

This file contains most of the changes made to the manual between V1.78 and V1.80. Replacing the corresponding pages in the V1.78 manual with these pages will cover the important changes, but will mess up a few of the page numbers (so they don't match the table of contents and index). If it is important that all of the page numbers match up, please download the complete V1.80 manual.

**RLC-3 8 Port Communications Controller
Software Version 1.80
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020: Program a Selected Timer

This command allows you to program the controller's timer system.

```
<020> xxx t..t
```

Parameters:

- 020 is the default command name.
- 'xxx' is the timer to be programmed (three digits)
- 't..t' is the value to be programmed into the timer, 0 to 9999, one to four digits

Message Start Delay Timer:

This timer controls how long the controller will wait before sending voice messages in two situations. The first is when you enter a command and unkey; it controls how long it will be before the response to that command will be sent. If the delay is set too short, you might miss the first word or two while your HT finishes switching from transmitting to receiving. The second situation in which this timer might delay voice messages is when they need to be sent out of a transmitter that is not keyed up at the time. The transmitter will be keyed for at least the length of this timer before the voice is started. If this timer is too short, the transmitter might not have time to come up to full power and the beginning of the voice message might be missed. If the voice message is being sent down a link system with multiple hops, more time might be needed so all of the link transmitters will have time to come up.

- This timer is programmed in 10mS increments from 0..9999.
- If a timer value of 000 is entered, the timer is disabled.

Timer Number	Definition	Defaults
000	Message Start Delay Timer, Transmitter 1	500mS (050)
001	Message Start Delay Timer, Transmitter 2	"
002	Message Start Delay Timer, Transmitter 3	"
003	Message Start Delay Timer, Transmitter 4	"
004	Message Start Delay Timer, Transmitter 5	"
005	Message Start Delay Timer, Transmitter 6	"
006	Message Start Delay Timer, Transmitter 7	"
007	Message Start Delay Timer, Transmitter 8	"

021: Recall a Timer Value

This command allows you to recall the duration of a timer as set with command 020. It also recalls the current value of the counter so you can tell how long it will be before the timer expires (the timers count down and expire when they reach zero).

<021> xxx

Parameters:

- 021 is the default command name.
- XXX is the timer to recall (three digits, see command 020 for list of timers)

022: Start a Timer

This command makes the specified timer start running, so that it will expire later. If the timer is already running, this command will make it start over. The controller automatically starts and stops most timers, but you can override the controller's normal way of doing things with this command. You can also use this command to make the user timers start running (timers 148..163).

<022> xxx	Start timer 'xxx' for the duration set with command 020
<022> xxx t..t	Start timer 'xxx' for duration 't..t'

Parameters:

- 022 is the default command name.
- 'xxx' is the timer to start (three digits, see command 020 for list of timers)
- 't..t' is the duration the timer should run for *this time only*. This does not permanently change the length of the timer; that is what command 020 is for.

Notes:

- Some timers (such as the ID timers) are reset to their normal duration periodically by the firmware, so command 022 may be ineffective on those timers.
- If a timer's normal duration has been set to 0 with command 020, it will not run regardless of what you try to set it to with command 022.

023: Stop a Timer

This command allows you to stop a timer, so that it will not expire normally. The controller automatically stops most timers as needed, so the only time you should need to use this command is when you want to change the way the controller normally works. Most timers automatically stop when they expire.

```
<023> xxx
```

Parameters:

- 023 is the default command name.
- XXX is the timer to stop (three digits, see command 020 for list of timers)

130: Block Command Execution From Port

This command allows you to block execution of a command or a range of commands by a port. Before using it, please read the cautions on the previous page.

<130> ccc	Recall which ports are blocked from executing this command
<130> p ccc	Block execution for a single command
<130> p ccc ddd	Block execution for a range of commands

Parameters:

- 130 is the default command name.
- P is the port to block access by
- CCC is the first command number to block
- DDD is the last command number in the range of commands to block

131: Allow Command Execution From Port

This command allows you to reverse the effects of Command 130 and allow the specified port to execute a command or range of commands again. This command is not dangerous - it can not lock you out of your own controller.

<131> ccc	Recall which ports are blocked from executing this command
<131> p ccc	Allow execution for a single command
<131> p ccc ddd	Allow execution for a range of commands

Parameters:

- 131 is the default command name.
- P is the port to allow access by
- CCC is the first command number to allow
- DDD is the last command number in the range of commands to

063: Send a Polite Voice Message

This command is identical to 036 except that audio from receivers is given priority over the voice message. If a receiver that is on the same port as, or is connected to, any transmitter that is sending the voice message keys up, the voice message will be discarded so you can hear the receiver instead. In other words, if someone is talking, the controller won't interrupt (it is "polite). If someone interrupts the controller (keys up while it is speaking), it will finish the word it is currently speaking and then throw the rest of the message away. This is commonly used for speaking scheduled messages, such as reading the time at the top of every hour. It could also be used for ID's, but if you want a CW ID to be sent when the voice ID is interrupted, use command 064 instead.

```
<063> vvv..vvv
```

Parameters:

- 063 is the default command name.
- VVV..VVV is a list of synthesized voice words to be spoken
(See Appendix B for word numbers)

Example:

- Speak the time only if it won't play over someone talking: "063 810". Note that word 810 is a special word that speaks the current time. To put that command into macro 500, enter: "053 500 063 801". You can then call macro 500 from a macro, the scheduler, a tail message, etc. to speak the time politely.

Notes:

- The autopatch will not interrupt polite voice messages. In other words, a polite voice message that is spoken to the autopatch port will not be interrupted by the autopatch "receiver," even though it is always active during a call.

064: Send a Polite Voice Msg, If Interrupted Execute Cmd

This command is identical to Command 063 except that if a receiver is active and causes the voice message to be thrown away, it will cause another command to be executed. This is used to make a voice ID that gets interrupted cause a CW ID to be sent instead (see the example below).

```
<064> ccc vvv..vvv
```

Parameters:

- 064 is the default command name.
- CCC is the command number to execute if the message is interrupted
- VVV is the Voice word to be spoken
 - See Appendix B for voice word numbers

Example:

You want to program a polite voice pending ID message for port 1 that will send a CW ID if it is interrupted. Since the first pending ID for port 1 is sent by macro 228, we will program that macro to execute command 064. We will tell command 064 to either speak the voice ID, or if it is interrupted, to execute the impolite ID (command number 260) instead. We will make the voice ID say the words "I D" with are word numbers 039 and 034 (you would want to change this - see Appendix B for other word numbers):

```
053 228 064 260 039 034 unkey, D or <Enter>
```

The above string uses command 053 to program macro 228 to execute command number 064. When command 064 executes, it checks for receiver activity. If the receiver is active, it executes command 260 (the impolite ID). Otherwise it speaks the voice message "ID". See Chapter 11 for more information about programming ID's.

Notes:

- The autopatch will not interrupt polite voice messages. In other words, a polite voice message that is spoken to the autopatch port will not be interrupted by the autopatch "receiver," even though it is always active during a call.

terminal or terminal emulation software supports ANSI cursor control commands (most do). This feature is useful for checking how much of the range of the analog to digital converter is being used.

