

Version 1

Amino Communications
Commercial in Confidence



Amino Communications Ltd

Amino Remote Controls Configuration Guide

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1 Scope and Purpose

This document is intended to be a guide to the Amino IR Remote Controls

It is intended for use by the Amino customer in order to:

1. Understand the functionality of the standard Amino remote controls
2. Understand how to specify a customized remote control
3. Understand how to configure and change macros

It is NOT intended to be an end-user guide. Amino has written separate documents that are intended to be used by the customer as a template for an end-user guide.

Amino does not provide an end-user guide for the remote control. The end-user interface is governed by the middleware that is being used. Generally, the middleware is either written by the customer or purchased by the customer directly from a specialized middleware provider, and then customized for the application. Amino does not supply middleware.

2 Overview

The Amino remote control is designed to complement the Amino range of Set-Top Boxes in terms of style, quality and functionality.

The remote is universal; capable of controlling the end-users own television as well as the Amino set-top box. Approximately 95% of all televisions worldwide can be controlled using this remote.

The remote is easily programmed to control the end-users TV by entering a 3-digit TV Brand Code taken from a table of brand codes. (See Appendix A for European TV Brand Codes and Appendix B for US/Asia TV Brand Codes)

The remote can be specified with different button layouts, legends, and brand logo.

The remote can be specified pre-configured with macros to give multi-step command sequences in response to a single button press.

3 Specifications

3.1 Mechanical

The dimensions of the remote are approximately 195mm long by 48mm wide.

The weight is approximately 78g without batteries and 112g with batteries

The body of the remote is ABS plastic in a light gray colour (Pantone Cool Gray 3U). Being a solid colour rather than a spray finish, the remote does not easily show small scratches or other minor damage.

A fine spark-texture finish is applied to the body of the remote. As well as a pleasing aesthetic finish, this also provides a good grip.

Primary button functions are clearly printed onto the top of each rubber button in highly wear-resistant ink, tested to over 100,000 operation cycles.

The buttons provide positive tactile feedback and are tested to over 100,000 operations.

The remote is rugged, capable of surviving a drop from 2m onto concrete floor on any face.

3.2 Security

In order to deter battery theft, the battery compartment cover can be secured by a screw. The screw is supplied fitted into the base of the remote.

In order to fit the battery cover screw:

1. Remove the battery compartment cover.
2. Remove the silver screw at the base of the remote using a 0pt Posidrive™ screwdriver.
3. Fit the batteries and re-fit the battery cover.
4. Insert the screw into the hole in the base of the battery cover

The remote has an unobtrusive feature molded into the case to allow secure fixing by cable lock (not supplied)

3.3 Batteries

The remote is powered by 3 x AAA, MN2400, UM-3 or LR03 batteries.

The use of alkaline batteries is strongly recommended.

Battery life (using alkaline batteries) is typically around 6 months of 30-minutes intermittent use per day.

3.4 Optical

A high-power 980nm LED is fitted to transmit IR commands to the users TV and STB.

A transmitter half-power angle of 45 degrees ensures reliable control even when the remote is not aligned accurately with the receiver.

When controlling the Amino set-top box, the remote uses a 56kHz proprietary IR protocol that is highly immune to interference from other IR sources. The IR protocol is shared by the Amino IR keyboard (available separately)

IR range with the Amino STB is typically greater than 6 meters under standard tungsten room lighting and in direct line of sight.

The range decreases to approximately 3 meters at an angle of 45 degrees to the Amino Set Top Box.

The effective range and angle of control with the users television is dependent on the TV IR frequency, protocol and receiver sensitivity, but will typically be similar to that of the Amino STB

4 Standard Remotes

Amino supplies one of 3 standard remotes with its set-top box products:

1. A remote for use in European and Hong-Kong markets
2. A remote for use in US and Asian market for use with middlewares other than Minerva
3. A remote for use in US and Asian markets and with Minerva middleware.



Amino Standard Remote for European market



Amino Standard Remote for US/Asia market



Amino Standard Remote for US/Asia market with Minerva middleware





The European remote has a TV brand code library that works specifically with European (and Hong-Kong) Televisions and the US/Asia remotes have a TV code library that works specifically with US and Asia televisions.

It is important to use the correct remote for the televisions in use!

5 Hand-Held IR Remote Operation

5.1 Setting the Mode

In common with most universal remotes, the Amino remote is moded and operates in one of two modes, either *STB mode* or *TV mode*.

The mode is selected by pressing the TV  or STB  mode-select button at the top of the remote. When pressed, the TV or STB mode-select button illuminates for 1 second to indicate that the corresponding mode has been set.

When any function button on the remote is pressed, the TV or STB button will light to indicate that a command is being transmitted in that mode.



The mode remains selected until changed by the user.

If a button has no valid function in that mode, neither the TV nor STB mode buttons will light.

5.2 Entering TV Brand Codes

In order for the remote to transmit the correct signals to control the TV, the remote must first be programmed with the 3-digit code corresponding to the make and model of TV in use.

This is done in the following way:

- Identify the make of the TV that is to be controlled. E.g. Sony, Magnavox, Philips etc.
- Find the TV make listed in the branding table in the *Remote Control User Guide*
- Simultaneously press and hold the TV  and OK  buttons on the remote.
- After approximately 2 seconds, the TV button will light.
- Release the TV and OK buttons – the TV button remains illuminated.
- Now enter the 3-digit brand code according to the make of the TV that is being controlled.
- As each of the digits are entered, the TV button will briefly flash off and on again
- When the third digit has been entered, the TV button will go out.
- If a TV brand code has been entered that the remote does not recognize, the TV button will flash rapidly for a second and remain illuminated. If this happens, re-enter the correct TV brand code.
- Verify that the remote control works with the TV.

-
- If no brand code is entered, or the brand code entered is incomplete, after several seconds, the remote will exit the TV brand code entry mode and the TV brand code will be unchanged.
 - The remotes are supplied by default with TV Brand Code 000.


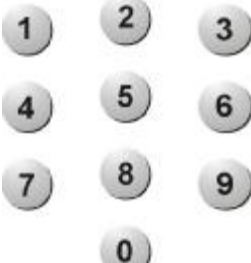






Most TV makes have more than one brand code listed in the brand code table – if this is the case try all brand codes that are listed for that make until a suitable match is found.





If no brand code is listed for the TV, try brand codes for common televisions such as Philips and NEC.

The brand code tables for European and US/Asia remotes are included in Appendix A and Appendix B respectively.

6 Operation in Television Mode

The remote can control the following TV functions:


TV Function	US Remote	European Remote	Default Button Symbol	Description
Power	ü	ü		Toggles the TV power. ^(Note 1)
Direct channel number entry	ü	ü		Allows direct entry of channel numbers
Volume up/down	ü	ü		Volume up and volume down
Channel up/down	ü	ü		Channel up and channel down
Mute	ü	ü		Toggles TV mute
AV	ü	ü		Cycles the TV through the available AV inputs ^(Note 2)
Last Channel	ü	ü		Toggles the TV between the last displayed TV channel and the current TV channel ^(Note 3)
Multi-Digit	r	ü		Toggles TV between single and multi-digit channel selection

Menu	ü	r		Displays the TV set-up Menu (Note 4)
Navigation & OK	ü	r		Navigate the TV set-up menu (Note 4)
TeleText	r	ü		Display & Control TV Teletext pages
FastText	r	ü		Context-sensitive navigation of Teletext pages

Functions that are not listed above are not available on the Amino remote.

