ICS
REPEATER
CONTROLLERS

LINKER IIs USER MANUAL

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Linker IIs User Manual Version 1.45

General Description of the ICS Linker IIs Repeater Controller

Here at ICS we strive to make products that have new, innovative, easy to use features and excellent quality at a reasonable cost. We believe the Linker IIs is such a product. The Linker IIs has such innovative features such as remote base control, a full featured control receiver input (has priority), programming with actual values (i.e. Volts, Hertz, Seconds, wpm) and a very easy to use 3 level command access feature which has over 130 functions available. When designing the Linker IIs we worked hard to provide a product that is easy to use, durable and of excellent quality at a reasonable cost.

The Linker IIs has many unique features. One such feature is the control receiver input. This input is unique in that it provides a level of control normally only provided on more expensive controllers. It is optional to use the Control receiver input as the repeater receiver input (port 1) and even the link / remote base receiver input (port 2) will provide the access to control the repeater. The control receiver gives you control over the repeater even if the repeater's receiver is inaccessible. With the addition of a jumper, you can pass the control receiver audio to the repeaters transmitter audio output (TX1) and the audio level can be adjusted with the control receiver input audio pot. The control receiver's COS input can be set to operate with either active high or active low signals. The polarity can be easily set with a simple jumper change. When the control receiver COS becomes active all the port 1 and Port 2 DTMF signals are ignored and the Linker IIs only listens to the control receiver for DTMF codes. The repeater (Port 1) input has priority over the remote base / link receiver (Port 2).

Another such unique feature is the remote base control system, which will allow you to use most radios that have memories and that have a mike input for "UP memory". You simply program in the frequencies, the offsets and the CTCSS tones (encode and decode) into your radio's memory and tell the Linker IIa how many memories you have on your radio to increment through. The Linker IIa remembers which memory the remote base is set too even if the power is turned off. All the user needs to do is select which memory he wants with a DTMF command. When the remote base radio is disabled or turned off the Linker IIa will return the radio to the home memory. When desired you may select from one of several link / remote base commands to control your link / remote base radio. These commands are easy to use and give you an easy to use multi frequency remote base at a reasonable cost.

The Linker IIs CTCSS control feature gives a wide range of control over CTCSS decode and encode signals. The Linker IIa gives you DTMF on and off control over CTCSS decode, encode and the encode hang timer. Also the CTCSS encode hang timer is programmable. The encode hang timer starts from the time the repeater receiver becomes non-active. This will allow a reverse burst or courtesy tone to be heard after the receiver becomes inactive.

The ever growing set of easy to use features can be accessed by a secure Setup mode (program mode), a Control operator mode and a User mode. If desired the Setup mode (program mode) can be accessed only by a hardware jumper from the factory. A DTMF sequence (up to 10 digits) can be programmed to give access to the Setup mode if desired. This provides the highest level of security. In the Setup mode (program mode) all the commands are accessible by DTMF using their 2 or 3 digit function codes. This makes the controller programming easy. The User and Control operator levels use from 1 to 5 digits to access these same functions if setup to do so. From 0 to 25 DTMF codes can be setup for the User and Control operator levels allowing easy programming, total flexibility and an extremely secure system for controlling the Linker IIa and its functions.

It can be difficult at times to work on a repeater without knowing what the incoming and outgoing signals are doing. Connecting voltmeters, scopes and other monitoring equipment can sometimes be difficult. We have provided many LEDs to help make the setup of the repeater easier. The Linker IIs has 9 of them. Most of the input and output signals are indicated. The controller will also indicate when it recognizes a DTMF code. When not being used the LEDs can be disabled with a jumper. We have found these indicators to be a big help when working with repeaters.

The control inputs and outputs of the Linker IIa repeater controller are very simple to use. There are 3 COS inputs, 2 CTCSS inputs and 4 open collector type outputs. The inputs include a Control receiver COS input, the repeater input (port 1) with COS and CTCSS inputs, and the remote base / link receiver (port 2) also has a COS and a CTCSS input. All of these COS and CTCSS inputs can be set to either active high or active low by choosing the correct jumper location on the corresponding jumper block. Both ports 1 and 2 have COS and CTCSS inputs. You may select between the COS and CTCSS or select both for 'AND' or 'OR' control.   This allows for the switching back and forth between carrier squelch and CTCSS inputs for the 'receiver active' signal.

The auxiliary outputs of the Linker IIs are multi-featured and easy to use.   The 3 auxiliary outputs can be used for several different functions. All of the 3 auxiliary outputs can send a short pulse or either be locked on or off. The Auxiliary 1 output has a programmable timer that can be enabled or disabled. It can also control a timed transmitter fan. The Auxiliary 2 output optionally provides the PTT for the link / remote base transmitter (port 2). The Auxiliary 3 output can provide control of the remote base memory selection. The 4th open collector output is for the repeater / port 1 push to talk. All of the inputs are buffered and the outputs are protected to greatly reduce any chance of damage.

SPECIAL FEATURES OF THE ICS LINKER IIs

CTCSS Encode / Decode Control

The Linker IIs gives you the option of having receiver 1 or receiver 2 (or both) enable transmitter 1 encode. The Linker IIa has commands to enable and disable these functions. The commands are Enable RX 1 CTCSS encode activate (function #110), Disable RX 1 CTCSS encode activate (function #111), Enable RX 1 CTCSS encode activate (function #112), Disable RX 2 CTCSS encode activate (function #113).

Port 2 modes

Some other features special that the Linker IIa has are xpeat mode and full/half duplex modes on the 2nd port (Link / Remote base port). The xpeat is designed to activate transmitter 1 when receiver 2 becomes active and transmitter 2 when receiver 1 is active. Receiver 1 will have priority.

The full/half duplex mode on the ICS Linker IIs allows full or half duplex operation on port 2. In Full duplex operation ,both receivers and both transmitters can be on at the same time and the audio from both receivers will be mixed together.

The Linker IIa has a function to report what the remote base radio is set to (function #129). The controller will report in Morse code what memory the remote base is set to.

Beacon Mode

The Linker IIs has a Beacon mode. When the Linker IIa is in Beacon mode it will send the ID when the IDer pending ID timer times out (see function #68). The polite ID timer will still operate holding off the ID until the polite ID timer times out or until the receiver becomes non-active.

Programmable Tones

Another feature the Linker IIs has is programmable tones. There are currently 5 programmable tones and 40 different tones available to put in the each of the programmable tones. The 5 programmable tones are as follows;

1. Port 1 programmable tone
2. Port 2 programmable tone
3. Setup mode programmable tone
4. Change memory programmable tone
5. Port 1 programmable tone when port 2 is active

See Function #127 for further details. The available programmable tones and the available tones are at the end of the manual, you can find the page number in the table of contents.

Antikerchunker Filter

The Linker IIs's antikerchunker filter will help eliminate the kerchunking of your repeater. The operation is simple, when the antikerchunker filter is enabled (see the Enable antikerchunker filter (command #118) and the Disable antikerchunker filter (command #119)) and Linker IIa sees that the repeater receiver is active the Linker IIs will wait a programmed period of time (see the Set antikerchunker filter delay (command #120)) before it recognizes the repeater receiver as active. If the repeater receiver stays active for the preprogrammed period of time the Linker IIs will then recognize the repeater receiver as being active. Once the Linker IIs recognizes the repeater receiver is active the Linker IIs will temporarily disable the antikerchunker filter for a preprogrammed period of time (see the Set antikerchunker filter interval time (command #121).

Hardware Reset Jumper

The reset jumper is meant to allow the Linker IIs to be set back to the factory parameters. With the use of the reset jumper the "Set parameters to factory default" (function #66) will be activated. The reset jumper is located on the top of the controller board and is marked "RESET".

To use the reset jumper to reset the controller to the factory default first power down the controller. Put both the Setup mode jumper and reset jumpers in place. When the jumpers are in place then power up the controller.

The DV LED will flash for 15 seconds. This is a warning that a controller reset to factory defaults is about to occur. Removal of either the reset jumper or the Setup mode jumper will stop the DV LED from flashing and cancel the controller reset.

After the 15 seconds are completed the controller will reset itself to factory defaults (except for the ID and the DTMF command line memories). The controller will do a warm start and if the Setup mode and reset jumpers are still in place the DV LED will again start flashing. This is because both jumpers are in place and the controller software is starting from fresh.

There will be a noticeable delay between the series of LED flashing. When the DV LED begins to flash again is the best time to power down the controller. Once the controller is powered down remove the reset jumper, power up and the controller will operate normally with the factory defaults in place.

COMMAND STRUCTURE

The command structure of the Linker IIs is easy to use and very versatile. It includes Setup mode for programming, Control op mode and User mode for control. The structure of these levels gives needed security and still provides a very easy system to setup and program. The Setup mode gives you access to all the functions directly. In Setup mode the function codes are entered directly with your DTMF pad. The Control op and User modes are very similar to each other. To access a function in either of these modes you need to have programmed (from Setup mode) a DTMF sequence (1 to 5 DTMF digits) followed by the function in a DTMF memory. When you enter the DTMF codes in Control op or User mode that are in a DTMF memory the function in the DTMF memory will be called. A condition code can be added to the DTMF memory to restrict that DTMF memory (and its function) to the Control op mode only, the function will then not be accessible in the User mode.

The Setup mode (program mode) allows access to all the functions directly. All the functions can be activated just by entering the 2 or 3 digit code for that function. When the Linker IIa controller leaves the factory the only way to access the Setup mode is with the hardware jumper. It initially can not be accessed any other way. Normally if the Setup mode jumper is in you are in Setup mode and if it is not in you are not in Setup mode. There are two functions that can be used to enter and exit the Setup mode in a DTMF command line, 'Exit Setup mode' (see function #59)and 'Enter Setup mode' (see function #58). The Setup mode can be accessed by putting the 'Enter Setup mode' function in the Control op or User modes using a DTMF command memory (see function #78). The 1 to 5 digits you program in will give you access to the Setup mode. If you only allow access to the DTMF code for the Setup mode in Control op mode the Linker IIa can be setup to require up to 10 digits to access the Setup mode, 5 digits to go from the User mode to the Control op mode and 5 digits to access the DTMF memory you programmed the "Enter Setup" function into. Remote access to the Setup mode is only available if you make it so.

When the Linker IIs is in the Setup mode (program mode) the Linker IIs uses a special courtesy tone. The courtesy tone is 3 dits or a Morse code "S" to indicate being in Setup mode. If the repeater is left in the Setup mode and the repeater can not be physically accessed to remove the Setup jumper the Setup mode can be exited using the 2 digit 'Exit Setup mode' function. This is true even if the Setup jumper is still installed.

The Control op mode is intended to give access to control functions that only a few people should have. In the Control op mode all the preprogrammed DTMF memories (DTMF command lines) are available. In the User mode you can provide limited access to the DTMF memories. Only the DTMF memories that have not been setup as Control op level, will be accessible in User mode. Any, some or none of the Linker IIa's commands can be enabled on this level. You program any of the functions you want to give access to and on what level.

To give access to a function in the Control Operator or User modes a DTMF code and a function must be entered in a DTMF memory (DTMF command line). To start the entry use the "ENTER DTMF COMMAND LINE" function (#78). First you select a DTMF memory 0 – 24, then enter 1 to 5 DTMF code digits, then indicate if this DTMF memory is to be only available in the Control op level and of course the function you wish to give access to (see the ENTER DTMF COMMAND LINE (#78) function in the function descriptions). All 16 DTMF digits can be used in a DTMF code including A, B, C, D, * and #. An example of the DTMF code layout for a few DTMF memories is shown below;

DTMF Memory number	DTMF codes, 1 to 5 digits	Control Op?	function
0	` 2 # 0	N	33 (DISABLE TX 1)
1	2 # 1	Y	32 (ENABLE TX 1)
2	3 9 0 B #	N	60 (SET CONTROL OPERATOR MODE)
3	C	Y	61 (CLEAR CONTROL OPERATOR MODE)
4	A # 4 B 2	Y	58 (ENTER SETUP MODE)
5	B	N	48 (ACTIVATE KEYPAD TEST)

Any of the functions can be used in a DTMF memory. There is a chart at the end of this manual that is similar to the above and can be copied and used to keep track of your DTMF settings. Note: The Linker IIs controller comes with all DTMF memories empty, you must use Setup mode (program mode) initially for access to the Linker IIs's functions.

LINKER IIs REMOTE BASE CONTROLLER

The remote base controller on the Linker IIa uses a new and unique method to control a remote base . The Linker IIs controller will allow you to select from any one of the preset memories in the remote base radio's memory. The Linker IIs supports from 1 to 250 memories. The Linker IIa remembers what memory the remote base radio is set to even if the power goes off. The user only needs to select which memory he wants to use and the Linker IIa will automatically select that memory on the remote base. This is a very easy way of selecting remote base memories as the frequencies, offsets and CTCSS – DCS settings are all preset in the remote base radio. You can choose to only have the receiver active, to have the receiver and transmitter active or even only the transmitter active on the remote base radio. The functions are easy to setup and to use.

The connection from the remote base radio to the Linker IIs controller is straightforward. First you will need to determine a way to get a COS signal and/or a CTCSS signal if needed from your remote base radio. The Linker IIs's RX 2 COS and CTCSS inputs can be configured for either active high or active low operation by selecting the proper jumper location on the corresponding jumper blocks..

The next connections that needs to be made is for the remote base / link radio's receiver and transmitter (port 2) audio. The controller's audio input circuit is fairly robust and can handle both discriminator raw audio as well as processed audio from high level stages in the radio. There is a pre-emphasis/de-emphasis jumper on the audio input for selecting either raw discriminator audio or audio that has been processed.

If your radio has an "UP" input on its microphone input this can be used to give the Linker IIs control over which memory to select. The auxiliary 3 output of the Linker IIa is used for this purpose. The "UP" input can be connected directly to the auxiliary 3 input if the "UP" input is designed to go to ground for it's activation. The Linker IIa uses an open collector configuration for this function. If the "UP" input on the remote base radio does not normally get switched to ground to select the next memory a relay may be connected to the auxiliary 3 output and appropriate connections to the radio made on the other side of the relay. This is all that is necessary to wire up the memory selection of your remote base.

The auxiliary 3 output has a programmable timer (see function #116) which times how fast the auxiliary 3 output goes on and off. This timer can be set to speed up or slow down the rate in which the remote base memories are selected.

