

RLC-3 Field Programming Sheets - Quick Reference Section

USAGE

DESCRIPTION

Version 1.80

05-26-1998

000 XY	Connect one Port X to another Port Y
001 XY	Monitor one Port X from another Port Y
002 XY	Disconnect one Port X from another Port Y
003 X	Interrogate where a Receiver is routed
004 X	Interrogate where a Transmitter is routed
005 X(port)Y(Input0-5)Z(dtmf 0-5)	Port's Access Mode Y & Z 0=No Access 1=COR 2=PL 3=COR&PL 4=CORorPL 5=Always Active (HF)
006 X	Recall a Port's Access Mode
007 X(port)M(0-1)C(0-1)U(0-1)	Configure DTMF Mute for a selected port M=Mute C=Cover Tone U=Mute Bypass 1=Recall
008 X	Check DTMF Mute, Cover Tone, Bypass Settings for a Port May Eventually Be Removed
009	Recall Entire Controller's Crosspoint
010 XXXYYYYYYY	Re-Program Command Names XXX=CMD# Y=New Name 1 to 6 Digits
011 XXX	Interrogate & Recall information on a Command name by number
012 YYYYYY	Find & Recall Information about a Command name by name
013	Radio Port Card Conditions Ports not on System or Port Failure
014..016	***Not Active Yet***
017	***Not Active Yet***
018	***Not Active Yet***
019	***Not Active Yet***
020 XXXY,YY,YYY,YYYY	Program a Selected Timer X=Selected Timer Slot # - Y=Value Of Time To be Programed
	000-007 = Message Start Delay Timer port 1-8 10mS 001-999 - Default t = 050
	008-015 = Courtesy Beep Delay Timer port 1-8 10mS 001-999 - Default t = 100
	016-023 = Transmitter Hang Timer port 1-8 10mS 001-999 - Default t = 200 (2 Sec.)
	024-031 = DTMF Mute Timer port 1-8 10mS 001-999 - Default t = 100 (1 Sec.)
	032-039 = Do Not Mess With This Timer - Mother Board SPI Retry Timer (005) 50 mS
	040-047 = Do Not Mess With This Timer - Mother Board SPI Time Out Timer (024) 240 mS
	048 = I/O Polling Timer / 10 mS - Default t = 100 (1 Sec.)
	049-056 = Courtesy Beep after Voice - 1-8 10 mS 001-999 - Default t = 100 (1 Sec.)
	057 = RBI-1 Delayed Send Timer - 10 mS 001-999 - Default t = 050 (½ Sec.)
	058 = HF Scan Delay Timer - 10 mS 001-999 - Default t = 050 (½ Sec.)
	059 = Small DVR Timer - Automatically Set by the Controller
	060-067 = Mini Hang Timer TX port 1-8 10 mS 001-999 - Default t = 050 (½ Sec.)
	068-075 = Keyup Delay Timer port 1-8 10 mS 001-999 - Default t = 050 (½ Sec.)
	076 = Calculating Wind Speed timer 10 mS 001-999 - Default t = 226 (2.26 Sec)
	077 = Word Too Long Timer 10 mS 001-999 - Default t = 150 (1½ Sec)
	100-107 = Impolite ID Timer port 1-8 / 1 Sec. 001-999 - Default t = 020 (20 Sec.)
	108-115 = Initial ID Timer port 1-8 / 1 Sec. 001-999 - Default t = 600 (10 Min.)
	116-123 = Pending ID Timer port 1-8 / 1 Sec. 001-999 - Default t = 540 (9 Min.)
	124-131 = Timeout Timers RX port 1-8 / 1 Sec. 001-999 - Default t = 180 (3 Min.)
	132-139 = Dial Tone Timer port 1-8 / 1 Sec. 001-999 - Default t = 008 (8 Sec.)
	140-147 = Preaccess Timer port 1-8 / 1 Sec. 001-999 - Default t = 008 (8 Sec.)
	148-163 = User Timers 00-15 (start with C022 stop with C023) (see appendix D)
	164-171 = DTMF Interdigit Timer port 1-8 / 1 Sec. 001-999 - Default t = 005 (5 Sec.)
	172 = Reverse Patch Ring Timer / 1 Sec. 001-999 - Default t = 010 (10 Sec.)
	173 = Ping Card Timer / 1 Sec. 001-999 - Default t = 010 (10 Sec.)
	174 = DVR Start Recording Timer / 1 Sec. 001-999 - Default t = 010 (10 Sec.)
	175 = DVR Record Length Limit / 1 Sec. 001-999 - Default t = 030 (30 Sec.)
	176-184 = Log on Timer port 1-8,S / 1 Sec. 001-999 - Default t = 060 (60 Sec.)
	185 = Beacon Timer / 1 Sec. 000-999 - Default t = 060 (60 Sec.)
	186-193 = Tail Msg. Timer port 1-8 / 1 Sec. 000-999 - Default t = 300 (5 Min.)
	194-201 = Re-enable Keyup Delay 1-8 / 1 Sec. 000-999 - Default t = 060 (60 Sec.)
021 XXX	Recall a Timer Value & Recalls the Time Remaining Until the Timer Expires
022 XXX or XXXY,YY,YYY	Start a Selected Timer - Insert A One Time Change of Timer Value
023 XXX	Stop a Selected Timer - See Command C020 for Timers
024 X(port0-8)Y(Speed)	Set Up the Controllers RS-232 Serial Baud Rate X:0=Main Y=300-19200 Port1-8 <9600
025 XX(Hours)YY(Min)Z	Sets the Time of Day Clock - Z is: 1 = PM , 0 = AM
026	Recall the Time of Day Clock in Male Speech
027	Recall the Time of Day Clock in Female Speech
028 XXYYZZD	Sets the Date - X=Month - Y=Day - Z=Year - D: 1=Sunday thru 7=Saturday
029	Recall the Date
030 YY....YY	Send a CW Message
031 YY....YY	Send a DTMF Sequence
032 Y.....Y	Send a Serial Message out the RLC-3 Port
033 X(port)Y.....Y	Send a Serial Message out a Radio Card's Serial Port Y=Data
034 X(port)YYY...YYY	Send a Serial Message out a Radio Card's Serial Port Y=Decimal Data 000-255
035	Remotely Reset the Controller
036 YYY...YYY	Send a Voice Message
037 X,XX,XXX,XXXX,ie.	Set Audio Routing Variable for Commands Inside a Macro
038	Kill All Voice/CW Responses Following This Command in Macro
039	Recall the Ports in the Current Audio Routing Variable
040 LLLDDDDXXXXYYYY	Send One, or Two Tone Chord L=Length 10mS 000-255 / D=Delay 10mS 000-255 / X=Tone 1 (0350 Hz) / Y=Tone 2 (1200 Hz) / Z=Tone 3 Not Active Yet
041 X(port)Y(0-2)	Courtesy Beep Enable/Disable for Selected Port 0=Never 1=Only Rpt. 2=& Even Links
042 X(port)YY(WPM)	Set CW Speed for a Selected Port Y=05-50 WPM
043 WXXXXYYYY	Set CW 2-Tone Chord Frequencies for Selected Port W=Port XYZ=(0000-9999 Hz)
044 WXXXXYYYY	Set Up DTMF Regenerate Parameters W=Port X=DTMF Length Y=Pause
045 SS,MMMXTTTTNNYD..D	Setup & Recall Beacon Table S=Slot #, M=Macro, X=# of times, T=Time to wait, N=Next slot 01-50 0=stop, Y=Type of Beacon 0=radio port(s) 1=Beacon out of the autopatch, D=Audio Path or Phone number
046 SS(01-50)	Start Beacon

047 Cancel Beacon

048 SS English_words Start Beacon Using English Words Example: 048 This_is_a_test_error_message - see 066

~~049 Command Descriptions ***Not Active Yet***~~

050 SS(01-12)X.X(ports) Set Up Default Audio Routing Variables SSO=Clear Default t/audio not to be sent anywhere 01-08 Cmds ent from Receivers 09=Serial 10=Automatic Macro/Event Trigger 11=Scheduler 12=I/O Alarm

051 Start Dial-Tone DTMF digit sent will kill dial tone on that port (see cmd 020)

~~052 Command Descriptions ***Not Currently Used***~~

053 WWWXXXZZZ...ZZ Program a Single Command Macro Sequence (Erase/New) W=Macro X=Command Z=Data Cmd uses

054 XXX Recall Macro Contents M=Macro#, N=# of Cmds, C=CMD, D=Digits of Data, ? Percentage Filled

055 XXX Delete Macro

056 WWWXXXZZZ...ZZ Append a Command to a Macro Same Entry type as C053

057 XXXYYY Copy a Macro X=Source Y=Destination

058 XXXYY Delete a Command in a Macro X=Macro # - Y= # of commands in the macro

059 XXXYYZZZDDD Insert a Command in a Macro X=Macro # - Y=New command location within the macro Z=New command # for insert D=Data for the command

060 XYZQ Serial Port's U/L Case & Linefeed X0=U Case 1=U/L Case Y=1 LF on 0=LF off Z=1 suppress serial by DTMF 0=send serial from DTMF Q=1 queued serial 0= send before cont.