Note 1. All TVs will power off with this button. Some TVs will switch on when the power button is next pressed and other TVs will only power on when a channel button or channel +/- is pressed.









Note 2. Some TV's will cycle through available AV inputs using the Channel +/- button. Other TVs only use the AV button to access the AV inputs.















Note 3. This button is sometimes marked as  on TV remotes. Not all TVs support this feature.

Note 4. Some US TVs use the menu, navigation and OK buttons to access settings that are not commonly changed (Closed-caption display, for example) European TVs do not normally use these buttons.

7 Operation in STB mode

In STB mode, the remotes can control the following STB functions:

STB Function	Default Button Symbol	Description
Power		Toggles the STB power.
Direct channel number entry		Allows direct entry of STB channel numbers Also function as text entry buttons when web-browsing. ^(Note 1)
Volume up/down		TV Volume up and volume down ^(Note 2)
Channel up/down		STB Channel up and channel down
Mute		Toggles TV mute ^(Note 2)
AV		Cycles through TV output video modes ^(Note 2) (May also be used to toggle STB TEXT mode)
Delete		Deletes a single character, left of the current cursor position, in text entry boxes . (This button is not available with Minerva middleware)
Enter		Acts as a return key when entering text. (This button is not available with Minerva middleware)

DEL		Deletes a single character, left of the current cursor position, in text entry boxes (This button is unique to the Minerva middleware)
Menu		Displays the main menu
Navigation		Navigate the menus and web pages.
Navigation		Coloured navigation buttons ^(Note 3)
Video Control		Rewind the movie
		Play the movie
		Pause the movie
		Fast Forward the movie
		Stop the movie
		Record the movie
Page Control		Scroll up and down the current page
		View the previous page or the next page (if already visited)
		Refresh (reload) the current page
		Jump to home page

Note 1. Text entry using the remote control is not supported by default.

Note 2. These buttons control the TV functions in both TV mode and STB mode.

Note 3. The Minerva middleware version of the US/Asia remote has specific use for these buttons.

8 Remote Control Key Codes

Each STB function that the remote is capable of transmitting has its own unique code that can be reported by the operating software through to the middleware.

The list of buttons and their corresponding key codes that are received by the middleware in response to STB IR codes is given in Appendix E

9 Learning

The remote has no IR code learning capability.

10 Customising the Hand-Held Remote Control

The remote control is the users interface to the middleware that is being used to provide the end-user interface for the Set-top box.

Amino recognizes that the standard remote may not always fulfill the requirements of the end-user interface in terms of functionality or branding.

Amino therefore provides a means of customizing the standard remote control according to the customers requirements.

Once the configuration information is supplied to Amino, Amino will return a Remote Control Configuration Specification to the customer. After sign-off, the remote will then be manufactured and tested to the agreed specification.

An example Configuration Specification is included in Appendix C

It is possible for Amino to provide functional samples of remotes with standard Amino artwork for functional verification.

It is *not* generally possible for Amino to provide samples of customized artwork on remotes due to the long lead times required to generate the silk-screens

Customization may include any of:

1. Replacing the Amino logo with the customers own logo
2. Moving buttons
3. Removing unnecessary functions
4. Adding buttons.
5. Adding macros to buttons

10.1 Lead Times

Lead times on customized remotes are a minimum of **14 weeks** following sign-off of the remote specification.

10.2 Logo Customisation

The simplest form of customization is to replace the Amino logo on one of the standard Amino remotes with the customers own brand logo.

The customers own logo will replace the Amino logo in the position shown.

In order to brand the remote with a new logo, the customer must supply Amino with a copy of the logo artwork.

The logo drawing must be supplied in either EPS (Encapsulated Post-Script) or AI (Adobe Illustrator) format.

The logo must be single colour and single-density, suitable for single-pass silk-screen printing.

The maximum logo size is approximately 40mm wide x 23mm high

The logo colour must be specified in solid Pantone™ colour reference.

Amino will size and position the logo on the remote.

A dimensioned drawing of the remote can be provided to the customer on request, for approval. The dimensioned drawing will be available approximately **2 weeks** after sign-off of the remote specification.

10.3 Legend Customisation

Button legends may be changed to ones more suited to the demographic of the end-user.

Example:

The existing power control logo  button symbol can be replaced with 

The legends printed on the body of the remote can also be removed or changed.

In order to specify the button or body legends, the customer must supply marked-up drawings or a change-list to Amino. It is NOT necessary for the customer to provide finished artwork to Amino, a sketch is sufficient.

10.4 Layout Customisation

Where the existing button layout is not acceptable, it may easily be changed.

No further TV functions may be added above those available on the standard EU or US remote.

However, the TV and STB functions may be freely moved around the remote or removed completely if not required.

The lower panel of 16 buttons can be populated or depopulated as required.

The holes left by buttons that have been removed from the lower panel are covered by a customizable printed overlay label.



The one limitation is that the button colours cannot be changed from the standard layout.



Customisable 4 x 4 button panel.



10.5 Macros

With the exception of the STB  and TV  mode set buttons, all buttons on the remote can be programmed with 1 or 2 macros, an STB-mode macro and/or a TV-mode macro.

Macros are typically used to move button functions from one button on the remote to another, remove button functions, or add complex sequences of mixed TV and STB commands to a button.

Without a macro, the button assumes its default behaviour. (for the default button codes and functions, see Appendix D)

Each macro can hold a minimum of zero, and a maximum of 4 sequential commands.

Between each macro command, a pause of between 500ms and 2 s (in 500ms steps) can be programmed.

Buttons that are programmed with macros that have no commands have no function. A button that has no function, when pressed, will not transmit any IR and the mode set button will not illuminate.

A macro can consist of mixed TV and STB commands in any order.

Macros cannot be nested.

A macro can be set to repeat when the button is held down, or transmit once only for each button press.

Once a button is pressed, the entire macro will be transmitted.

Each macro can be configured to auto-repeat when the button is held down, or transmit only once per button press.

Macros can be user-programmed, or pre-programmed in manufacturing.

Macros that are pre-programmed in manufacturing can be 'locked' to prevent accidental or malicious erasure or alteration. Macros can be individually locked.

Unlocked macros cannot be locked after manufacture. (Macro locking can only be performed at manufacture)

A macro can be used to program a button with no function (in which case, when pressed, neither STB or TV buttons will illuminate)

Macros entered by the end user can only include functions for which there are buttons on the remote. (When entering Macros, the remote assumes that each function is positioned at the default location)

Macros are specified by means of the Configuration Specification in Appendix C.

Macros are retained when the remote battery is replaced.