The Linker IIs uses a "home memory" as a reference point. This is the memory in the remote base radio the Linker IIs will consider memory number 0. The Linker IIa will always return the remote base radio to the home memory when the remote base is disabled. Memory '0' will always be the first memory to the Linker IIs. The current memory number is stored in the Linker IIs's EEPROM memory so the Linker IIs will remember the currently selected memory the remote base is set to even if the power goes out.

The Linker IIs will always increment the remote base memory up, even when returning to the home memory or to go to one memory below the current memory. The Linker IIs will "wrap around" memories. When the radio's highest memory is reached the Linker IIa will expect the next UP signal to bring the radio to the first or lowest memory. While the memories are changing (or while any function is active) TX 1 will remain on. When TX 1 drops you will know the memory changing has been completed. The Linker IIs will send a cover tone while the remote base memories are being selected and then send the number of the finial memory in Morse code.

Once all the connections are made and the COS input voltages (you probably don't need to change these) are set you will need to program the remote base radio itself. Once this is done the Linker IIs will need to know how many memories it will have to increment through. This means the actual number of memories that show up on the display of the remote base radio, even if they are not used. This is done using the "SET NUMBER OF REMOTE BASE MEMORIES " function (function #71). The Linker IIs's remote base memory numbers start at 0 so the first memory is always memory number 0 (Home memory). Some radios start at memory 0 and some start at memory 1. The number the Linker IIa needs programmed in for the number of memories it will have to increment through.

TX 2 will go off if any DTMF tones are recognized on any receiver input. When doing control functions in most cases it is desirable to not be transmitting on the remote base's transmitter as the remote base may be on a repeater's input or frequency that is being used by others.

QUICK CONNECT FOR THE CONTROL RECEIVER

NOTE: *You do not need to use this input, it is optional, it is only for use with a separate control receiver. If you do not plan to use a separate control receiver then please skip this page. The repeater receiver port has access to all the same control functions (the control receiver has priority). Do not connect the repeater receiver to this input.*

1. *If you decide to use a control receiver* you should have the control receiver COS and audio signal already wired to the proper connections according to the plug layout in this manual before you start. These signals should be suitable to drive a 100K ohm load. **It is *not* necessary to use a control receiver to operate the Linker IIs repeater controller.**

2. Check to see what the control receiver's COS on and off voltages are and write them down. For proper operation the polarity jumper on JP12 should be on Pins 1&2 for active High and on Pins 2&3 for active low.

3. The control receiver audio input amplifier jumper JP16 setting needs to be determined. For flat or pre-emphasized audio do not install the jumper. For de-emphasized or discriminator audio install the jumper on pins 1 & 2.

4. Too much audio or too little audio level may cause the DTMF decoder to not recognize the tones properly.

5. If you have a scope or an audio voltmeter available, monitor the signal on pin 72 of JP16, if not skip to step 7.

6. Send a DTMF digit through the control receiver. Set R16 (CONTROL RX AUDIO) until you get about a 300Mv P-P or 100Mv RMS reading. You should now see the VALID DTMF LED steadily lit up (no flickering). If not it should be close.

7. If you do not have a scope or meter available start by sending a DTMF digit tone through the control receiver.

8. Adjust R16 (CONTROL RX AUDIO) until you see the VALID DTMF LED light up. Try to find a center point so you are not on the edge of operation.

9. The control receiver should now be ready to perform control functions

QUICK CONNECT FOR THE REPEATER RECEIVER

This is a procedure that will help connect up the repeater's receiver. It is not the only way to do it but one that we have used that works well.

1. You should have a repeater receiver COS/CTCSS and audio signals already wired to the proper connections according to the plug layout in this manual before you start. The Port 1 receiver audio input amplifier jumper JP14 setting needs to be determined. For flat or pre-emphasized audio do not install the jumper. For de-emphasized or discriminator audio install the jumper on pins 1 & 2.

2. Check to see what the Port 1 receiver's COS and if used the CTCSS on and off voltages are and write them down. For proper operation the COS polarity jumper on JP10 should be on Pins 1&2 for active High and on Pins 2&3 for active low. The CTCSS polarity jumper JP5 should be on Pins 1&2 for active High and on Pins 2&3 for active low.

3. Too much audio or too little audio level may can cause the DTMF decoder to not recognize the tones properly.

4. Here are two methods to correctly set the receiver audio levels on both Ports 1 and 2.

5. If you have a scope or an audio voltmeter available, monitor the signal on pin 2 of JP16, if not skip to step 7.

6. Send a DTMF digit through the Port 1 receiver. Set R66 (Port 1 RX AUDIO) until you get about a 300Mv P-P or 100Mv RMS reading. You should now see the VALID DTMF LED steadily lit up (no flickering). If not it should be close.

7. If you do not have a scope or meter available start by sending a DTMF tone through the receiver.

8. Adjust R66 (RX1 AUDIO LEVEL) until you see the VALID DTMF LED light up. Try to find a center point so you are not on the edge of operation.

9. The repeater receiver COS and CTCSS input (Port 1) and the remote base / link (Port 2) COS and CTCSS inputs are set up in the same general way and this quick connect procedure can be used to setup the remote base / link COS and CTCSS inputs. The Port 2 COS jumper is JP11. The CTCSS Port 2 jumper is JP13. The jumper needs to be installed on Pins 1&2 for active High or on Pins 2&3 for active low.

10. The Port 2 receiver audio input amplifier jumper JP15 setting needs to be determined. For flat or pre-emphasized audio do not install the jumper. For de-emphasized or discriminator audio install the jumper on pins 1 & 2.

11. Adjust the Port 2 audio level control R75 using above steps 5-8.

SPECIFICATIONS

|	
SUPPLY VOLTAGE	13.8V
IDLE CURRENT	@13.8V 29mA LEDs disabled
MAXIMUM CURRENT TX 1 OUTPUT	1 A
MAXIMUM CURRENT ON AUXILIARY 1 OUTPUT	1 A
MAXIMUM CURRENT ON AUXILIARY 2 OUTPUT	1 A
MAXIMUM CURRENT ON AUXILIARY 3 OUTPUT	1 A
VOLTAGE IN ON RECEIVER 1 AUDIO INPUT	20mVpp to 10Vpp
VOLTAGE IN ON RECEIVER 1 AUDIO INPUT	20mVpp to 9Vpp
VOLTAGE IN ON RECEIVER 2 AUDIO INPUT	20mVpp to 9Vpp
VOLTAGE IN ON THE CONTROL RECEIVER AUDIO INPUT	20mVpp to 9Vpp
MAX VOLTAGE OUT ON RECEIVER 1 AUDIO OUTPUT	9Vpp
MAX VOLTAGE OUT ON RECEIVER 2 AUDIO OUTPUT	9Vpp
VOLTAGE IN ON THE RX 1 COS	0 to 30V
VOLTAGE IN ON THE RX 2 COS	0 to 30V
VOLTAGE IN ON THE CONTROL RX COS	0 to 30V
VOLTAGE IN ON THE RX 1 CTCSS	0 to 30V
VOLTAGE IN ON THE RX 2 CTCSS	0 to 30V
OUTPUT IMPEDANCE FOR TRANSMITTER 1 AUDIO OUTPUT	< 300 ohms
OUTPUT IMPEDANCE FOR TRANSMITTER 2 AUDIO OUTPUT	< 300 ohms
INPUT IMPEDANCE ON RECEIVER 1 AUDIO INPUT	~100K ohms
INPUT IMPEDANCE ON RECEIVER 2 AUDIO INPUT	~100K ohms

JP 9   JP 3   JP 2   J3   J5   J4
RESET   DEC EN   CNTL AU   CTCSS   RX 2 DADM   RX 1 DADM

JP 7
RX 1 AUDIO

JP 1
LED GROUND

P1
PORT 1

JP 4
SETUP

JP 5
CNTL RX COS
POLARITY

J2
CONTROL RX

JP 8
RX 2 AUDIO

P2
PORT 2

JP 6

J1
POWER
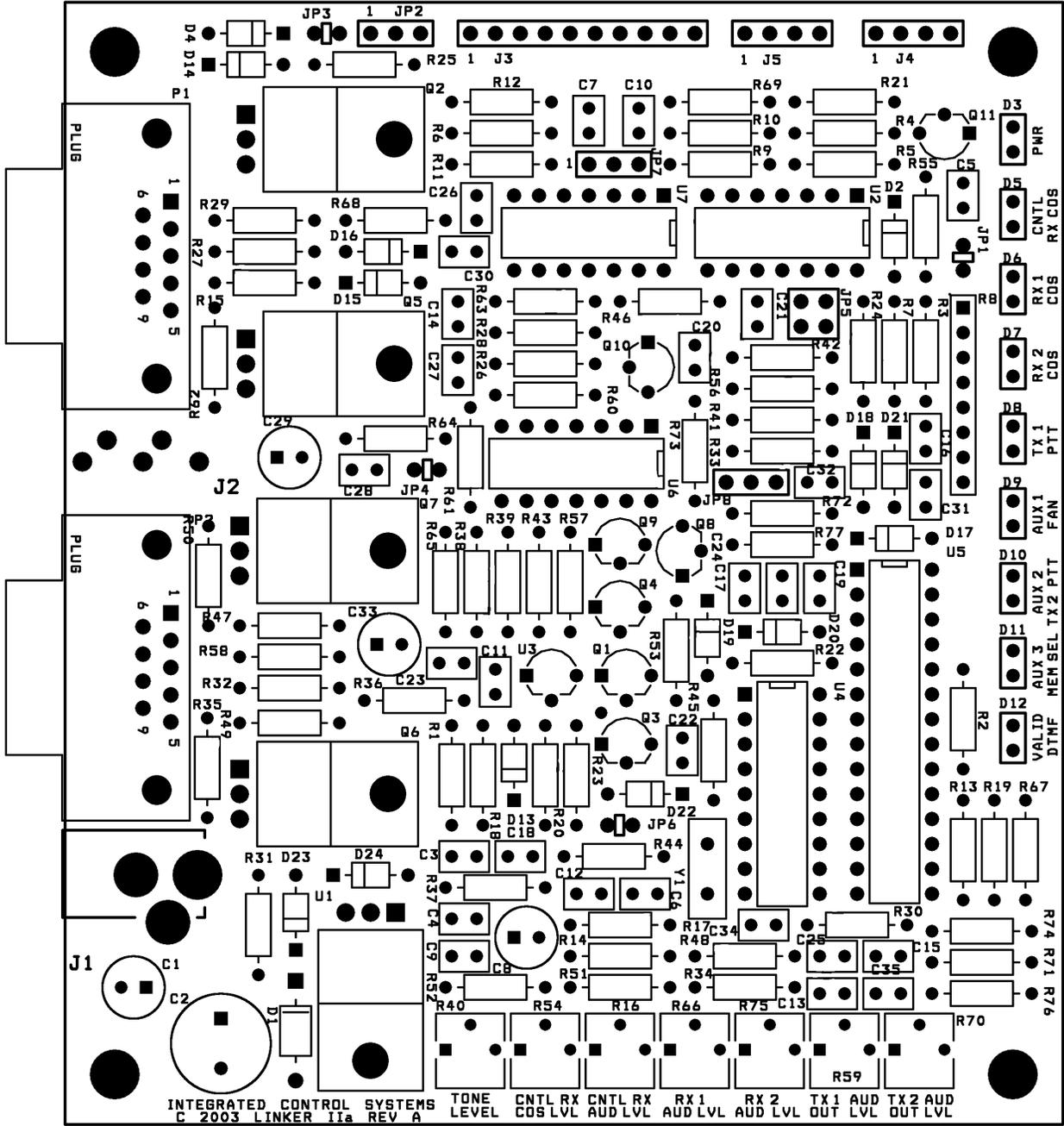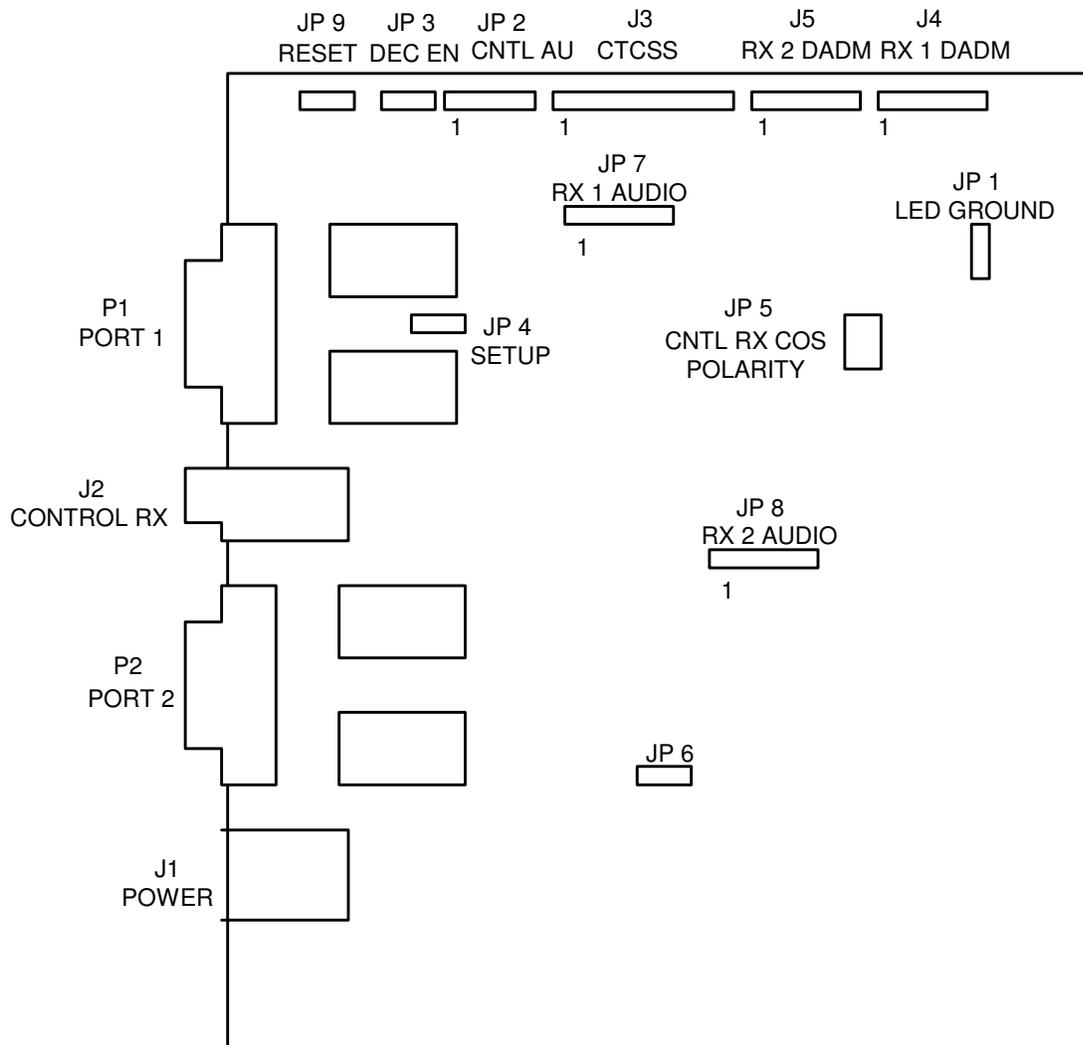
J1   12V Power in, Center Positive, 2.5mm coaxial type jack
J2   Control receiver COS and audio in
J3   RX 1 CTCSS port, connections for 3rd party CTCSS board
J4   RX 1 connection for ICS DADM board
J5   RX 2 connection for ICS DADM board