- A status display lets you check how much storage time is used for each message and mailbox. This can help you know what you should delete when the memory gets full.

If you have connected a terminal or computer to your RLC-3, all you have to do is unplug the cable from the RLC-3 and plug it into the DVR. The default setting is 9600 baud, N81, the same as the default for the RLC-3. If you do not already have a cable and your computer or serial terminal has a DB-9 connector, you can use a straight through DB-9 cable (not a null modem cable). If you are using a modem or TNC, note that pins 2 and 3 will have to be swapped (a null modem adapter will do this). If you are using a modem or TNC, you will probably have to set them up to make them work transparently - contact Link Communications if you need more information about how to do this.

If everything you type shows up double on your serial screen like this "tteesstt", turn the local echo off on your communications program.

The DVR is unavailable to the controller while it is executing a command entered from the serial port. Because of this, most of the serial commands will time out if you do not respond within about 10 seconds. Pressing the escape key will also get you out of most commands.

The default baud rate of 9600 baud works well for both uploading and downloading. Faster baud rates are supported, but may not work reliably. Downloading may work at a higher baud rate than uploading. When uploading, you may have to set the character pacing time (check the ASCII transfer settings on your communications program) to avoid overruns. The line pacing can be set relatively small, often to 0. When uploading at high baud rates, if the data that appears on your screen has missing or incorrect characters but you are not getting error messages, the data is probably being uploaded correctly and you can ignore the incorrect characters that you see on the screen. Most errors in uploading are caused by trying to upload to a track that is not empty. If the DVR is reset either by powering it down or by the serial reset commands, the baud rate is automatically reset to 9600 baud.

Making DVR-1 Messages Polite:

Currently, DVR command 173 is similar to the synthesized voice command 036 in that they are both impolite (see commands 063 and 064 for more information about "polite" messages). There are no DVR commands similar to the synthesized voice commands 063 (speak politely) or 064 (speak politely and do something if interrupted) in this firmware version (they are planned for a future version), but they can be simulated on the DVR-1 (the big DVR, not the small one) by programming macros similar to those shown below. To make polite DVR messages, the DVR-1 must be running V1.50 or later firmware; older versions of DVR firmware will continue to work but will not be polite and may cause the following (harmless) message to be printed to the controller's serial port: "DVR is not responding (1), Error sending command to DVR".

- Speak polite DVR message (like command 063):
055 500 ; erase macro
056 500 036 801 ; start polite mode
056 500 173 <dvr tracks> ; play dvr tracks
056 500 036 802 ; stop polite mode
- Speak polite DVR message and do macro 230 if interrupted (like command 064):
055 501 ; erase macro
056 501 036 801 ; start polite mode
056 501 173 <dvr tracks> ; play dvr tracks
056 501 036 803 230 ; stop polite mode, do 230 if interrupted

on one repeater, it messes up the courtesy beep on the other repeater as well, since everything gets stored in one big snapshot macro. You can't make a snapshot macro that does just what you want; it always restores a whole configuration at once.

The solution to the dilemma illustrated above is to use multiple command macros that do exactly what you want them to and nothing else. If you want a macro to connect you to Link A and not to Link B, make a multiple command macro to disconnect your repeater from Link B and connect it to Link A. Executing this macro will not interfere with anything else that is going on in the controller like a snapshot would.

Advanced Macro Topics:

Limits on Macros:

Since one macro can call another macro, you may wonder if macro 500 could call 501, which could call 502, which could call 503, etc. until you had called 100 macros or so. The answer is not quite. There are two limits. One is that if the total time it takes the processor to decode and execute the whole chained macro sequence is more than 1/2 second or so, the controller may reset itself. It is unlikely that you will ever reach this limit (it would probably take more than 20 macros all hooked together to even come close to this limit). The other limit restricts how deeply the macros can be *nested* (called from another macro). This is not a limit on how many commands can be called inside of a macro. It is not a limit on how many macros can be executed from one macro. It is a limit on one macro calling another macro that calls another macro that calls another macro. You can think of it as a limit on how deep an outline can go. For example, you execute macro 500. It calls Command 038, macro 501, and Command 000. This can be shown as the level with roman numerals:

- I Call Command 038
- II Call macro 501
- III Call Command 000 and connect port 1 and 3

Macro 501 could contain Command 007 and call macro 502. Since macro 501 is called from macro 500, it is *nested* one level deeper, to level 2. This could be shown as capital letters in the outline:

- I Call Command 038
- II Call macro 501
 - A Call Command 007
 - B Call macro 502
- III Call Command 000 and connect port 1 and 3

Macro 502 could call macros 503, 504 and 505. Macro 502 is nested one level deeper than 501, so it is at level 3.

- I Call Command 038
- II Call macro 501

- A Call Command 007
- B Call macro 502
 - 1 Call macro 503
 - 2 Call macro 504
 - 3 Call macro 505
- III Call Command 000 and connect port 1 and 3

Macros 503, 504 and 505 are at level 4. Note that they are all at the same level. Any commands that are called from these macros will be at level 5. This is about as deep as the RLC-3 will let you nest macros, 5 or 6 levels. If you ever exceed this limit, error macro 209 will be executed. This is the nested macro depth limit.

Macros that Accept Data at Runtime:

Normally macros must be programmed with all of the data they will need to execute. For example, a macro that dials a phone number could be programmed as follows:

```
055 500 ;           erase macro 500
056 500 112 123 4567 ;   call 123-4567
```

Such a macro will always call the same phone number. It can be executed by entering "500". There is a way to make macros that accept more information at the time they are executed, and pass that data into the commands that are executed by the macro. For example:

```
055 500 ;           erase macro 500
056 500 112 ;       phone number will be supplied at runtime
```

contains everything it needs to know to make the call, except for what phone number it is supposed to use. You can tell the controller to get the rest of the information needed to execute the macro at the time you tell it to execute the macro with command 067. For the above example, you could enter:

```
067 500 07 0 ;       make macro 500 accept exactly seven digits
```

Command 067 tells the controller that a macro will need more information at runtime. In this case, we specified that the user would enter exactly seven digits. It would also be possible to let the user enter seven or more digits ("067 500 07 1"), or any number of digits ("067 00 1"). See command 067 for more information.

Macro 400 is used to speak "Autopatch Busy" when you try to use the patch when it is already in use. It is automatically programmed when the controller is reinitialized. You can delete it and program your own autopatch busy message if you wish.

Macro	Definition
400	Called when the Autopatch is Busy

Macro 401 is used to speak "Autopatch" before the phone number is read back and dialed. It is automatically programmed when you set up the autopatch with Command 110. You can delete it and program your own message if you wish, but be sure that you recall the pre-programmed message first and understand what it does (it may do some other things depending on the number readback mode). You can also change the number of pauses that are spoken after the word "Autopatch" to change the delay before the number readback begins. Also see macro 411.

Macro	Definition
401	Called before Autopatch number is read-back

Macro 402 is used to speak pauses after the number is read back. It is automatically programmed when you set up the autopatch with Command 110. You can change it if you wish, but be sure that you recall the pre-programmed macro first and understand what it does. You can change the number of pauses that are spoken to change the time that you can wait after the number is read back and still be able to kerchunk to make it dial/not dial (depending on the number readback mode).

