



**Motorola
Advanced Series
MXv3 Remote Control**

Please refer to the code list (on separate sheet) for a list of supported brands and models. If you do not find the brand of your device on the supported code list, please refer to section B for the search function or you may use section C for instructions on the learning feature of your remote control.

If you have an integrated or combo unit such as a TV/DVD, each component of the unit may need to be setup separately by setting up both the TV and DVD mode keys.

NOTE: The DVD and AUX mode keys can be setup with any code. The TV mode key can only be setup with TV codes.

A. Manual Programming

Use the following steps to setup the TV, DVD or AUX mode keys:

1. Power on the device you want to program and locate the 4-digit code from the code list.
2. Press and hold the mode key (TV, DVD, or AUX) and while holding it pressed, press the OK key for one second.
3. Release both keys, all of the mode keys will flash then the selected mode key light will stay lit.
4. Enter the 4-digit code by pressing the numerical keys (0-9). The selected mode key light will blink for each digit entry and will remain off after the entry of the fourth digit - indicating a successful setup.
5. Point the remote control at the selected device and press the power key once. The device should turn off. If the device stayed on, repeat the steps 2 thru 5 trying each code for your brand until you find the correct code.

Repeat the steps on the previous page to setup another device. To use the remote control for your Set Top Box, press the STB mode key.

NOTE: If an invalid code is entered or no key is pressed at all for 30 seconds, the mode key light flashes for 3 seconds and turns off. The remote control returns to normal operation and you will need to start over from step A2 to setup the device.

B. Using the Search Function

To search for a particular device code for DVD or AUX e.g. VCR, use the Manual Programming for section A and program DVD or AUX with any VCR code prior to starting a search.

1. Turn on the device you want to control and point the remote at that device.
2. Press and hold the mode key (TV, DVD, or AUX) and while holding it pressed, press the OK key for one second.
3. Release both keys, all of the mode keys will flash then the selected mode key light will stay lit.
4. Press the power button repetitively until the selected device turns off. Once your device has turned off, press OK to save the code.
5. To indicate a successful setup, the selected mode key will turn off and you are ready to setup another device by following steps 1 thru 4 of this section.

C. Learning

If the code for your device is not found in the code list and the search feature was not able to find the code for your device, then the learning feature may be your best option. The learning feature lets you "learn" functions from your original remote control.

Note: Learning cannot be performed for any mode until after that mode is setup with a valid code. So, to learn the keys, first setup the mode with a valid code, see section A, (select any code for the appropriate mode, from the code list), then follow the steps below.

C-I. Learning Commands

1. Press and hold the mode key (TV, DVD, or AUX) on the MXv3 remote and while holding it pressed, press the LEARN key for one second then release both keys.



Motorola remote

1 inch apart



Your original remote

2. All of the mode keys will flash and then the selected mode key light remains on.
3. On your MXv3 remote, press and release the key that you want to teach.
4. While pointing your original remote at the bottom of your MXv3 remote, approximately 1 inch apart, press and hold the original remote key until the mode key light blinks once and stays on. (If there is a learning problem, the mode key light blinks for three seconds and stays on. If this happens, repeat steps 3 and 4 above.)
5. Repeat steps 3 and 4 on previous page for each key you want your MXv3 Remote Control to learn.
6. Press and release the LEARN key when all desired remote commands have been learned. If you have encountered difficulties with the LEARN key setup, please refer to Section K: Troubleshooting Learning.

NOTE: It is not necessary to have your MXv3 Remote Control learn every key from your original remote since most of the keys will not be used under normal daily use. The best practice is to teach only the keys that help you navigate for the best experience, like your volume up and down, channel up and down, and DVR functions.

D. Clearing Commands

D-I. To Clear all Learned Commands (under a single mode)

1. Press and hold the mode key (TV, DVD, or AUX) and while holding it pressed, press the LEARN key for one second then release both keys.
2. All the mode keys will flash and the selected mode key light will stay on.
3. Press and release the LEARN key once. The mode key light blinks off.
4. Press and release the DELETE key. The mode key light turns off. All learned Commands under that mode are now cleared.

D-II. To Clear all Learned Commands (under ALL modes)

1. Press and hold the mode key (TV, DVD, or AUX) and while holding it pressed, press the LEARN key for one second then release both keys.
2. All the mode keys will flash and the selected mode key light will stay on.
3. Press and release the LEARN key twice. The mode key light blinks off.
4. Press and release the DELETE key. The mode key light turns off.