JP 1   LED ground - Remove this jumper to disable LED's
JP 2   Control RX audio - 1 & 2 de-emphasized, 2 & 3 low gain (~2X), no jumper high gain (~10X)
JP 3   RX 1 CTCSS Decode enable - Install jumper to enable 3rd party decoder
JP 4   Setup mode jumper - install to put the controller in setup mode
JP 5   Control RX COS polarity - Rotate both jumpers 90 degrees for opposite COS polarity
JP 6   TX 2 tone enable - Enables courtesy tones and ID on TX 2 (Only for Slave repeater mode)
JP 7   RX 1 audio - 1 & 2 de-emphasized, 2 & 3 low gain (~2X), no jumper high gain (~10X)
JP 8   RX 2 audio - 1 & 2 de-emphasized, 2 & 3 low gain (~2X), no jumper high gain (~10X)
JP 9   Controller reset - reset parameters to factory defaults

P1   Connector for Port 1 connections
P2   Connector for Port 2 connections

CONNECTORS ON LINKER IIa BOARD

P1 PORT 1

Pin	Description
1	GND
2	V+ OUT 100ma (0.1a) MAX
3	TX 1 PTT OUTPUT (OPEN COLLECTOR)
4	AUX 1 / FAN / TIMED OUTPUT (OPEN COLLECTOR)
5	TX 1 AUDIO OUTPUT
6	RX 1 AUDIO INPUT
7	NC
8	RX 1 COS INPUT
9	RX 1 CTCSS INPUT

P2 PORT 2

Pin	Description
1	GND
2	V+ OUT 100ma (0.1a) MAX
3	AUX 2 / TX 2 PTT OUTPUT (OPEN COLLECTOR)
4	AUX 3 / MEMORY SELECT (OPEN COLLECTOR)
5	TX 2 AUDIO OUTPUT
6	RX 2 AUDIO INPUT
7	NC
8	RX 2 COS INPUT
9	RX 2 CTCSS INPUT
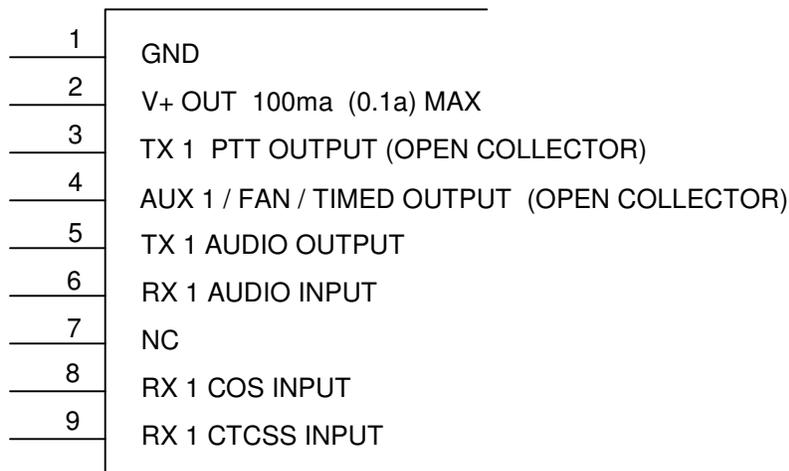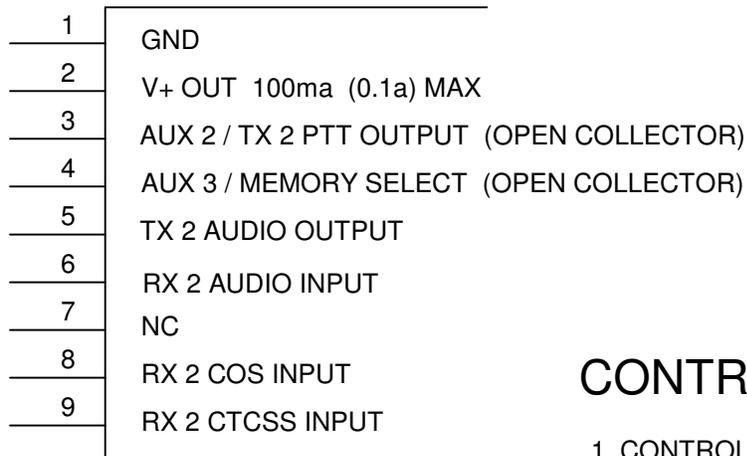
J2 CONTROL RX INPUT

1. CONTROL RX COS INPUT
2. CONTROL RX AUDIO INPUT
3. GND

| 1 | 2 | 3 |
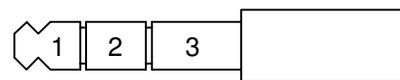
SHOWN IS THE JACK WHICH IS
PLUGS INTO THE LINKER IIa BOARD

J3 CTCSS PORT

Pin	Description
1	GND
2	V+ OUT 100ma (0.1a) MAX
3	RX 1 DISCRIMINATOR AUDIO
4	CTCSS DECODE SIGNAL
5	CTCSS ENCODE ENABLE
6	CTCSS TX 1 TONE
7	GND
8	V+ OUT 100ma (0.1a) MAX
9	RX 1 AUDIO IN
10	RX 1 FILTERED AUDIO
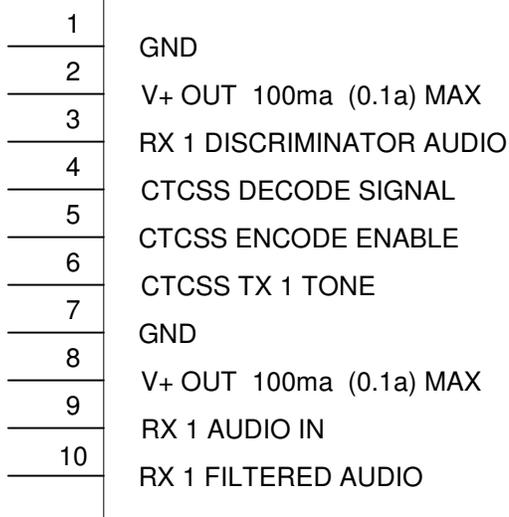
JUMP PINS 1 & 2 IF ICS DADM NOT USED

J4
RX 1 AUDIO
AND
J5
RX 2 AUDIO

Pin	Description
1	AUDIO IN
2	AUDIO OUT
3	GND
4	+10V
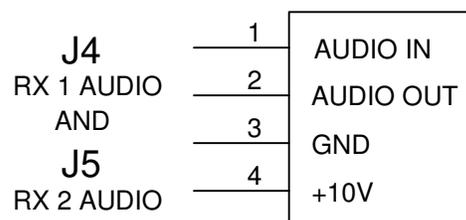
DO NOT USE +10V EXTERNALLY
CONTROLLER DAMAGE MAY OCCUR

FUNCTION LIST FOR THE ICS LINKER II / LINKER IIa CONTROLLERS

1. Transmitter enable / disable functions

Enable TX 1	32
Disable TX 1	33
Force TX 1 on	85
Force TX 1 on clear	86
Enable TX 2	52
Disable TX 2	51
Disable RX 2 TX 1 and TX 2	146
Enable RX 2 TX 1 and TX 2	147

2. Receiver enable / disable functions

Use only RX 1 COS input	35
Use only RX 1 CTCSS input	36
AND RX 1 COS and CTCSS inputs	93
RX 2 enable	50
RX 2 and TX 2 disable	49
Disable RX 2 TX 1 and TX 2	146
Enable RX 2 TX 1 and TX 2	147
Use only RX 2 COS input	96
Use only RX 2 CTCSS input	97
AND RX 2 COS and CTCSS inputs	98
Enable RX1	154
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3. Auxiliary output functions

Turn auxiliary output 1 off	39
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Turn auxiliary output 2 on	42
Turn auxiliary output 3 off	43
Turn auxiliary output 3 on	44
Pulse auxiliary 1 output	45
Pulse auxiliary 2 output	46
Pulse auxiliary 3 output	47
Set auxiliary 1 output timeout time	69
Turn auxiliary timer off	37
Turn auxiliary timer on	38
Enable timed TX fan on auxiliary 1 output	88
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Set auxiliary 3 pulse time (pulse duration)	116

4. DTMF command setup functions

Enter new DTMF command line	78
Clear all DTMF command lines	74
Clear one DTMF command line	75
Turn DTMF muting on	91
Turn DTMF muting off	92
Set RX2 DTMF control	99
TX1 off for DTMF disable	163
TX! off for DTMF disable	164

Definition of Terms used

1. Key up – To activate the Control or Repeaters receiver COS (The repeaters receiver needs to be allowed to do DTMF control)

2. Unkey – To deactivate The Control or Repeaters receiver COS

3. COMMAND ACCEPTED indication – The controller sends a CW letter "K" for "OK"

4. ENTER NEXT DATA code – The controller sends a CW letter "M" for "ready for MORE information"

5. TX 1 = Transmitter 1 (typically the repeaters transmitter)

6. TX 2 = Transmitter 2 (typically the remote base / link transmitter)

7. RX 1 = Receiver 1 (typically the repeaters receiver)

8. RX 2 = Receiver 2 (typically the remote base / link receiver)

9. FUNCTION = "command / function" as described in the previous text

10. A decimal point can be entered on some functions by using the '*' key on your touch pad

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FUNCTION: ENABLE TX 1

FUNCTION CODE: 32

PURPOSE: Enables the TX 1 output

HOW TO USE:

1. Key up
2. Enter the ENABLE TX 1 function code.
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The TX 1 output is now enabled.

The ENABLE TX 1 command will enable TX 1. If TX 1 was disabled on power up TX 1 will again be disabled on power up (or warm reset) unless you use SAVE STATUSES (function number 87). If you ENABLE TX 1 and then use the SAVE STATUSES function TX 1 will always be enabled when a power or warm reset occurs.

FUNCTION: DISABLE TX 1

FUNCTION CODE: 33

PURPOSE: Disables the TX 1 output

HOW TO USE:

1. Key up
2. Enter the DISABLE TX 1 function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The TX 1 output is disabled.

The DISABLE TX 1 command will disable TX 1. If TX 1 was enabled on power up TX 1 will again be enabled on power up (or warm reset) unless you use SAVE STATUSES (Function number 87). If you DISABLE TX 1 and then use the SAVE STATUSES function TX 1 will always be disabled when a power or warm reset occurs.

FUNCTION: FORCE ID

FUNCTION CODE: 34

PURPOSE: To force the controller to send the CW ID

HOW TO USE:

1. Key up
2. Enter FORCE ID function code
3. Unkey
4. When the command is accepted the controller will send the preprogrammed CW ID.

When the controller sends a forced ID the ID interval timer is not reset.

FUNCTION: USE ONLY RX 1 COS INPUT

FUNCTION CODE: 35

PURPOSE: Changes the receiver 1 input to use the RX 1 COS input only

HOW TO USE:

1. Key up
2. Enter USE ONLY RX 1 COS INPUT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Receiver 1 will now only use the receiver 1 COS input

This function switches control for RX 1 only to the RX 1 COS input for receiver 1.

FUNCTION: USE ONLY RX 1 CTCSS INPUT

FUNCTION CODE: 36

PURPOSE: Changes the receiver 1 input to use the RX 1 CTCSS input only

HOW TO USE:

1. Key up
2. Enter USE ONLY RX 1 CTCSS INPUT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Now only the RX 1 CTCSS input will activate RX 1.

This function switches control for RX 1 to only the RX 1 CTCSS input

FUNCTION: TURN AUXILIARY TIMER OFF

FUNCTION CODE: 37

PURPOSE: Disables the timer for the auxiliary 1 output

HOW TO USE:

1. Key up
2. Enter the TURN AUXILIARY TIMER OFF function code
3. Unkey
4. The controller will send a COMMAND ACCEPTED indication
5. The auxiliary 1 output timer will no longer affect the auxiliary 1 output.

FUNCTION: TURN AUXILIARY TIMER ON

FUNCTION CODE: 38

PURPOSE: Enables the timer for the auxiliary 1 output

HOW TO USE:

1. Key up
2. Enter the TURN AUXILIARY TIMER ON function code
3. Unkey
4. The controller will send the COMMAND ACCEPTED indication
5. The auxiliary output timer is now enabled

The auxiliary 1 output timer will start when the auxiliary output is on. When the timer times out the auxiliary 1 output will be turned off.

FUNCTION: TURN AUXILIARY 1 OUTPUT OFF

FUNCTION CODE: 39

PURPOSE: Turns off the auxiliary 1 output

HOW TO USE:

1. Key up
2. Enter the TURN AUXILIARY 1 OUTPUT OFF function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The auxiliary 1 output will now be turned off.

FUNCTION: TURN AUXILIARY 1 OUTPUT ON

FUNCTION CODE: 40

PURPOSE: Turns on the auxiliary 1 output ON

HOW TO USE:

1. Key up
2. Enter the TURN AUXILIARY OUTPUT ON function code
3. Unkey
4. The controller will send the COMMAND ACCEPTED indication
5. The auxiliary 1 output will be latched on.

If the auxiliary 1 output timer is enabled, the timer will turn the auxiliary 1 output off when the timer times out.

FUNCTION: TURN AUXILIARY 2 OUTPUT OFF

FUNCTION CODE: 41

PURPOSE: Turns off the auxiliary 2 output

HOW TO USE:

1.   Key up
2.   Enter the TURN AUXILIARY 2 OUTPUT OFF function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication
5.   The auxiliary 2 output is now turned off.

FUNCTION: TURN AUXILIARY 2 OUTPUT ON

FUNCTION CODE: 42

PURPOSE: Turns on the auxiliary 2 output ON

HOW TO USE:

1.   Key up
2.   Enter the TURN AUXILIARY OUTPUT ON code
3.   Unkey
4.   The controller will now send the COMMAND ACCEPTED function indication
5.   The auxiliary 2 output is now latched on

Auxiliary 2 does not have a timeout timer.

