

Programming

It is important to be aware that there may be differences between a SPECTRA™ or ASTRO™ radio programmed for a ground support vehicle compared with one programmed for the Tac/Com II™ control. The following is provided as guidance on differences that may be encountered due to the finite functions of the Tac/Com II™ control head. All programming of the SPECTRA™ and ASTRO™ radios are done with a PC using Motorola supplied software.

(NB: Once programmed they can not be altered in any way from the Tac/Com II™ control head.)

Modes & Zones

Instead of channels, the radios are programmed with “Modes” which include frequencies (simplex/duplex), encryption, and sub-audible tones among other features. When used in a Trunking network, groups of Modes are then assigned to specific users which are designated as “Talk Groups” or “Fleets”. This allows multiple groups to utilize a single Trunking network without interfering with each other.

Each radio can be programmed to operate within a single Talk Group, or have access to several. In larger, more complex networks, Talk Groups are further grouped into “Zones” to create a multi-level system. An operator first selects a Zone and then the appropriate Mode.

Labels

The Tac/Com II™ SPECTRA™ interface card will operate either version, the standard SPECTRA™ or the SPECTRA 9000™. Each version is capable of storing, on an EEPROM, an alphanumeric label for each Mode, with one significant difference.

The standard SPECTRA™ series stores the label in the radio and is displayed on the Tac/Com II™ control head. The 9000 series stores the label information in its own remote control head. Since the SPECTRA™ 9000 control head is not used with the Tac/Com II™ control head, this label is not available. Therefore, the label must be stored in the Tac/Com II™ control head. This means that even though the radio is capable of storing 250 Modes, only 128 labels can be stored in the Tac/Com II™ control head, limiting the total number of available Modes with labels to 128. If more Modes are required, the labels can be turned off and the Tac/Com II™ control will then display “Mode 1, Mode 2”, etc., up to “Mode 250”.

(NB: Channel information stored in the SPECTRA™ radio cannot be edited from the Tac/Com II™ control head.)

The ASTRO™ version stores all label information within the radio regardless of the type. The Tac/Com II™ control head will read these labels and display them.

(NB: Channel information stored in the ASTRO™ radio cannot be edited from the Tac/Com II™ control head.)

Changing Modes

Use the CHAN ± toggle switch to scroll forward or backward through the list of Modes programmed into the radio. The Tac/Com control head will then display the active Mode label.

Changing Zones

Use the optional ZONE ± toggle switch (D1 and L1 cards only) to scroll forward or backward through the list of Zones programmed into the radio.

(NB: See “Labels” section for important information about Mode labels.)

HOME Mode

The “HOME” Mode is designated as a quick access channel. To access the pre-programmed HOME Mode during normal operation, press the SCAN/NORM/HOME toggle switch to the momentary HOME position and release.

Scanning

The SPECTRA™ radios are restricted to a single scan mode when used with the Tac/Com II™ control head. Access to additional scan modes is not available. The radio needs to be programmed prior to installation in the aircraft. Once installed, the Tac/Com control cannot modify this list.

To turn Scanning on, move the SCAN/NORM/HOME switch to the SCAN position. The radio begins scanning its pre-programmed list of Modes for activity. When a scanned Mode becomes active, the display indicates the Mode label and the RX indicator illuminates.

To turn scanning off, move the SCAN/NORM/HOME switch to the NORM position.

Encryption

The Tac/Com II™ control head is not capable of selecting encryption on or off within a Mode. Encryption must be programmed as a permanent function of a Mode. If a specific Mode needs to be able to have encryption selectable on or off, then the Mode will need to be programmed twice; once with encryption, once without.

Private Call

This feature is not available on the Tac/Com II™ control head.

Paging

Paging is a function that allows the dispatcher or mobile user to selectively call another specific user. The pilot would receive an audible tone, see the display flash and then hear an audible message. Paging is acknowledged by the pilot keying the microphone.

Emergency ID

This function allows the radio to be put into an emergency alert mode which tells dispatch help is needed. This function is not available with the Tac/Com II™ control head.

Phone

This allows direct access into standard telephone land lines and is initiated with the "Phone" button on the Motorola control. The "Phone" button is not available on the Tac/Com II™ control head.

Monitoring Conventional Mode Activity

To monitor channel activity on conventional Modes, press the SQuelch button. If there is activity on the Mode, the RX LED on the Tac/Com II™ control head will illuminate and the raw receive signal will be passed to the audio system. If it is determined that the squelch sensitivity needs to be adjusted, the

radio must be removed and the squelch sensitivity adjusted through software programming.

Power Output

Most Spectra radios are set at 35 watts transmit power, which is far greater than required for an aircraft environment. This setting should be reduced through software to a maximum of 10 watts, and if necessary, further reduced by the addition of an in-line attenuator.

Configuration

The "D" or "L" interface card is required for networks without Zones. Networks with Zones require the "D1" or "L1" interface card, which includes an additional switch (\pm) on the Tac/Com II™ control head.

The location of the interface within a control is designated by the position within the part number (i.e. TH350-2NNL). Attention must be given when configuring a Tac/Com II™ control head with an "L1" or "D1" interface.

When an interface with the "Zone" function switch is specified, there may be limitations in which position it may be placed. Typically, it will reside in either the first or last position except for the TH450 series, where it will only fit in the first position (i.e. TH450-2L1NNN). Please check with NAT.

Upgrading

When upgrading an existing Tac/Com II™ control head, there is no standard pricing due to the variances between each control. When arranging an upgrade, please provide NAT with the full part number and serial number of the unit. We will then be pleased to prepare a quote.

TH350-2NNL1 SPECTRA™ Interface with Zone Function





Approvals:

FCC Parts 22, 90 Type Acceptance.
DOC RSS-119/RSP-100 Type Approval.
DOC Technical Acceptability Certification for Aircraft Use.
TSO No applicable category.
UK/CAA and Home Office Approval #MIS00002.

Inputs:

Power 28 VDC
Current 250 series, excl. panel ltg.: 0.25 A
350,450 series excl. panel ltg.: 0.35 A

Mechanical:

Dimensions TH250/260 Two radio control (Master/Slave)
3.0" H x 5.75" W x 6.3" D

TH350/360 Three radio control (Master/Slave)
3.0" H x 5.75" W x 6.3" D

TH450/460 Four radio control (Master/Slave)
4.88" H x 5.75" W x 6.3" D

TH450A Slimline four radio control.
3.75" H x 5.75" W x 6.3" D

TH450B Slimline four radio control.
(L1 & D1 I/F not avail.)
3.38" H x 5.75" W x 6.3" D

Panel lights: 0.23 A

Serial Link RS232C
(Serial interface for Master/Slave, Serial Loading, or Data Entry)

Environmental:

Temperature:
Operational -20 C to + 55 C
Survival -55 C to + 85 C

Shock & Vibr. DO160B

Humidity 90%

Altitude 15,000 ft (unpress.)

Weight 2.5 - 3.2 lb., depending on type.

Mounting:

Dzus

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