All learned Commands in the remote are now cleared.

E. Volume Control Setup Options

The volume controls will control your Set Top Box until the TV device mode is programmed, e.g. if DVD mode is selected then volume controls your STB. If TV mode is programmed and DVD mode is selected, then volume controls your TV.

If you'd like the volume commands to operate from just one device, e.g. always TV, then follow the instructions in Section E-I. If you'd like the volume commands to be sent to different devices depending which mode you are in, then follow the instructions in Section E-II.

E-I. Volume Always Controls the Same Device

1. Press the TV key and while holding it pressed, press the OK key for 1 second.
2. Release both keys, all of the mode keys will flash followed by the TV mode key light remaining on.
3. Press and hold the MUTE key for 3 seconds until the TV mode key light briefly turns off then remains on. Press and release the mode key that you always want to operate the volume commands (STB, TV, DVD, and AUX). The selected mode key light will remain on.
4. Press and release the MUTE key to save the setting. The selected mode key light will turn off indicating a successful setup. The volume commands will be setup for the selected device despite what mode is selected. If the selected mode key light flashes for 3 seconds and turns off, then the selected mode will have no volume commands of its own and will need to start over from step 1 above and select a different mode to program the device.

E-II. Volume Control Depends on Device Selected

1. Press and hold the TV key and while holding it pressed, press the OK key for one second.
2. Release both keys, all of the mode keys will flash followed by the TV mode key light remaining on.
3. Press and hold the MUTE key for 3 seconds until the TV mode key light briefly turns off then stays on, then release the MUTE key.
4. Press and release the MUTE key to save the setting. The TV mode key light turns off indicating successful setup. The volume commands will now work for different devices.

NOTE: If a programmed mode key has no volume commands of its own, then the volume control will normally operate the TV. If an invalid key is pressed, the selected mode key light flashes for 3 seconds and turns off. The remote control returns to normal operation and you will need to start over.

If no key is pressed within 30 seconds, the remote control times out, the selected mode key light flashes for 3 seconds and turns off. The remote control returns to normal operation at which time you can start over.

F. Channel Control Setup Options

The channel controls (Channel Up/Down, 0-9 and LAST) will always work your Set Top Box. If you'd like the channel commands to be sent to different devices depending which mode you are in, then follow the instructions in Section F-I.

F-I. Channel Control Depends on Device Selected

1. Press and hold the TV key and while holding it pressed, press the OK key for one second.
2. Release both keys, all of the mode keys flash followed by the TV mode key light remaining on.
3. Press and hold the LAST key for 3 seconds until the TV mode key light briefly turns off then stays on, then release the LAST key.
4. Press and release the LAST key to save the setting. The TV mode key light turns off indicating successful setup. The channel commands will now work for different devices.

F-II. Channel Always Controls your Set Top Box (Factory Default)

1. Press and hold the TV key and while holding it pressed, press the OK key for 1 second.
2. Release both keys, all of the mode keys will flash followed by the TV mode key light remaining on.
3. Press and hold the LAST key for 3 seconds until the TV mode key light briefly turns off then remains on.
4. Press and release the STB mode key. The selected mode key light remains on.
5. Press and release the LAST key to save the setting.

The STB mode key light will turn off indicating a successful initial setup. The channel commands will be setup for your Set Top Box regardless of what mode is selected. If the selected mode key light flashes for 3 seconds and turns off, then you will need to start over from step 1.

G. Mode Deactivation

If you'd like to deactivate a device mode, then follow the instructions below:

1. Press and hold the mode key to be deactivated (TV, DVD, or AUX) and while holding it pressed, press the OK key for one second.
2. Release both keys, all of the mode keys will flash and then the selected mode key light will remain on.
3. Enter the 4-digit code 1754 by pressing the numerical keys (0-9). The selected mode key light will blink for each digit entry and will remain off after the entry of the fourth digit - indicating the mode is deactivated.

Note the STB mode cannot be deactivated.