The TV brand code can be changed without affecting the macro. The TV brand code only affects the IR protocol that is transmitted for each TV function.

10.6 User Macro Programming

10.6.1 To enter the macro programming mode.

1. Press and hold STB and TV buttons simultaneously for 2 seconds
2. Both STB and TV buttons continuously illuminate
3. Press the STB or TV button to select the mode for the macro. The button will flash off and on again once.
4. Press the button that is required to store the macro
5. Press the STB or TV button and then the required function
6. Repeat step 5 above up to a maximum of 4 times to program 4 sequential commands into the button
7. In order to enter a pause, press either STB button, 'n' times, where n is the required delay in 500ms increments, up to a maximum of 4 button presses. (A pause does not count as one of the 4 macro program steps)
8. At the end of the macro program, in order for the macro to repeat, press the TV button once. Omit this step if the macro is to be transmitted once for each button press.
9. Press and hold the STB and TV buttons simultaneously for 2 seconds to end the macro recording.
10. The STB and TV buttons go dark and the macro is stored.

Any key can be programmed with a macro.

If a macro has been locked into the remote at the factory, the above procedure will not overwrite the existing macro.

EXAMPLE

A repeating TV macro is programmed into the MENU button. This macro turns the TV on, pauses a second, tunes the TV to channel 99 and turns the STB on. The macro steps are as follows:

1. Transmit the TV code for power
2. Pause 1 second
3. Transmit TV code 9
4. Transmit TV code 9
5. Transmit STB code for power

In order to program this macro, the following buttons are pressed.

1. Press and hold STB and TV buttons for 2 seconds until both LEDs light (enter macro programming mode)
2. Press the TV button (The macro is to be recorded in TV mode)
3. Press the MENU button (The Macro is on the MENU button)
4. Press the TV button The first step of the macro is a TV command)
5. Press the POWER button (TV power ON)
6. Press STB button twice (enters the 1s pause between this step and the next)
7. Press TV button
8. Press 9 button (TVchannel 9)
9. Press TV button
10. Press 9 button (TV channel 9)
11. Press STB button
12. Press POWER button (STB Power ON)
13. Press TV button (macro repeats)
14. Press and hold STB and TV buttons until LEDs go out (Finish macro programming)

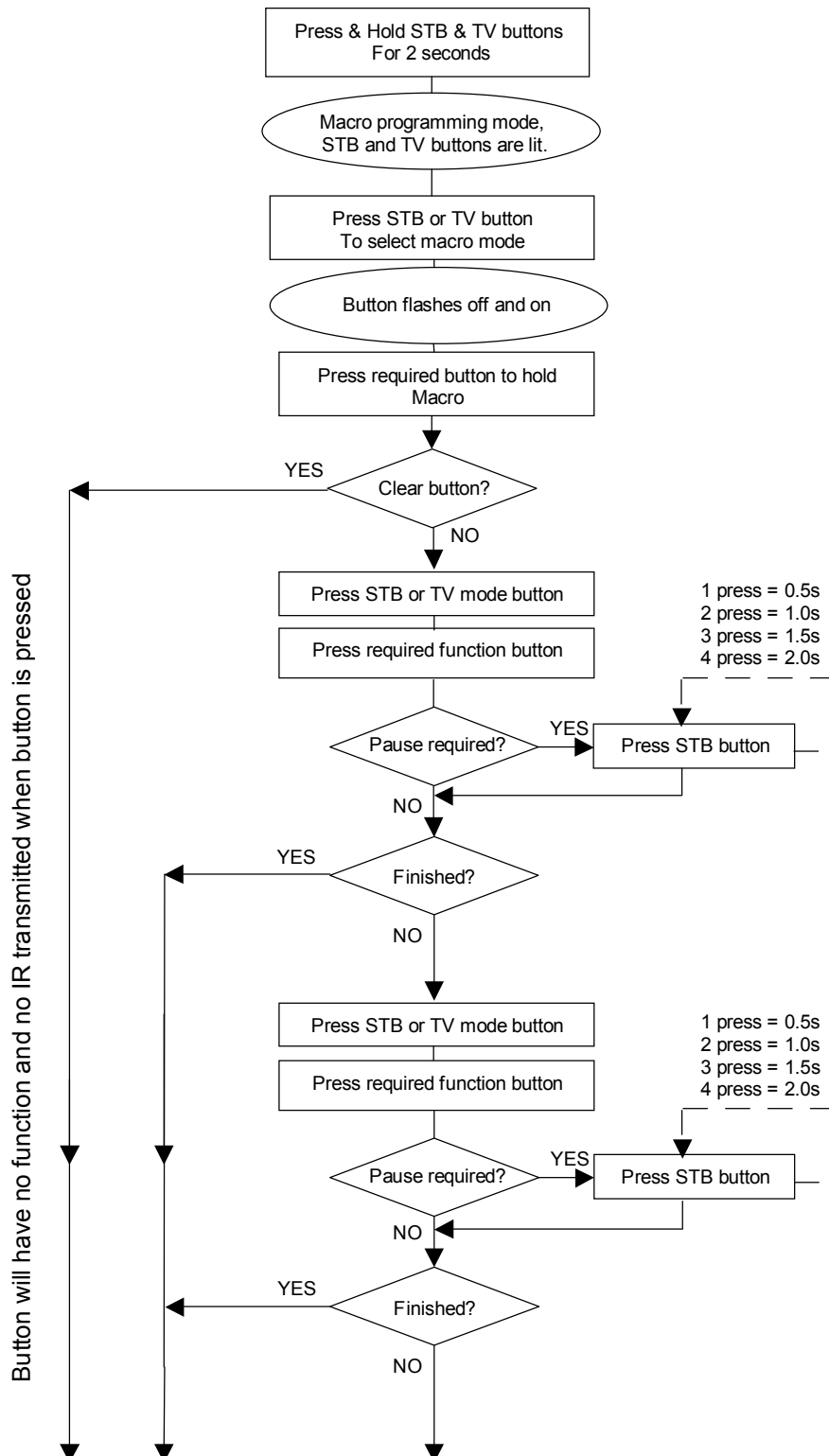
10.6.2 To remove a macro from a button.

