INSTRUCTIONS

A0316
iBus Wall-Dock for Distributed Audio with RS-232 Control

Made for iPod

iBus™

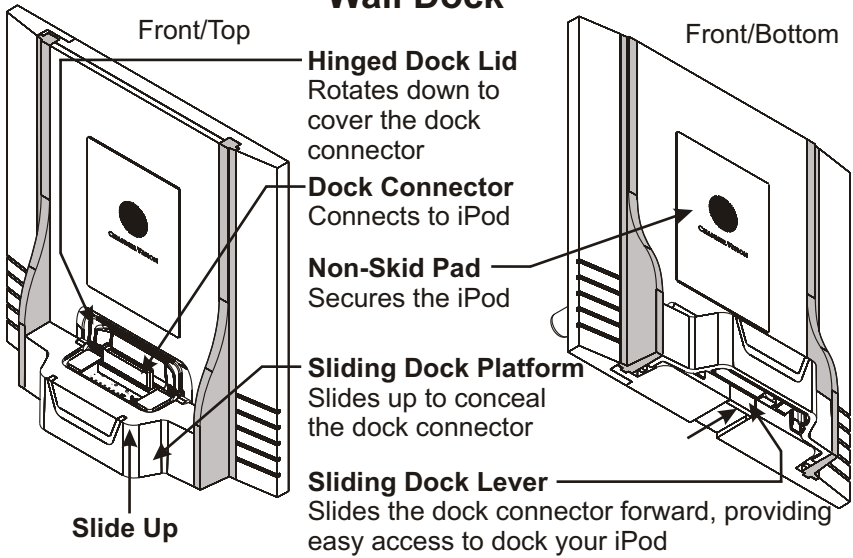**By** CHANNEL VISION™

The **A0316** is an on-wall iPod® docking station that supports RS-232 and IR control. The dock connector slides in and out to adjust for any iPod and the non-skid pad helps to hold the music player in place. It's elegant and contemporary design make the A0316 perfect for anyone who wants to enjoy their music without defacing their wall.

Features:
✐ Supports IR control: compatible with A0505 or Apple Remote
✐ RS-232 interface for use with advanced control systems
✐ Built-in IR receiver
✐ Charges the iPod
✐ Allows viewing of iPod videos on a TV
✐ Mounts in a standard 2-gang box

Wall Dock

Front/Top

Front/Bottom

Hinged Dock Lid
Rotates down to cover the dock connector

Dock Connector
Connects to iPod

Non-Skid Pad
Secures the iPod

Sliding Dock Platform
Slides up to conceal the dock connector

Sliding Dock Lever
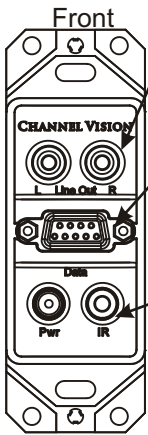Slides the dock connector forward, providing easy access to dock your iPod

Slide Up

RJ-45 & 110 Connectors
Connect to output wall plate via CAT5 cable (only use one)

Composite Video Output
Outputs video signals from the iPod
Use RG59U coax or CAT5 and a video balun
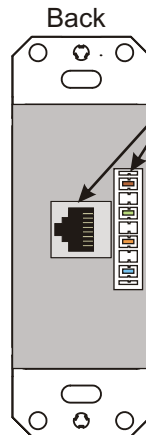(Suggested balun model B201 CAT5 video balun)

Output Wall Plate

Front

Back

Audio Outputs
Connect to your amplifier.

CHANNEL VISION

L   Line Out   R

Serial Connector
RS-232 interface provides advanced control and feedback.
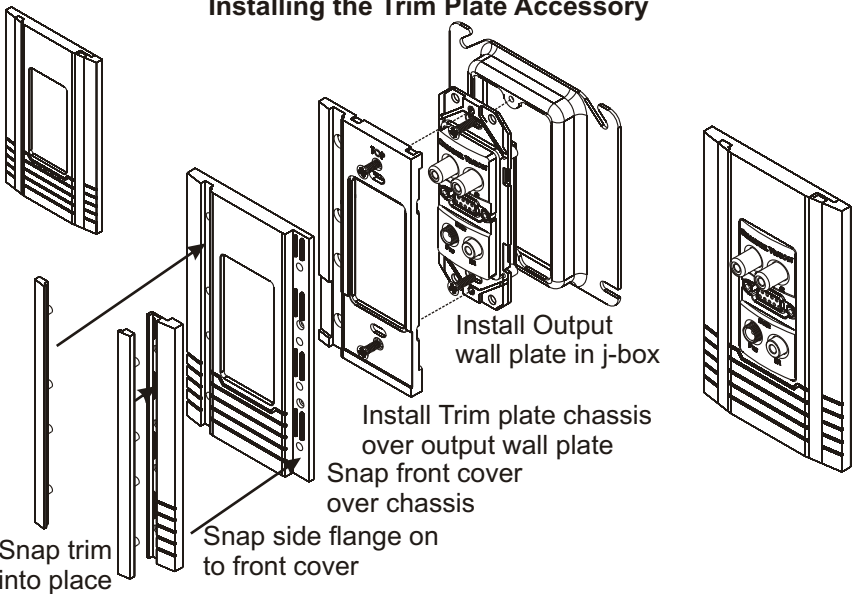
Data

IR Input
Connect an IR receiver and use the A0505 remote to control your iPod.