Macro	Definition
402	Called after Autopatch number is read-back

Macro 403 is an autopatch macro that is used for number readback mode 2.

Macro	Definition
403	Internal Autopatch Macro

Macro 404 is used to speak "Call complete at <time>" when you hang up the patch. It is automatically programmed when the controller is reinitialized. You can delete it and program your own autopatch off message if you wish.

Macro	Definition
404	Called when the Autopatch is hung-up.

Macro 405 is called when the DTMF cover tone is requested. It normally sends a 440 Hz tone using command 040. It can be set back to the default beep by entering: "053 405 020 030 0440". Any other tone, cw character, or voice message could also be used, although you will want to keep the length fairly short.

Macro	Definition
405	DTMF cover tone macro

Macro 406 is called when a user logs on using his password. First his callsign is spoken, then this macro is called. It is normally programmed to speak "control up". It can be programmed to speak other messages if you wish.

Macro	Definition
406	User Logon Message

Macro 407 is called a user tries to log on but gets the password wrong. It normally says "fail".

Macro	Definition
407	User Logon Fail Message

Macro 408 is called when a user logs off. First his callsign is spoken, then this macro is called. It is normally programmed to speak "control down".

Macro	Definition
408	User Logoff Message

067: Set Macro Data Length

This is an advanced command that lets you specify that a macro should gather some extra information (more digits entered after the name of the macro) when it is executed and pass that information on to the commands inside of the macro. See the examples below for some of the possible uses of this command.

<067> mmm	recall data length for macro 'mmm'
<067> mmm xx y	'mmm' is the macro number 'xx' is number of digits of data 'y' is '0' if the amount of data must be exact or '1' if more data is OK.

Notes:

- When the macro executes, any commands in the macro that require a fixed amount of data will first take the data that was specified when the macro was programmed, then will take as many of the digits specified at runtime as needed.
- Commands in the macro that will accept a variable amount of data get all of the remaining digits specified at run-time.
- Any extra digits will be discarded.

Examples:

- Extra autopatch up code:
 067 500 01 1 ; allow macro 500 to take 1 or more digits
 053 500 112 ; make macro 500 call patch up command
 ; the phone number will be specified at runtime
 010 500 n..n ; rename new patch up code to "n..n"
 Usage: "n..n <phone number>"
- Connect port 3 to the port that user specifies:
 067 501 01 0 ; allow macro 500 to take 1 digit
 053 501 000 3 ; connect port 3 to port specified at runtime
 Usage: "501 x" will connect port 3 to port x

085: Enable/Disable IDing a Port

This command allows you to enable or disable the IDing functions for a port. Normally all ports are IDed, including link ports. Often this is not desired. This command allows you to turn off the IDing functions.

This command also lets you specify whether the controller should use the pending ID messages or the impolite CW message during conversations. If you choose the latter, the controller won't even try to send voice ID's during conversations (after the initial ID); it will always use the impolite CW ID message. If you choose voice ID's, it will try to sneak in a voice ID when you unkey. If you key up during the voice ID and it is programmed to be polite, it will switch to CW at that point.

<085> p i	Enable or disable ID
<085> p i 0	Enable or disable ID. Use pending ID's during conversations
<085> p i 1	Enable or disable ID. Use impolite CW ID during conversations.

Parameters:

- 085 is the default command name.
- P is the port for which to enable or disable the ID's (1..8)
- 'i' is 1 to enable ID's, 0 to disable them

Defaults:

- IDs are enabled only on port 1.
- The controller tries to use voice ID's during conversations.

Notes:

If you only want to disable some of the ID's for a port, keeping the pending ID's but not the initial ID, for example, just delete the ID macro that you don't want to do anything (see Chapter 8 for macro definitions).

086: Recall Which Ports have ID's Enabled

This command lists the ports that have IDing enabled. If all ports do, it speaks "12345678".

<086>

Parameters:

- 086 is the default command name.

Chapter 13: Autopatch Routines

Configuring the Autopatch:

Because any of the eight radio ports can be used as the autopatch port, you must tell the controller which radio port the autopatch is hooked up to. This is done with Command 110. Command 110 also allows you to specify whether or not you want the autopatch to read back in the synthesized voice the number it is about to dial. If you select to have the number read back, you can choose whether it should read it back "politely" (so it can be interrupted by kerchunking) or "impolitely" (so it always reads back the whole number).

Autopatch Up Commands:

There are three different commands that can be used to access the autopatch. All of them connect the port that the command was entered from to the autopatch port (as specified with Command 110). Because of this, none of them can be executed from the serial port or by the scheduler (how do you connect an autopatch to a scheduler?). They are:

- **Manual Off Hook:** Command 111. This command connects the radio port to the phone line without dialing any numbers. You can dial phone numbers without DTMF regeneration by executing this command, waiting for dial tone, and entering the number on your DTMF pad. Since the tones are not captured and regenerated but go out directly onto the phone line, there is no long distance checking, etc.
- **Normal Forward Dial:** Command 112. This command is the one you would usually make available to users. Three digit numbers will access autodial slots, 4 through 11 digit numbers will be checked against the dialing tables (explained later), then regenerated over the phone line. If you have specified pre-dial digits (such as a '9' to get out of a local PBX) with Command 116, they will be dialed first.
- **Special Forward Dial:** Command 113. This command is similar to the normal forward dial but it bypasses the dialing table checks. It is the most convenient way to bypass all of the long distance checking. It will dial any predial digits that you have programmed with Command 116.

Using '*' for the Autopatch Up Command:

You can use the '*' digit to execute any of the above autopatch commands. Simply rename your autopatch command to a '*' using Command 010. This will allow you to use the patch by simply keying up, pressing '*', then the phone number you wish to dial.

Hanging Up:

No matter which command was used to bring up the autopatch, Command 114 will hang it up. If you want to have more than one hang up command, just make several different macros call Command 114. You can rename command 114 to '#' by entering "010 114 #" unkey, 'D' or <Enter>.

Command 115 can also be used to hang up the patch. It differs from command 114 in that it will not hang up the patch from a radio port that is not part of a call in progress. For example: port 1 and port 2 are running independent repeaters (they aren't connected), and port 1 makes an autopatch call. Port 2 continues to operate normally, unaware that the autopatch is in use. Then someone on port 2 decides to make a call on the patch and gets the autopatch busy message. Rather than waiting for the user on port 1 to finish their call, the person trying to make a call on port 2 decides to hang up the patch so he can make his own call. If he uses command 115, the controller will not hang up the patch because port 2 is not connected to the autopatch. If he uses command 114, it will. Either command will work to hang up the patch if they are entered from port 1, the port that made the call. Often command 115 is used as the primary hang up command and command 114 is reserved as a control operator command, to be used only when an emergency mandates hanging up someone else's call. Resetting the controller with command 035 also hangs up the patch and can be executed from any radio port.

Connected Ports:

Any ports that are connected to or monitoring the port you make the autopatch call from will also be included in the autopatch call. For example, if you have connected repeaters and someone wants to make a call from one of them, you can bring the patch up for them from the other one.