H. Multiple Device Power Control Setup Options

After pressing the STB key, pressing the Power key turns the Set Top Box on or off, AND turns on or off the TV if it has been setup. If you want the Power key to turn on other devices at the same time you can enable these as follows:

1. Press and hold the STB key and while holding it pressed, press the OK key for 1 second. Then release both keys. You are now in setup mode.
2. Press and release the mode key (TV, DVD or AUX) you want to enable.
3. Press and release the 1 key. The selected mode is now enabled. If no mode key is pressed instep 2 ALL modes (TV, DVD and AUX) will be enabled.

To remove a mode from the Power key:

1. Press and hold the STB key and while holding it pressed, press the OK key for 1 second. Then release both keys. You are now in setup mode.
2. Press and release the mode key (TV, DVD or AUX) you want to disable.
3. Press and release the 0 key. The selected mode is now disabled. If no mode key is pressed in step 2, ALL modes (TV, DVD and AUX) will be disabled.

Note you can turn individual devices on/off by pressing the desired Mode key followed by the Power key. It is important to point your MXv3 remote directly towards the devices for this feature to operate correctly.

I. Backlight Cancellation Feature

Your MXv3 Remote Control has the ability to toggle between turning the backlights on or off. If you wish to use this feature, follow these instructions.

1. Press and hold the TV key and while holding it pressed, press the OK key for one second and release both keys at the same time.
2. All the mode keys flash and the TV mode key light stays on.
3. Press the GUIDE key, all backlights will no longer turn on.

To reverse this process so that the backlights turn on when the remote control is being used, simply follow the same steps of the above section one more time.

J. Resetting the Remote Control to the Factory Default Settings

1. Press and hold the TV key and while holding it pressed, press the OK key for one second and release both keys at the same time.
2. All the mode keys will flash, the TV mode key light will stay on.
3. Press and hold the DELETE key for 3 seconds until the TV mode key blinks and stays off. The remote control is now reset to factory default settings. If you want to use the remote control for your TV and other devices, you will need to setup the TV, DVD and AUX mode keys.
4. If no key is pressed within 30 seconds, the remote control times out. The selected mode key light flashes for 3 seconds and turns off. The remote control returns to normal operation and you will need to start over.

K. Troubleshooting Learning

You can only learn one device type under any one mode key. For example, only learn TV codes under the TV mode, DVD codes under the DVD mode, etc. If you are trying to learn from a "Universal" remote, it might have more than one code type stored under a mode.

- a. No functions may be stored under the LEARN key, or in the STB mode.
- b. Depending on the remote you are trying to learn, some keys may not be learnable.

c. Only one original device type can be learned per individual mode.

d. Use fresh batteries for your original remote, and your MXv3 Remote Control.

e. Keep at least three feet away from incandescent or low-energy lights when learning.

f. Before learning, clear all learned commands (refer to Section D-II) then try learning 2 or 3 commands initially.

g. Point your original remote at the bottom end of your MXv3 Remote Control so the IR elements on both remotes are directly in line with each other (see diagram to the left). You may need to adjust the height of either remote to achieve this.

h. Avoid learning your original remote's Volume/Mute keys unless you are sure these operate the same device.

i. Avoid learning your original remote's VCR or DVD transport keys unless you're sure these operate the same device.

j. If learning the first or second keys for a mode results in continuous errors then try the following:

- i. End the learn session by pressing the LEARN key.
- ii. Clear out the learned commands for that mode.
- iii. Check the IR elements are correctly aligned between the two remotes.
- iv. Adjust the distance between the two remotes to be closer (e.g. half an inch) or further away (e.g. 2 inches) from each other.
- v. Try learning the original remote for that mode again. If problems reoccur with the same key check the original remote key being learned - does it transmit? Does it operate the target device? Try learning that key under a different *clear* mode. If it learns OK then it is likely to be a different code type from the others and cannot be learned under the same mode.