Auxiliary 2 is also used as the PTT output for TX 2.

FUNCTION: TURN AUXILIARY 3 OUTPUT OFF

FUNCTION CODE: 43

PURPOSE: Turns off the auxiliary 3 output

HOW TO USE:

1.   Key up
2.   Enter the TURN AUXILIARY 3 OUTPUT OFF function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication
5.   The auxiliary 3 output is now turned off.

FUNCTION: TURN AUXILIARY 3 OUTPUT ON

FUNCTION CODE: 44

PURPOSE: Turns on the auxiliary 3 output ON

HOW TO USE:

1.   Key up
2.   Enter the TURN AUXILIARY OUTPUT ON function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication
5.   The auxiliary 3 output is now latched on.

Auxiliary 3 does not have a timeout timer.

Auxiliary 3 is also used for remote base memory selection.

FUNCTION: PULSE AUXILIARY 1 OUTPUT

FUNCTION CODE: 45

PURPOSE: Pulses the auxiliary 1 output

HOW TO USE:

1. Key up
2. Enter the PULSE AUXILIARY OUTPUT 1 function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The auxiliary 1 output will be pulsed

FUNCTION: PULSE AUXILIARY 2 OUTPUT

FUNCTION CODE: 46

PURPOSE: Pulses the auxiliary 2 output

HOW TO USE:

1. Key up
2. Enter the PULSE AUXILIARY 2 OUTPUT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The auxiliary 2 output will be pulsed

FUNCTION: PULSE AUXILIARY 3 OUTPUT

FUNCTION CODE   47

PURPOSE: Pulses the auxiliary 3 output

HOW TO USE:

1. Key up
2. Enter the PULSE AUXILIARY 3 OUTPUT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The auxiliary 3 output will be pulsed.

FUNCTION: ACTIVATE KEYPAD TEST

FUNCTION CODE: 48

PURPOSE: Allows testing of users radio touch pad

HOW TO USE:

1. Key up
2. Enter the ACTIVATE KEYPAD TEST function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Push the digit to be tested
7. Unkey
8. The controller will report which DTMF digit it heard in CW

The controller will wait for another DTMF digit to be sent. If it you wish to cancel the function key up without sending a DTMF digit and unkey. The controller will cancel the keypad test with no acknowledge tone.

If a DTMF tone is not heard in a minute's time the function will be canceled. The maximum time a function can be active and waiting for DTMF input is 1 minute. After a minute of waiting for a DTMF tone and not hearing one the function will be canceled.

FUNCTION: RX 2 AND TX 2 DISABLE

FUNCTION CODE: 49

PURPOSE: Disables RX 2 and TX 2 and returns the remote base to the home memory

HOW TO USE:

1. Key up
2. Enter the RX 2 AND TX 2 DISABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. RX 2 and TX 2 have been disabled and the memory (if it had been changed from memory 0) is incrementing back to memory 0 (the home memory).

FUNCTION: RX 2 ENABLE

FUNCTION CODE: 50

PURPOSE: Enables RX 2

HOW TO USE:

1. Key up
2. Enter the RX 2 ENABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. RX 2 receiver will now be enabled.

The remote base memory will not be changed with this function

FUNCTION:　　　　　TX 2 DISABLE

FUNCTION CODE:　　51

PURPOSE:　　　　　Disables TX 2

HOW TO USE:

1.　Key up
2.　Enter the TX 2 DISABLE function code
3.　Unkey
4.　The controller sends the COMMAND ACCEPTED indication
5.　TX 2 is now disabled.

The remote base memory will not be changed with this function

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FUNCTION:　　　　　ENABLE TX 2

FUNCTION CODE:　　52

PURPOSE:　　　　　Enables TX 2

HOW TO USE:

1.　Key up
2.　Enter the ENABLE TX 2 function code
3.　Unkey
4.　The controller sends the COMMAND ACCEPTED indication
5.　TX 2 will be enabled.

The remote base memory will not be changed with this function.

FUNCTION: RX 2 ENABLE WITH MEMORY SELECT

FUNCTION CODE: 53

PURPOSE: Enables RX 2 and will change the remote base memory (TX 2 is not enabled)

HOW TO USE:

1. Key up
2. Enter the RX 2 ENABLE WITH MEMORY SELECT function code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the memory number you wish to have the remote base set to
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The repeater transmitter (TX 1) will be forced on and a interment tone will be send while the memory are being selected.
10. The remote base memory will be selected and the Linker IIa will report the memory number in Morse code
11. RX 2 is enabled
12. Once RX 2 is enabled the repeaters transmitter (TX 1) will no longer be forced on and the tone will stop.

FUNCTION: RX 2 AND TX 2 ENABLE WITH MEMORY SELECT

FUNCTION CODE: 54

PURPOSE: Enables RX 2 and TX 2 and will change the remote base memory

HOW TO USE:

1. Key up
2. Enter the RX 2 AND TX 2 ENABLE WITH MEMORY SELECT function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the memory number you wish to have the remote base set to
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The repeater transmitter (TX 1) will be forced on and a interment tone will be send while the memory are being selected.
10. The remote base memory will be selected the Linker IIa will report the memory number in Morse code
11. Then RX 2 and TX 2 will be enabled
12. Once RX 2 is enabled the repeaters transmitter (TX 1) will no longer be forced on and the tone will stop.

FUNCTION: WARM RESET

FUNCTION CODE: 55

PURPOSE: Resets all statuses to power up condition.

HOW TO USE:

1. Key up
2. Enter the WARM RESET function code
3. Unkey
4. There will be no direct acknowledging from the controller.

When you unkey after entering the WARM RESET code the transmitter will drop immediately as the controller does a reset and does not remember that the receiver was active.

FUNCTION: COURTESY TONE ENABLED

FUNCTION CODE: 56

PURPOSE: Enables the all of the courtesy tones.

HOW TO USE:

1. Key up
2. Enter the COURTESY TONE ENABLED function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. All the courtesy tones will enabled

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: COURTESY TONE DISABLE

FUNCTION CODE: 57

PURPOSE: Disables the all of the courtesy tones.

HOW TO USE:

1. Key up
2. Enter the COURTESY TONE DISABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. All the Courtesy tones will be disabled.

This function does not affect the acknowledge codes. The remote base, Setup mode and normal courtesy tones will be disabled.   The COMMAND ACCEPTED and ENTER NEXT DATA indications will still operate.

FUNCTION: ENTER SETUP MODE

FUNCTION CODE: 58

PURPOSE: Puts the controller in the Setup mode – to be used in a DTMF Command Line

HOW TO USE:

1. Key up
2. Enter the ENTER SETUP MODE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will be in the Setup mode

Entering the Setup mode with this command will occur regardless of the position of the setup jumper.

FUNCTION: EXIT SETUP MODE

FUNCTION CODE: 59

PURPOSE: Takes the controller out of the Setup mode

HOW TO USE:

1. Key up
2. Enter the EXIT SETUP MODE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will not be in the Setup mode.

Exiting the Setup mode with this command will occur regardless of the position of the Setup mode jumper.

FUNCTION: SET CONTROL OPERATOR MODE

FUNCTION CODE: 60

PURPOSE: Puts the controller in the Control operator mode

HOW TO USE:

1. Key up
2. Enter the SET CONTROL OPERATOR MODE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will be in the Control operator mode..

If the Control operator mode is enabled during the Setup mode it will have no effect until exiting the Setup mode. Upon exiting the Setup mode the controller will be in Control operator mode. The controller can be both in Setup mode and Control operator mode at the same time but the Setup mode has priority.

The Control operator mode operates exactly like the User mode except it will allow access to DTMF command lines that are set to be accessible only in the Control operator mode.

FUNCTION: CLEAR CONTROL OPERATOR MODE

DTMF CODE: 61

PURPOSE: Takes the controller out of the control operator mode

HOW TO USE:

1. Key up
2. Enter the CLEAR CONTROL OPERATOR MODE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will not be in the Control operator mode.

If the control operator mode is enabled during the Setup mode it will have no effect until exiting the Setup mode. Upon exiting the Setup mode the controller will be in Control operator mode. The controller can be both in Setup mode and Control operator mode at the same time but the Setup mode has priority.

The Control operator mode operates exactly like the user mode except it will allow access to DTMF command lines that are set to be accessible only in the Control operator mode.

FUNCTION: ENABLE IDER

FUNCTION CODE: 62

PURPOSE: Enables the IDer

HOW TO USE:

1. Key up
2. Enter the ENABLE IDER function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller's IDer will now be enabled...

If the IDer was not enabled on power up the save statuses function will need to be run. This will store the new IDer status along with others. This needs to be done or the IDer status will return to the way it was the last time the controller was powered up when a warm reset or power on reset occur.

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: DISABLE IDER

FUNCTION CODE: 63

PURPOSE: To keep IDer from IDing

HOW TO USE:

1. Key up
2. Enter the DISABLE IDER function code
3. Unkey
4. The controller will send the COMMAND ACCEPTED indication
5. The controller's IDer will now be disabled...

If the IDer was enabled on power up the save statuses function will need to be run. This will store the new IDer status (along with others). This needs to be done or the IDer status will return to the way it was the last time the controller was powered up.

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: TURN ON TEST TONE

FUNCTION CODE: 64

PURPOSE: To provide an audio test signal from the controller

HOW TO USE:

1. Key up
2. Enter the TURN ON TEST TONE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will send a continuous tone at the frequency that is currently set.

This function will not cause the transmitter to stay on. It only provides the tone from the tone output. The transmitter can be locked on by using the TX 1 force on function (#85).

The test tone frequency will be the same as the IDer tone frequency.

FUNCTION: TURN OFF TEST TONE

FUNCTION CODE: 65

PURPOSE: To turn off the test tone signal from the controller

HOW TO USE:

1. Key up
2. Enter the TURN OFF TEST TONE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will stop sending the test tone

FUNCTION: SET PARAMETERS TO THE FACTORY DEFAULT

FUNCTION CODE: 66

PURPOSE: Reset the listed parameters to the factory defaults

HOW TO USE:

1. Key up
2. Enter the SET PARAMETERS TO THE FACTORY DEFAULT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The Parameters are now set to the Factory Defaults

The factory defaults are as follows:

1.	Words per minute	10 WPM
2.	CW frequency	1000Hz
3.	TX 1 timeout time	600 seconds
4.	TX 1 Hang time	2 seconds
5.	RX 1 COR and CTCSS input levels	2.5V positive acting
6.	RX 2 COR and CTCSS input levels	2.5V positive acting
7.	Number of remote base memories	10
8.	Auxiliary 1 output timer time	600 seconds
9.	IDer polite ID time	150 seconds
10.	IDer pending ID time	600 seconds
11.	Statuses are set to defaults	(See SAVE STATUSES Function (#87))

FUNCTION: SET IDER RX POLITE ID TIME

FUNCTION CODE: 67

PURPOSE: Sets the time to hold off the ID if the pending ID timer has timed out and the RX
is active

HOW TO USE:

1. Key up
2. Enter the SET IDER RX ACTIVE HOLD OFF TIME function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds for the hold off time
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new time value is stored

The time range is from 30 seconds to 2500 seconds. If a value is entered outside these limits the controller will not
save the entered value, it will give the ERROR indication (B in CW) and the function will be ended.

FUNCTION: SET IDER PENDING ID TIMER

FUNCTION CODE: 68

PURPOSE: Sets the time the IDer will wait before it tries to ID

HOW TO USE:

1. Key up
2. Enter the SET IDER PENDING ID function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds for the pending ID time
7. Unkey
8. The controller sends the COMMAND ACCEPTED
9. The value is changed.

The time range is from 30 seconds to 2500 seconds. If a value is entered outside these limits the controller will not
save the entered value, it will give the ERROR indication (B in CW) and the function will be ended.

FUNCTION: SET AUXILIARY 1 OUTPUT TIMEOUT TIME

FUNCTION CODE: 69

PURPOSE: Changes the time for the auxiliary 1 timer

HOW TO USE:

1. Key up
2. Enter the SET AUXILIARY 1 OUTPUT TIMEOUT TIME function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds for the auxiliary 1 timeout timer
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The timer value is changed.

The time range is from 10 seconds to 2520 seconds. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR indication (B in CW) and the function will be ended.

FUNCTION: SET WORD PER MINUTE RATE

FUNCTION CODE: 70

PURPOSE: Changes the word per minute rate for the IDer CW output

HOW TO USE:

1. Key up
2. Enter the SET WORD PER MINUTE RATE function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds for the new wpm rate
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The word per minute value is changed for the IDer

The time range is from 5 wpm to 30 wpm. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended.

FUNCTION: SET NUMBER OF REMOTE BASE MEMORIES

FUNCTION CODE: 71

PURPOSE: To tell the controller the number of memories the remote base is using

HOW TO USE:

1. Key up
2. Enter the SET NUMBER OF REMOTE BASE MEMORIES function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the number of memories the remote base has that the controller will increment through
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The number of remote base memories is set

The time range is from 1 memory to 254 memories. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended.

When deciding the value for this function the actual number of memories that appears on the radio's display is what needs to be programmed in. The number to enter here is the actual number of memories that shows up on the remote base radio's display when you go from the first memory to the last.

FUNCTION: SET HANG TIME

FUNCTION CODE: 72

PURPOSE   Sets the time TX 1 is on after the receivers activating it become inactive

HOW TO USE:

1. Key up
2. Enter the SET HANG TIME code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the hang time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new hang time value is stored

The range of the timer is from 0.1 seconds to 25 seconds. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended. The timer is accurate to about 0.2 seconds and has a minimum of about a quarter of a second

To enter a decimal point use the ' * ' key. To enter the value 1.2 sec enter ' 1*2 ' on your DTMF keypad.

FUNCTION: SET TX 1 TIMEOUT TIME

FUNCTION CODE: 73

PURPOSE   Sets the time TX 1 is allowed to be on

HOW TO USE:

1. Key up
2. Enter the SET TX 1 TIMEOUT TIME function code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the time out time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new timeout time value is stored

The time range is from 10 seconds to 1200 seconds in 10-second increments. The accuracy is about 10 seconds. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended.

If "0" is entered the TX 1 timer is disabled. TX 1 will not time out.