Predial Digits:

Autopatches that are on a PBX often have to dial a '9' or some other combination of digits to reach the outside world. The RLC-3 has the ability to dial these digits for you. You can tell it what digits to dial and how long of delays to use before and after these "predial digits" with Command 116. These digits will be dialed before every number that is dialed with the forward dial commands. You can chose whether or not they should be dialed before each autodial number. This allows you to dial numbers that do not require the predial digits by putting them in an autodial slot.

The Autodialer:

There are 1000 autodial slots that can each hold up to an eighteen digit phone number. They are numbered 000 through 999. They can be accessed by executing either of the forward dial commands with the number of the autodial slot you want to dial. They can be programmed with Command 124. You can find out what number is in an autodial slot with Command 125. You can select whether or not the predial digits (set with Command 116) get sent before the autodial number with Command 126. This is useful for those using a PBX because it allows them to have some autodial slots go to internal numbers and some to dial the predial digits to get to the outside

world. Command 127 allows you to enable or disable the use of an autodial slot. This allows you to keep an autodial number from being dialed without erasing the slot and having to re-program it later.

Limiting Call Length:

The time out timer for the autopatch port limits the total length of the call. If the timer expires, it will execute the autopatch port's time out macro (see Chapter 8) and hang the autopatch up. If you would like a message to be spoken when this happens, put the commands to speak that message in the time out macro. If you do not want the autopatch to time out, set the timer length to 9999 with Command 020. You will probably want to erase the contents of the time out clear macro for the autopatch port with Command 055.

You will be warned before the patch times out. Thirty seconds before timeout, three beeps will be sent out of the radio port and down the phone line (so both sides of the conversation know it). Two beeps are sent twenty seconds before, and one ten seconds before. *The CW characters 'S', 'I', and 'E' are used for these warning beeps.*

If you want to reset the patch time out timer during a call, use Command 022 to reset the time out timer for the autopatch port (timer 094..101 depending on which port you are using). Using port 4 as the autopatch port as an example, the command would be: 022 127 D or unkey. You could make macro 500 extend the patch timer using the code `**3` with the following command:

```
053 500 030 18 D or unkey      ; send CW 'I' as a beep-beep response
056 500 038 D or unkey        ; be silent for rest of macro
056 500 022 127 D or unkey    ; reset timer 127
010 500 **3 D or unkey        ; rename macro 500 to '**3'
```

How the Dialing Tables Work:

The dialing tables are used to control which long distance numbers can be dialed with Command 112 and which cannot. They do not affect autodial numbers or numbers dialed with Command 113. If you attempt to dial a number with Command 112 that is not allowed you will get an error 213 (you can disable or change this error message by editing macro 213 - see Chapter 8). By default all but 7 digit numbers are blocked (see command 119). Before a number is dialed using Command 112, it must pass the following tests:

- All digits in the phone number must be decimal digits. A, B, C, and D are not allowed; if you need to dial these digits, put them in as predial digits, use an autodial slot or use Command 113.
- If the number is one, two or three digits, it will be treated as an autodial number. The autodial number will be looked up, and if it has been programmed, it will be accepted without checking to see if it is long distance or not. It is assumed that whoever programs the autodial slots will decide whether to allow long distance numbers in autodial slots or not.

- If the number matches one of the entries in the nuisance number table, it is blocked. Slot 001 defaults to blocking all four digit numbers. If you want to dial four digit numbers, clear that slot in the nuisance number table.
- If the number is five digits or longer and matches one of the entries in the allowed number table, it is accepted, otherwise it is blocked. Slot 000 defaults to allowing all seven digit numbers.

If the number passes all of the above tests and is accepted, it will be read back (if you turn number readback on with Command 110) and then dialed.

Both the allowed numbers table and the nuisance number table store each type of number in a separate "slot". Each slot affects only one length of number, so allowing all seven digit numbers will not affect six or eight digit numbers. You should keep track of what you put in each slot as you program them, so that you can easily change them later.

The allowed numbers table has 500 slots, numbered 000..499. Each slot can hold one type of number that you want to allow. For example, you might want to program slot 0 to allow seven digit numbers that begin with the prefix 482, such as 482-7515 and slot 1 to allow eleven digit numbers that begin with 1800. To do this, you could enter Command 119 000 482 D or unkey (where Command 119 is the name of the command that programs the allowed numbers table, 0 is the slot to store this type of number in, and 482 is the number we want to allow, ignoring the last four digits). If you instead wanted to allow all seven digit numbers, not just 482 numbers, we could enter Command 119 000 ### D or unkey instead. The # symbol is a wildcard digit that represents any decimal digit. To allow 1800 numbers (using slot 1 so we don't mess up the seven digit numbers we allowed in slot 0), we would enter Command 119 001 1800### D or unkey.

The nuisance number table allows you to block numbers that would otherwise be allowed. It has 100 slots, numbered 000..099. You may not need to use the nuisance number table. It is usually used to block prank calls. For example, we allowed all seven digit numbers in the allow table example above. If someone was calling our fax number (482-7547) with the autopatch as a prank, we could block that number by entering Command 121 000 4827547 D or unkey. Note that the nuisance number table is independent from the allowed number table; slot 000 in one table does not interfere with slot 000 in the other table. The nuisance number table requires that you enter all of the digits of the phone number; it does not ignore the last four digits like the allowed number table does. The nuisance number table accepts wildcards. Even if we had allowed all seven digit numbers in the allow table as in the examples above, we could block seven digit numbers beginning with 554 by entering Command 121 01 554##### D or unkey.

You can check the operation of the dialing tables at any time by either trying to dial a number with the forward dial command, or just *pretending* to dial it with Command 123. This command will tell you whether a number would be blocked by the dialing table or would be dialed, without actually using the autopatch. Command 123 will work even if you don't have an autopatch.

Other Commands that Affect the Autopatch:

Command 007 (see Chapter 3) allows you to turn the DTMF mute on or off for the autopatch port. While this does not affect the DTMF digits that are actually generated when the autopatch is dialing, it does have several other effects. See the note on command 007 for more information.

110: Configure the Autopatch

This command sets which port the autopatch interface is hooked to and allows you to choose whether and how the number is read back before it is dialed.

```
<110> p s
```

Parameters:

- 110 is the default command name.
- P is the radio port that the autopatch is hooked to (1..8). Enter 9 to specify that no ports are autopatches
- S is the readback style, described below. Modes 2 and 3 watch to see if you force the command to be executed by pressing the force-execution digit (defaults to 'D', see command 078) or kerchunk before, during, or shortly after the number is read back; if you do they will immediately quit reading the number back and either dial the number (mode 2) or abort dialing (mode 3). Also see the notes for more options.