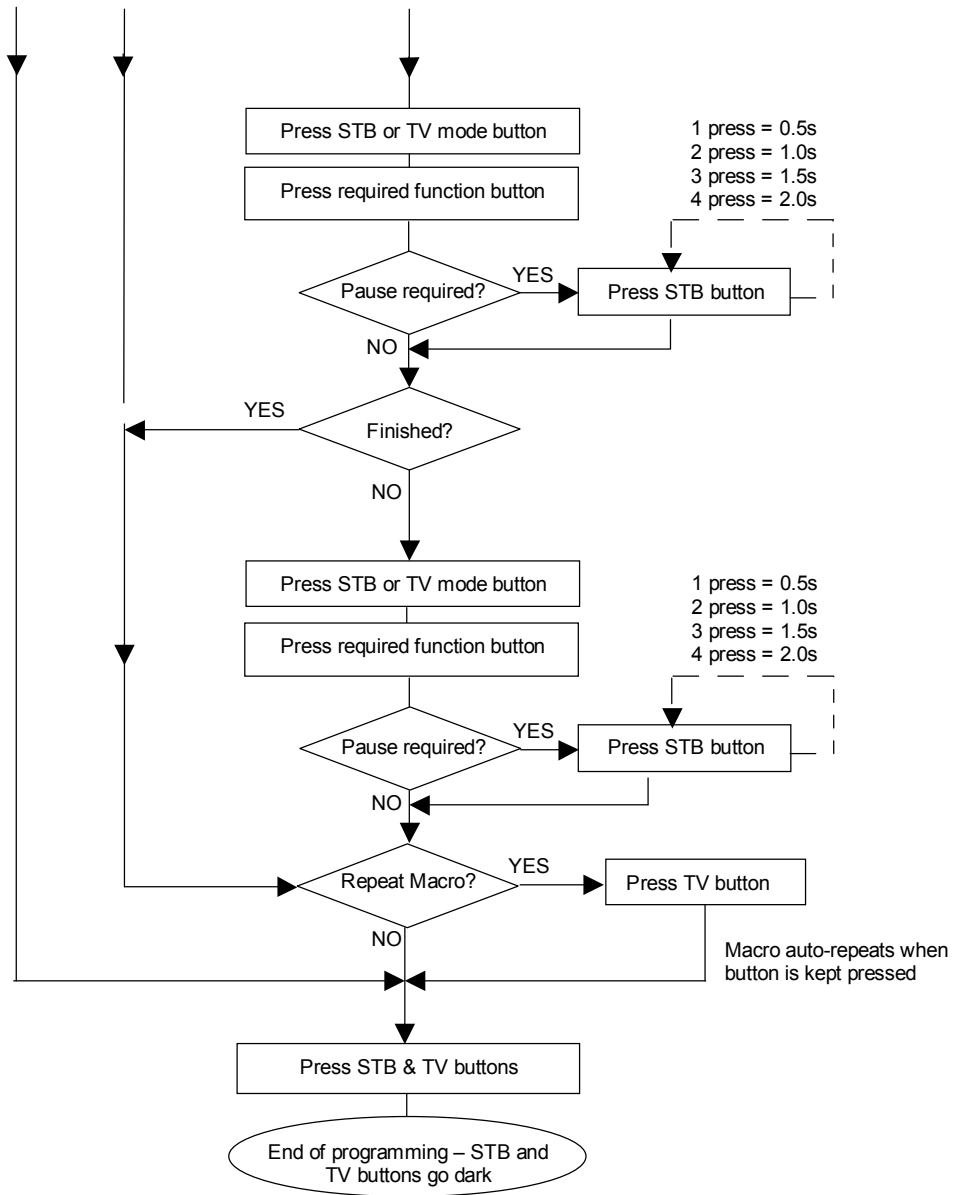
1. Press STB and TV simultaneously for 2 seconds
2. Both STB and TV button illuminate
3. Press the STB or TV button to select the mode for the macro. The button will flash off and on once.
4. Press the button that is to be erased
5. Press and hold the STB and TV buttons simultaneously for 2 seconds to end the macro recording
6. The STB and TV buttons go dark and the macro is erased. The button now has no function in the mode selected at step 3 and will not transmit any IR when pressed. Nor will the LED light.

Note that, in the case of a button with both a TV macro and an STB macro recorded on the same button, the above process will only erase the macro in the mode chosen at step 3 and will not erase both macros. In order to erase both STB and TV macros, the above process needs to be run through twice, once selecting TV mode at step 3 and next time selecting STB at step 3

If a macro has been 'locked' into the remote during manufacture, the macro will not be removed by the above procedure.

10.7 Macro Programming Flowchart





11 Appendix A: European TV Brand Codes

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ADMIRAL	041, 045, 091, 102, 108
AIKO	089
AKAI	006, 010, 023, 119, 135, 159, 164, 179, 189, 198
AKURA	133
ALBA	124, 133, 236
ALBIRAL	197
AMSTRAD	130, 151
ANAM	117
ARC EN CIEL	057
ARCAM	057, 076
ARISTONA	075
ARTHUR MARTIN	045, 164
ASA	041, 045, 052, 078, 087, 102, 108, 142, 205, 209, 215, 255
ASTRA	151
ATANTIC	076
ATLANTIC	076
ATORI	151
AUDIOSONIC	118, 132, 151
AUSIND	049, 141
AUTOVOX	009, 035, 048, 049, 060, 078, 095, 105, 108, 139, 142
BAIRD	110, 135
BANG & OLUFSEN	108
BASIC LINE	132, 133
BAUER	145
BAUR	004, 006, 012, 013, 022, 156
BEKO	249, 250
BLAUPUNKT	022, 023, 024, 025, 047, 074, 220, 221, 222, 223, 224, 226, 257, 258
BRANDT	057, 065, 073, 090, 182
BRIONVEGA	102, 105, 108
BRITANNIA	076
BRUNS	082, 099, 102, 108
BSR	039, 069, 162, 190, 198

BUSH	045, 124, 133, 164, 174, 213, 215
BUSH (UK)	048, 156, 161
CANDLE	079
CENTURY	102, 108
CGE	049, 081, 098, 140, 153, 161, 162, 198, 220, 225, 227
CITIZEN	079
CLARIVOX	082, 096, 197
CLATRONIC	118, 133
CONCERTO	079
CONDOR	076
CONTEC	015, 117
CONTINENTAL EDISON	057, 065, 090
CRAIG	117
CROSLEY	002, 049, 102, 108, 140, 198, 220, 225, 227
CROWN	254
CTC CLATRONIC	026
CXC	117
DAEWOO	010, 150, 151, 261
DANSAI	010
DECCA	027, 058, 060, 097, 110, 169
DECCA (UK)	027, 058, 060, 110, 168
DEGRAAF	045, 135
DIXI	099, 151
DOMEOS	010
DORIC	103
DUAL	009, 060, 161, 164, 210
DUAL-TEC	060, 151, 162, 211
DUMONT	026, 052, 078, 102, 108, 198, 212, 215
DYNATRON	010
ELBE	155, 197, 203
ELECTRO TECH	151
ELEKTRONSKA	077
ELMAN	026, 162
ELTA	151
EMERSON	092, 102, 108, 112, 117, 126, 130
ERRES	010
ETRON	198