FUNCTION: CLEAR ALL DTMF COMMAND LINES

FUNCTION CODE: 74

PURPOSE: To clear all the DTMF memories

HOW TO USE:

1. Key up
2. Enter the CLEAR ALL DTMF COMMAND LINES function code
3. Unkey
4. The controller will send the COMMAND ACCEPTED indication
5. All of the DTMF codes are now cleared from the controller's EEPROM

If it is only necessary to clear one or a few DTMF command lines / memories the CLEAR ONE DTMF COMMAND LINE function can be used.

FUNCTION: CLEAR ONE DTMF COMMAND LINE

FUNCTION CODE: 75

PURPOSE: To clear only one DTMF command line

HOW TO USE:

1. Key up
2. Enter the CLEAR ONE DTMF COMMAND LINE function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the memory number of the DTMF line to clear
7. Unkey
8. The controller will send the COMMAND ACCEPTED indication
9. The DTMF codes in the DTMF selected line / memory are now cleared from the EEPROM

If it is desired to clear all of the DTMF command lines / memories from the EEPROM the CLEAR ALL DTMF COMMAND LINES function may be used.

FUNCTION: ENTER NEW ID

FUNCTION CODE: 76

PURPOSE: To set the information the IDer sends

HOW TO USE:

1. Key up
2. Enter the ENTER NEW ID function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Hold the key while entering in a series of 0's, 1's and 2's.
7. The 0's will enter a space, the 1's will enter a DIT and the 2's will enter a DAH.
8. When all the information is entered unkey.
9. The controller sends the COMMAND ACCEPTED indication
10. The new ID is stored

There is enough room to store as much as two call signs. If the controller did not like the information it received the controller will not save the entered data and it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended.

FUNCTION: SET NEW CW FREQUENCY

FUNCTION CODE: 77

PURPOSE: To set the frequency at which the controller sends any tone

HOW TO USE:

1. Key up
2. Enter the SET NEW CW FREQUENCY function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the new frequency for the controller to send (from 400Hz to 1500Hz)
7. Unkey
8. The controller will send the COMMAND ACCEPTED indication
9. The DTMF codes in the selected line / memory are now cleared from the EEPROM

The frequency range is from 400Hz to 1500Hz. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR indication (B in CW) and the function will be ended.

FUNCTION: ENTER DTMF COMMAND LINE

FUNCTION CODE: 78

PURPOSE: To enter a DTMF code that when entered will do a function

HOW TO USE:
1. Key up
2. Enter the ENTER DTMF COMMAND LINE function code
3. Unkey, the controller sends the ENTER NEXT DATA indication
4. Key up
5. Enter the DTMF line memory number 0 to 24.   (a total of 25 DTMF memories)
6. Unkey, the controller sends the next ENTER NEXT DATA indication
7. Key up
8. Enter the DTMF digits for the DTMF code, do <u>not</u> unkey while entering the 1 to 5 DTMF digits
9. Unkey, the controller sends the next ENTER NEXT DATA indication
10. Key up,
11. If this DTMF command line is to be used only at the Control operator's level (and only if) enter in "16"
12. Unkey, the controller sends the next ENTER NEXT DATA indication
13. Enter in the numerical value of the function for this DTMF command line to do
14. Unkey, the controller sends the COMMAND ACCEPTED indication
15. The new DTMF command line is now stored in EEPROM

If the controller did not like the information it received the controller will not save the entered data and it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended. This can occur from step 4 to step 14

PLEASE NOTE: You must now Unkey after entering in the Control operator code (16) if you enter it.

FUNCTION: FORCE TX 1 ON

FUNCTION CODE: 85

PURPOSE: Forces TX 1 on

HOW TO USE:

1. Key up
2. Enter the FORCE TX 1 ON function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. TX 1 will be locked on.

The FORCE TX 1 ON will be cancelled when either the TX 1 FORCE CLEAR is used or when the TX 1 timeout timer times out.

FUNCTION: FORCE TX 1 ON CLEAR

DTMF CODE: 86

PURPOSE: Cancels the command FORCE TX 1 ON

HOW TO USE:

1. Key up
2. Enter the FORCE TX 1 ON CLEAR function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. If the FORCE TX 1 ON CLEAR command is active, the FORCE TX 1 ON command will now be canceled.

FUNCTION: SAVE STATUSES

FUNCTION CODE: 87

PURPOSE: Makes the current statuses permanent

HOW TO USE:

1.   Key up
2.   Enter the SAVE STATUSES function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication
5.   The controller's selected statuses will now be stored in EEPROM

The statuses need to be changed before using Save statuses. Save statuses just stores them the way it finds them from the controllers temporary RAM memory to the controllers permanent EEPROM memory.
This command will put the value of the statuses listed below in EEPROM memory so they are as currently in RAM when the controller is powered up again. If the Save statuses function is not used and any of these values are changed the values will go back to what they were before power up. The factory defaults are also shown below;

1.   TX ENABLED   Default = TRUE
2.   ID ENABLED   Default = TRUE
3.   BEEP ENABLED   Default = TRUE
4.   AUXILIARY 1 TIMER ENABLED   Default = FALSE
5.   DTMF MUTING ENABLED   Default = TRUE
6.   ENABLE TX FAN   Default = FALSE
7.   RX 1 COR IN AND / OR MODE   Default = FALSE
8.   RX 2 COR IN AND / OR MODE   Default = FALSE
9.   DTMF CONTROL ON RX 2 INPUT   Default = FALSE
10. Port 2 Mode status   Default = HALF DUPLEX
11. FORCE CTCSS ON   Default = FALSE

FUNCTION: ENABLE TIMED TX FAN ON AUXILIARY 1 OUTPUT

FUNCTION CODE: 88

PURPOSE: To enable control for a transmitter fan for TX 1 on auxiliary 1 output

HOW TO USE:

1.   Key up
2.   Enter the ENABLE TIMED TX FAN ON AUXILIARY 1 OUTPUT function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication
5.   The TX 1 fan output is now enabled on the auxiliary 1 output

This function will turn on its output when TX 1 comes on and remain on for a preset time after TX 1 goes off. The output used for this function is the auxiliary 1 output. The auxiliary 1 output timer is used for the fan timer. It starts when TX 1 goes off. To set the time for this function use the SET AUXILIARY 1 OUTPUT TIMEOUT TIME function (function code 69).

The ENABLE TIMED TX FAN ON AUXILIARY 1 OUTPUT command will enable the TX fan. If the TX fan was disabled on power up the TX FAN will again be disabled on power up (or warm reset) unless you use the SAVE STATUSES (function #87). If you ENABLE TIMED TX FAN ON AUXILIARY 1 OUTPUT and then use the SAVE STATUSES function the TX fan will always be enabled when a power or warm reset occurs.

FUNCTION: DISABLE TIMED TX FAN ON AUXILIARY 1 OUTPUT

FUNCTION CODE: 89

PURPOSE: To disable control for a transmitter fan for TX 1 on the Auxiliary 1 output

HOW TO USE:

1. Key up
2. Enter the DISABLE TIMED TX FAN ON AUXILIARY 1 OUTPUT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The fan output is now disabled

The DISABLE TIMED TX FAN ON AUXILIARY 1 OUTPUT command will disable the TX fan. If the TX fan was enabled on power up the TX FAN will again be enabled on power up (or warm reset) unless you use the SAVE STATUSES (Function number 87). If you DISABLE TIMED TX FAN ON AUXILIARY 1 OUTPUT and then use the SAVE STATUSES function the TX fan will always be disabled when a power or warm reset occurs.

FUNCTION: USE CURRENT MEMORY AS REMOTE BASE HOME MEMORY

FUNCTION CODE: 90

PURPOSE: To tell the controller the remote base is now on memory zero (home memory)

HOW TO USE:

1. Key up
2. Enter the USE CURRENT MEMORY AS REMOTE BASE HOME MEMORY function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The current memory in the remote base is now Memory 0 or Home memory to the controller

The Linker IIa controller uses EEPROM to remember what memory the remote base is set to. This function provides a method to tell the Linker IIa what memory in the remote base radio to use as memory 0 or the Home memory. When you use this function the controller will consider the current remote base memory to be memory 0 or the home memory. The current memory will be remembered even if the power is turned off.

FUNCTION: TURN DTMF MUTING ON

FUNCTION CODE: 91

PURPOSE: Tell the controller to mute audio when DTMF tones are heard

HOW TO USE:

1. Key up
2. Enter the TURN DTMF MUTING ON function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The DTMF tones will now be muted

The TURN DTMF MUTING ON function will enable DTMF muting. If DTMF muting was disabled on power up the DTMF muting will again be disabled on power up (or warm reset) unless you use the SAVE STATUSES (function #87). If you TURN DTMF MUTING ON and then use the SAVE STATUSES function the DTMF muting will always be enabled after a power up or warm reset occurs.

If DTMF control is not enabled on RX 2 the control will not mute if tones come in from RX 2.

FUNCTION: TURN DTMF MUTING OFF

FUNCTION CODE: 92

PURPOSE: Set the controller not to mute RX1 or RX2 audio when DTMF tones are heard

HOW TO USE:

1. Key up
2. Enter the TURN DTMF MUTING OFF function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The DTMF tones will now not be muted

The TURN DTMF MUTING OFF command will disable DTMF muting. If DTMF muting was enabled on power up the DTMF muting will again be enabled on power up (or warm reset) unless you use the SAVE STATUSES (function #87). If you TURN DTMF MUTING OFF and then use the SAVE STATUSES function the DTMF muting will always be disabled after a power up or warm reset occurs.

FUNCTION: AND RX 1 COS AND CTCSS INPUTS
*****
FUNCTION CODE: 93

PURPOSE: Requires an AND condition for a valid RX1 ACTIVE condition

HOW TO USE:

1. Key up
2. Enter the SET RX1 COS TO AND function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller is now in AND mode on receiver 1 (RX1, port 1)

This function when enabled will set the receiver #1 input (RX1) to require both the RX1 main input and the RX1 CTCSS input to be active (AND condition) before an active receiver condition is recognized by the controller.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: USE ONLY RX 2 COS INPUT

FUNCTION CODE: 96

PURPOSE: Changes the COS input which RX 2 uses to the RX 2 COS input only

HOW TO USE:

1. Key up
2. Enter USE ONLY RX 2 COS INPUT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The RX 2 COS will now activate RX 2.

This function switches control for RX 2 to the RX 2 COS input.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: USE ONLY RX 2 CTCSS INPUT

FUNCTION CODE: 97

PURPOSE: Changes the input RX 2 uses to the RX 2 CTCSS input

HOW TO USE:

1. Key up
2. Enter the USE ONLY RX 2 CTCSS INPUT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will now look for a valid signal from the RX 2 CTCSS input for a valid receive signal

This function switches control for RX 2 the RX 2 CTCSS input.

This function status will *not* be saved with the SAVE STATUSES command.

FUNCTION: AND RX 2 COS AND CTCSS INPUTS

FUNCTION CODE: 98

PURPOSE: Requires an AND condition for a valid RX 2 receiver active signal

HOW TO USE:

1. Key up
2. Enter the AND RX 2 COS AND CTCSS INPUTS function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller is now in AND mode on receiver 2 (RX2, port 2)

This function, when enabled will set the receiver #2 input (RX 2) to require both the RX 2 COS input and the RX 2 CTCSS input to be active (AND condition) before an active RX 2 receive signal is recognized by the software.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (Function #87) must be used.

FUNCTION: SET RX2 DTMF CONTROL

FUNCTION CODE: 99

PURPOSE: Tell the controller to allow or not allow DTMF control from the RX 2 input

HOW TO USE:

1. Key up
2. Enter the SET RX2 DTMF CONTROL function code
3. Unkey
4. The controller sends ENTER NEXT DATA indication
5. Enter a '1' to allow RX 2 DTMF control or a '0' to Not allow RX 2 DTMF control
6. Unkey
7. The controller sends the COMMAND ACCEPTED indication
8. If a '1' was entered DTMF control can now be done from the RX 2 receiver input

This function will allow you to enable or disable DTMF control from RX 2. Entering a '1' enables the DTMF control and entering a '0' disallows DTMF control from the RX 2 input or port.

The default status (factory default) is DTMF control is not allowed from RX 2.

To keep the current setting of this function you must use the SAVE STATUSES command (command #87). This will insure the current status of this setting will be maintained upon power up and reset.

FUNCTION: ACTIVATE CTCSS ENCODE HANG TIMER

FUNCTION CODE: 100

PURPOSE: Tells the controller to keep the CTCSS encode on after the receiver goes off while
                                   the CTCSS hang timer is running

HOW TO USE:

1. Keyup
2. Enter the ACTIVATE CTCSS ENCODE HANG TIMER function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication.
5. The CTCSS encode will now stay on after the receiver goes off while the CTCSS hang timer is running

The CTCSS encode has to be enabled (command #103) before the encode tone will be sent.

FUNCTION: DEACTIVATE CTCSS ENCODE HANG TIMER

FUNCTION CODE: 101

PURPOSE: Tells the controller to disable the CTCSS encode hang time timer function

HOW TO USE:

1. Keyup
2. Enter the DEACTIVATE CTCSS ENCODE HANG TIMER function code
3. Unkey
4. The controller send the COMMAND ACCEPTED indication.
5. **The CTCSS encode will now not stay on after the receiver goes off.**

FUNCTION: SET CTCSS ENCODE HANG TIME

FUNCTION CODE: 102

PURPOSE: Sets the amount of time the CTCSS stays on after the receiver goes off if enabled

HOW TO USE:

1. Keyup
2. Enter the ACTIVATE CTCSS ENCODE HANG TIMER function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Keyup
6. Enter the number of seconds (from 0s to 25s) in seconds.
7. Unkey
8. The controller send the COMMAND ACCEPTED indication.
9. The newly entered CTCSS encode hang time is now used

FUNCTION: ACTIVATE CTCSS ENCODE

FUNCTION CODE: 103

PURPOSE: Turns on the CTCSS encode function

HOW TO USE:

1. Keyup
2. Enter the ACTIVATE CTCSS ENCODE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication.
5. The CTCSS encode will now be active when the repeater or link receiver is active.

 FUNCTION: DEACTIVATE CTCSS ENCODE

FUNCTION CODE: 104

PURPOSE: Turns off the CTCSS encode function

HOW TO USE

1. Keyup
2. Enter the DEACTIVATE CTCSS ENCODE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication.
5. The CTCSS encode will now be disabled.

This function will disable any CTCSS tone on the TX 1 output.

FUNCTION: ACTIVATE XPEAT

FUNCTION CODE: 105

PURPOSE: Tells the controller to operate in the XPEAT mode

HOW TO USE:

1. Keyup
2. Enter the ACTIVATE XPEAT function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication.
5. The controller will now operate in the XPEAT mode

The XPEAT mode will transmit on TX 2 when RX 1 is activated and on TX 1 when RX 2 is activated. Only one path will operate at a time. RX 1 to TX 1 will have priority.