S - Readback Style	Reads Number Back	If Kerchunked or Force Execution
0	Never	No Effect
1	Always	No Effect
2	Politely	Makes it Dial
3	Politely	Makes it Abort Dialing
4	Politely	No Effect (dials either way)

Notes:

- If you change the autopatch port with this command, you will need to set up the reverse patch again with Command 133.
- You can adjust messages and the length of the delays before and after the phone number is read back by editing macros 401..403, after you execute this command to set them up.
- You can make the controller read the numbers back politely like mode two, but dial whether or not you kerchunk it, by entering using command 110 to select readback mode 2, then entering "056 402 403" to make macro 402 call macro 403 when it finishes. There is one known problem with doing this: if you do kerchunk it to make the message go polite, it will dial the number twice in a row. This usually won't be noticed but could be if someone answers the phone right away (on the first ring or so). If you are calling an answering machine, paging service or some other device that listens for DTMF digits, it could cause problems by entering digits you didn't want entered. To avoid that, either don't use this readback mode or don't kerchunk while it is reading the number back.
- If this command is executed while the patch is in use, it will hang the patch up.
- This command automatically turns on timed execution and makes '#' be the force-execution

digit for the autopatch port, to make entering commands from the reverse patch easier (see command 133). These changes can be reversed/modified with command 078.

111: Manual Off Hook

This command connects the port from which the command is executed to the autopatch without dialing any numbers. Touch tones from your radio can be used to dial numbers without DTMF regeneration. This is usually used only for testing, because it doesn't regenerate your DTMF digits, it doesn't allow you to block long distance numbers, and it usually causes an error message when you dial a number. The error message may be generated because the controller can't tell whether you are entering a command (such as to hang up the patch) or dialing a number, so it treats the number as a (usually invalid) command; you can just ignore the error message. Command 114 can be used to hang up the patch.

<111>

Parameters:

- 111 is the default command name.

112: Normal Forward Dial

This is the normal autopatch up command you would make available to your users if you want an open autopatch. If the number you enter is 3 digits or less, it dials that autodial number. If it is longer, it checks it against the dialing tables described at the beginning of this autopatch section and if it passes, dials that number.. Command 114 can be used to hang up the patch.

<112> sss	Autopatch using an autodial memory slot
<112> d..d	Autopatch using user entered number

Parameters:

- 112 is the default command name.
- SSS is the autodial slot number (1..3 digits)
- D..D is the phone number you want to dial

Notes:

- The longest number that can be dialed with the command is eleven digits, because that is the longest number that can be specified in the allowed number table. If you need to dial longer numbers, use Command 113.

113: Forward Dial with no Long Distance Checking

This is the autopatch up command you would use if you wanted to dial a number without worrying about whether or not it is allowed by the dialing tables. You would not normally make this command available to the average user, because it would allow them to dial any number, including long distance numbers.

<113> sss	Autopatch using an autodial memory slot
<113> d..d	Autopatch using user entered number

Parameters:

- 113 is the default command name.
- SSS is the autodial slot number (1..3 digits)
- D..D is the phone number you want to dial

Notes:

- You can call this from a macro to dial numbers too long to fit in an autodial slot.

Example:

Have macro 500 dial the number 012345678901234567890

```
<053> 500 113 012345678901234567890 D or unkey or <Enter>
```

The user will program macro 500 to bring up the patch and dial the number 012345678901234567890.

137: Autodial Only

This is the same as the other dialing commands except it will only let you dial autodial numbers.

```
<137> sss
```

Parameters:

- 137 is the default command name.
- SSS is the autodial slot number 000..999 (1..3 digits)

129: Repeat Dial (redial the last number dialed)

This command allows you to easily redial the last number you called or to find out the last number someone else called. It keeps track separately for each port that can use the autopatch, so if you make a call from port 1 and get a busy signal, then someone on port 2 makes a call (which you might not even know about), then you attempt a redial from port 1, it will redial the number you called, not the number that was called from port 2. It works for numbers that are dialed directly or using an autodial slot, but it does not remember numbers that are dialed while using command 111 (manual off hook). It does not “forget” the last number dialed after a certain period of time; you can redial a number that was dialed last week if no calls were made from that port in the meantime.

<129>	Redial the last number dialed
<129> p	Recall (speak, do not dial) the last number dialed from port ‘p’

114: Hang up the Autopatch

This is the command to use to hang up the autopatch, no matter which of the three autopatch up commands you used to take it off-hook. If the autopatch is not currently in use, it doesn't do anything.

```
<114>
```

Parameters:

- 114 is the default command name.

Note:

- The autopatch is also hung up whenever the controller is reset.

Example:

I want my autopatch hang-up code to be '#'

```
<010> 114 # D or unkey or <Enter>
```

Now the users will enter '#' to hang-up the autopatch.

115: Possibly Hang up the Autopatch

This command normally works exactly like command 114, but it won't allow you to hang up the patch if someone else on another radio port is using it and you aren't. Command 114 will hang up the patch if it is any use by any port; that is you can hang it up even if someone else on another port of the controller that is using it. It is important to be able to do that if there is an emergency and you need to cut them off. On the other hand, if someone tries to use the patch and gets the "autopatch busy" message, they may not realize (or care) that someone else is using the patch even though they can't hear it, and they may hang it up. Giving the users access to command 115 rather than 114 will solve that problem, as only the port(s) that can hear the autopatch call will be allowed to hang it up. If they try to hang it up with this command while someone else is using it, you may want to speak a message that indicates that they aren't allowed to do that. Event trigger 227 (see Chapter 20) will let you do that.

```
<115>
```

116: Set / Recall the Predial Digits and Timing

When either of the forward dial commands are used, several things must take place before the number is actually dialed:

- If number readback is turned on, speak the number.
- Take the phone line off-hook. This is the same as you picking up your phone at home.
- Since the controller can not listen to see if it gets dial tone from the phone line, it just delays for a little bit and assumes that dial tone is there. We will call this delay the "initial delay".
- If you must dial '9' or some other digits to get out of a local switchboard or PBX, those digits should be dialed here. We will call those "predial digits". You can also use these predial digits to dial special codes to turn on or off call waiting, caller ID, and other special features that your phone company may offer. They can be omitted if you are not on a PBX.
- After dialing the predial digits, you may need to delay again while the PBX hooks you up to an outside telephone line. We will call this delay the "after-predial delay". This delay can be set to zero if you are not using predial digits.
- Now we can dial the actual number.

This command lets you set the initial delay, predial digits (if any), and after-predial delay.

Recall Settings	<116> 0
Change Settings	<116> iii aaa d..d

Parameters:

- 116 is the default command name.
- III is the length of the initial delay in 10mS increments (001..250). Default is 100. Do not set to 0.
- AAA the length of the after-predial delay in 10mS increments (001..250). Default is 100. Do not set to 0.
- D..D are the predial digits. They can be omitted. The maximum number of predial digits is 10. Any of the 16 DTMF digits can be used, although you might have to temporarily change your force-execution digit to use it (see command 078).

Defaults:

Initial delay = 100 (1 second)
 After-predial delay = 100 (1 second)
 Predial digits = none

119: Set Allowed Numbers Table Slot

This command allows you to set one of the slots in the allowed numbers table. For a description of this table and how to use it, see the explanation of the dialing tables before Command 110.

<119> sss	Clear slot sss
<119> sss d..d	Program slot sss

Parameters:

- 119 is the default command name.
- SSS is the slot number (000..499)
- D..D is the area code/prefix (do not include the last four digits of the phone number). The '#' digit is a wildcard that matches any digit.

Defaults:

- Slot 000 is programmed to “###”, which allows all seven digit numbers.

