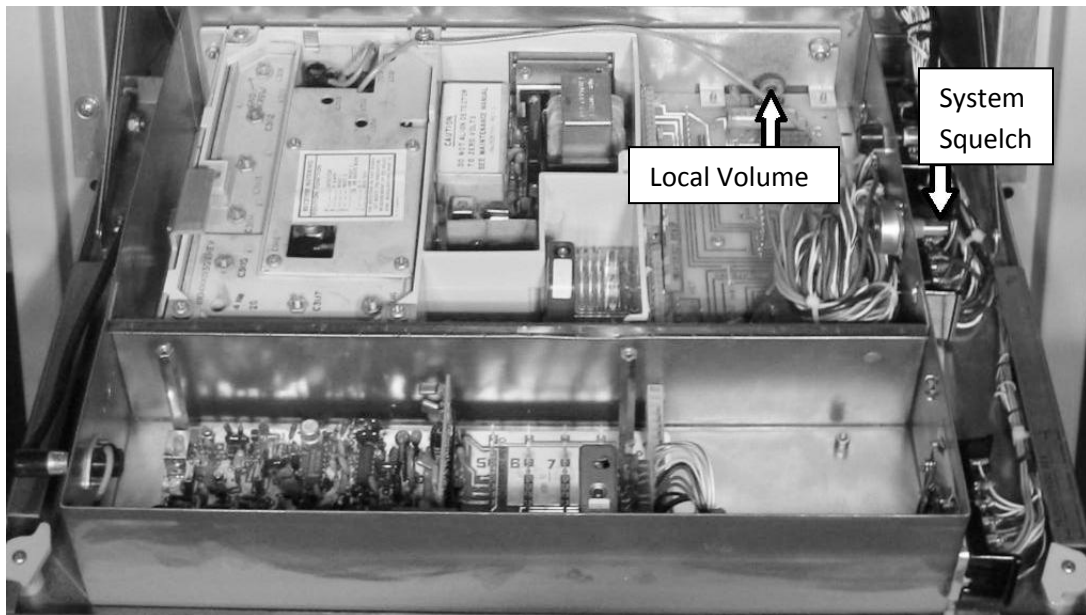
REPEATER STATION CONTROL

Repeater control functions are managed by appropriate equipment as indicated by the parameters of each application.

Single user systems may be set up using original GE MASTR II Channel Guard Decode boards (19D432500G1) (installed on System Board A901-P908 & P909) and encode boards (19C331044G1) (installed in exciter shelf) with Audio Board (19A129924G2) (installed in J1206) and Repeater Control Board (PL19D417198G2) (installed in J1207) of the Station Control Shelf.

Multiple user systems may be set up using after-market repeater controllers such as provided by Zetron and Communications Specialists. These products should be installed into the MASTR II Station Control Shelf as specified by the controller manufacturer.

STATION CONTROLS

POWER SUPPLY CONNECTIONS