061 X(ports) Disconnect all Ports from a Radio Port

062 XXXYYYZ,ZZ,ZZZ Change the Beginning of Command Names X=First Cmd in Range Y=Last Cmd in Range Z=New first digits for the range of cmds (062*000999# then cmds are #000-#999)

063 YYY...YYY Send a Polite Voice Message Kerchunk will interrupt msg. - Same as Cmd 036

064 XXXYYY...YYY Send a Polite Voice Message and if Interrupted Execute Command C=Cmd Y=Word

065 Restore the Audio Routing Variable (Undo 037 and 038)(Must be used within a macro.)

066 Voice_Text_English Send a Voice Message Using English Words Word List 000-685 or spelled if not in list

067 XXXDDY Macro to Accept Extra Data at Runtime (Exact or Minimum Length) X=Macro D=# of Data Digits Y=Extra Digits 1=OK 0=No Extra Data Digits

~~068 Command Description ***Not Currently Used***~~

~~069 Command Description ***Not Currently Used***~~

070 X(port) Configure a Repeater for Preaccess

071 X(port)Y(O-1)ZZ Configure a Link for Preaccess Y:1=Dial Tone On 0=Off - Z=Site Access Code#

072 X Disable Preaccess Requirement for a Port Sets port back to factory defaults

073 Recall Ports with Preaccess Requirement

074 Allow Access To a Port that Requires Preaccess

075 P(port)XYZIF(O-1) Set Stop Access Conditions 0=Stop Access X=Cmd Exec Y=Cmd Inval id Z=When COR Drops after DTMF entered I=When DTMF Interdigit Expires F=When Force Execution Digit is Pressed

076 P(port) Recall Stop Access Conditions

077 X(port) Isolate a Port from the Rest of the System

078 X(port1-9)CTE Set the Command Entry Functions 9=Serial is '!', C=Chain, T=Time, E=New Digit 0=Off

079 X(port1-9) Recall the Command Entry Setup for a Port Port-9=Serial C=Chain T=Time E=Digit

080 XXXD..D Execute Command by Name With Out Regard to Name

~~081 Command Description ***Not Currently Used***~~

082 XXYYYYMM Set Up a Scheduler Event HOURLY X=Scheduler Slot# Y=Command # M=Min.

082 XXYYYYHHMMP Set Up a Scheduler Event DAILY H=Hour P=0 AM 1 PM

082 XXYYYYWHHMMP Set Up a Scheduler Event WEEKLY W=Day of Week 1=Sunday thru 7= Saturday

082 XXYYYYDDHHMM Set Up a Scheduler Event MONTHLY D=Day of Month 01-31

082 XXYYNNDDDHHMMP Set Up a Scheduler Event Yearly N=Month of the Year 01-12

083 XX Recall a Scheduler Event X=Slot S=On/Off C=cmd Freq 0=Year 1=month 2=wk 3=daily 4=hr

084 XX(slot)Y(O-1) Enable/Disable a Scheduler Event X=Slot - Y O=Event Off 1=Event On

085 X(port)Y(O-1)C(O-1) Enable/Disable IDing a Port Y O=ID Off - 1=ID On C=ID Type 0=Voice/Pending ID's 1=CW Impolite ID's

086 Recall Which Ports have IDs Enabled

087 X(port)Y(O-1) Set Random or Rotating Pending IDs 0=Rotating 1=Random

088 Recall Random or Rotating Pending ID Selection Voice will list Rotate

~~089 Command Description ***Not Currently Used***~~

090 XY,Y..Y Read Whether Input Line is High or Low X=Board# (1or2) Y=Input Line# (1-8)

091 XY,Y..Y Execute Input Line High or Low Macro X=Board# (1or2) Y=Input Line# (1-8)

092 XYZQ* Enable/Disable Input Line Alarm X=Board Y=Line# Z:0=Low/1=High Q:0=Alarm Off 1=Alarm On

093 XY,Y..Y Turn Output Line On X=Board# (1or2) Y=Output Line# (1-8)

094 XY,Y..Y Turn Output Line Off X=Board# (1or2) Y=Output Line# (1-8)

095 XY,Y..Y Recall Whether Output Line is On or Off X=Board# (1or2) Y=Input Line# (1-8)

096 0-1,XX(00-64),XX(0-1) Control/Recall Extended Output Lines 0=Off XX=Recall XX0=Output Line Off I/O Board 1 Line 6=Latch 7=Clock 8=Data H/L

~~097 Pulse Output Lines ***Not Active Yet***~~

~~098 Pulse Output Lines ***Not Active Yet***~~

~~099 Pulse Output Lines ***Not Active Yet***~~

100 XY,Y..Y Read Analog Input Line X=Board# (1or2) Y=Input Line# (1-8)

101 XYZ Set Resolution For Analog Input X=Board# (1or2) Y=Input Line# (1-8) Z=#Digits after Decimal Point

102-Command-See Below Set Conversion Ratio For Analog Input

Command	Description	Resolution	Format:- C101 is the default command name.
102 X Y N WWWW M ZZZZ	General Form		X - is the I/O Board Number (1-2)
102 X Y 1 0460 0 0440	Temperature	1 degree F (0)	Y - is the Analog Input Number (1-8)
102 X Y 1 0273 0 0227	Temperature	1 degree C (0)	N - is 1 for negative, 0 for positive for the following number
102 X Y 0 0000 0 0005	(0)0 to 5 volts	1 volt (0)	W - is the reading with a 0 volt input with leading 0s if necessary.
102 X Y 0 0000 0 0050	(1)0 to 5 volts	1/10 volt (1)	M - is 1 for negative, 0 for positive for the following number
102 X Y 0 0000 0 0500	0 to 5 volts	1/100 volt (2)	Z - is the reading with a 5 volt input to the processor with leading 0s if necessary. If the voltage divider on the I/O board is turned on, this is the reading with a 25 volt input.
102 X Y 0 0000 0 0025	0 to 25 volts	1 volt (0)	
102 X Y 0 0000 0 0250	0 to 25 volts	1/10 volt (1)	
102 X Y 0 0000 0 2500	0 to 25 volts	1/100 volt (2)	
102 X Y 0 0000 0 0100	0 to 100 %	1 percent (0)	
102 X Y 0 0000 0 0360	0 to 360 deg	1 degree (0)	