EUROPHON	026, 058, 060, 077, 109, 162, 200
FENNER	010, 151
FERGUSON	028, 037, 055, 065, 078, 086, 088, 113, 118, 136, 146, 197, 199, 228, 231, 234
FIDELITY	045, 076, 228
FIDELITY (UK)	056, 059, 193, 228
FILMNET	114
FINLANDIA	045, 232
FINLUX	002, 026, 049, 052, 078, 081, 087, 108, 141, 142, 198, 205, 209, 212, 215, 255
FIRST LINE	198
FISHER	002, 009, 014, 051, 060, 080, 082, 098, 102, 108, 198, 209
FORGESTONE	228
FORMENTI	045, 049, 076, 108, 145, 154, 198
FORMENTI-PHOENIX	002, 043, 045, 059, 141
FORTRESS	108
FRONTECH	045, 118, 198
FUJITSU	126
FUNAI	039, 069, 117, 118, 126
FUTURETECH	117
GBC	002, 014, 132, 151, 162, 198
GEC	045, 110, 128, 232
GEC (UK)	003, 008, 058, 060, 110, 128, 156
GELOSO	002, 041, 045, 132, 151, 162, 198
GENERAL TECHNIC	268
GENEXXA	045, 133
GOODMANS	014, 110, 137, 164, 230
GORENJE	098, 106
GRAETZ	045
GRANADA	014, 045, 049, 058, 060, 110, 111, 135, 198, 232
GRANADA (UK)	008, 014, 045, 049, 058, 060, 103, 131, 152, 156, 164
GRUNDIG	022, 023, 047, 049, 071, 074, 138, 202, 204, 214, 215, 282, 283, 284, 285
HANSEATIC	002, 012, 014, 043, 059, 156
HANTAREX	058
HEMMERMANN	006
HIFIVOX	033, 057
HINARI	007, 014, 045, 126, 135, 151, 164, 198, 201

HITACHI	000, 001, 003, 008, 014, 029, 033, 034, 045, 060, 063, 070, 128, 156, 160, 182, 183, 184, 186, 187, 188, 189, 194, 198, 205, 232, 234
HYPER	059, 060, 151, 162
IMPERIAL	045, 049, 081, 098, 140, 161, 162, 220, 225, 227
INGERSOL	151
INNO HIT	058, 060, 084, 110, 133, 137, 151, 201
INNOVATION	259, 260, 261, 262, 264, 265, 266, 271, 272, 276, 277, 278
INTERFUNK	003, 004, 006, 012, 018, 045, 049, 108, 164, 179, 182, 198, 223
IRRADIO	049, 132, 133, 137, 141, 151, 201
ISUKAI	133
ITT	003, 004, 005, 006, 007, 008, 018, 041, 045, 049, 124, 129, 135, 150, 160, 164, 174, 192, 198, 209, 233, 243
ITT-NOKIA	003, 004, 005, 006, 007, 008, 018, 041, 045, 049, 124, 129, 135, 150, 160, 164, 174, 192, 198, 209, 233, 243
JVC	007, 072, 144, 158, 159, 174, 179
KAISUI	059, 132, 133
KAMOSONIC	060
KARCHER	059, 060, 084, 109, 132, 151, 156, 205
KAWASHO	076
KENDO	026
KENNEDY	002, 035, 095, 198
KONKA	270
KORTING	043, 101, 102, 108, 154
KTV	060, 117
LENOIR	060, 151
LEYEO	118
LG (GOLDSTAR)	059, 060, 076, 079, 137, 149, 151, 156, 162, 164
LIFETEC	259, 260, 261, 262, 264, 265, 266, 267, 268, 269, 271, 276, 277, 278
LOEWE OPTA	012, 013, 058, 061, 108
LOGIC	169, 228
LOGIK	055, 168, 228
LOWEWE	083
LUMA	035, 045, 190
LUXMAN	079
LUXMAN STEREO TUNER	079

LUXOR	000, 006, 018, 034, 042, 045, 046, 049, 060, 067, 135, 137, 156, 160, 191, 192, 198
LYCO	118
MAGNADYNE	002, 006, 026, 058, 064, 077, 102, 108, 162, 198
MAGNAFON	026, 049, 058, 059, 064, 076, 109, 200
MANESTH	010
MARANTZ	010
MARELLI	108
MARK	010
MATSUI	006, 045, 060, 069, 110, 115, 124, 127, 130, 151, 156, 168, 169
MAXIMAL	007, 198
MCMICHAEL	128
MEDION	259, 260, 261, 262, 264, 265, 266, 267, 268, 269, 271, 272, 276, 277, 278
MEMOREX	151
METZ	023, 074, 100, 104, 108, 148, 207, 208
MGA	123
MICROMAXX	259, 262, 264, 265, 271, 276, 277, 278
MINERVA	022, 023, 049, 138, 214, 215
MISTRAL	228
MITSUBISHI	014, 020, 023, 066, 119, 120, 123, 167, 169, 174
MIVAR	049, 050, 058, 059, 076, 077, 137, 143, 203
MTC	079
MULTITECH	026, 058, 060, 064, 098, 132, 151
MURPHY	045, 209
MURPHY (UK)	008, 103
N. E. I.	010, 096
NAD	134
NEC	014, 171, 172, 173
NECKERMANN	045, 060, 098, 108, 156, 193, 198, 221, 223, 224
NEDIATOR	010
NICAMAGIC	076

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13 Appendix C: Example Configuration Specification

Layout:



Requirements:

Part Number

Remote part number shall be **002-XXX-0A-00-REM*-BM**

Code Library

The Remote shall be supplied with the **US/Asia** code library.

Brand Codes

TV Brand code set to **095 (unlocked)**

STB Brand code set to **000 (locked)**

Macros

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
1	STB	TV mode button 1	NO	TV mode button 18	NO	STB mode button 43	NO	-	-	NO	NO	TV Toggle power TV AV STB Home page
	TV	TV mode button 1	NO	TV mode button 18	NO	STB mode button 43	NO	-	-	NO	NO	TV Toggle Power TV AV STB Home page

Buttons 2 and 3 intentionally missing.

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
4	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 1 / symbol
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 1

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
5	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 2 / abc
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 2

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
6	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 3 / def
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 3

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
7	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 4 / ghi
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 4

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
8	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 5 / jkl
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 5

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
9	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 6 / mno
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 6

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
10	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 7 / pqrs
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 7

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
11	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 8 / tuv
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 8

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
12	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 9 / wxyz
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 9

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
13	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Delete
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Last Channel

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
14	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Channel 0 / Space/Shift
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel 0

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
15	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Return
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
16	STB	TV mode button 16	-	-	-	-	-	-	-	NO	YES	TV Volume +
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Volume +

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
17	STB	TV mode button 17	-	-	-	-	-	-	-	NO	YES	TV Mute
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Mute

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
18	STB	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV AV

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
19	STB	NO FUN	-	-	-	-	-	-	-	NO	YES	No Function
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel +

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
20	STB	STB mode button 43	-	-	-	-	-	-	-	NO	NO	STB Home Page
	TV	TV mode button 18	-	STB mode button 43	-	-	-	-	-	NO	NO	TV AV STB Home Page

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
21	STB	TV mode button 21	-	-	-	-	-	-	-	NO	YES	TV Volume -
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Volume -

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
22	STB	NO FUN	-	-	-	-	-	-	-	NO	YES	No Function
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Channel -

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
23	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Focus Up
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Cursor Up

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
24	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Focus Left
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Cursor Left

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
25	STB	Default	-	-	-	-	-	-	-	NO	YES	STB OK
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Enter

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
26	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Focus Right
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Cursor Right