Code List
TV

Abex	0185
Acme	0010
Admiral	0020 0226 0001
Advent	0116 0176 0922
Adventura	0174
Aiko	0058
Aiwa	0195 0196 0227 0269
Alleron	0051
Amark	0020
Amtron	0053
Akai	0105 0002 0077 1137 1138 0254 1105 1113 1139
Anam National	0053 0003
AOX	0025 0042 0193
Apex	0004 0005 0009 1009
Archer	0014 0156 0175 0187
Aspect	0020
Audiovox	0059
Axion	0053 1019 1117
Bang & Olufsen	0177
Belcor	0190
Bell & Howell	0004
Benq	0031 0049 0000 0001
Bluesky	0081 0083 0101
Bradford	1155 0144
Broksonic	0053
Brokwood	0147 0135 0310
Candle	0004
Capehart	0004 0009 0174 0008
CCE	0175
Celera	1153
Celebrity	0214
Centrios	0002
Centurion	0169
Cetronic	0009
Changhong	0042
Cineral	0214 0401
Citizen	0058 0144
Clairtone	0004 0009 0053 0105 0109
Classic	0189 0135 0001 0008 0042 0058
Coby	0014
Color Voice	0214 0401 0042
Colortyme	1091 1124
Concerto	0010
Concierge	0004 0009 0010
Contec/Cony	0004 0009
Cornea	0121
Craig	0053 0012 0014 0042
Crosley	0050
Crown	0053 0042
Curtis Mathes	0031 0105 0130 0004
CTX	0009 0000 0049 0109 0358 0001 0015
CXC	0020
Cybervision	0107 0109 0000 0227 0015
Daewoo	0051
Daytron	0004 0009
Dell	0138 0043 0140 0039 0444 0080 0042
Diamond Vision	0058 0017 0010 0126 0018 0127 0019
Digimate	0004 0009
Digistar	0209 0028 0132
Dynasty	0210 0948 0092
Elektra	1017
Electroband	1019 0165 0118 0116
Electrohome	0167 0132 1020 1151 1152
Elite Video	0031 0000
Emerson	0158 0135
Envision	0059 0072
ESA	0121 0004
Fisher	0189 0135 0153
Fujitsu	0217 0157 1135
Funai	0042
Futuretec	0001
Gateway	0002 0014
GE	0004 0009 0005 0027
Gibraltar	0044 0054 0000 0342 0003
Goldstar	0125 0015 0022 0052 0087
Gradiente	0121 0004
Grundig	0004 0009 0005 0227
Guestvision	0338 0012 0057 0080 0156
Gvision	1013 0004 0153 1160 1159
Haier	0051 0053
Hallmark	0201
Harley Davidson	1005
Harvard	0081 0216 0217 0157 1147
Hewlett Packard	0004 0009
Hisense	0153
Hitachi	0053
Hyundai	0088 0059 0142 0060 0072
ILO	0004 0009 0091 1002 0001 0012
IMA	0061 0137 0139 0141 0179 0227
Infinity	1134
In Focus	0198 1070 1024
Integra	1023 0146 0189 1139
Inteq	0000
Janeil	0062 0288
JBL	0000
JCB	1070 0146 1085 1109
JC Penney	0103 0189 0217 0135
Jensen	0133 0116 0167 1148 0456 0029
JVC	0181
Kawasho	0181
Kaypani	0121
KEC	0174
Kenwood	0062
KLH	1155 0144
Kloss Novabeam	0002
Kogi	0031 0004 0005 0009
Konka	0105 0107 0109 0054 0000 0087
KTV	0008 0012 0015 0022 0030 0052
Kurazai	0004 0009 0133
Lasonic	0060 0026 0197 0069 0160
Legend	0247 0923 0012 0065 0067 0141
LG	0004 0009 0002
Liquidvideo	0000 0012 0015 0022 0030 0052
Lloyd	0004 0009 0133
Lodgenet	0105 0107 0109 0054 0000 0087
Loewe	0008 0012 0015 0022 0030 0052
Logik	0004 0009 0133
Luce	0060 0026 0197 0069 0160
Luxman	0247 0923 0012 0065 0067 0141
LXI	0004 0009 0002
Magnasonic	0000 0012 0015 0022 0030 0052
Magnavox	0004 0009 0133
Majestic	0004 0009 0133
Marantz	0004 0009 0133
Maxent	0004 0009 0133
Medion	0004 0009 0133
Megatron	0004 0009 0133