103	XYNWWWW	Calibrate an Analog Input XY2=Reset
104	XYLNWWWW	Set an Analog Alarm L:0=Alarm Low 1=Alarm High
105	XYWWWW	Set Analog Alarm Hysteresis
106	XYLN	Enable/Disable an Analog Alarm L:0=Alarm Low 1=High N:0=Disable 1=Enable
107	X	Recall Analog Lines in Alarm
108	XY	Recall Analog Line Configuration X,Y,W,Z,Calibrate,LO,L1,Hysteresis,LO on/off, L1 on/off
109	XX(I/O #1=01-08 #2=9-16)	Pulse Input Line Counter Anemometer-Wind Speed Counter - Counts Contact Closures I/O #1=Board 1
110	X(port)Y(0-4)	Configure the Autopatch 0=No Read Back 1=Read All # 2=Read and must be kerchunked before, during or shortly after number readback to dial 3=Read Back and stop dial if kerchunked 4=Polite Readback Dials with or without Kerchunk ***Sets Force Exec. Digit to " #" (Use 078 if change is needed)***
111		Manual Off Hook Off Hook Patch Timer Reset
112	XXX,orYYY...YYYY	Normal Forward Dial X=Autodial Slot (000-999) or Y=11digit Phone # 053xxx03018
113	XXX,orYYY...YYYY	Forward Dial w/no Long Distance Checking X=Autodial Slot or Y=11digit # 053xxx038
114		Hang up the Autopatch 053xxx022131
115		Hang up From Only Ports That Are Connected and That Can Hear Autopatch 010xxx**3
116	IIIAAAD...D	Set and Recall Predial Digits and Timing I=Initial Delay 10mS A=After predial 10mS D=Any up to 10 digits for predial
117		Command Description ***Not Currently Used***
118		Command Description ***Not Currently Used***
119	SSSN..N	Set Allowed Prefix Slot S=Slot # N=Area Code/Prefix #=Wildcard digits
120	SSS(000-499)	Recall Allowed Prefix Slot
121	SSS(000-099)N..N	Set Nuisance Number Slot S=Slot # N=Area Code/Prefix #=Wildcard digits
122	SSS(000-099)	Recall Nuisance Number Slot
123	N..N	Test Dialing Tables N=Number with Dialing Table
124	SSS(000-999)N..N	Set - Program Autodial Slot S=Slot # N=Up to any 11 Digit Phone #
125	SSS(000-999)	Recall Autodial Slot
126	SSS(000-999)X(0-1)C(0-1)	Set Whether to Send Predial Digits for Autodial Slot and Call Sign S=Slot # X 0=No 1=Send Predial C 1=Call Sign of user assigned to slot sent 0=Autodial slot number is sent
127	SSS(000-999)X(0-1)	Autodial Slot S=Slot # X: 0=Disable 1=Enable Slot
128	X(port)YY	Set & Recall Half-Full Duplex Mode For a port Y: 00= Full Duplex 10= Half Duplex Not Siml Private 11=Half Duplex Siml Private 12=Half Duplex Siml Private with Cover Tone X only=Recall
129	,X	Redial Last Number / With Data - Recalls Last Number Dialed from Specified Port
130	PCCC,&DDD or CCC	Block / Recall Command Execution From Port P=port C=Cmd Range Low# D=Cmd Range High#
131	PCCC,&DDD or CCC	Allow / Recall Command Execution From Port P=port C=Cmd Range Low# D=Cmd Range High#
132	XXX(000-999)	Directed Reverse Autopatch Mode 2 Speaks Call sign, Sets Forced Execution to #, W/O Data=GenCall
133	0	Disable Reverse Patch Mode
	1 XX(Rings)Y...Y	Ring Over the Air Mode After XX rings Y=Ports (Does not Answer Phone Unless CMD 135 is used)
	2 XX(Rings)N....N(Optional)	Control Mode 2 29 seconds to enter access code N..N and 134(DTMF "ABCD" will have to be renamed) If No Password is Used Access Step is Skipped
134		Access Reverse Patch Control Mode (for the controllers internal use)
135		Answer a Reverse Autopatch over the air (must be ringing to answer)(Wont Work Mode 2)
136	GG,DD XXXXXXXXZZZZ	Recall / Reverse Autopatch Ring G=Maximum Number or Rings CMD 132 Uses for General Call Out D=Maximum Number of Rings After Done Speaking User # for the Directed Reverse Autopatch (at the End of 132) X=Ring Length Y=Tone 1 Freq 0660 Hz Z=Tone 2 Freq 1000 Hz
137	XXX(000-999)	Dial a Autodial Slot Number
138	P(port)XX...XX	Direct SPI Send out of Radio Card's Serial Port a Hex number 00-FF (byte of data)
139	C SS or 000	Setup RBI-1 / RLC - Icom 900/901 Interface 000= Default for the RBI-1 C=Connector 1-4 SS=Set Up Code - Band Offset TX/RX 28MHz=00 50MHz=05 140-160MHz=10 20MHz=15 430-440MHz=20 1200MHz=25 OFFSET:100KHz=30 500KHz=35 600KHz=40 1MHz=45 1.6MHz=50 1.7MHz=55 5MHz=60 12MHz=65 20MHz=70 Transceive Enable=85 Receive Only=90 Disable Module=95
140	P(port)	Set a Port for RBI-1 (must be set for RBI-1 commands to work)
141	X,X(0-1)	Control / Recall RBI-1 Output Lines x=recall x0=Output Off x1=Output On
142	XXXXXXXXY	RBI-1 or RLC-ICM Set Frequency X=New Frequency Y=Optional Offset
143	X(0-3)	RBI-1 or RLC-ICM Set Offset Format 0 0=-,1=+,2=Simp,3=-20 Format 1 0=-20,1=-,2=Simp,3=+
144	X,Y(0-1)	RBI-1 or RLC-ICM Set Offset Format x0=Format 0(Default) 1=Format 1 Y=Read Back 1=Enabled
145	X(0-2)	RBI-1 Set RF Power Level 0=Low 1=Medium 2=High
146	XXXX	RBI-1 or RLC-ICM Set PL Tone Freq. 67.0= 67,670,6700 / 250.3=250,2503 RLC-ICM=33.0/254.1
147	X(0-1)	RBI-1 or RLC-ICM Turn PL Encode Off / On 0=Off 1=On
148	X(0-1)	RBI-1 or RLC-ICM Turn PL Decode Off / On 0=Off 1=On
149		RBI-1 or RLC-ICM Recall Band, Frequency, and Offset Voice Response XXX.YYY 0
150		RBI-1 or RLC-ICM Recall ALL RBI-1 Settings Port,Freq.,Offset,Power,PL,PL-TX,PL-RX
151	X	RBI-1 Turn Radio Power On or Off 0=Off 1=On
152	X..X	RBI-1 Goto Radio Memory X=Memory Channel supported by the radio
153		Command Description ***Not Currently Used***
154		Command Description ***Not Currently Used***
155	P(port)F(0-1)	PTT Enable or Disable 0=PTT Line Off 1=PTT Line On (Default)
156		Recall which PTT Lines are Enabled
157	,YYY(000-252)ZZZ	Event Macro Assign / Recall Y=Event Number (See Event Table) Z=Command Number
158	XXX	Execute Default Event Trigger Action (Should Never Be Called Directly or Never From Macro)
159	XXX(000-252)Y(0-1)	Event Macro Enable/Disable 0=Off 1=On
160	I(1-2)H(0-2)L(1-8)	Clear Analog Highs/Lows I=I/O Board H:0=Low 1=High 2=Both L=I/O Line
161	I(1-2)L(1-8)XX(time)	Set Analog Smoothing 50=9Sec,60=13,70=18,80=30,90=50,95=120,97=220,98=325,99=11Min
162	Y....Y	Always Send a Serial Message out the Mother Board Port Impolite - Like C032
163	X....X	Keypad Test to Check DTMF Digits **=S #*=P
164		Recall Controllers Software Version
165		Reset COP Watchdog Timer COP=Computer Operating Properly - Macro too long causes reset
166		Display Status Screen Formatted Screens of Serial Information out the Mother Board Port

167 Do Nothing Returns the OK Error Code - default command to execute commands like C164
168 ~~Command Description~~ ~~***Not Currently Used***~~ See CMD 005
169 CCC...CCC Always Send Serial out Main Serial Port by ASCII Code 032 ie.
170 DVR - Record and Play Audio Test
171 T,TT,TTT DVR - Record Track (Non-Prompted)
172 T,TT,TTT DVR - Record Track (Prompted)
173 TTT,T..T,TTT..TTT DVR - Play Tracks TTT=Play Single T..T=Play Multiple TTT...TTT...=Play Multiple Separate
DVR-1 Polite Messages Requires DVR-1 to have 1.50 Version Firmware to be installed in the DVR-1 Example of usage: 056XXX036 801 056XXX171TTT,T..T,TTT..TTT 056XXX036802 -or- 056XXX036803YYY
174 TTT,T..T,TTT...TTT DVR - Erase Tracks TTT=Single T.T=Multi in a row TTT...TTT=Start thru Finish
175 DVR - Record Public Mail
176 DVR - Check Public Mail
177 S(1-9) DVR - Retrieve Public Mail
178 DVR - Erase Public Mail Erases only the last message that was retrieved
179 SSS DVR - Record Private Mail SSS=number of the mail box to leave message in
180 SSS DVR - Retrieve Private Mail SSS=Number of the Mail Box to get the mail from
181 DVR - Erase Private Mail Erases ALL the contents of a mail box that was retrieved
182 X DVR - Select DVR Type 0=None Installed 1=Large DVR Installed 2=Small DVR Installed
183 SS,SS..EE dvr - Record a Message on the Small DVR SS=Start Slot Number EE=End Slot (optional)
184 S,SS,SS..SS dvr - Playback a Small DVR Message S=Single 0-9 SS=Single 00-34 SS..SS=Multi 00-34
185 SS,SS..EE dvr - Erase Small DVR Message SS=Slot to erase SS(start)..EE(end)=Multi-EE(optional)
186 UUU,E,L,T,P..P Set Up User Password U=User # E=Enable/Disable L=Level 1-7 T=Type 0=none/fixed 1-8=Digits of Challenge Passwords P..P=Password (a maximum of up to 8 digits 0-9 & A-D can be used)
186 UUU=Recalls Password Info for a User (It is not a good idea broadcast this info over the air)
Enable the Security Password System - Level 0=186 000 1 0 Level 2=186 000 12 Disable=18600017
187 UUUP..P User Log-On U=User Number P=Password (7 to 4 Decoy Digits can be added with type 1-4
Challenged Password Entry requests - A Maximum of 8 Password Digits for Entry is Allowed)
188 Recall the User that is Currently Logged Into the Controller
189 User Log-Off
190 CCC,L or CCCEEE,L Assign a User Level to a Command CCC=Recall CCCL=Assign EEE=End of Range of Cmds
191 UUU, or UUUWWWW...WWW Assign / Recall a Call sign to a User U=User # W=Words from word list - there is a 8 word max
192 0000 Recall Reverse Patch General Call-Out Settings Use With Command 132
00000 Disable General Call-Out
00001X..X Enable General Call-Out to Ports X=Ports 1-8
0UUU Recall Directed Call-Out Settings for User
0UUUO Disable Directed Call-Out to user U & V =User Number
0UUU1X..X Enable Directed Call-Out to User On Ports
1UUUWV Recall Settings for Range of Users UUU-VVV
1UUUWVO Disable Directed Call-Out for Users UUU-VVV
1UUUWV1X..X Enable Directed Call-Out for Users UUU-VVV on Ports
493 ~~Command Description~~ ~~***Not Currently Used***~~
494 ~~Command Description~~ ~~***Not Currently Used***~~
195 D(0-3)P Configure HF Mode 0=Disable 1=Enable/P=Prefix digit 2=HF Off w/o disabling 3=Recall Settings
196 O,PRX.XX Configure HF Radio 0=Recall Config, P=Port, R=Rig Manf/1=Icom 2=Kenwood 3=Yaesu, X=Rig Model
Icom 735=04 R7000=08 275=16 375=18 475=20 575=22 1275=24 R71=26 751=30 271=32
471=34 1271=36 781=38 725=40 R9000=42 765=44 970=46 726=48 R72=50 7100=52 706=72
XX..Other
Kenwood 450,850,870,570,690,950 and other recent radios=0 TS-50,940,440,140,680,711,790A,811,
R5000 and other early radios=1
Yaesu 736=0 757=1 767=2 890,900,990,747,FT1000=3 Not Supported are 727 and FRG8800
197E(0-1),C(Nov=0 Extra=4) Set/Recall Transmit/Scan Band Edges E=Recall Band Edges C=Set Bands-Class of License
EBB(00-15) Recall Edges for One Band BB 00=160 01=80 02=40 03=30 04=20 05=17 06=15 07=12 08=28
09=29 10=6 11=2 12=1.25cm 13=70cm 14=33cm 15=23cm 16=user defined
EBBC Set Edges for One Band for a Class
EBBUF..F*F..F Set Upper or Lower Edge for One Band to a Specific Frequency U 0=Lower Edge /
1=Upper Edge F=Frequency *=Separator between Mhz and Khz
198 HF Mode Enable Turns on the re-defined HF DTMF Remote access Keyboard Pad
P(prefix),D.....D(dtmf data) "DTMF Keypad Commands" Example: Recall Mem Channel = P(prefix),5(recall),00-99(Mem Ch #'s),
Direct Frequency Entry = P(prefix)29*600 & unkey or force frequency entry with the # key
1 = Remote in RECEIVE ONLY or with Added Data Digit 1=USB 2=LSB 3=AM 4=FM 5=CW
2 = RECEIVE and TRANSMIT ON or with Added Data Digit(s) 1=Toggle PL RX 2=Toggle PL TX 3=PL off
8=Recall PL <Hz>=Set PL Frequency
3 = HF MODE OFF/Exit HF Mode - Receive and Transmit Off
4 = Remote Down 100 Hz or Added Data Digits <XXX>=Macro Cmd example: 026 recalls the time
5 = Select VFO A or Added Data Digits Recall Memory Channel ## 00..99
6 = Remote Up 100 Hz
7 = Remote Down 500 Hz or added data Start Scan 1=Down Slow 3=Up Slow 4=Down Med. 6=Up Med.
7=Down Fast 9=Up Fast
8 = Recall Frequency of current VFO or Added Data Digit(s) 0=Offset Off 1=Offset On 11=Minus Offset
10=Plus Offset 1X=Set Size of Offset for this Band 00=0 01=100khz 02=500khz 03=600khz
04=1Mhz 05=1.6Mhz 07=5Mhz 08=12Mhz 09=20Mhz
9 = Remote Up 500 Hz
0 = Select VFO B or Added Data Digits Write Memory Channel ## 00..99
* = Frequency <POINT> Key
= ENTER / Force-Execution Digit
A = Remote Up 20 Hz
B = Remote Down 20 Hz
C = Not Defined
D = Not Defined
199PH..H Enter HF Command w/o being in HF Mode P=Prefix H=HF Keypad 198 commands
200..499 Execute an Internal Macro (can be utilized as user macros)
500..999 Execute a User Macro