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
27	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Focus Down
	TV	Default	-	-	-	-	-	-	-	NO	YES	TV Cursor Down

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
28	STB	Default	-	-	-	-	-	-	-	NO	YES	STB RED
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
29	STB	Default	-	-	-	-	-	-	-	NO	YES	STB GREEN
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
30	STB	Default	-	-	-	-	-	-	-	NO	YES	STB YELLOW
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
31	STB	Default	-	-	-	-	-	-	-	NO	YES	STB BLUE
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
32	STB	Default	-	-	-	-	-	-	-	NO	YES	VoD & PVR Rewind
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
33	STB	Default	-	-	-	-	-	-	-	NO	YES	VoD & PVR Play
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
34	STB	Default	-	-	-	-	-	-	-	NO	YES	VoD & PVR Pause
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
35	STB	Default	-	-	-	-	-	-	-	NO	YES	VoD & PVR Fast Forward
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
36	STB	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
37	STB	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
38	STB	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

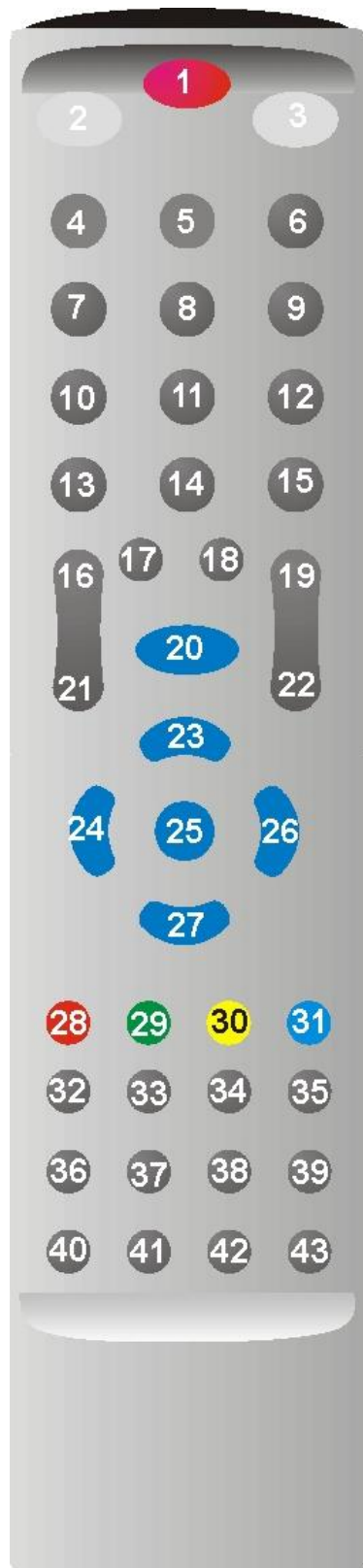
Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
39	STB	Default	-	-	-	-	-	-	-	NO	YES	VoD & PVR Stop
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
40	STB	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
41	STB	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
42	STB	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function
	TV	NO FUN	-	-	-	-	-	-	-	NO	NO	No Function

Key	Mode	Macro Step 1	Pause	Macro Step 2	Pause	Macro Step 3	Pause	Macro Step 4	Pause	Lock	Rep	Function
43	STB	Default	-	-	-	-	-	-	-	NO	YES	STB Home Page
	TV	TV mode button 18	-	STB mode button 43-	-	-	-	-	-	NO	NO	TVAV STB Home Page



14 Appendix D: Default Button Functions

Button Position	STB Button Function	TV Button Function
1	Toggles power to the STB	TV power
2	STB Mode button No IR transmitted	
3	TV Mode button No IR transmitted	
4	Channel 1 / Text Symbol	Channel 1
5	Channel 2 / Text abc	Channel 2
6	Channel 3 / Text def	Channel 3
7	Channel 4 / Text ghi	Channel 4
8	Channel 5 / Text jkl	Channel 5
9	Channel 6 / Text mno	Channel 6
10	Channel 7 / Text pqrs	Channel 7
11	Channel 8 / Text tuv	Channel 8
12	Channel 9 / Text wxyz	Channel 9
13	Text Delete	Toggles the TV between current channel and last channel (where supported by TV)
14	Channel 0 / Text Shift/space	Channel 0
15	Text Return key	Toggles TV between single and multi digit channel entry where supported.
16	Volume +	Volume +
17	Mute	Mute
18	Text entry toggle	Cycles TV through available AV inputs and TV
19	Channel +	Channel +
20	Menu	Displays TV menu (where supported)
21	Volume -	Volume -
22	Channel -	Channel -
23	Move focus up	Navigate TV menu UP
24	Move focus left	Navigate TV menu LEFT
25	Select	Navigate TV menu SELECT
26	Move focus right	Navigate TV menu RIGHT
27	Move focus down	Navigate TV menu DOWN
28	Depends on middleware	Teletext RED (European TV only) No function with US/Asia TV
29	Depends on middleware	Teletext GREEN (European TV only) No function with US/Asia TV
30	Depends on middleware	Teletext YELLOW (European TV only) No function with US/Asia TV
31	Depends on middleware	Teletext BLUE (European TV only)

		No function with US/Asia TV
32	Rewind	TV – turns the TV from TEXT mode to TV mode (European and US/Asia TV)
33	Play	TEXT – Displays Teletext (European TV) or Closed Captioning (US/Asia TV where supported)
34	Pause	HOLD – Holds the Teletext display (European TV only) No function with US/Asia TV
35	Fast Forward	MIX – Mixes the Teletext with the TV picture (European TV only) No function with US/Asia TV
36	Record	No function
37	Page UP	No function
38	Page DOWN	No function
39	Stop	No function
40	Refresh	No function
41	Page Back	No function
42	Page Forward	No function
43	Home Page	No function

15 Appendix E: STB Key Codes

Button Position	STB Button Function	STB Key Code
1	Toggles power to the STB	2147483765
2	STB Mode button No IR transmitted	
3	TV Mode button No IR transmitted	
4	Channel 1 / Text Symbol	49
5	Channel 2 / Text abc	50
6	Channel 3 / Text def	51
7	Channel 4 / Text ghi	52
8	Channel 5 / Text jkl	53
9	Channel 6 / Text mno	54
10	Channel 7 / Text pqrs	55
11	Channel 8 / Text tuv	56
12	Channel 9 / Text wxyz	57
13	Text Delete	1073741827
14	Channel 0 Text Shift/space	48
15	Text Return key	1073741828
16	Volume +	2147483764
17	Mute	2147483762
18	Text entry toggle	1073741975
19	Channel +	2147483767
20	Menu	2147483760
21	Volume -	2147483769
22	Channel -	2147483749
23	Move focus up	1073741838
24	Move focus left	1073741840
25	Select	1073741828
26	Move focus right	1073741841
27	Move focus down	1073741839
28	Depends on middleware	1073741956
29	Depends on middleware	1073741957
30	Depends on middleware	1073741958
31	Depends on middleware	1073741959
32	Rewind	1073741922
33	Play	1073741924

34	Pause	1073741925
35	Fast Forward	1073741923
36	Record	1073742083
37	Page Up	2147483753
38	Page Down	2147483759
39	Stop	1073741921
40	Refresh	1073741928
41	Page Back	1073741926
42	Page Forward	1073741927
43	Home Page	3221225473

Version 1

3rd December 2003

Amino Communications



Amino Communications Ltd

Amino Remote Controls
User Guide for
European Standard Remotes

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1 Overview

The Amino remote control is designed to complement the Amino range of Set-Top Boxes in terms of style, quality and functionality.