This status (controller in XPEAT mode will be the power up mode if the SAVE STATUSES function (#87) is used. In the XPEAT mode the IDER will function on TX 1. Please note, the IDer will work in XPEAT in versions starting with version 1.22 of the Linker IIs software.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: SET PORT 2 TO HALF DUPLEX

FUNCTION CODE: 106

PURPOSE: Tells the controller to allow either RX 2 or TX 2 to operate – not both

HOW TO USE

1. Keyup
2. Enter the SET PORT 2 TO HALF DUPLEX function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication.
5. RX 2 and TX 2 will now not operate at the same time.

When Port 2 is in HALF DUPLEX it will active TX 1 and TX 2 when RX 1 becomes active but the controller will only activate TX 1 if RX 2 becomes active.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This is the Default mode for Port 2.

FUNCTION: SET PORT 2 TO FULL DUPLEX

FUNCTION CODE: 107

PURPOSE: Sets Port 2 to full duplex

HOW TO USE:

1. Keyup
2. Enter the SET PORT 2 TO FULL DUPLEX function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication.
5. Port 2 will now operate in full duplex mode.

When Port 2 is in full duplex TX 1 and TX 2 will always be activated when either RX 1 or RX 2 is active.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: SET TX 2 TIMEOUT TIME

FUNCTION CODE: 109

PURPOSE   Sets the time TX 2 is allowed to be on

HOW TO USE:

1. Key up
2. Enter the SET TX 2 TIMEOUT TIME function code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the time out time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new timeout time value is stored

Sets the time maximum time TX 2 remains on after the receivers become inactive

The time range is from 0 seconds to 1200 seconds in 10-second increments. The accuracy is about 10 seconds. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended.

If "0" is entered the TX 2 timer is disabled. TX 2 will not time out.

FUNCTION: ENABLE RX 1 CTCSS ENCODE ACTIVATE

FUNCTION CODE: 110

PURPOSE   To allow activation of the CTCSS encode on TX 1 when RX 1 is active

HOW TO USE:

1. Keyup
2. Enter the ENABLE RX 1 CTCSS ENCODE ACTIVATE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication.
5. RX 1 will now activate the CTCSS encode on TX 1 when RX 1 is active.

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: DISABLE RX 1 CTCSS ENCODE ACTIVATE

FUNCTION CODE: 111

PURPOSE   To not allow RX 1 to activate the encode on TX 1 when RX 1 is active

HOW TO USE:

1. Keyup
2. Enter the DISABLE RX 1 CTCSS ENCODE ACTIVATE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication.
5. RX 1 will now not activate the CTCSS encode on TX 1 when RX 1 is active.

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: ENABLE RX 2 CTCSS ENCODE ACTIVATE

FUNCTION CODE: 112

PURPOSE   To allow activation of the CTCSS encode on TX 1 when RX 2 is active

HOW TO USE:

1.   Keyup
2.   Enter the ENABLE RX 2 CTCSS ENCODE ACTIVATE function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication.
5.   RX 2 will now activate the CTCSS encode on TX 1 when RX 2 is active.

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used. This function is a factory default.

FUNCTION: DISABLE RX 2 CTCSS ENCODE ACTIVATE

FUNCTION CODE: 113

PURPOSE   To not allow RX 2 to activate the encode on TX 1 when RX 1 is active

HOW TO USE:

1.   Keyup
2.   Enter the DISABLE RX 2 CTCSS ENCODE ACTIVATE function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication.
5.   RX 2 will now not activate the CTCSS encode on TX 1 when RX 2 is active.

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: ACTIVATE BEACON MODE

FUNCTION CODE: 114

PURPOSE   Sets the IDer to operate in 'Beacon Mode"

HOW TO USE:

1. Key up
2. Enter the ACTIVATE BEACON MODE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller is now in Beacon Mode mode

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

In Beacon mode the IDer will ID whether or not the transmitter has been activated. The time in-between IDs will be what the pending ID timer (See Function #68) is set to. If a receiver input is active when the pending ID timer times out the IDer will start the polite ID timer (See Function #67). The IDer will not ID until the polite ID timer times out or the receiver input is no longer active.

FUNCTION: DEACTIVATE BEACON MODE

FUNCTION CODE: 115

PURPOSE   Sets the IDer back to normal mode – disables the Beacon function

HOW TO USE:

1. Key up
2. Enter the DEACTIVATE BEACON MODE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will now not be in Beacon mode

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used. This is a factory default (see set factory defaults, function #66)

FUNCTION: SET TIME FOR PULSE ON AUXILIARY 3

FUNCTION CODE: 116

PURPOSE   To set the time the Auxiliary 3 pulse will be on when auxiliary 3 is pulsing

HOW TO USE:

1. Key up
2. Enter the SET TIME FOR PULSE ON AUXILIARY 3 Function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds for the Auxiliary 3 pulse time
7. Unkey
8. The controller sends the COMMAND ACCEPTED
9. The value is changed.

The time range is from .004 second to 1.000 second. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR indication (B in CW) and the function will be ended. Use the '*' key for the decimal point. You can only enter 4 digits (the decimal point counts as a digit).

FUNCTION: RX 2 AND TX 2 ENABLE

FUNCTION CODE: 117

PURPOSE   Enables RX 2 and TX 2

HOW TO USE:

1. Key up
2. Enter the RX 2 AND TX 2 ENABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Now RX 2 and TX 2 are enabled

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: ENABLE ANTIKERCHUNKER FILTER

FUNCTION CODE: 118

PURPOSE   Enables the Antikerchunker filter

HOW TO USE:

1. Key up
2. Enter the ENABLE ANTIKERCHUNKER FILTER function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Now the Antikerchunker filter is enabled

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: DISABLE ANTIKERCHUNKER FILTER

FUNCTION CODE: 119

PURPOSE   Disables the Antikerchunker filter

HOW TO USE:

1. Key up
2. Enter the DISABLE ANTIKERCHUNKER FILTER function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Now the Antikerchunker filter is enabled

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: SET ANTIKERCHUNKER FILTER DELAY

FUNCTION CODE: 120

PURPOSE   Allows changes to the Antikerchunker delay time

HOW TO USE:

1. Key up
2. Enter the SET ANTIKERCHUNKER FILTER DELAY function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. Now the Antikerchunker filter is set to the entered value

The range of the delay timer is 0.1s to 25s. This timer sets the amount of time the receiver needs to be active before the antikerchunker filter stops filtering. .Use the '*' key for the decimal point. You can only enter 4 digits (the decimal point counts as a digit).

FUNCTION: SET ANTIKERCHUNKER FILTER INTERVAL TIME

FUNCTION CODE: 121

PURPOSE: Allows changes to the interval timer - the time before the Linker IIs restarts the Antikerchunker filter

HOW TO USE:

1. Key up
2. Enter the SET ANTIKERCHUNKER FILTER INTERVAL TIME function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. Now the Antikerchunker filter interval time is set to the entered value

The range of the interval timer is 10s to 2500 seconds. This timer starts after the antikerchunker times out. When this timer times out the antikerchunker filter is again started.

FUNCTION: SET PREBEEP TIME

FUNCTION CODE: 122

PURPOSE   Sets the time from when RX1 is determined to be off and the courtesy tone starts

HOW TO USE:

1. Key up
2. Enter the SET PREBEEP TIME function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. Now the Prebeep time is set to the entered value

The minimum Prebeep time that can be set is 0.1 seconds, the maximum Prebeep time that can be set is 25 seconds. If a value is entered outside this range the controller will send a Morse code "B" (for Bad data) and the bad data will not be saved. .Use the '*' key for the decimal point. You can only enter 4 digits (the decimal point counts as a digit).

FUNCTION: OR RX 1 COS AND CTCSS INPUTS

FUNCTION CODE: 123

PURPOSE: Requires an OR condition for a valid RX1 ACTIVE condition

HOW TO USE:

1. Key up
2. Enter the SET RX1 COS TO OR function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller is now in OR mode on receiver 1 (RX1, port 1)

This function when enabled will set the receiver #1 input (RX1) to require both the RX1 main input and the RX1 CTCSS input to be active (OR condition) before an active receiver condition is recognized by the controller.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: OR RX 2 COS AND CTCSS INPUTS

FUNCTION CODE: 124

PURPOSE: Requires an OR condition for a valid RX1 ACTIVE condition

HOW TO USE:

1. Key up
2. Enter the SET RX2 COS TO OR function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller is now in OR mode on receiver 2 (RX2, port 2)

This function when enabled will set the receiver #1 input (RX1) to require both the RX2 main input and the RX2 CTCSS input to be active (OR condition) before an active receiver condition is recognized by the controller.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

FUNCTION: FORCE CTCSS ENCODE ON

FUNCTION CODE: 125

PURPOSE: Turns on the CTCSS encode and keeps it on

HOW TO USE:

1. Key up
2. Enter the FORCE CTCSS ENCODE ON function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller now forces on the CTCSS encode

When the CTCSS encode is forced on it will stay on independent of any other condition. The CTCSS encode will remain on regardless of the status of the transmitters, receivers or the CTCSS encode hang time.