Automatic Macro Numbers

200 - Command Length not Matched	284 - I/O #2 Analog High Alarm #1	372 - Pre-Access Port 1
201 - Too Few Data Digits Entered	285 - I/O #2 Analog High Alarm #2	373 - Pre-Access Port 2
202 - Too Many Data Digits Entered	286 - I/O #2 Analog High Alarm #3	374 - Pre-Access Port 3
203 - Invalid # of Data Digits Entered	287 - I/O #2 Analog High Alarm #4	375 - Pre-Access Port 4
204 - Execution Blocked From This Port	288 - I/O #2 Analog High Alarm #5	376 - Pre-Access Port 5
205 - User Level to Low to Execute Cmd	289 - I/O #2 Analog High Alarm #6	377 - Pre-Access Port 6
206 - Macro Reserved for Internal Use	290 - I/O #2 Analog High Alarm #7	378 - Pre-Access Port 7
207 - Command Executed OK	291 - I/O #2 Analog High Alarm #8	379 - Pre-Access Port 8
208 - Internal Error Just Occurred		
209 - Nested Macro Depth Limit Reached	292 - I/O #1 Analog Low Alarm #1	380 - Power on Reset Macro
210 - Inval id Value Entered	293 - I/O #1 Analog Low Alarm #2	
211 - Command Doesn't Exist	294 - I/O #1 Analog Low Alarm #3	381 - Temporary Macro
	295 - I/O #1 Analog Low Alarm #4	
212 - Bad Autopatch Number	296 - I/O #1 Analog Low Alarm #5	
213 - General Autopatch Error	297 - I/O #1 Analog Low Alarm #6	
	298 - I/O #1 Analog Low Alarm #7	
214 - User Requested Disabled- Inval id	299 - I/O #1 Analog Low Alarm #8	
215 - Digital Voice Recorder is Busy	300 - I/O #2 Analog Low Alarm #1	382 - User Timer 00 Expired
	301 - I/O #2 Analog Low Alarm #2	383 - User Timer 01 Expired
216 - Macro Is Full	302 - I/O #2 Analog Low Alarm #3	384 - User Timer 02 Expired
	303 - I/O #2 Analog Low Alarm #4	385 - User Timer 03 Expired
217 - HF Error	304 - I/O #2 Analog Low Alarm #5	386 - User Timer 04 Expired
	305 - I/O #2 Analog Low Alarm #6	387 - User Timer 05 Expired
218 - Reserved	306 - I/O #2 Analog Low Alarm #7	388 - User Timer 06 Expired
219 - Reserved	307 - I/O #2 Analog Low Alarm #8	389 - User Timer 07 Expired
		390 - User Timer 08 Expired
220 - Initial ID Port 1	308 - I/O #1 Analog Alarm to Normal #1	391 - User Timer 09 Expired
221 - Initial ID Port 2	309 - I/O #1 Analog Alarm to Normal #2	392 - User Timer 10 Expired
222 - Initial ID Port 3	310 - I/O #1 Analog Alarm to Normal #3	393 - User Timer 11 Expired
223 - Initial ID Port 4	311 - I/O #1 Analog Alarm to Normal #4	394 - User Timer 12 Expired
224 - Initial ID Port 5	312 - I/O #1 Analog Alarm to Normal #5	395 - User Timer 13 Expired
225 - Initial ID Port 6	313 - I/O #1 Analog Alarm to Normal #6	396 - User Timer 14 Expired
226 - Initial ID Port 7	314 - I/O #1 Analog Alarm to Normal #7	397 - User Timer 15 Expired
227 - Initial ID Port 8	315 - I/O #1 Analog Alarm to Normal #8	
		398 - Before Patch Off Hook
228 - Pending ID #1 Port 1	316 - I/O #2 Analog Alarm to Normal #1	399 - After Patch On Hook
229 - Pending ID #1 Port 2	317 - I/O #2 Analog Alarm to Normal #2	400 - Patch Busy Message
230 - Pending ID #1 Port 3	318 - I/O #2 Analog Alarm to Normal #3	401 - Before Patch Number Readback
231 - Pending ID #1 Port 4	319 - I/O #2 Analog Alarm to Normal #4	402 - After Patch Number Readback
232 - Pending ID #1 Port 5	320 - I/O #2 Analog Alarm to Normal #5	403 - Dial Patch if Readback Interrupt
233 - Pending ID #1 Port 6	321 - I/O #2 Analog Alarm to Normal #6	404 - Voice Message "Autopatch Off"
234 - Pending ID #1 Port 7	322 - I/O #2 Analog Alarm to Normal #7	
235 - Pending ID #1 Port 8	323 - I/O #2 Analog Alarm to Normal #8	405 - DTMF Cover Tone
236 - Pending ID #2 Port 1	324 - I/O #1 Input Line High #1	406 - User Log-On Message
237 - Pending ID #2 Port 2	325 - I/O #1 Input Line High #2	407 - User Log-On Fail Message
238 - Pending ID #2 Port 3	326 - I/O #1 Input Line High #3	408 - User Log-Off Message
239 - Pending ID #2 Port 4	327 - I/O #1 Input Line High #4	
240 - Pending ID #2 Port 5	328 - I/O #1 Input Line High #5	409 - Beaconing Message Macro
241 - Pending ID #2 Port 6	329 - I/O #1 Input Line High #6	410 - Beaconing Message Macro
242 - Pending ID #2 Port 7	330 - I/O #1 Input Line High #7	
243 - Pending ID #2 Port 8	331 - I/O #1 Input Line High #8	411 - Speak "Autodial" I like 401
244 - Pending ID #3 Port 1	332 - I/O #2 Input Line High #1	412..499 - Reserved
245 - Pending ID #3 Port 2	333 - I/O #2 Input Line High #2	
246 - Pending ID #3 Port 3	334 - I/O #2 Input Line High #3	500..999 - User Macros
247 - Pending ID #3 Port 4	335 - I/O #2 Input Line High #4	
248 - Pending ID #3 Port 5	336 - I/O #2 Input Line High #5	
249 - Pending ID #3 Port 6	337 - I/O #2 Input Line High #6	
250 - Pending ID #3 Port 7	338 - I/O #2 Input Line High #7	
251 - Pending ID #3 Port 8	339 - I/O #2 Input Line High #8	
252 - Pending ID #4 Port 1	340 - I/O #1 Input Line Low #1	
253 - Pending ID #4 Port 2	341 - I/O #1 Input Line Low #2	
254 - Pending ID #4 Port 3	342 - I/O #1 Input Line Low #3	
255 - Pending ID #4 Port 4	343 - I/O #1 Input Line Low #4	
256 - Pending ID #4 Port 5	344 - I/O #1 Input Line Low #5	
257 - Pending ID #4 Port 6	345 - I/O #1 Input Line Low #6	
258 - Pending ID #4 Port 7	346 - I/O #1 Input Line Low #7	
259 - Pending ID #4 Port 8	347 - I/O #1 Input Line Low #8	
260 - Impolite ID Port 1	348 - I/O #2 Input Line Low #1	
261 - Impolite ID Port 2	349 - I/O #2 Input Line Low #2	
262 - Impolite ID Port 3	350 - I/O #2 Input Line Low #3	
263 - Impolite ID Port 4	351 - I/O #2 Input Line Low #4	
264 - Impolite ID Port 5	352 - I/O #2 Input Line Low #5	
265 - Impolite ID Port 6	353 - I/O #2 Input Line Low #6	
266 - Impolite ID Port 7	354 - I/O #2 Input Line Low #7	
267 - Impolite ID Port 8	355 - I/O #2 Input Line Low #8	
268 - Courtesy Beep Command Slot Port 1	356 - Time-Out Timer Message #1	
269 - Courtesy Beep Command Slot Port 2	357 - Time-Out Timer Message #2	
270 - Courtesy Beep Command Slot Port 3	358 - Time-Out Timer Message #3	
271 - Courtesy Beep Command Slot Port 4	359 - Time-Out Timer Message #4	
272 - Courtesy Beep Command Slot Port 5	360 - Time-Out Timer Message #5	
273 - Courtesy Beep Command Slot Port 6	361 - Time-Out Timer Message #6	
274 - Courtesy Beep Command Slot Port 7	362 - Time-Out Timer Message #7	
275 - Courtesy Beep Command Slot Port 8	363 - Time-Out Timer Message #8	
276 - I/O #1 Analog High Alarm #1	364 - Time-Out Clear Message #1	
277 - I/O #1 Analog High Alarm #2	365 - Time-Out Clear Message #2	
278 - I/O #1 Analog High Alarm #3	366 - Time-Out Clear Message #3	
279 - I/O #1 Analog High Alarm #4	367 - Time-Out Clear Message #4	
280 - I/O #1 Analog High Alarm #5	368 - Time-Out Clear Message #5	
281 - I/O #1 Analog High Alarm #6	369 - Time-Out Clear Message #6	
282 - I/O #1 Analog High Alarm #7	370 - Time-Out Clear Message #7	
283 - I/O #1 Analog High Alarm #8	371 - Time-Out Clear Message #8	