The remote is universal; capable of controlling the basic functions of the television as well as the Amino Set-Top-Box.



2 Batteries

The remote takes 3 batteries, type AAA, MN2400, UM-4 or LR03.

Alkaline batteries should be used for best performance.

The battery cover is removed by pushing lightly on the recess and sliding the cover downwards.



The batteries must be inserted in the correct direction.



The battery cover is replaced by sliding the cover upwards until it snaps into place.

Note

To prevent children from opening the battery compartment, it is possible to secure the battery compartment cover by use of the screw provided:

- Remove the battery cover and, using a small crosshead screwdriver, remove the silver screw that is now visible at the base of the remote control.





- Fit the batteries and replace the battery compartment cover.
- Now re-fit the screw at the base of the cover.
Do not over-tighten the screw!



3 Remote Modes

The remote control operates in one of two modes, either *STB mode* or *TV mode*.


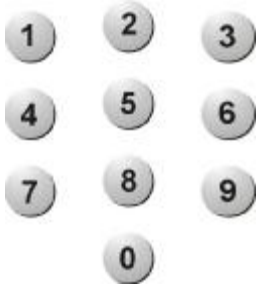







The mode is selected by pressing the TV  or STB  mode-select button at the top of the remote. When pressed, the TV or STB mode-select buttons illuminate for 1 second to indicate that the mode has been set.







When any function button on the remote is pressed, the TV or STB button will light to indicate that a command is being transmitted in that mode.

If a button has no valid function in that mode, neither the TV nor STB mode buttons will light.

4 TV Control

In TV mode, the remote can control the following TV functions:

TV Function	Default Button Symbol	Description
Power		Toggles the TV power. (Note 1)
Direct channel number entry		Allows direct entry of TV channel numbers
Volume up/down		TV volume up and volume down
Channel up/down		TV channel up and channel down
Mute		TV mute/un-mute
AV		Cycles the TV through the available AV inputs (Note 2)
Last Channel		Toggles the TV between the last displayed TV channel and the current TV channel (Note 3)
Multi-digit		Single/multi digit channel entry (Note 4)
Menu		Displays the TV Menu (Note 5)

Navigation & OK		Navigate the TV menu (Note 5)
Teletext		Display Teletext
		Hide Teletext – return to normal TV viewing
		Mix Teletext and TV
		Hold the current Teletext page (press again to allow page to update automatically)
		FastText navigation buttons

Note 1. All TVs will power off with this button. Some TVs will switch on when the power button is next pressed and other TVs will only power on when a channel button or channel +/- is pressed.

Note 2. Some TV's will cycle through available AV inputs using the Channel +/- button. Other TVs only use the AV button to access the AV inputs.

Note 3. Not all TVs support this function.



Note 4. Some makes of TV will only accept single-digit channel entry (0...9). In order to enter a 2-digit channel number, the -/-- button is pressed first. The 2-digit channel number can then be entered. Not all TVs support this function.

Note 4. Some TVs use the menu, navigation and OK buttons to access settings that are not commonly changed (Closed-caption display, for example) Not all TVs support this function.

4.1 TV Brand Codes

In order for the remote to transmit the correct signals to control the TV, the remote must be programmed with a 3-digit code corresponding to the type of TV in use.

This is done in the following way:









- Identify the make of the TV that you are using. E.g. Sony, Magnavox etc.
- Find the TV make listed in the branding table in Appendix A.
- Simultaneously press and hold the TV  and OK  buttons on the remote.
- After approximately 2 seconds, the TV button will light.
- Release the TV and OK buttons – the TV button remains illuminated.
- Now enter the 3-digit brand code according to the make of the TV that is being controlled.
- As each of the digits are entered, the TV button will briefly flash off and on again
- When the third digit has been entered, the TV button will go out.
- If a TV brand code has been entered that the remote does not recognize, the TV button will flash rapidly for a second and remain illuminated. If this happens, re-enter the correct TV brand code.
- Verify that the remote control works with the TV.














Most TV makes have more than one brand code listed in the brand code table – if this is the case try all brand codes that are listed for that make until a suitable match is found.

If no brand code is listed for the TV, try brand codes for Philips and NEC TVs.

5 STB Control

In STB mode, the remote can control the following STB functions:

STB Function	Default Button Symbol	Description
Power		Toggles the STB power.
Direct channel number entry		Allows direct entry of STB channel numbers Also function as text entry buttons when web-browsing. ^(Note 1)
Volume up/down		TV Volume up and volume down ^(Note 2)
Channel up/down		STB Channel up and channel down
Mute		Toggles TV mute ^(Note 2)
AV		Cycles through TV output video modes ^(Note 2)
Delete		Deletes a single character, left of the current cursor position, in text entry boxes
Enter		Acts as a return key when entering text. (Same function as OK button)

Menu		Displays the main menu
Navigation & OK		Navigate the menus and web pages.
Navigation		Coloured navigation buttons
Video Control	 Rewind	Rewind the movie
	 Play	Play the movie
	 Pause	Pause the movie
	 Fast Fwd	Fast Forward the movie
	 Stop	Stop the movie
	 Record	Record the movie
Page Control	 Pg Up Pg Down	Scroll up and down the current page
	 Pg Back Pg Fwd	View the previous page or the next page (if already visited)
	 Refresh	Refresh (reload) the current page
	 Home	Jump to home page

Note 1. Text entry may not be supported by your Set-Top-Box.

Note 2. These buttons control the TV functions in both TV mode and STB mode.