120: Recall Allowed Numbers Table Slot

This command allows you to recall the contents of one of the slots in the allowed numbers table. For a description of this table and how to use it, see the explanation of the dialing tables before Command 110.

<120> sss

Parameters:

- 120 is the default command name.
- SSS is the slot number (000..499)

121: Set Nuisance Numbers Table Slot

This command allows you to set one of the slots in the nuisance number table. For a description of this table and how to use it, see the explanation of the dialing tables before Command 110.

<121> sss	Clear slot sss
<121> sss d..d	Program Slot sss

Parameters:

- 121 is the default command name.
- SSS is the slot number (000..099)
- D..D is the whole number to be blocked (do include the last four digits of the phone number). The '#' digit is a wildcard that matches any digit.

Defaults:

- Slot 000 is programmed to “###” to block three digit numbers (which isn’t really necessary and has no effect) and slot 001 is programmed to “####” to block four digit numbers.

122: Recall Nuisance Numbers Table Slot

This command allows you to recall the contents of one of the slots in the nuisance number table. For a description of this table and how to use it, see the explanation of the dialing tables before Command 110.

<122> sss

Parameters:

- 122 is the default command name.
- SSS is the slot number (000..099)
- D..D is the whole number to be blocked (do include the last four digits of the phone number). The '#' digit is a wildcard that matches any digit.

123: Test Dialing Tables

This command allows you to test the dialing tables. It takes the telephone number you enter and tests it in the exact same way the normal forward dial Command 112 does, but instead of dialing the number, it just tells you whether or not the number is rejected by the dialing tables. This comes in very handy when setting up the dialing tables, because you don't have to actually dial and hang up numbers to see if they are blocked or not. This command also works from the serial port, allowing you to check the dialing table from a terminal or computer. You do not have to have an autopatch installed to use this command.

```
<123> d..d
```

Parameters:

- 123 is the default command name.
- D..D is the number you wish to test with the dialing tables

124: Set Autodial Slot

This command allows you to set one of the autodial slots. For a description of the autodial slots and how to use them, see the autopatch section before Command 110.

```
<124> sss d..d
```

Parameters:

- 124 is the default command name.
- SSS is the slot number (000..999)
- D..D is the whole number to be dialed (up to 18 digits), not including any predial digits (they must be set with Command 116 - you can keep them from being sent for an autodial slot with Command 126).

Notes:

- You will probably want to program autodial slot 911 to dial 911 or whatever your local emergency number is.
- You can clear the data out of a slot by entering Command 124 SSS D or unkey
- You can disable a slot without erasing it with Command 127.
- After you program an autodial memory, the predial information for that slot is enabled
- Autodial numbers are not checked by the long distance dialing tables

125: Recall Autodial Slot

This command allows you to recall the contents of one of the autodial slots.

<125> sss

Parameters:

- 125 is the default command name.
- SSS is the slot number (000..999)

126: Send Predial Digits / Callsign for Autodial Slot?

This command allows you to control whether or not the predial digits will be sent before an autodial number. The default is to send them. By telling the controller not to send them, you can dial extensions on the PBX you are on (numbers that don't need the predial digits) with an autodial slot. The initial delay and after-predial delay (see Command 116) are sent in either case.

It also allows you to control whether or not any callsigns you may have programmed for your users will be spoken when dialing their autodial slot. You may also want to assign autodial slots for emergency numbers and program their "callsign" to be something like "police". See command 191 for information about programming callsigns.

Set Predial Sending	<126> sss p
Set Callsign Sending	<126> sss p c

Parameters:

- 126 is the default command name.
- SSS is the slot number (000..999)
- P is 1 to send the predial digits (the default), 0 to not send them.
- C (optional, no change if omitted) is 1 to send the callsign for that autodial slot if it is programmed (the default), 0 is to just use the number of the autodial slot. The default callsigns are the number of the slot, spoken as separate digits like "two three zero". If you set C to 0, it will speak the number of the slot as a number, like "two hundred thirty".

Notes:

This command must be executed after you program an autodial position. The default setting for this command is predial enabled. If you have a predial number programmed, and you do not want the controller to add a predial your autodial slot number, then you must execute this command and disable the predial setting for that specific autodial number.

127: Enable/Disable an Autodial Slot

This command allows you to disable an autodial slot without erasing its contents so you can enable it later without having to re-enter the number.

```
<127> sss c
```

Parameters:

- 127 is the default command name.
- SSS is the slot number (000..999)
- C is 1 to enable the slot, 0 to disable it

128: Set/Recall Patch Audio Options for a TX

Talking to someone using the autopatch is different in several ways from talking to someone on a repeater. One difference is that when you are talking on a repeater, everyone has to wait until you unkey before they can talk (unless they have a stronger signal than you do and can capture the repeater receiver); a person talking on a phone during an autopatch call can talk at the same time that you are talking on the radio. If you are using a typical transceiver (HT or mobile) that is half-duplex (cannot transmit and receive at the same time), you can't talk and listen at the same time. If the autopatch is set up to work full-duplex and the person on the phone talks at the same time you do, you will not be able to hear what they are saying, but anyone else listening to the repeater will be able to hear both you and them. To avoid this problem, the autopatch can be set to work in half-duplex mode. Half-duplex mode causes the audio from the phone to be muted whenever you are talking; if someone starts to say something that shouldn't be transmitted, all you have to do is key up and they will get muted. This is the default mode. In some situations, such as when you have two radios (one to talk on and the other to listen with) or a radio that can transmit and receive at the same time (possibly on different bands), you may want to change the autopatch to work in duplex mode. You can change the mode in the middle of a call, and can select the mode for each transmitter separately.

Another difference between talking to someone on a repeater versus an autopatch is that the person using the phone though the autopatch doesn't care if your audio gets transmitted out the repeater or not; he is listening to the phone. If you don't want everyone else that is monitoring the repeater to hear the things you say while you are talking on the autopatch, you can tell the controller to mute your audio at those times. That is known as "semi-private" mode. Anyone that is listening to the repeater while you use the autopatch in semi-private mode will only hear one side of the conversation, what the person on the phone says. You can turn on a cover tone to be sent while the person on the radio is talking, or just let it be silent.

<128> p	Recall half-duplex and semi-private settings for a port
<128> p h	Set autopatch half-duplex mode for a port
<128> p h s	Set autopatch half-duplex and semi-private modes for a port
<128> p 0 0	Full duplex mode, not semi-private
<128> p 1 0	Half duplex, not semi-private
<128> p 1 1	Half duplex, semi-private with no cover tone
<128> p 1 2	Half duplex, semi-private with cover tone

Parameters:

- 128 is the default command name.
- P is the port (1..8) that the autopatch call is made or answered from, not port the autopatch is connected to.
- H is the Half-Duplex on/off setting, 1 for half duplex (the default), 0 for full duplex

Notes:

- The half/full duplex mode and semi-private mode settings are independent, but the semi-private feature doesn't work well in duplex mode because the autopatch hybrid is not (and can not be) perfect. For this reason, only the combinations shown in the chart above are useful in most situations.
- This command allows you to control whether the audio from the autopatch gets muted when one of the receivers that can send audio to the patch is active. When the controller receives a command to bring up the patch, it connects that port and any ports that are monitoring or connected to that port to the patch, so they can all take part in the call. Each of those ports' transmitters will stay up for the length of the call. Each transmitter that is set for full-duplex mode with this command will transmit the audio from the autopatch for the entire length of the call; if it also transmits the audio from a receiver, it will mix it with the autopatch audio. Each transmitter that is set up for half-duplex mode (the default) with this command will mute the audio from the autopatch whenever someone keys up their radio to talk to the person on the phone. This allows the control op to mute anything that the person on the phone may say by simply keying up, rather than having to hang up the patch.