Event Table

000 - COR Active Port 1	094 - Port 1 DTMF Active *	192 - Port 8 DTMF Active 0
001 - COR Active Port 2	095 - Port 1 DTMF Active #	193 - Port 8 DTMF Active 1
002 - COR Active Port 3		194 - Port 8 DTMF Active 2
003 - COR Active Port 4		195 - Port 8 DTMF Active 3
004 - COR Active Port 5	096 - Port 2 DTMF Active 0	196 - Port 8 DTMF Active 4
005 - COR Active Port 6	097 - Port 2 DTMF Active 1	197 - Port 8 DTMF Active 5
006 - COR Active Port 7	098 - Port 2 DTMF Active 2	198 - Port 8 DTMF Active 6
007 - COR Active Port 8	099 - Port 2 DTMF Active 3	199 - Port 8 DTMF Active 7
	100 - Port 2 DTMF Active 4	200 - Port 8 DTMF Active 8
008 - COR Inactive Port 1	101 - Port 2 DTMF Active 5	201 - Port 8 DTMF Active 9
009 - COR Inactive Port 2	102 - Port 2 DTMF Active 6	202 - Port 8 DTMF Active A
010 - COR Inactive Port 3	103 - Port 2 DTMF Active 7	203 - Port 8 DTMF Active B
011 - COR Inactive Port 4	104 - Port 2 DTMF Active 8	204 - Port 8 DTMF Active C
012 - COR Inactive Port 5	105 - Port 2 DTMF Active 9	205 - Port 8 DTMF Active D
013 - COR Inactive Port 6	106 - Port 2 DTMF Active A	206 - Port 8 DTMF Active *
014 - COR Inactive Port 7	107 - Port 2 DTMF Active B	207 - Port 8 DTMF Active #
015 - COR Inactive Port 8	108 - Port 2 DTMF Active C	
	109 - Port 2 DTMF Active D	208 - Tried to hang up patch when was al ready hung up.
016 - PL Active Port 1	110 - Port 2 DTMF Active *	
017 - PL Active Port 2	111 - Port 2 DTMF Active #	209 - Before turn HF mode On
018 - PL Active Port 3		210 - After turn HF mode Off
019 - PL Active Port 4	112 - Port 3 DTMF Active 0	211 - HF Band 160m
020 - PL Active Port 5	113 - Port 3 DTMF Active 1	212 - HF Band 80m
021 - PL Active Port 6	114 - Port 3 DTMF Active 2	213 - HF Band 40m
022 - PL Active Port 7	115 - Port 3 DTMF Active 3	214 - HF Band 30m
023 - PL Active Port 8	116 - Port 3 DTMF Active 4	215 - HF Band 20m
	117 - Port 3 DTMF Active 5	216 - HF Band 17m
024 - PL Inactive Port 1	118 - Port 3 DTMF Active 6	217 - HF Band 15m
025 - PL Inactive Port 2	119 - Port 3 DTMF Active 7	218 - HF Band 12m
026 - PL Inactive Port 3	120 - Port 3 DTMF Active 8	219 - HF Band 10m 28-29MHz
027 - PL Inactive Port 4	121 - Port 3 DTMF Active 9	220 - HF Band 10m 29MHz+
028 - PL Inactive Port 5	122 - Port 3 DTMF Active A	221 - HF Band 6m
029 - PL Inactive Port 6	123 - Port 3 DTMF Active B	222 - HF Band 2m
030 - PL Inactive Port 7	124 - Port 3 DTMF Active C	223 - HF Band 1.25cm
031 - PL Inactive Port 8	125 - Port 3 DTMF Active D	224 - HF Band 70cm
	126 - Port 3 DTMF Active *	225 - HF Band 33cm
032 - Port Active Port 1	127 - Port 3 DTMF Active #	226 - HF Band 23cm
033 - Port Active Port 2		227 - HF Band Other Band
034 - Port Active Port 3	128 - Port 4 DTMF Active 0	
035 - Port Active Port 4	129 - Port 4 DTMF Active 1	228 - Hang Up Command 115 Blocked
036 - Port Active Port 5	130 - Port 4 DTMF Active 2	
037 - Port Active Port 6	131 - Port 4 DTMF Active 3	229 - Tail Msg 1 TX 1
038 - Port Active Port 7	132 - Port 4 DTMF Active 4	230 - Tail Msg 2 TX 1
039 - Port Active Port 8	133 - Port 4 DTMF Active 5	231 - Tail Msg 3 TX 1
	134 - Port 4 DTMF Active 6	
040 - Port Inactive Port 1	135 - Port 4 DTMF Active 7	232 - Tail Msg 1 TX 2
041 - Port Inactive Port 2	136 - Port 4 DTMF Active 8	233 - Tail Msg 2 TX 2
042 - Port Inactive Port 3	137 - Port 4 DTMF Active 9	234 - Tail Msg 3 TX 2
043 - Port Inactive Port 4	138 - Port 4 DTMF Active A	
044 - Port Inactive Port 5	139 - Port 4 DTMF Active B	235 - Tail Msg 1 TX 3
045 - Port Inactive Port 6	140 - Port 4 DTMF Active C	236 - Tail Msg 2 TX 3
046 - Port Inactive Port 7	141 - Port 4 DTMF Active D	237 - Tail Msg 3 TX 3
047 - Port Inactive Port 8	142 - Port 4 DTMF Active *	
	143 - Port 4 DTMF Active #	238 - Tail Msg 1 TX 4
048 - Any Connected RX Active 1	144 - Port 5 DTMF Active 0	239 - Tail Msg 2 TX 4
049 - Any Connected RX Active 2	145 - Port 5 DTMF Active 1	240 - Tail Msg 3 TX 4
050 - Any Connected RX Active 3	146 - Port 5 DTMF Active 2	
051 - Any Connected RX Active 4	147 - Port 5 DTMF Active 3	241 - Tail Msg 1 TX 5
052 - Any Connected RX Active 5	148 - Port 5 DTMF Active 4	242 - Tail Msg 2 TX 5
053 - Any Connected RX Active 6	149 - Port 5 DTMF Active 5	243 - Tail Msg 3 TX 5
054 - Any Connected RX Active 7	150 - Port 5 DTMF Active 6	
055 - Any Connected RX Active 8	151 - Port 5 DTMF Active 7	244 - Tail Msg 1 TX 6
	152 - Port 5 DTMF Active 8	245 - Tail Msg 2 TX 6
056 - All Connected RX Inactive 1	153 - Port 5 DTMF Active 9	246 - Tail Msg 3 TX 6
057 - All Connected RX Inactive 2	154 - Port 5 DTMF Active A	
058 - All Connected RX Inactive 3	155 - Port 5 DTMF Active B	247 - Tail Msg 1 TX 7
059 - All Connected RX Inactive 4	156 - Port 5 DTMF Active C	248 - Tail Msg 2 TX 7
060 - All Connected RX Inactive 5	157 - Port 5 DTMF Active D	249 - Tail Msg 3 TX 7
061 - All Connected RX Inactive 6	158 - Port 5 DTMF Active *	
062 - All Connected RX Inactive 7	159 - Port 5 DTMF Active #	250 - Tail Msg 1 TX 8
063 - All Connected RX Inactive 8		251 - Tail Msg 2 TX 8
	160 - Port 6 DTMF Active 0	252 - Tail Msg 3 TX 8
064 - Any DTMF Active Port 1	161 - Port 6 DTMF Active 1	
065 - Any DTMF Active Port 2	162 - Port 6 DTMF Active 2	253 - Reverse Patch Answered
066 - Any DTMF Active Port 3	163 - Port 6 DTMF Active 3	
067 - Any DTMF Active Port 4	164 - Port 6 DTMF Active 4	254 - reverse Patch Password OK
068 - Any DTMF Active Port 5	165 - Port 6 DTMF Active 5	
069 - Any DTMF Active Port 6	166 - Port 6 DTMF Active 6	255 - Command entered from Reverse Patch
070 - Any DTMF Active Port 7	167 - Port 6 DTMF Active 7	
071 - Any DTMF Active Port 8	168 - Port 6 DTMF Active 8	256 - 30 Second to Patch Timeout
	169 - Port 6 DTMF Active 9	257 - 20 Second to Patch Timeout
072 - Any DTMF Inactive Port 1	170 - Port 6 DTMF Active A	258 - 10 Second to Patch Timeout
073 - Any DTMF Inactive Port 2	171 - Port 6 DTMF Active B	
074 - Any DTMF Inactive Port 3	172 - Port 6 DTMF Active C	259 - Patch Dialing Cover Tone
075 - Any DTMF Inactive Port 4	173 - Port 6 DTMF Active D	
076 - Any DTMF Inactive Port 5	174 - Port 6 DTMF Active *	260 - General Call-Out Answered
077 - Any DTMF Inactive Port 6	175 - Port 6 DTMF Active #	
078 - Any DTMF Inactive Port 7		261 - Directed Reverse Patch Answered
079 - Any DTMF Inactive Port 8	176 - Port 7 DTMF Active 0	262 - Directed R.P. "No Pager" Message
	177 - Port 7 DTMF Active 1	263 - Directed R.P. "No Answer" Message
080 - Port 1 DTMF Active 0	178 - Port 7 DTMF Active 2	264 - Directed R.P. "Cancel" Message
081 - Port 1 DTMF Active 1	179 - Port 7 DTMF Active 3	265 - Directed R.P. "Clear" Message
082 - Port 1 DTMF Active 2	180 - Port 7 DTMF Active 4	
083 - Port 1 DTMF Active 3	181 - Port 7 DTMF Active 5	266 - Semi-Private Patch Cover Tone
084 - Port 1 DTMF Active 4	182 - Port 7 DTMF Active 6	
085 - Port 1 DTMF Active 5	183 - Port 7 DTMF Active 7	267 - Repeat Dial Message
086 - Port 1 DTMF Active 6	184 - Port 7 DTMF Active 8	
087 - Port 1 DTMF Active 7	185 - Port 7 DTMF Active 9	
088 - Port 1 DTMF Active 8	186 - Port 7 DTMF Active A	
089 - Port 1 DTMF Active 9	187 - Port 7 DTMF Active B	
090 - Port 1 DTMF Active A	188 - Port 7 DTMF Active C	
091 - Port 1 DTMF Active B	189 - Port 7 DTMF Active D	
092 - Port 1 DTMF Active C	190 - Port 7 DTMF Active *	
093 - Port 1 DTMF Active D	191 - Port 7 DTMF Active #	