6 TV Brand Codes

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ADMIRAL	041, 045, 091, 102, 108
AIKO	089
AKAI	006, 010, 023, 119, 135, 159, 164, 179, 189, 198
AKURA	133
ALBA	124, 133, 236
ALBIRAL	197
AMSTRAD	130, 151
ANAM	117
ARC EN CIEL	057
ARCAM	057, 076
ARISTONA	075
ARTHUR MARTIN	045, 164
ASA	041, 045, 052, 078, 087, 102, 108, 142, 205, 209, 215, 255
ASTRA	151
ATANTIC	076
ATLANTIC	076
ATORI	151
AUDIOSONIC	118, 132, 151
AUSIND	049, 141
AUTOVOX	009, 035, 048, 049, 060, 078, 095, 105, 108, 139, 142
BAIRD	110, 135
BANG & OLUFSEN	108
BASIC LINE	132, 133
BAUER	145
BAUR	004, 006, 012, 013, 022, 156
BEKO	249, 250
BLAUPUNKT	022, 023, 024, 025, 047, 074, 220, 221, 222, 223, 224, 226, 257, 258
BRANDT	057, 065, 073, 090, 182
BRIONVEGA	102, 105, 108
BRITANNIA	076
BRUNS	082, 099, 102, 108
BSR	039, 069, 162, 190, 198
BUSH	045, 124, 133, 164, 174, 213, 215

BUSH (UK)	048, 156, 161
CANDLE	079
CENTURY	102, 108
CGE	049, 081, 098, 140, 153, 161, 162, 198, 220, 225, 227
CITIZEN	079
CLARIVOX	082, 096, 197
CLATRONIC	118, 133
CONCERTO	079
CONDOR	076
CONTEC	015, 117
CONTINENTAL EDISON	057, 065, 090
CRAIG	117
CROSLEY	002, 049, 102, 108, 140, 198, 220, 225, 227
CROWN	254
CTC CLATRONIC	026
CXC	117
DAEWOO	010, 150, 151, 261
DANSAI	010
DECCA	027, 058, 060, 097, 110, 169
DECCA (UK)	027, 058, 060, 110, 168
DEGRAAF	045, 135
DIXI	099, 151
DOMEOS	010
DORIC	103
DUAL	009, 060, 161, 164, 210
DUAL-TEC	060, 151, 162, 211
DUMONT	026, 052, 078, 102, 108, 198, 212, 215
DYNATRON	010
ELBE	155, 197, 203
ELECTRO TECH	151
ELEKTRONSKA	077
ELMAN	026, 162
ELTA	151
EMERSON	092, 102, 108, 112, 117, 126, 130
ERRES	010
ETRON	198
EUROPHON	026, 058, 060, 077, 109, 162, 200

FENNER	010, 151
FERGUSON	028, 037, 055, 065, 078, 086, 088, 113, 118, 136, 146, 197, 199, 228, 231, 234
FIDELITY	045, 076, 228
FIDELITY (UK)	056, 059, 193, 228
FILMNET	114
FINLANDIA	045, 232
FINLUX	002, 026, 049, 052, 078, 081, 087, 108, 141, 142, 198, 205, 209, 212, 215, 255
FIRST LINE	198
FISHER	002, 009, 014, 051, 060, 080, 082, 098, 102, 108, 198, 209
FORGESTONE	228
FORMENTI	045, 049, 076, 108, 145, 154, 198
FORMENTI-PHOENIX	002, 043, 045, 059, 141
FORTRESS	108
FRONTECH	045, 118, 198
FUJITSU	126
FUNAI	039, 069, 117, 118, 126
FUTURETECH	117
GBC	002, 014, 132, 151, 162, 198
GEC	045, 110, 128, 232
GEC (UK)	003, 008, 058, 060, 110, 128, 156
GELOSO	002, 041, 045, 132, 151, 162, 198
GENERAL TECHNIC	268
GENEXXA	045, 133
GOODMANS	014, 110, 137, 164, 230
GORENJE	098, 106
GRAETZ	045
GRANADA	014, 045, 049, 058, 060, 110, 111, 135, 198, 232
GRANADA (UK)	008, 014, 045, 049, 058, 060, 103, 131, 152, 156, 164
GRUNDIG	022, 023, 047, 049, 071, 074, 138, 202, 204, 214, 215, 282, 283, 284, 285
HANSEATIC	002, 012, 014, 043, 059, 156
HANTAREX	058
HEMMERMANN	006
HIFIVOX	033, 057
HINARI	007, 014, 045, 126, 135, 151, 164, 198, 201

HITACHI	000, 001, 003, 008, 014, 029, 033, 034, 045, 060, 063, 070, 128, 156, 160, 182, 183, 184, 186, 187, 188, 189, 194, 198, 205, 232, 234
HYPER	059, 060, 151, 162
IMPERIAL	045, 049, 081, 098, 140, 161, 162, 220, 225, 227
INGERSOL	151
INNO HIT	058, 060, 084, 110, 133, 137, 151, 201
INNOVATION	259, 260, 261, 262, 264, 265, 266, 271, 272, 276, 277, 278
INTERFUNK	003, 004, 006, 012, 018, 045, 049, 108, 164, 179, 182, 198, 223
IRRADIO	049, 132, 133, 137, 141, 151, 201
ISUKAI	133
ITT	003, 004, 005, 006, 007, 008, 018, 041, 045, 049, 124, 129, 135, 150, 160, 164, 174, 192, 198, 209, 233, 243
ITT-NOKIA	003, 004, 005, 006, 007, 008, 018, 041, 045, 049, 124, 129, 135, 150, 160, 164, 174, 192, 198, 209, 233, 243
JVC	007, 072, 144, 158, 159, 174, 179
KAISUI	059, 132, 133
KAMOSONIC	060
KARCHER	059, 060, 084, 109, 132, 151, 156, 205
KAWASHO	076
KENDO	026
KENNEDY	002, 035, 095, 198
KONKA	270
KORTING	043, 101, 102, 108, 154
KTV	060, 117
LENOIR	060, 151
LEYEO	118
LG (GOLDSTAR)	059, 060, 076, 079, 137, 149, 151, 156, 162, 164
LIFETEC	259, 260, 261, 262, 264, 265, 266, 267, 268, 269, 271, 276, 277, 278
LOEWE OPTA	012, 013, 058, 061, 108
LOGIC	169, 228
LOGIK	055, 168, 228
LOWEWE	083
LUMA	035, 045, 190
LUXMAN	079
LUXMAN STEREO TUNER	079

LUXOR	000, 006, 018, 034, 042, 045, 046, 049, 060, 067, 135, 137, 156, 160, 191, 192, 198
LYCO	118
MAGNADYNE	002, 006, 026, 058, 064, 077, 102, 108, 162, 198
MAGNAFON	026, 049, 058, 059, 064, 076, 109, 200
MANESTH	010
MARANTZ	010
MARELLI	108
MARK	010
MATSUI	006, 045, 060, 069, 110, 115, 124, 127, 130, 151, 156, 168, 169
MAXIMAL	007, 198
MCMICHAEL	128
MEDION	259, 260, 261, 262, 264, 265, 266, 267, 268, 269, 271, 272, 276, 277, 278
MEMOREX	151
METZ	023, 074, 100, 104, 108, 148, 207, 208
MGA	123
MICROMAXX	259, 262, 264, 265, 271, 276, 277, 278
MINERVA	022, 023, 049, 138, 214, 215
MISTRAL	228
MITSUBISHI	014, 020, 023, 066, 119, 120, 123, 167, 169, 174
MIVAR	049, 050, 058, 059, 076, 077, 137, 143, 203
MTC	079
MULTITECH	026, 058, 060, 064, 098, 132, 151
MURPHY	045, 209
MURPHY (UK)	008, 103
N. E. I.	010, 096
NAD	134
NEC	014, 171, 172, 173
NECKERMANN	045, 060, 098, 108, 156, 193, 198, 221, 223, 224
NEDIATOR	010
NICAMAGIC	076

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