This function is available starting with V1.16 of the Linker IIa software.
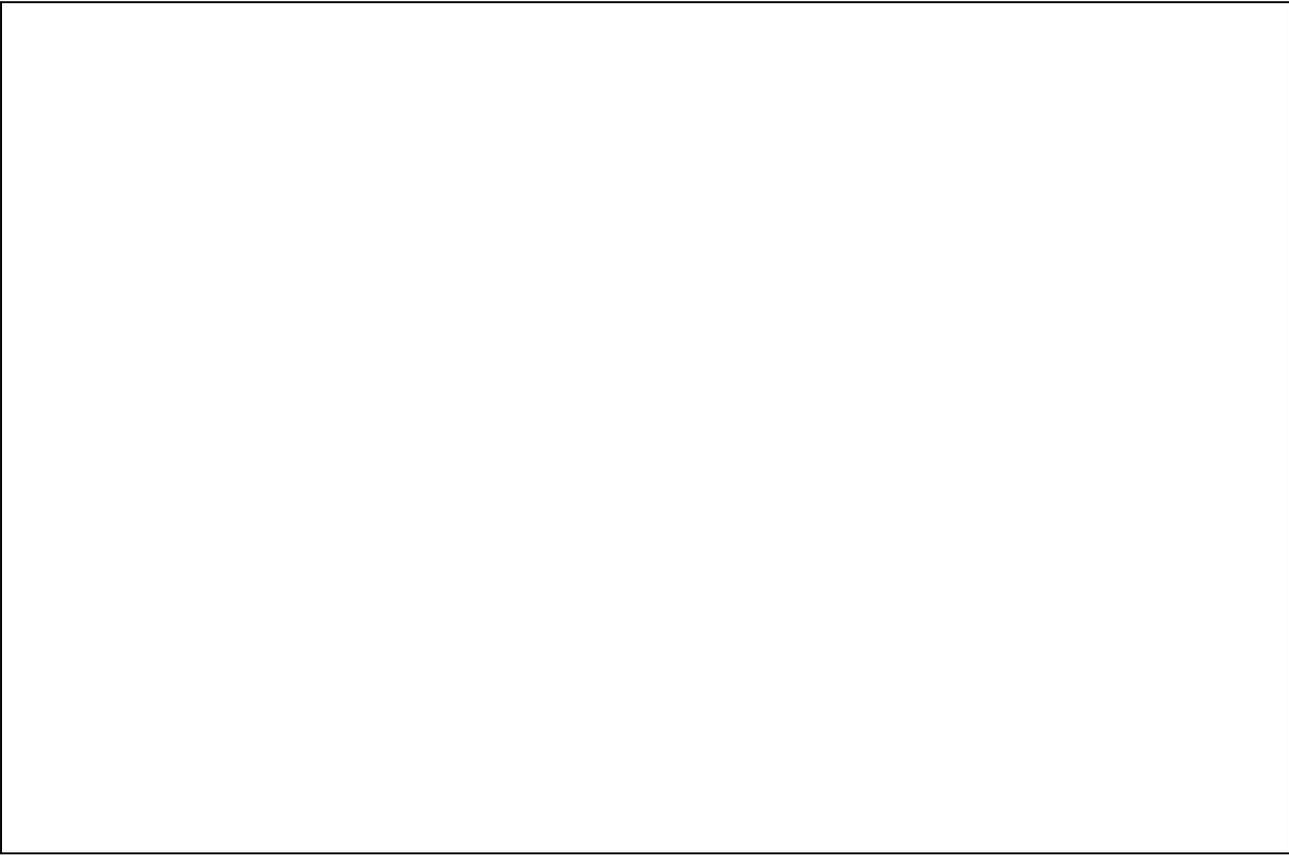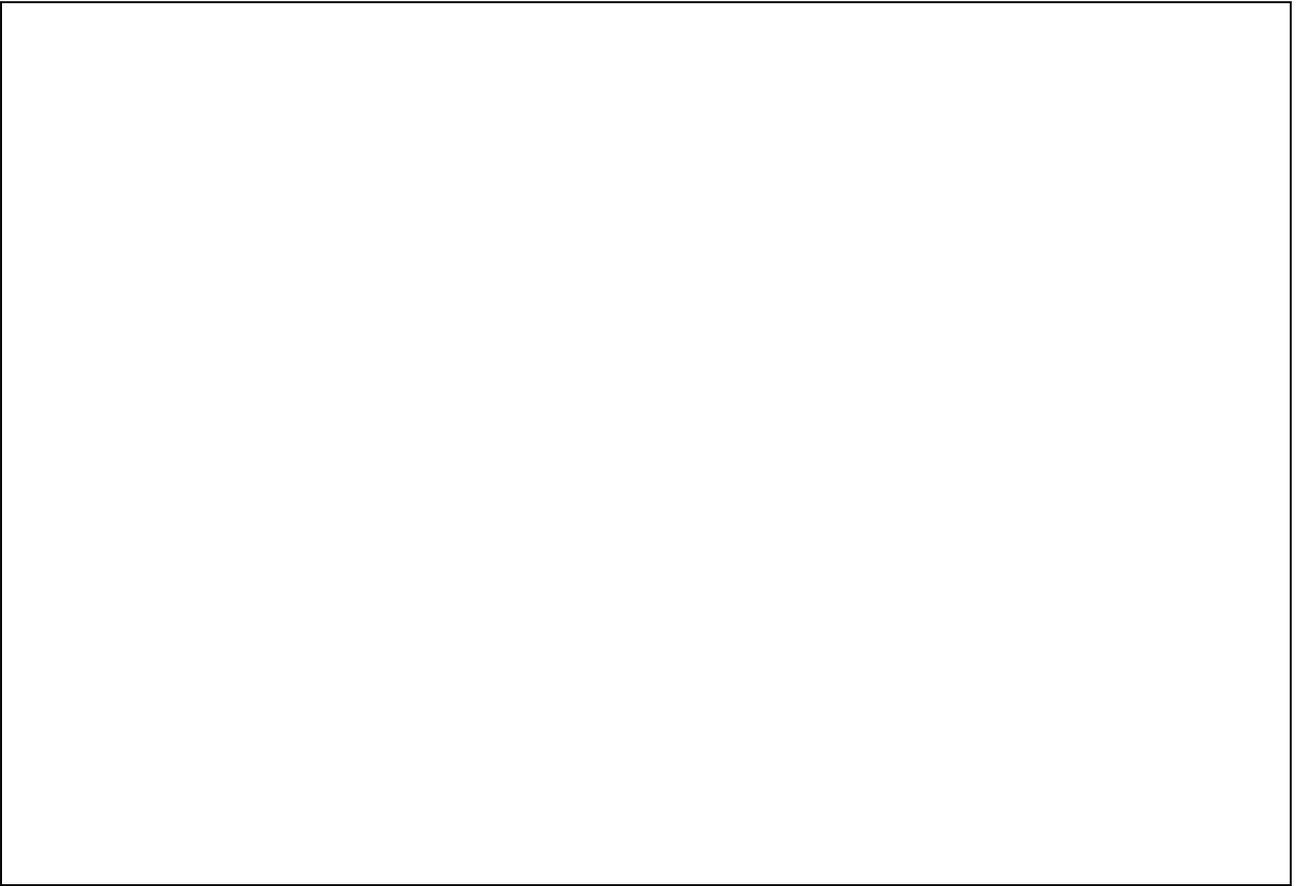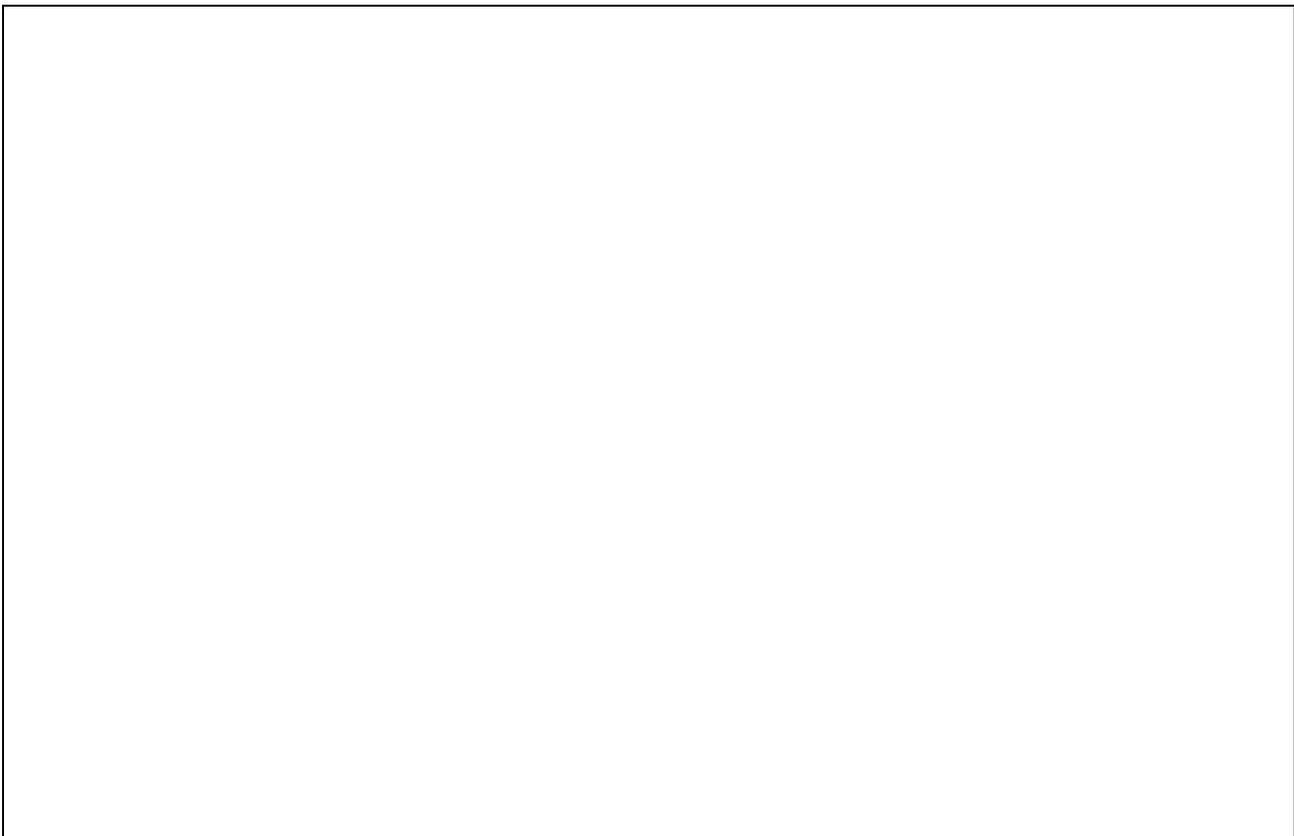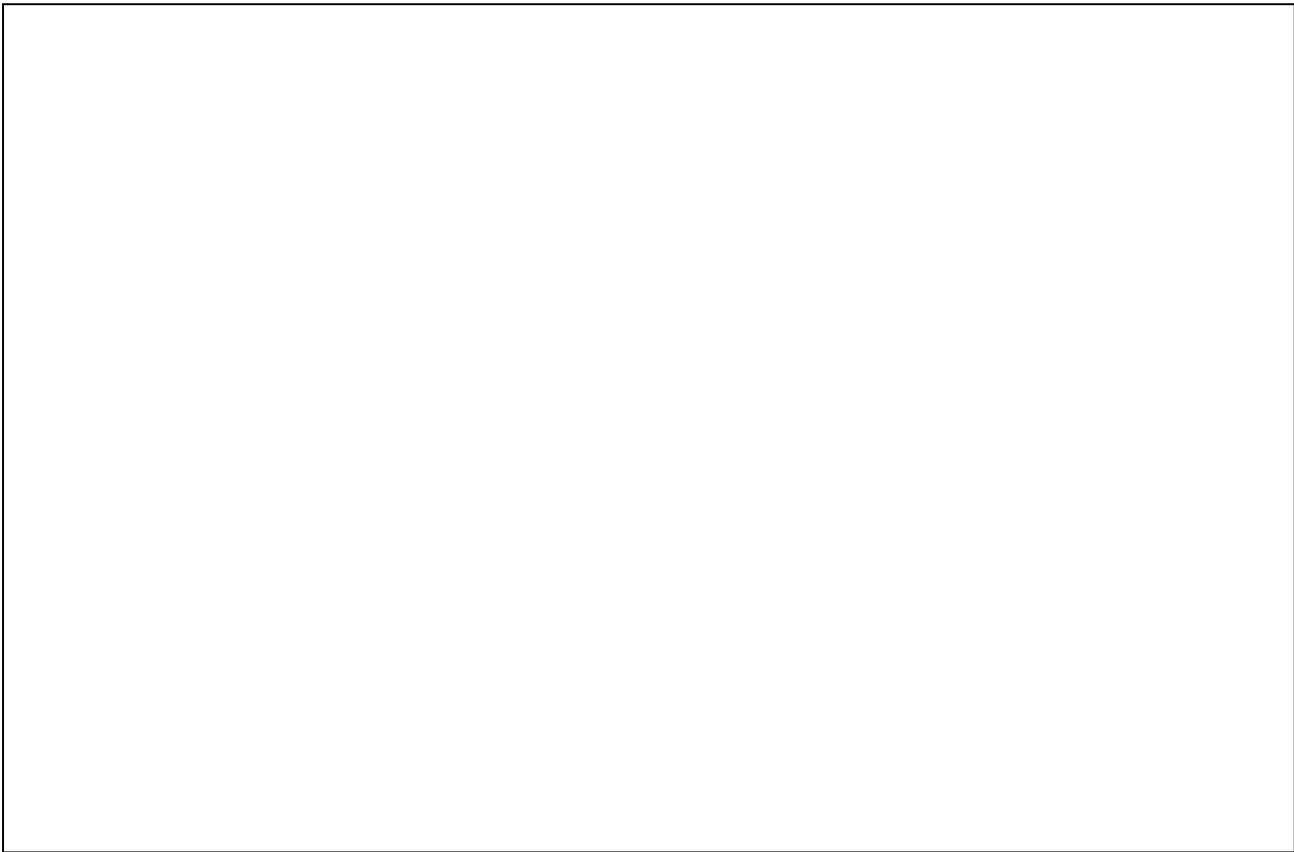
FUNCTION: CANCEL FORCE CTCSS ENCODE ON

FUNCTION CODE: 126

PURPOSE: Cancels the force CTCSS encode force on

HOW TO USE:

1. Key up
2. Enter the CANCEL FORCE CTCSS ENCODE ON function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will no longer force the CTCSS encode on

If the FORCE CTCSS ENCODE ON is active and this function is used the controller will stop forcing the CTCSS encode to be on. The CTCSS encode will operate according to the statuses of the CTCSS encode and the CTCSS encode hang time.

This function is available starting with V1.16 of the Linker IIa software

FUNCTION: CHANGE A PROGRAMMABLE TONE

FUNCTION CODE: 127

PURPOSE: Allows you to change one of the programmable tones

HOW TO USE:

1. Key up
2. Enter the CHANGE A PROGRAMMABLE TONE function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the programmable tone number you wish to change
7. Unkey
8. The controller sends the ENTER NEXT DATA indication
9. Key up
10. Enter the tone number you with to use for the selected programmable tone.
11. Unkey
12. The controller sends the COMMAND ACCEPTED indication

The available programmable tones and the available tones are at the end of the manual, you can find the page number in the table of contents.

This function is available starting with V1.17 of the Linker II and Linker IIa software.

FUNCTION: PLAY A TONE

FUNCTION CODE: 128

PURPOSE: This function will play one of the available tones

HOW TO USE:

1. Key up
2. Enter the PLAY A TONE function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the tone to play
7. Unkey
8. The controller sends the selected tone

The available tones are at the end of the manual, you can find the page number in the table of contents.

This function is available starting with V1.17 of the Linker II and Linker IIa software

FUNCTION: REPORT THE CURRENT REMOTE BASE MEMORY NUMBER

FUNCTION CODE: 129

PURPOSE: Tells you what memory the remote base is set to

HOW TO USE:

1. Key up
2. Enter the REPORT THE CURRENT REMOTE BASE MEMORY NUMBER function code
3. Unkey
4. The controller now reports the current remote base memory number in morse code

This function is available starting with V1.17 of the Linker II and Linker IIa software.

FUNCTION: PROGRAM TERMINATOR DIGIT

FUNCTION CODE: 131

PURPOSE: Allows the selection of the terminator digit

HOW TO USE:

1. Key up
2. Enter the PROGRAM TERMINATOR DIGIT function code
3. Unkey
4. The controller sends ENTER NEXT DATA indication
5. Enter the new terminator digit
6. Unkey
7. The controller sends the COMMAND ACCEPTED indication
8. The terminator digit is now stored. The controller will use new digit as the terminator.

This function is available starting with V1.21 f the Linker II and Linker IIa software.

FUNCTION: TERMINATOR CONTROL

FUNCTION CODE: 132

PURPOSE: This function enabling or disabling of the terminator..

HOW TO USE:

1. Key up
2. Enter the TERMINATOR CONTROL function code
3. Unkey
4. The controller sends ENTER NEXT DATA indication
5. Enter a '1' to enable the terminator or a '0' to disable the terminator
6. Unkey
7. The controller sends the COMMAND ACCEPTED indication
8. If a '1' was entered the terminator digit is now active..

This function will allow you to enable or disable the terminator. Entering a '1' enables the terminator and entering a '0' disables the terminator.

The default status (factory default) is the terminator is active in software versions before 1.30.1.
The default status (factory default) is the terminator is NOT active in software version 1.30.1 and later. This means the terminator must be enabled to use it in versions 1.30.1 and later.

To keep the current setting of this function you must use the SAVE STATUSES command (command #87). This will insure the current status of this setting will be maintained upon power up and reset.

This feature is available starting with version 1.21 of the Linker II / Linker IIa software.

FUNCTION: SET COURTESY TONE SPEED

FUNCTION CODE: 133

PURPOSE: This function is used for changing the courtesy tone speed..

HOW TO USE:

1. Key up
2. Enter the SET COURTESY TONE SPEED function code
3. Unkey
4. The controller sends ENTER NEXT DATA indication
5. Enter the desired courtesy tone speed in words per minute, 5wpm to 30wpm
6. Unkey
7. The controller sends the COMMAND ACCEPTED indication
8. The courtesy tone speed is now the newly entered value.

This feature is available starting with version 1.30 of the Linker II / Linker IIa software.

FUNCTION: ID CANCEL ENABLE

FUNCTION CODE: 134

PURPOSE: This function is used to enable ID canceling

HOW TO USE:

1. Key up
2. Enter the ID CANCEL ENABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The is now the newly entered value

The ID cancel will stop the ID anytime an enabled receiver is determined to be active. The controller will immediately try to ID again when there is not an enabled receiver active. When this is enabled the ID will not occur when the controller is activating the push to talk. In order for the IDer to stop trying to ID the full ID must be sent.

This feature is by default disabled.

To keep the current setting of this function you must use the SAVE STATUSES command (command #87). This will insure the current status of this setting will be maintained upon power up and reset.

This feature is available starting with version 1.30.1 of the Linker II / Linker IIa software.

FUNCTION: ID CANCEL DISABLE

FUNCTION CODE: 135

PURPOSE: This function is used to disable ID canceling

HOW TO USE:

1. Key up
2. Enter the ID CANCEL DISABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The courtesy tone speed is now the newly entered value

To keep the current setting of this function you must use the SAVE STATUSES command (command #87). This will insure the current status of this setting will be maintained upon power up and reset.

This feature is available starting with version 1.30.1 of the Linker II / Linker IIa software.