Voice Word Table

000	ZERO	102	BLUE KNOB	206	FLOW	309	MEAN
001	ONE	103	BOARD	207	FOG	310	MEASURE
002	TWO	104	BOOST	208	FOR	311	MEETING
003	THREE	105	BOZO	209	FOURTH	312	MEGA
004	FOUR	106	BRAKE	210	FOXTROT	313	MESSAGES
005	FIVE	107	BRAVO	211	FREEDOM	314	METER
006	SIX	108	BREAK	212	FREEZING	315	MICRO
007	SEVEN	109	BROKEN	213	FREQUENCY	316	MIKE
008	EIGHT	110	BUSY	214	FRIDAY	317	MILES
009	NINE	111	BUTTON	215	FROM	318	MILL
010	TEN	112	BY	216	FRONT	319	MILLI
011	ELEVEN	113	CABIN	217	FULL	320	MINUS
012	TWELVE	114	CALIBRATE	218	GALLONS	321	MINUTES
013	THIRTEEN	115	CALL	219	GATE	322	MIST
014	FOURTEEN	116	CALLING	220	GAUGE	323	MOBILE
015	FIFTEEN	117	CALM	221	GEAR	324	MODERATE
016	SIXTEEN	118	CANCEL	222	GET	325	MONDAY
017	SEVENTEEN	119	CAUTION	223	GLIDE	326	MONTH
018	EIGHTEEN	120	CEILING	224	GO	327	MORETHAN
019	NINETEEN	121	CELSIUS	225	GOLF	328	MOTOR
020	TWENTY	122	CENTER	226	GOODBYE	329	MOUNT HAMILTON
021	THIRTY	123	CHANGE	227	GREEN	330	MOUNT TAMALPAIS
022	FORTY	124	CHARLIE	228	GREENWICH	331	MOVE
023	FIFTY	125	CHECK	229	GROUND	332	MOVING
024	SIXTY	126	CIRCUIT	230	GURNEE	333	MUCH
025	SEVENTY	127	CLEAR	231	GUSTING_TO	334	NEAR
026	EIGHTY	128	CLIMB	232	HAIL	335	NEGATIVE
027	NINETY	129	CLOCK	233	HALF	336	NET
028	HUNDRED	130	CLOSED	234	HAM	337	NEW
029	THOUSAND	131	CLUB	235	HAMFEST	338	NEWINGTON
030	MILLION	132	CODE	236	HAMVENTION	339	NEW HAVEN
031	A	133	COLUMBUS	237	HAVE	340	NEXT
032	B	134	COME	238	HAZARDOUS	341	NIGHT
033	C	135	COMPLETE	239	HAZE	342	NO
034	D	136	COMPUTER	240	HEAVY	343	NORTH
035	E	137	CONDITION	241	HELLO	344	NORTHEAST
036	F	138	CONGRATULATIONS	242	HELP	345	NORTHWEST
037	G	139	CONNECT	243	HENRY	346	NOT
038	H	140	CONNECTICUT	244	HERTZ	347	NOVEMBER
039	I	141	CONTACT	245	HIGH	348	NUMBER
040	J	142	CONTROL	246	HOLD	349	OAKS
041	K	143	CONVERGING	247	HOME	350	OBSCURED
042	L	144	COSHOCTON	248	HOTEL	351	O'CLOCK
043	M	145	COUNT	249	HOOR	352	OCTOBER
044	N	146	COURSE	250	HOURS	353	OF
045	O	147	CRANE	039	I	354	OFF
046	P	148	CROSSWIND	251	ICE	045	OH
047	Q	149	CURRENT	252	ICING	355	OHIO
048	R	150	CUYAHOGA FALLS	253	IDENTIFY	356	OHMS
049	S	151	CYCLE	254	IGNITE	357	OIL
050	T	152	DALLAS	255	IGNITION	358	ON
051	U	153	DANGER	256	IMMEDIATELY	359	OPEN
052	V	154	DATE	257	IN	360	OPERATION
053	W	155	DAY	258	INBOUND	361	OPERATOR
054	X	156	DAYS	259	INCH	362	OSCAR
055	Y	157	DAYTON	260	INCREASE	363	OTHER
056	Z	158	DECEMBER	261	INCREASING	364	OUT
057	ABORT	159	DECREASE	262	INCREASING_TO	365	OUTER
058	ABOUT	160	DECREASING	263	INDIA	366	OVER
059	ABOVE	161	DEGREES	264	INDICATED	367	OVERCAST
060	ACKNOWLEDGE	162	DELTA	265	INFLIGHT	368	PAPA
061	ACTION	163	DEPARTURE	266	INFORMATION	369	PARTIALLY
062	ADJUST	164	DEVICE	267	INNER	370	PASS
063	ADVANCED	165	DIAL	268	INSPECTOR	371	PASSED
064	ADVISE	166	DINNER	269	INTRUDER	372	PATCH
065	AERIAL	167	DIRECTION	270	IS	373	PATH
066	AFFIRMATIVE	168	DISPLAY	271	IT	374	PELLETS
067	AIR	169	DIVIDED	272	JANUARY	375	PER
068	AIRPORT	170	DOOR	273	JULIET	376	PERCENT
069	AKRON	171	DOWN	274	JULY	377	PHONE
070	ALERT	172	DOWNWIND	275	JUNE	378	PICO
071	ALL	173	DRIVE	276	KENTUCKY	379	PLEASE
072	ALOFT	174	DRIZZLE	277	KEY	380	PLUS
073	ALPHA	175	DUST	278	KILO	381	POINT
074	ALTERNATE	176	EAST	279	KNOTS	382	POLICE
075	ALTITUDE	177	ECHO	280	LAND	383	POSITION
076	AMATEUR	178	ELECTRICIAN	281	LANDING	384	POWER
077	AMPS	179	ELEVATION	282	LATE	385	PRACTICE
078	AND	180	EMERGENCY	283	LAUNCH	386	PRESS
079	ANSWER	181	ENGINE	284	LEAN	387	PRESSURE
080	APPROACH	182	ENTER	285	LEFT	388	PRIVATE
081	APRIL	183	EQUAL	286	LEG	389	PROBE
048	ARE	184	EQUALS	287	LESS_THAN	390	PROGRAMMING
082	AREA	185	ERROR	288	LEVEL	391	PULL
083	ARRIVAL	186	ESTIMATED	289	LIGHT	392	PUSH
084	AS	187	EVACUATE	290	LIMA	393	P.M.
085	ASSOCIATION	188	EVACUATION	291	LINE	394	QUEBEC
086	AT	189	EXIT	292	LINK	395	RADAR
087	AUGUST	190	EXPECT	293	LIST	396	RADIO
088	AUTO	191	FAIL	294	LITTON	397	RAIN
089	AUTOMATIC	192	FAILURE	295	LOCK	398	RAISE
090	AUTOPILOT	193	FARAD	296	LONG	399	RANGE
091	AUXILIARY	194	FAHRENHEIT	297	LOOK	400	RATE
092	AVON	195	FARMINGTON	298	LOW	401	RATTLESNAKE MOUNTAIN
093	AVON MOUNTAIN	196	FAST	299	LOWER	402	READY
094	A.M	197	FEBRUARY	300	LUNCH	403	REAR
095	BAND	198	FEET	301	MACHINE	404	RECEIVE
096	BANK	199	FILED	302	MAINTAIN	405	RED
097	BASE	200	FINAL	303	MANUAL	406	RELEASE
098	BATTERY	201	FINDLAY	304	MARCH	407	REMARK
032	BE	202	FIRE	305	MARKER	408	REMOTE
099	BELOW	203	FIRST	306	MAY	409	REPAIR
100	BETWEEN	204	FLAPS	307	MAYDAY	410	REPEAT
101	BLOWING	205	FLIGHT	308	ME	411	REPEATER