Pwr   IR

RJ-45 & 110 Connectors
Receive signals from the wall dock via Category 5 or Category 6 cable.

Installing the Trim Plate Accessory

Install Output wall plate in j-box

Install Trim plate chassis over output wall plate

Snap front cover over chassis

Snap side flange on to front cover

Snap trim into place

Compatibility

Made For:
- iPod touch (2nd generation)
- IPod touch (1st generation)
- iPod classic
- iPod video
- iPod nano (5th generation)

- iPod nano (4th generation)
- iPod nano (3rd generation)
- iPod nano (2nd generation)
- iPod nano (1st generation)
- iPod mini
- iPod with dock connector

Basic Application

A0316 Wall Dock

Front

Rear

TV or Video Display

Video Output

A0505
Remote Control

The built-in IR receiver allows the A0316 to be controlled directly by the A0505.

CAT5 cable up to 350ft.

Whole-House Audio System
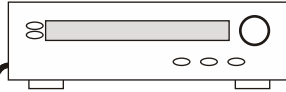
Rear

Front

Serial Control Automation:
Control4 driver available from
Extravegetables.com

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L   Line Out   R

Pwr.

Data

Pwr   IR
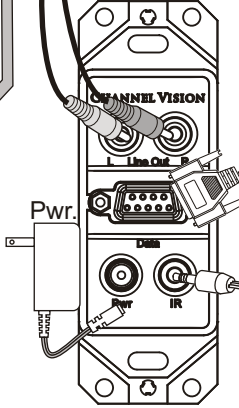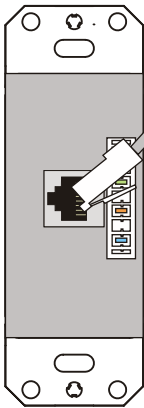
IR receiver
(optional)

A0505
Remote

A0316 Output Wall Plate

Note: An IR emitter output from a whole-house IR system can also be connected here. As shown on the following page.

Sample Wiring Diagram:
When used with the A4623

Power supply
not shown

Connect an IR emitter output into the
"IR in" of the A0316 output wall plate.

DVD player

CD player

IR-4180

A4623 Rear Panel

RG59U
or RG6

RG59U
or RG6

TV or Video Display

The single-gang trim plate can be
used to hold a single-gang keypad
next to the iPod dock in a 3-gang
junction box. See installation section
for details.

IR signals detected by the A0127
keypad will be repeated back to
the A4623. This allows control
of the input sources.

CAT5

CAT5

Installing the Wall Dock

Installation Steps
1. Connect all wiring.
2. Attach main chassis to j-box using the provided four 6-32 screws.
3. Feed the dock connector circuit board through the opening in the front cover.
4. Hang the front cover on the main chassis from the two top tabs.
5. Secure the front cover with the two small screws at the bottom.
6. Place the dock platform over the slide rail and push downward until the retention snaps are engaged.
7. Slide the side protectors into the slots on the main chassis.