133: Set up Reverse Patch

This command allows you to set up the reverse autopatch. You must set up the forward patch functions with Command 110 before you use this command. If you want to change how the reverse patch works, just execute this command again with the new information.

<133>	Recall reverse patch settings
<133> 0	Disable reverse autopatch
<133> 1 xx y..y	Configure for over-air ringing
<133> 2 xx	Configure for control mode with no password
<133> 2 xx n..n	Configure for control mode with password n..n

Parameters:

- 133 is the default command name.
- There are three reverse patch "modes".
Mode 0 disables the reverse patch. Forward patch will still work normally.

Mode 1 is the ring over air mode

- XX - Number of rings the controller waits before ringing over the air.
- Y..Y - What ports the ringing will be routed to

Mode 2 is the control mode

- XX - Number of rings the controller waits before answering the phone.
- N..N - Access code required when in mode 2 access

Note about Ring Detection:

This command automatically enables the keyup delay filter (see the description for the keyup delay timers in Chapter 4 for more information) for the autopatch port. This helps prevent transients on the phone line from fooling the controller into thinking the phone is ringing when it is not. If the phone line going to the controller rings in very short bursts, you may have to disable or shorten the keyup delay timer after executing this command to get the controller to answer.

Note on Mode 2:

After XX rings, the controller will answer the phone and give you about 29 seconds to enter the access code N..N, or it will hang up on you. If you enter the code N..N correctly the controller will speak "Control" and let you enter commands by DTMF just as you would from a radio port. Since you can't unkey to tell the controller to execute the commands, you will have to either use timed execution or change your force-execution digit for the autopatch from 'D' to '*' or '#' (both of those things are done automatically by command 110, see command 078 for more details). Note that you will have to rename any commands you wish to execute from the telephone to not contain the digits 'A', 'B', 'C' or 'D', as those digits can't be entered from most telephones.

After entering the access code, you can go out over radio ports or just monitor them by executing

Commands 000 and 001. For example, if you wish to monitor the repeater on port 1, enter "001 31", then press the force-execution digit for the patch or wait for the timed execution (see command 078). This will make the autopatch (port 3) monitor the repeater (port 1).

134: Access Reverse Patch Control Mode

You do not need to know about this command - it is for the controller's internal use when using reverse patch mode 2 (control mode), so you can quit reading now if you want. When the controller answers the phone in mode 2, the only commands you can execute are the pre-access macros for the autopatch port, because the controller turns preaccess on when you set up the patch. When you specify the reverse patch access code with Command 133, it renames one of the pre-access macros for that port to the access code and programs that macro to call this command when executed. This command allows you to access all of the commands until the patch is hung up, resets the patch time out timer, and stops the pre-access timer, among other things. If you accessing the reverse patch in mode 2 and the time out timer is about to expire, you can execute this command to keep the patch from timing out.

<134>

Parameters:

- 134 is the default command name.

135: Answer Reverse Patch

This command is used to answer a reverse patch call that is ringing out over the air (Autopatch needs to be configured as mode 1 with command 133 or mode 2 if command 132 is also used). It will only work when the reverse patch is ringing - it is not a substitute for the manual off-hook command. The patch is hung up the same way as for forward patch, with Command 114.

<135>

Parameters:

- 135 is the default command name.

Notes:

- The controller will speak "Connect" out both the radio and the autopatch when this command is executed successfully.
- If you try to execute this command and the reverse autopatch has not been ringing, you will get an autopatch error (See System wide errors at the front of the manual).

132: Start Reverse Patch Call-Out

There are several different ways to use the reverse autopatch. Command 133 allows you to select what the controller should do when it detects that the phone line is ringing (when someone is calling the controller). It can ignore the ringing (mode 0), generate a ring tone over the air without answering the phone (mode 1), or answer the phone after a few rings (mode 2). This command is only useful when command 133 is set for mode 2.

After the controller answers the phone, it may require you to enter a password (see command 133 for details). After the password has been entered, it will say “control”, unless you have changed that message to something else. At that point, the controller will wait for you to enter a command. You could enter any command, such as 026 to recall the time or 187 to log on so you can do password-protected commands. By using this command, you can make the controller do a general call-out or directed call-out.

<132>	Start general call-out
<132> x <132> xx <132> xxx	Start directed call-out to user xxx

If you start a general call-out, the controller will generate a ring-tone over the air. Anyone listening can answer the call-out by entering the reverse patch answer command (135, or whatever you have renamed it to). If no one answers the call-out, the controller will generate the ring tone a certain number of times, then give up and say “No answer” to the person on the phone. The number of times it will ring before giving up can be changed with command 136; it defaults to 5 rings for a general call-out. The ring tone will normally be transmitted on port 1, but that can be changed with command 192.

If you start a directed call-out and someone is talking on one of the ports that the call-out is going to, the controller will generate a ring tone until they unkey. Then it will speak their callsign, “Call for” and their callsign again, send the ring tone three times, and speak “<callsign> call for <callsign>” again. Finally, it will ring a few more times, then give up and tell the person on the phone “No answer”. The call-out can be answered at any time with command 135 or stopped with the hang up command (114 or 115). The callsign for each user can be set with command 191. Normally the call-out will be done on the transmitter connected to port 1, but that can be changed (or directed call-out can be disabled) for each user with command 192. Command 192 can also be used to change how many times the controller will generate the ring tone before giving up (the default is three).

If you wish to stop either a general or directed call-out before anyone answers it, enter the hang up code (the name of command 114 or 115). This will stop the call-out but will not cause the controller to hang up. You can then execute command 132 to try again, or any other command. If you wish to hang up, enter the hang up code again.

136: Set up Reverse Autopatch Ring

This command allows the user to set up the over the air ringing tone and length.

<136>	Recall ring length and frequencies
<136> gg dd	Set number of rings before give up when using command 132
<136> xxx yyyy zzzz	Set ring length and frequencies

Parameters:

- 136 is the default command name.
- GG is the maximum number of times the controller will generate a ring tone when command 132 is used to do a general call-out. Default is 5 rings.
- DD is the maximum number of times the controller will generate a ring tone at the end of the directed reverse patch call-out sequence. See command 132 for more details. The default is 3 rings.
- XXX is the length of the ring tone in 10ms increments (100 = 1 second)
- YYYY is the Frequency of the first ring tone
- ZZZZ (optional) is the Frequency of the second ring tone

Defaults:

Ring tone length defaults to 2 Second
 Ring tone frequencies default to 0440 Hz and 0480 Hz.