412 RICH
413 RICHMOND
414 RIG
415 RIGHT
416 ROAD
417 ROGER
418 ROMEO
419 ROUTE
420 RUNWAY
421 SAFE
422 SAINT PETERSBURG
423 SAND
424 SANTA CLARA
425 SAN LEANDRO
426 SATURDAY
427 SCATTERED
033 SEA
428 SECOND
429 SECONDS
430 SECURITY
033 SEE
431 SELECT
432 SEPTEMBER
433 SEQUENCE
434 SERVICE
435 SET
436 SEVERE
437 SEXY
438 SHORT
439 SHOWERS
440 SHUT
441 SIDE
442 SIERRA
443 SIGHT
444 SLEET
445 SLOPE
446 SLOW
447 SMOKE
448 SNOW
449 SOUTH
450 SOUTHEAST
451 SOUTHWEST
452 SPEED
453 SPRAY
454 SQUAWK
455 STALL
456 START
457 STOP
458 STORM
459 SUNDAY
460 SWITCH
461 SYSTEM
462 TANGO
463 TANK
464 TARGET
465 TARPON SPRINGS
466 TAXI
050 TEA
050 TEE
467 TEEN
468 TELEPHONE
469 TEMPERATURE
470 TERMINAL
471 TEST
472 THANK YOU
473 THAT
474 THE_LONG_E
475 THE_SHORT_E
476 THE_NORMAL_E
477 THIN
478 THINLY
479 THIRD
480 THIS_IS
481 THIS
482 THUNDERSTORM
483 THURSDAY
484 TIME
485 TIMER
486 TIMES
487 TO
488 TODAY
489 TOMORROW
490 TONIGHT
491 TOOL
492 TORNADO
493 TORONTO
494 TOUCHDOWN
495 TOWER
496 TRAFFIC
497 TRANSMIT
498 TRIM
499 TUESDAY
500 TURBULENCE
501 TURN
502 UNDER
503 UNIFORM
504 UNIT
505 UNLIMITED
506 UNTIL
507 UP
508 USE (NOUN)
509 USE (VERB)
510 VALLEY
511 VALVE
512 VARIABLE
513 VERIFY
514 VICTOR
515 VISIBILITY

516 VOLTS
517 WAIT
518 WAKE
519 WAKEUP
520 WARNING
521 WATCH
522 WATTS
523 WAY
524 WEATHER
525 WEDNESDAY
526 WELCOME
527 WEST
528 WEST HARTFORD
529 WHISKEY
530 WILL
531 WIND
532 WISKEY
533 WITH
534 WRONG
535 X_RAY
536 YANKEE
537 YELLOW
538 YESTERDAY
539 YOU
540 YOUR
541 ZED
542 ZONE
543 ZULU

Prefixes and Suffixes

544 FIF
545 THIR-
546 -ED
547 -ER
548 -ING
549 -S
550 -TEEN
551 -TH
552 -TY

Juliet's Words

553 OH
554 ONE (F)
555 TWO (F)
556 THREE (F)
557 FOUR (F)
558 FIVE (F)
559 SIX (F)
560 SEVEN (F)
561 EIGHT (F)
562 NINE (F)
563 TEN (F)
564 ELEVEN (F)
565 TWELVE (F)
566 THIRTEEN (F)
567 FOURTEEN (F)
568 FIFTEEN (F)
569 SIXTEEN (F)
570 SEVENTEEN (F)
571 EIGHTEEN (F)
572 NINETEEN (F)
573 TWENTY (F)
574 THIRTY (F)
575 FORTY (F)
576 FIFTY (F)
577 GOOD (F)
578 MORNING (F)
579 AFTERNOON (F)
580 EVENING (F)
581 THE (F)
582 TIME (F)
583 IS (F)
584 AM (F)
585 PM (F)
586 O'CLOCK (F)

Pause

587 PAUSE

Sound Effects

588 LASER
589 WHISTLE
590 PHASER
591 TRAIN
592 EXP
593 CROWD
594 TIC
595 TOC
596 HIGH-LOW TONE
597 LOW-HIGH TONE
598 HIGH TONE

Junior's Words

599 ALARM
600 AMATEUR
601 ANALOG
602 ARIZONA
603 AUTOPATCH
604 BACHELOR
605 BAD
606 BASE
607 BATTERY
608 BAY

609 BILLINGS
610 BOZEMAN
611 CANOE
612 CAPROCK
613 CENTRAL
614 CHARGING
615 CLOUDS
616 CLUB
617 COMMUNICATIONS
618 CONTROLLER
619 DIGITAL
620 EMPIRE
621 EVENT
622 FIELD
623 FLASH
624 FLOOD
625 FRIENDLY
626 GOLDEN
627 GREYCLIFF
628 HAM
629 HAMFEST
630 HARRISON
631 HOLLEY
632 HOME
633 INFORMATION
634 INLAND
635 INPUT
636 INSIDE
637 KOOTENAI
638 LINK
639 LITTLEROCK
640 MEDIUM
641 MEETING
642 MICA
643 MONITOR
644 MOUNTAIN
645 NET
646 OBED
647 OREGON
648 OUTSIDE
649 PEAK
650 POUND
651 PUMP
652 PYRAMID
653 RACES
654 RADIO
655 RATTLESNAKE
656 REMOTE
657 REPEATER
658 RIDGE
659 SANDRA
660 SCAN
661 SIDNEY
662 SKYWARN
663 SOCIETY
664 SPOKANE
665 STAR
666 STATE
667 SUNDANCE
668 SYSTEM
669 TACOMA
670 THIS
671 TIGER
672 TODAY
673 TOMORROW
674 TONIGHT
675 VALUE
676 VOLTAGE
677 WASHINGTON
678 WATCH
679 WATER
680 WELCOME
681 WITH
682 YAKIMA
683 YELLOWHEAD
684 YELLOWKNIFE
685 ZED

Internal Variable Words (don't use)

800 UNUSED
801 START POLITE
802 END POLITE
803 END POLITE DO CMD
804 DO DELAYED DIAL
805 START DVR TIMER

Variable Words

810 MALE TIME
811 HOUR OF DAY (12 hr)
812 HOUR OF DAY (24 hr)
813 MINUTE OF HOUR
814 AM / PM
815 DATE
816 MONTH OF YEAR
817 DAY OF MONTH
818 YEAR
819 DAY OF WEEK
830 TIME (F)
831 HOUR OF DAY (12 hr) (F)
832 HOUR OF DAY (24 hr) (F)
833 MINUTE OF DAY (F)
834 AM / PM (F)
835 Morn/Aft/Even (F)
840 I/O 1 ANALOG 1
841 I/O 1 ANALOG 2