FUNCTION: TX2 ID WITH TX1 ENABLE

FUNCTION CODE: 136

PURPOSE: When this function is enabled TX2 will key up and ID anytime TX1 does

HOW TO USE:

1. Key up
2. Enter the TX2 ID WITH TX1 ENABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The courtesy tone speed is now the newly entered value

When this function is enabled TX2 will key up and ID anytime TX1 does. The jumper JP6 must be installed to have the cw audio sent to TX2.

This feature is by default disabled.

To keep the current setting of this function you must use the SAVE STATUSES command (command #87). This will insure the current status of this setting will be maintained upon power up and reset.

This feature is available starting with version 1.30.1 of the Linker II / Linker IIa software.

FUNCTION: TX2 ID WITH TX1 DISABLE

FUNCTION CODE: 137

PURPOSE: This function disables TX2 ID WITH TX1 ENABLE function

HOW TO USE:

1. Key up
2. Enter the ID CANCEL DISABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The courtesy tone speed is now the newly entered value

To keep the current setting of this function you must use the SAVE STATUSES command (command #87). This will insure the current status of this setting will be maintained upon power up and reset.

This feature is available starting with version 1.30.1 of the Linker II / Linker IIa software.

FUNCTION: ENABLE ANTIKERCHUNKER FILTER RX2

FUNCTION CODE: 138

PURPOSE   Enables the rx2 Antikerchunker filter

HOW TO USE:

1. Key up
2. Enter the ENABLE ANTIKERCHUNKER FILTER RX2 function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Now the rx2 Antikerchunker filter is enabled

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.31 of the Linker II / Linker IIa software.

FUNCTION: DISABLE ANTIKERCHUNKER FILTER RX2

FUNCTION CODE: 139

PURPOSE   Disables the rx2 Antikerchunker filter

HOW TO USE:

1. Key up
2. Enter the DISABLE ANTIKERCHUNKER FILTER RX2 function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Now the rx2 Antikerchunker filter is enabled

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.31 of the Linker II / Linker IIa software.

FUNCTION: SET ANTIKERCHUNKER FILTER DELAY RX2

FUNCTION CODE: 140

PURPOSE   Allows changes to the rx2 Antikerchunker delay time

HOW TO USE:

1. Key up
2. Enter the SET ANTIKERCHUNKER FILTER DELAY RX2 function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. Now the rx2 Antikerchunker filter is set to the entered value

The range of the delay timer is 0.1s to 25s. This timer sets the amount of time the receiver needs to be active before the antikerchunker filter stops filtering. .Use the '*' key for the decimal point. You may enter up to 4 digits (the decimal point counts as a digit).

This feature is available starting with version 1.31 of the Linker II / Linker IIa software.

FUNCTION: SET ANTIKERCHUNKER FILTER INTERVAL TIME RX2

FUNCTION CODE: 141

PURPOSE: Allows changes to the interval timer - the time before the Linker IIa restarts the
                          rx2 Antikerchunker filter

HOW TO USE:

1. Key up
2. Enter the SET ANTIKERCHUNKER FILTER INTERVAL TIME RX2 function code
3. Unkey
4. The controller sends the ENTER NEXT DATA indication
5. Key up
6. Enter the time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. Now the rx2 Antikerchunker filter interval time is set to the entered value

The range of the interval timer is 10s to 2500 seconds. This timer starts after the rx2 antikerchunker times out. When this timer times out the rx2 antikerchunker filter is again started.

This feature is available starting with version 1.31 of the Linker II / Linker IIa software.

FUNCTION: ENABLE RX1 TONE RX2 ACTIVE

FUNCTION CODE: 142

PURPOSE   This function will allow a rx1 courtesy tone even with rx2 cos active

HOW TO USE:

1. Key up
2. Enter the ENABLE RX1 TONE RX2 ACTIVE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Now the rx1 courtesy tone will occur even if rx2 is active

This function, when enabled, will allow the courtesy tone from rx1 to occur when the rx1 cos becomes non-active and the rx2 cos is still active.

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.32 of the Linker II / Linker IIa software.

FUNCTION: DISABLE RX1 TONE RX2 ACTIVE

FUNCTION CODE: 143

PURPOSE: This disables the rx1 courtesy tone when rx2 is active

HOW TO USE:

1. Key up
2. Enter the DISABLE RX1 TONE RX2 ACTIVE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will not send the rx1 courtesy tone when rx2 is active

To make this function permanent (Function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.32 of the Linker II / Linker IIa software

FUNCTION: NO ID WHEN PORT 2 ENABLED ON

FUNCTION CODE: 144

PURPOSE: If this function is active the IDer will be disabled when port 2 is on.

HOW TO USE:

1. Key up
2. Enter the NO ID WHEN PORT2 ENABLED ON function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will not ID when port 2 is active

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.33 of the Linker II / Linker IIa software

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FUNCTION: NO ID WHEN PORT2 ENABLED OFF

FUNCTION CODE: 145

PURPOSE: This disables the "no ID when port 2 is enabled" function

HOW TO USE:

1. Key up
2. Enter the NO ID WHEN PORT2 ENABLED OFF function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will now send the ID normally

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.33 of the Linker II / Linker IIa software

FUNCTION: DISABLE RX2 TX1 AND TX2

FUNCTION CODE: 146

PURPOSE: This disables the controller by disabling RX2, TX1 and TX2

HOW TO USE:

1. Key up
2. Enter the DISABLE RX2 TX1 AND TX2 function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. Now RX2, TX1 and TX2 will be disabled.

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.33 of the Linker II / Linker IIa software

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FUNCTION: ENABLE RX2 TX1 AND TX2

FUNCTION CODE: 147

PURPOSE: This enables RX2, TX1 and TX2

HOW TO USE:

1. Key up
2. Enter the ENABLE RX2 TX1 AND TX2 function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. RX2, TX1 and TX2 are now enabled.

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.33 of the Linker II / Linker IIa software.

FUNCTION: SEND RESPONSE TO TX1 IN XPEAT ENABLE

FUNCTION CODE: 148

PURPOSE: If in xpeat mode this enables the sending of all function responses to TX1

HOW TO USE:

1. Key up
2. Enter the SEND RESPONSE TO TX1 IN XPEAT ENABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller in xpeat mode will now send the function responses to TX1 instead of TX2

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.33 of the Linker II / Linker IIa software.

FUNCTION: SEND RESPONSE TO TX1 IN XPEAT DISABLE

FUNCTION CODE: 149

PURPOSE: If in xpeat mode this disables the sending of all function responses to TX1

HOW TO USE:

1. Key up
2. Enter the SEND RESPONSE TO TX1 IN XPEAT DISABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will not send the rx1 courtesy tone when rx2 is active

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

The controller in xpeat mode will now send the function responses to TX2.

This feature is available starting with version 1.33 of the Linker II / Linker IIa software.

FUNCTION: SET HANG TIME TX2

FUNCTION CODE: 150

PURPOSE: Sets the time TX 2 is on after the receiver(s) become inactive.

HOW TO USE:

1. Key up
2. Enter the SET HANG TIME TX2 code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the hang time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new hang time value is stored

The range of the timer is from 0 seconds to 25 seconds. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended. The timer is accurate to about 0.1 second.

To enter a decimal point use the ' * ' key. To enter the value 1.2 sec enter ' 1*2 ' on your DTMF keypad.

This feature is available starting with version 1.33 of the Linker II / Linker IIa software.

FUNCTION: PULSE TX2 OFF ON ENABLE

FUNCTION CODE: 151

PURPOSE: Will pulse TX2 off and on when TX2 hang time starts

HOW TO USE:

1. Key up
2. Enter the PULSE TX2 OFF ON ENABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The controller will pulse TX2 off and on when the TX2 hang time starts

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

There is a timer for this function (see Function 153). The timer can be set from 0.004s to 1.000s.

This feature is available starting with version 1.34 of the Linker II / Linker IIa software.

FUNCTION: PULSE TX2 OFF ON DISABLE

FUNCTION CODE: 152

PURPOSE: Disables Pulse TX2 off / on.

HOW TO USE:

1. Key up
2. Enter the PULSE TX2 OFF ON ENABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. TX2 will operate normally

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.34 of the Linker II / Linker IIa software.

FUNCTION: SET TX2 OFF ON TIMER

FUNCTION CODE: 153

PURPOSE: Sets the time too pulse TX2 off

HOW TO USE:

1. Key up
2. Enter the SET TX2 OFF ON TIMER code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the off pulse time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new TX2 off/on time value is stored

The range of the timer is from 0.004 second to 1 second. If a value is entered outside these limits the controller will not save the entered value, it will give the ERROR or BAD VALUE indication (B in CW) and the function will be ended. The timer is accurate to about 0.004 second.

To enter a decimal point use the ' * ' key. To enter the value .12 sec enter ' *12 ' on your DTMF keypad.

This feature is available starting with version 1.34 of the Linker II / Linker IIa software.

FUNCTION: ENABLE RX1

FUNCTION CODE: 154

PURPOSE: Sets the time TX 2 is on after the receiver(s) become inactive.

HOW TO USE:

1.   Key up
2.   Enter the ENABLE RX1 function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication
5.   RX1 will be enabled

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function
(function # 87) must be used.

This feature is available starting with version 1.34 of the Linker II / Linker IIa software.

FUNCTION: DISABLE RX1

FUNCTION CODE: 155

PURPOSE: RX1 will not respond to it's COS or CTCSS inputs

HOW TO USE:

1.   Key up
2.   Enter the DISABLE RX1 function code
3.   Unkey
4.   The controller sends the COMMAND ACCEPTED indication
5.   The controller will not respond to RX1's inputs

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function
(function # 87) must be used.

This feature is available starting with version 1.34 of the Linker II / Linker IIa software.

FUNCTION: PROGRAM ID DELAY TIMER

FUNCTION CODE: 156

PURPOSE: This function will set the time for the delay between the time the controllers plans to ID and when the ID is actually started. This is typically after the COS's are inactive

HOW TO USE:

1. Key up
2. Enter the PROGRAM ID DELAY TIMER Function code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the delay time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new delay time value is stored

This feature is available starting with version 1.35 of the Linker II / Linker IIa software.

FUNCTION: PROGRAM RX1 HANG TIME TX1

FUNCTION CODE: 157

PURPOSE: This function will set the RX1 hang time.

HOW TO USE:

1. Key up
2. Enter the PROGRAM RX1 HANG TIME TX1 Function code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the hang time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new hang time value is stored

This function will program the hang time used for RX1. This RX1 hang time will request TX1 stays on for the delay time after the RX1 COS drops. If this function is set to zero it will have no effect on TX1.

This feature is available starting with version 1.36 of the Linker II / Linker IIa software.

FUNCTION: PROGRAM RX2 HANG TIME TX1

FUNCTION CODE: 158

PURPOSE: This function will set the RX2 hang time

HOW TO USE:

1. Key up
2. Enter the PROGRAM RX2 HANG TIME TX1 Function code
3. Unkey
4. The controller sends the ENTER NEXT DATA code
5. Key up
6. Enter the hang time in seconds
7. Unkey
8. The controller sends the COMMAND ACCEPTED indication
9. The new hang time value is stored

This function will program the hang time used for RX2. This RX2 hang time will request TX1 stays on for the delay time after the RX1 COS drops. If this function is set to zero it will have no effect on TX1.

This feature is available starting with version 1.36 of the Linker II / Linker IIa software.

FUNCTION: TX1 ON FOR ID DELAY

FUNCTION CODE: 159

PURPOSE: The transmitter will be on when the ID delay timer is active

HOW TO USE:

1. Key up
2. Enter the TX1 ON FOR ID DELAY function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The transmitter will be on when the ID delay timer is running

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.36 of the Linker II / Linker IIa software.

FUNCTION: TX1 OFF FOR ID DELAY

FUNCTION CODE: 160

PURPOSE: The transmitter will not be turned on by the ID'er when the ID delay timer is active

HOW TO USE:

1. Key up
2. Enter the TX1 ON FOR ID DELAY function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The transmitter will not be on when the ID delay timer is running

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.36 of the Linker II / Linker IIa software.

FUNCTION: TX2 ON FOR ID DELAY

FUNCTION CODE: 161

PURPOSE: The transmitter will be on when the ID delay timer is active

HOW TO USE:

1. Key up
2. Enter the TX2 ON FOR ID DELAY function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The transmitter will be on when the ID delay timer is running

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.37 of the Linker II / Linker IIa software.

FUNCTION: TX2 OFF FOR ID DELAY

FUNCTION CODE: 162

PURPOSE: The transmitter will not be turned on by the ID'er when the ID delay timer is active

HOW TO USE:

1. Key up
2. Enter the TX2 ON FOR ID DELAY function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The transmitter will not be on when the ID delay timer is running

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.37 of the Linker II / Linker IIa software.

FUNCTION: TX1 OFF FOR DTMF DISABLE

FUNCTION CODE: 163

PURPOSE: Disables the TX1 DTMF mute function

HOW TO USE:

1. Key up
2. Enter the TX1 OFF FOR DTMF DISABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The transmitter will operate normally

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.38 of the Linker II / Linker IIa software.

FUNCTION: TX1 OFF FOR DTMF ENABLE

FUNCTION CODE: 164

PURPOSE: Turns off the transmitter will be turned off when a DTMF tone is heard

HOW TO USE:

1. Key up
2. Enter the TX1 OFF FOR DTMF ENABLE function code
3. Unkey
4. The controller sends the COMMAND ACCEPTED indication
5. The transmitter will go off when a DTMF tone is heard

To make this function permanent (function stays active after power up or reset) the SAVE STATUSES function (function # 87) must be used.

This feature is available starting with version 1.38 of the Linker II / Linker IIa software.

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PROGRAMMABLE TONES AND AVAILABLE TONES

1. Programmable tones (See function #127)

A. Port 1 programmable tone	0
B. Port 2 programmable tone	1
C. Setup mode programmable tone	2
D. Change memory programmable tone	3
E.. Port 1 programmable tone when Port 2 is active	4

2. Available Morse code tones

Zero	0
One	1
Two	2
Three	3
Four	4
Five	5
Six	6
Seven	7
Eight	8
Nine	9
A	10
B	11
C	12
D	13
E	14
F	15
G	16
H	17
I	18
J	19
K	20
L	21
M	22
N	23
O	24
P	25
Q	26
R	27
S	28
T	29
U	30
V	31
W	32
X	33
Y	34
Z	35
Slash	36
Empty (no tone)	37
K	38
Beep	39
Short beep	14

REPEATER CONTROL CODES

Memory #	DTMF Codes	Control Op ?	Function code	Function Description
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
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