MEI	0004 0009 0133
Memorex	0004 0009 0133
MGA	0004 0009 0133
Midland	0004 0009 0133
Mimek	0004 0009 0133
Minutz	0004 0009 0133
Mitsubishi	0004 0009 0133
Montgomery Ward	0004 0009 0133
Moteva	0004 0009 0133
Motorola	0004 0009 0133
MTC	0004 0009 0133
Multitech	0004 0009 0133
Multivision	0004 0009 0133
Myron & Davis	0004 0009 0133
NAD	0004 0009 0133
NEC	0004 0009 0133
NET-TV	0004 0009 0133
Nexxtech	0004 0009 0133
Nikei	0004 0009 0133
Nikko	0004 0009 0133
Niko	0004 0009 0133
Norcent	0004 0009 0133
NTC	0004 0009 0133
Oncommand	0201
Onking	0042
Onwa	0053 0042
Optimus	0170 0185
Optoma	1028
Optonica	0020 0095
Orion	0121 0135 0035
Panasonic	0171 0148 0054
Philco	0170 0062 0003 0070
Philips	0062 0204 0184 0205 0207
Philips-Magnavox	0004 0189 0183 0199 0200
Pilot	0081 1149 1154 0003 0008
Pioneer	0068 0075 0086 0087 0141
Piva	0062 0204 0207
Planar	0183 0226 0288
Polaroid	0004 0009 0090 0179
Portland	0004 0005
Precision	0004 0005
Price Club	0009 0138 0130
Prima	0166
Princeton Graphics	0103 0189 0217 0135
Prism	0109 0165 0116 0167 0176
Proscan	0020 0099
Proton	0054
Prottron	0031 0107 0015 0162 0163
Proview	0192 0004 0009
Pulsar	1010 0093 0175 0186
Quasar	1017 1157
Radio Shack	1025 1026 1027
RCA	0121 0004
Realistic	0171 0148 0054
Rhapsody	0170 0062 0003 0070
Runco	0031 0004 0048 0049
Sampo	0053 0170 0009 0227 0342
Samsung	0000 0012 0041 0042 0095
Sansui	0031 0004 0048 0054 0094
Samtron	0100 0102 0107 0129 0191 0005
Sansui	0031 0004 0048 0054 0094
Santeca	0009 0000 0162 0163 0003 0015
Sanyo	0022 0096 0113 0125 0179 0187 0188
Scotch	0031 0004 0048 0049
Scott	0053 0170 0009 0000
Seals	0227 0012 0041 0042 0095
Selectron	0014
Semp	0121 0181 0111
Sharp	0124 0046 0004
Shogun	0009 0175 0012
Signature	0116
Simpson	0004 0009 0005 0132 0227
Sonic	0338 0012 0057 0080 0156
Sony	0177 0168
Sova	0153
Soyu	0031 0202 0000 0001
Soundesign	0010 0102 0107 0129 0191 0005
Spectra	0009 0000 0162 0163 0003 0015
Spectravision	0022 0096 0113 0125 0179 0187 0188
Squareview	0031 0004 0048 0049
SSS	0053 0170 0009 0000
Starlite	0227 0012 0041 0042 0095
Star Sight	0014
Supra	0121 0181 0111
Superscan	0124 0046 0004
Supersonic	0009 0175 0012
Supremacy	0116
Supreme	0004 0009 0051
SVA	0053 0008 0042
Sylvania	0004 0009 0051
Symphonic	0053 0008 0042
Syntax	0004 0009 0051
Tandy	0020
Tashiko	0153
Tatung	0081 0198 0003
Technics	0054
Techwood	0004 0009 0054
Teknika	0031 0004 0005 0009 0051
Telecaption	0053 0105 0109 0170 0000
Telerent	0174 0001 0008 0012 0042
Tera	0117
Tevion	0031 0000 0001
TMK	0004 0186
Toshiba	0198
Totevision	0004 0009
Trutech	0105 0049 0095 0170 0012 0117 0141
Universal	0153
Victor	1029 1145 1121
Vidtech	0002 0087
Viewsonic	0004 0005 0009
Viking	0046 0072 1014 1144
Viore	0004 0005 0009
Vizio	0174
Wards	1018
Westinghouse	0081 1011
White Westinghouse	0031 0062 0004 0005
Yamaha	0009 0051 0000 0068 0075 0087
Zenith	0095 0119 0052 0001 0008 0024