842 I/O 1 ANALOG 3
843 I/O 1 ANALOG 4
844 I/O 1 ANALOG 5
845 I/O 1 ANALOG 6
846 I/O 1 ANALOG 7
847 I/O 1 ANALOG 8
848 I/O 2 ANALOG 1
849 I/O 2 ANALOG 2
850 I/O 2 ANALOG 3
851 I/O 2 ANALOG 4
852 I/O 2 ANALOG 5
853 I/O 2 ANALOG 6
854 I/O 2 ANALOG 7
855 I/O 2 ANALOG 8
856 I/O 1 High 1
857 I/O 1 High 2
858 I/O 1 High 3
859 I/O 1 High 4
860 I/O 1 High 5
861 I/O 1 High 6
862 I/O 1 High 7
863 I/O 1 High 8
864 I/O 2 High 1
865 I/O 2 High 2
866 I/O 2 High 3
867 I/O 2 High 4
868 I/O 2 High 5
869 I/O 2 High 6
870 I/O 2 High 7
871 I/O 2 High 8
872 I/O 1 High Time 1
873 I/O 1 High Time 2
874 I/O 1 High Time 3
875 I/O 1 High Time 4
876 I/O 1 High Time 5
877 I/O 1 High Time 6
878 I/O 1 High Time 7
879 I/O 1 High Time 8
880 I/O 2 High Time 1
881 I/O 2 High Time 2
882 I/O 2 High Time 3
883 I/O 2 High Time 4
884 I/O 2 High Time 5
885 I/O 2 High Time 6
886 I/O 2 High Time 7
887 I/O 2 High Time 8
888 I/O 1 Low 1
889 I/O 1 Low 2
890 I/O 1 Low 3
891 I/O 1 Low 4
892 I/O 1 Low 5
893 I/O 1 Low 6
894 I/O 1 Low 7
895 I/O 1 Low 8
896 I/O 2 Low 1
897 I/O 2 Low 2
898 I/O 2 Low 3
899 I/O 2 Low 4
900 I/O 2 Low 5
901 I/O 2 Low 6
902 I/O 2 Low 7
903 I/O 2 Low 8
904 I/O 1 Low Time 1
905 I/O 1 Low Time 2
906 I/O 1 Low Time 3
907 I/O 1 Low Time 4
908 I/O 1 Low Time 5
909 I/O 1 Low Time 6
910 I/O 1 Low Time 7
911 I/O 1 Low Time 8
912 I/O 2 Low Time 1
913 I/O 2 Low Time 2
914 I/O 2 Low Time 3
915 I/O 2 Low Time 4
916 I/O 2 Low Time 5
917 I/O 2 Low Time 6
918 I/O 2 Low Time 7
919 I/O 2 Low Time 8

920XXX - read analog 1-16 as S-Meter

921XXX - read analog 1-16 as a Direction N, NE, E, SE, S etc.

922XXX - Execute Command xxx (up to 900 or so, may not go all the way to 999) Will not happen until this word is - actually spoken.

923XXX - Speak 24 hour time in male voice adding xxx hours. Can use to speak the time for any time zone.

924XXX - Same as above in female voice

925 - Speak Call sign of User XXX
926 - Speak Call sign on Port XXX

927 - Speak Call sign of User XXX Being Paged by Directed Reverse Patch

CW Code Table

00	0
01	1
02	2
03	3
04	4
05	5
06	6
07	7
08	8
09	9
10	A
11	B
12	C
13	D
14	E
15	F
16	G
17	H
18	I
19	J
20	K
21	L
22	M
23	N
24	O
25	P
26	Q
27	R
28	S
29	T
30	U
31	V
32	W
33	X
34	Y
35	Z
36	/
37	.
38	?
39	AR
40	SPACE
41	PAUSE

DTMF Code Table

00	Digit 0
01	Digit 1
02	Digit 2
03	Digit 3
04	Digit 4
05	Digit 5
06	Digit 6
07	Digit 7
08	Digit 8
09	Digit 9
10	Digit *
11	Digit #
12	Digit A
13	Digit B
14	Digit C
15	Digit D
16	<Pause>

Radio Port Pin-Out

1,6,8,9	Ground
2	PL Input (Active H/L)
3	PTT (Active Low 150mA)
4	Audio Out (600 Ohm)
5	Audio In (10K Ohm)
7	COR Input (Active H/L) (COR 10K 4mA ^ to gnd)

Radio Port Dip SW

1	Off (Speaker Audio)
2	On (Discriminator)
3	Off COR High
4	On COR Low
5	Off PL High
6	On PL Low
7	Spare
8	Spare

J1 TX & J3 RX

1,2	Audio Path Complete
3	Ground
4	+10 Volt

J5 RS232*

*=When Jumpers are Removed, Requires Dallas DS1275 -Do Not Jump 1,2 and 3,4 w/DS1275. -12 to +12 Volts

J5 TTL**

**=When Jumpers Are Present = TTL Signals from 68HC11 - This Mode is used for Doug Hall and RLC-ICM Control. 0-5 Volts

Audio Adjustment

RECEIVER:

Adjust the "RX" pot on each port, checking the signal on P4 so that all receiver inputs are set to the same level of 1 volt Peak-to-Peak. (P4 is a 10 pin connector near the power connector above the motherboard serial port)

TRANSMITTER:

After RX adjustment, adjust the "TX" pots on all connected transmitters to obtain the desired deviation. (transmitters should not need any additional adjustments after at least 1 receiver is set up)

VOICE LEVEL:

This adjustment R12 should be set for 2 KHz deviation. (R12 is located on the mother- board between port cards 2 and 3)

TO NE GENERATOR:

Adjust the "TN" pot on each port card for 1.5 KHz deviation.

RS232

Communication Parameters

9600 N81	9600
Baud (Default)	
Start Bits	1
Stop Bits	1
Parity	None
Word Length	8
Duplex	Full

RS232 Signals and Interfacing Modem

Computer to Controller:
Use a straight-through cable (not a null modem cable or adapter) with at least * pins conncted

Controller to Modem:
Use a null modem cable or a null modem adapter

DB25 to DB9

8	1	Carrier Detect
3	* 2	Receive Data
2	* 3	Transmit Data
20	4	Data Term. Ready
7	* 5	Ground
6	6	Data Set Ready
4	7	Request to Send
5	8	Clear to Send
22	9	Ring Indicator

Controller- Computer - or Modem

DB9	-DB9	DB25-DB9	DB25
pin 2	2	3	3
pin 3	3	2	2
pin 5	5	7	5

Modem Defaults

AT&F = Factory Defaults
 AT3 = Auto Answer 3rd Ring
 or (ATSO No Answer)
 ATSO = Auto Answer Off
 AT&KO = Disable Flow Control
 ATEO = Disable Local Echo
 ATQ1 = Stop Modem Result Codes
 AT&W = Store Modem Settings

If Unable to Disable theModems Flow Control, ShortPins 4 and 5 together and Pins 6, 8 and 20 togetherThis should fool the Flow Control

Serial Downloads

If more than a dozen commands or so are downloaded, the RLC-3 may get way behind, or even get lost. This does not affect the commands that are being sent to the RLC-3 in any way - just the responses. If you need to know what the responses are change the ASCII transfer settings on your communications software to insert a 1.5 second delay after each line (longer for slow baud rates, shorter for fast baud rates) this will give the RLC-3 time to send the responses back without overflowing the queue. Setting 050 090 before the download will turn off voice responses.

To turn Lower Case and Linefeeds ON enter 06011 before the download.

Use a terminal program that allows the use of prompt strings. The program will wait for the prompt "DTMF>" before the next line of text is sent to the controller, thus no need to insert a pause after each line that is sent.

DTMF Voice Falsing

Check to see if R12 on the Radio Port Card is 470K Ohms. (NOT the MOTHER BOARD)

The RLC3 early releases were shipped with R12 as 300K. This change increases the decode time from 40ms to 50ms. If more than 50ms is needed, values over 700K should be avoided as they may cause the RLC3 not to decode at all.

Any additional audio falsing can be less annoying by setting DTMF Mute Timer relatively short 1..2 sec. (or less with audio delay module)

IO Card DB-25

DB-Pin	Line-#	I/O Type
1	N/A	Ground
14	8	Analog
2	7	Analog
15	6	Analog
3	5	Analog
16	4	Analog
4	3	Analog
17	2	Analog
5	1	Analog
18	8	Input
6	7	Input
19	6	Input
7	5	Input
20	4	Input
8	3	Input
21	2	Input
9	1	Input
22	8	Output
10	7	Output
23	6	Output
11	5	Output
24	4	Output
12	3	Output
25	2	Output
13	1	Output

I/O Card

S1 Up On for LM335 Temp Sen
 S2 Up On for V-Divider 25V

LM335 Temperature Sensor

The sensor converts temperature into voltage which is read by the controllers ADC (Analog-Digital Converter). Powering the sensor is accomplished by turning the appropriate dip switch 'ON' on the I/O board. The power switch must be on and the voltage divider switch off for the temperature sensor to work.

To avoid RFI causing the sensor to give erroneous readings, some consideration should be given to using shielded cable, by-pass capacitors on both ends of the cable to be utilized, and ferrite beads.



1=N/C 2=Analog 3=Ground

Pins on the LM-335

System Re-Initialization

Method #1
 With the power off.

Press and hold the INIT button on the Mother-board. Turn on the power. Wait for about 3 seconds (or longer. Release the INIT Button.

Method #2
 With the power on.

Press and hold both the INI and the RESET buttons. Release the RESET button Wait at least 3 seconds. Release the INITAL button.

Link Communications Inc.

1035 Cerise Road
 Billings, MT 59101-1518

(406) 245-5002 Voice
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 ext 102 Steve S.
 ext 103 Allan
 ext 105 Mark
 ext 106 Jeanie
 ext 112 Steve H.
 Ext 113 Rodney
 ext 114 Brock
 ext 115 Sue
 (800) 610-4085 Orders
 (406) 245-4889 Fax

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