Example:

To set the ring back to the default: 136 200 0440 0480

Notes:

Do not make the length of the ring tone too long. The controller will stack up tone requests and could still be ringing over the air after the phone has answered if the length of the tone is longer than the delay between rings from your phone company.

192: Set/Recall Call-Out Options

The command allow you to set and recall several options that affect how the reverse patch call-out command (132) works. The default is to allow the general call-out and directed call-out for all users. If you disable the directed call-out for a user and someone attempts to do a directed call-out to them using command 132, they will hear the message "No P A G E R". Each user's callsign can be set with command 191 (in Chapter 18).

<192> 0 000	Recall general call-out settings
<192> 0 000 0	Disable general call-out
<192> 0 000 1 x..x	Enable general call-out to transmitters x..x

<192> 0 uuu	Recall directed call-out settings for user uuu
<192> 0 uuu 0	Disable directed call-out to user uuu
<192> 0 uuu 1 x..x	Enable directed call-out to user uuu on transmitters x..x

<192> 1 uuu vvv	Recall settings for range of users from uuu to vvv
<192> 1 uuu vvv 0	Disable directed call-out for users uuu..vvv
<192> 1 uuu vvv 1 x..x	Enable directed call-out for users uuu..vvv on transmitters x..x

Parameters:

- uuu is the user number
- vvv is the last user number in a range from user uuu to user vvv
- x..x is a list of the ports that the call-out will be transmitted on. The default for everything is transmitter 1.

- 182 - Port 7 DTMF Active 6
- 183 - Port 7 DTMF Active 7
- 184 - Port 7 DTMF Active 8
- 185 - Port 7 DTMF Active 9
- 186 - Port 7 DTMF Active A
- 187 - Port 7 DTMF Active B
- 188 - Port 7 DTMF Active C
- 189 - Port 7 DTMF Active D
- 190 - Port 7 DTMF Active *
- 191 - Port 7 DTMF Active #
- 192 - Port 8 DTMF Active 0
- 193 - Port 8 DTMF Active 1
- 194 - Port 8 DTMF Active 2
- 195 - Port 8 DTMF Active 3
- 196 - Port 8 DTMF Active 4
- 197 - Port 8 DTMF Active 5
- 198 - Port 8 DTMF Active 6
- 199 - Port 8 DTMF Active 7
- 200 - Port 8 DTMF Active 8
- 201 - Port 8 DTMF Active 9
- 202 - Port 8 DTMF Active A
- 203 - Port 8 DTMF Active B
- 204 - Port 8 DTMF Active C
- 205 - Port 8 DTMF Active D
- 206 - Port 8 DTMF Active *
- 207 - Port 8 DTMF Active #
- 208 - Tried to hang up patch when was
already hung up.
- 209 - Before turn HF mode on
- 210 - After turn HF mode off
- 211 - HF Band 160m
- 212 - HF Band 80m
- 213 - HF Band 40m
- 214 - HF Band 30m
- 215 - HF Band 20m
- 216 - HF Band 17m
- 217 - HF Band 15m
- 218 - HF Band 12m
- 219 - HF Band 10m below 29MHz
- 220 - HF Band 10m above 29MHz
- 221 - HF Band 6m
- 222 - HF Band 2m
- 223 - HF Band 125cm
- 224 - HF Band 70cm
- 225 - HF Band 33cm
- 226 - HF Band 23cm
- 227 - HF Band Other
- 228 - Hang Up Command 115 Blocked
- 229 - Tail Msg 1 TX 1
- 230 - Tail Msg 2 TX 1
- 231 - Tail Msg 3 TX 1
- 232 - Tail Msg 1 TX 2
- 233 - Tail Msg 2 TX 2
- 234 - Tail Msg 3 TX 2
- 235 - Tail Msg 1 TX 3
- 236 - Tail Msg 2 TX 3
- 237 - Tail Msg 3 TX 3
- 238 - Tail Msg 1 TX 4
- 239 - Tail Msg 2 TX 4
- 240 - Tail Msg 3 TX 4
- 241 - Tail Msg 1 TX 5
- 242 - Tail Msg 2 TX 5
- 243 - Tail Msg 3 TX 5
- 244 - Tail Msg 1 TX 6
- 245 - Tail Msg 2 TX 6
- 246 - Tail Msg 3 TX 6
- 247 - Tail Msg 1 TX 7
- 248 - Tail Msg 2 TX 7
- 249 - Tail Msg 3 TX 7
- 250 - Tail Msg 1 TX 8
- 251 - Tail Msg 2 TX 8
- 252 - Tail Msg 3 TX 8
- 253 - Reverse Patch Answered - default
audio routing is to the autopatch port.
- 254 - Reverse Patch Password OK - makes
command 158 speak "Control"
- 255 - Command Entered From Reverse
Patch - makes command 158 reset the
patch timeout timer
- 256 - 30 Seconds Until Patch Timeout -
makes command 158 speak "30
seconds"
- 257 - 20 Seconds Until Patch Timeout -
doesn't make command 158 do
anything
- 258 - 10 Seconds Until Patch Timeout -
doesn't make command 158 do
anything

- 259 - Patch Dialing Cover Tone - makes command 158 send a cover tone while the patch is dialing a number.
- 260 - General Call Out Answered - happens when command 132 is being used for a general call-out and someone enters the reverse patch answer command. It makes command 158 speak "Connect".
- 261 - Directed Reverse Patch Answered - happens when command 132 is being used for a directed call-out and someone enters the reverse patch answer command. It makes command 158 speak "Connect".
- 262 - Directed Reverse Patch No Pager - makes command 132 speak "No P A G E R" to the person on the phone if they try to do a directed page to someone that has reverse patch paging disabled with command 192.
- 263 - Directed Reverse Patch No Answer - happens whenever command 132 is used, no one enters the reverse patch answer command, and the controller gives up. It makes command 132 speak "No Answer" to the person on the phone.
- 264 - Directed Reverse Patch Cancelled - happens when someone enters the hangup code while command 132 is being used.
- 265 - Directed Reverse Patch Clear
- 266 - Semi-Private Patch Cover Tone - makes command 158 send a cover tone during semi-private patch operation.
- 267 - Repeat Dial Message - happens when command 129 is used. Speaks "Repeat Dial".

Notes about the Event Triggers:

Tail Messages: There are three tail messages assigned to each transmitter. They can be used to indicate that you are on battery power, that a link is up, to announce club meetings, etc. If you transmit PL from your repeater, you may want to consider turning the PL encoder off and sending a cw pause from a tail message to make your PL go away before the repeater actually drops (you could turn the PL encoder back on from the "any connected receiver active" event trigger). You can enable any one, two, or all three tail messages at the same time. The controller will send them in order after the courtesy beep (if on a repeater) and hang time are over. They will normally be the last thing sent before the transmitter drops (the mini-hang time is all that happens afterward). To keep them from getting too annoying, they will be sent no more often than the length of the tail message timers (see Chapter 4), which defaults to 5 minutes. If you set the tail message timers to 0, they will be sent every time the transmitter drops. If you key up while a tail message is being sent, it will start the cycle over again; that is the tail message will be sent again after you unkey, and the courtesy beep and hang timer are done.