Tandy	0020
Tashiko	0153
Tatung	0081 0198 0003
Technics	0054
Techwood	0004 0009 0054
Teknika	0031 0004 0005 0009 0051
Telecaption	0053 0105 0109 0170 0000
Telerent	0174 0001 0008 0012 0042
Tera	0117
Tevion	0031 0000 0001
TMK	0004 0186
Toshiba	0198
Totevision	0004 0009
Trutech	0105 0049 0095 0170 0012 0117 0141
Universal	0153
Victor	1029 1145 1121
Vidtech	0002 0087
Viewsonic	0046 0072 1014 1144
Viking	0004 0005 0009
Viore	0174
Vizio	1018
Wards	0081 1011
Westinghouse	0031 0062 0004 0005
White Westinghouse	0009 0051 0000 0068 0075 0087
Yamaha	0095 0119 0052 0001 0008 0024
Zenith	0143 0114 1146

Apex	0214 0401
Broksonic	0394
Hitachi	0935
JVC	0923
Panasonic	0437 0950
Philips	0456 0189 0458
RCA	0031 0409
Sansui	0394
Sylvania	0456 0189 0458
Toshiba	0394 0924

Magnavox	0456
Panasonic	0437
RCA	0031 0409 0225
Samsung	0942
Sears	0456
Sylvania	0456
Toshiba	0924

Broksonic	0147 0250
Daewoo	0147 0257 0310
Emerson	0039 0252 0138 0279
JVC	0227 0233 0039 0252
Magnavox	0147 0250 0254 0257
Magnin	0265 0266 0310 0325
MGA	0247
Mitsubishi	0226 0288 0456
Optimus	0268
Panasonic	0268
Penney	0268
Philips	0254
Quasar	0374 0381
RCA	0374 0381
Samsung	0268
Sansui	0288 0456
Sanyo	0374 0381
Sharp	0288 0456
Sylvania	0374 0381
Toshiba	0288 0456
Zenith	0226 0227 0039 0252

Sony	0071 0152
Mitsubishi	0146 1024
Proscan	0000
RCA	0031 0000
Samsung	0105
Dell	0209 0028 0132
Zenith	0121 0091 0111
Daewoo	0100
Philips	0205 0204 0208
Sampo	0124
Apex	0215
Hitachi	0088
JVC	0160
Panasonic	0170 0171
Sharp	0063

NET-TV	0124
Sharp	0079 0020 0004
Benq	1150
Hitachi	1002
Sylvania	1141
Magnavox	0204 1133
Panasonic	0148
Philips	0206 0208
Polaroid	0182 0173 0133 1019 1136
Samsung	0007 0005
Sony	0128 0013 0152
Toshiba	0159 0178 0105
Viewsonic	0921 1117
Zenith	0430

Audiovox	0430
Blaupunkt	0672
BOSE	0672
Broksonic	0932 0967 0394
Cinevision	0405
Clarion	1073
Classic	0431 1051 0401
Daewoo	0440 0441 0444 0971 0965
Denon	0400 0421
Emerson	0405 0940 0899 0456 0458
Fisher	0416
Funai	0456 0458 0899
GE	0409 0430
Go-Video	0937 0971 0454
GPX	0407 0426 0455
Harman Kardon	0936 0944
Hitachi	0404 0407 0428 0419 0387
Irradio	0170 0181
JVC	0398 0406 0408 0964
Kenwood	0900 1072 0418 0923
Konka	0400 0429
Koss	0410 0411 0412 0413 0905
Lasonic	0415 0388
LG	0451 0948
Magnavox	0405 0972 0907
Marantz	0398 0408 0458 0981
Memorex	0456 0915 0914 0969
Mintek	0398 0405 0408 0423 0981
Mitsubishi	0446 1050 1118 1123
NAD	0430
Nakamichi	0402
Nexxtech	0405 0433
Onkyo	0432
Orion	0952 0954 0955 0956
Panasonic	0934 1052 1054 1055 1056
Philips	1057 1063 1064 0449 0949

NET-TV	0124
Sharp	0079 0020 0004
Benq	1150
Hitachi	1002
Sylvania	1141
Magnavox	0204 1133
Panasonic	0148
Philips	0206 0208
Polaroid	0182 0173 0133 1019 1136
Samsung	0007 0005
Sony	0128 0013 0152
Toshiba	0159 0178 0105
Viewsonic	0921 1117
Zenith	0430

Audiovox	0430
Blaupunkt	0672
BOSE	0672
Broksonic	0932 0967 0394
Cinevision	0405
Clarion	1073
Classic	0431 1051 0401
Daewoo	0440 0441 0444 0971 0965
Denon	0400 0421
Emerson	0405 0940 0899 0456 045