Slide Rail

Retention Snap
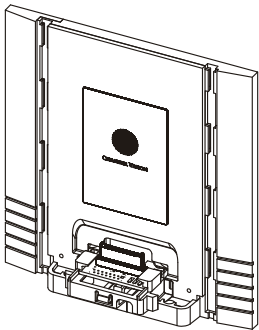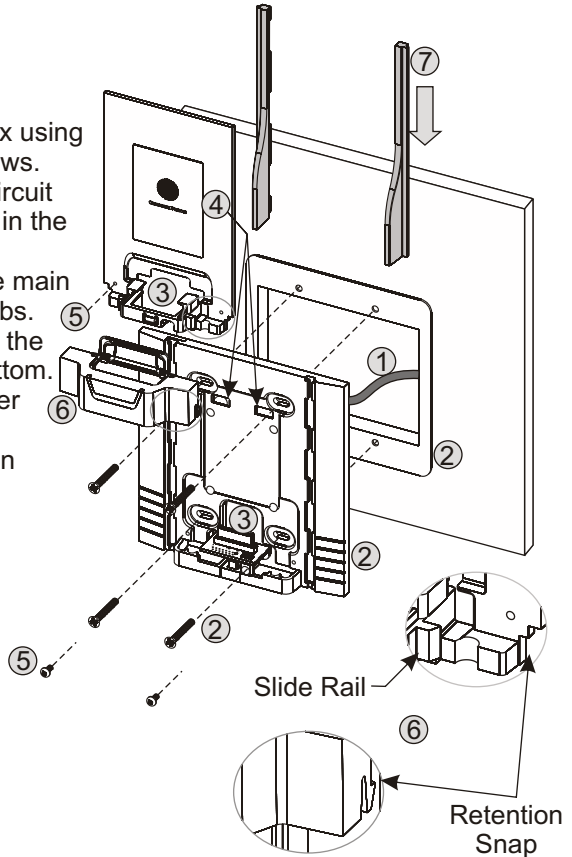
Steps 3 & 4 complete
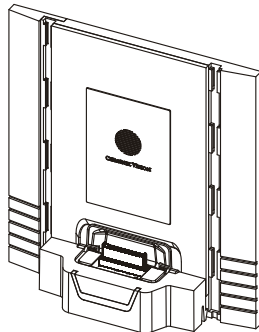
Steps 5 & 6 complete
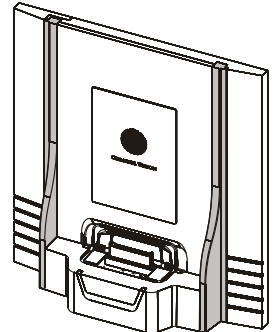
Completed Installation

Installing the Wall Dock

In some installations it may be desirable to mount a single gang control keypad next to the A0316. To accomplish this, the single gang trim plate can be installed next to the A0316 in a 3-gang junction box.
Follow the steps below:

Installation Steps
1. Connect all wiring. Use the correct installation tools: J-110 tool, or 1014 crimp tool.
2. Install keypad and single-gang trim plate in the far left position of the 3-gang junction box. (See details on page 3)
3. Leave off the right side flange and trim piece.
4. Install the iPod dock in the left side of the 3-gang j-box. It will overlap and snap into the single gang trim plate. (See page 5 for details)

See attachment detail on previous page
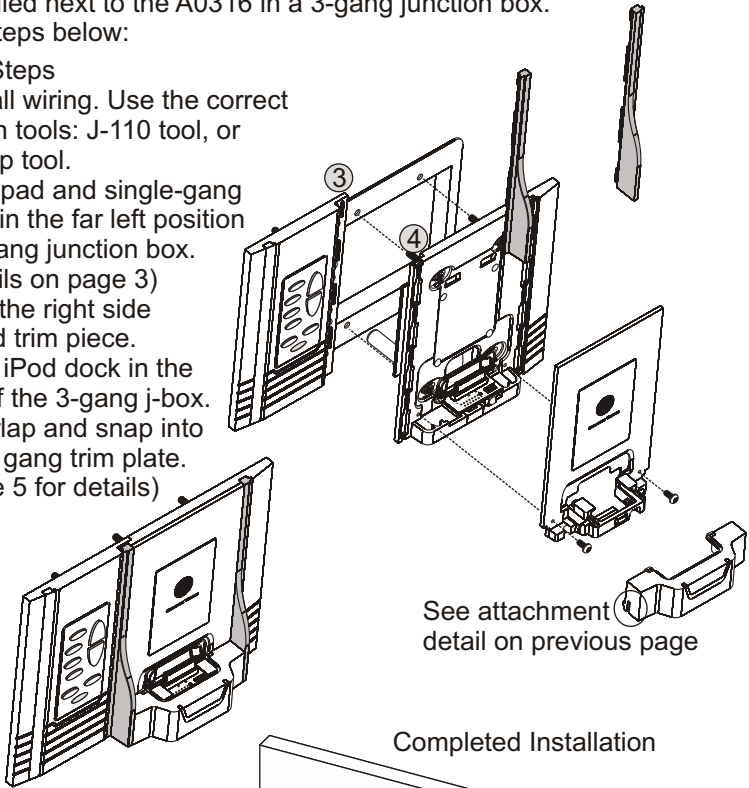
Completed Installation
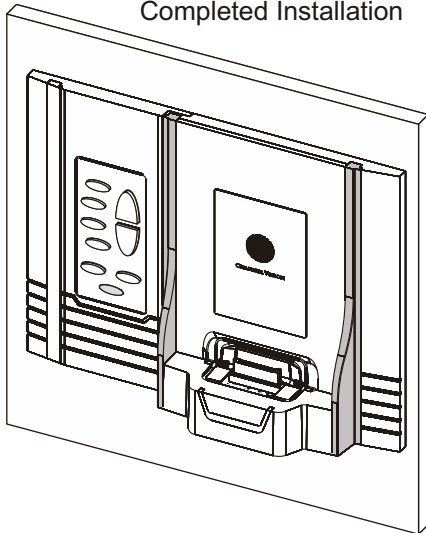
Docking the iPod
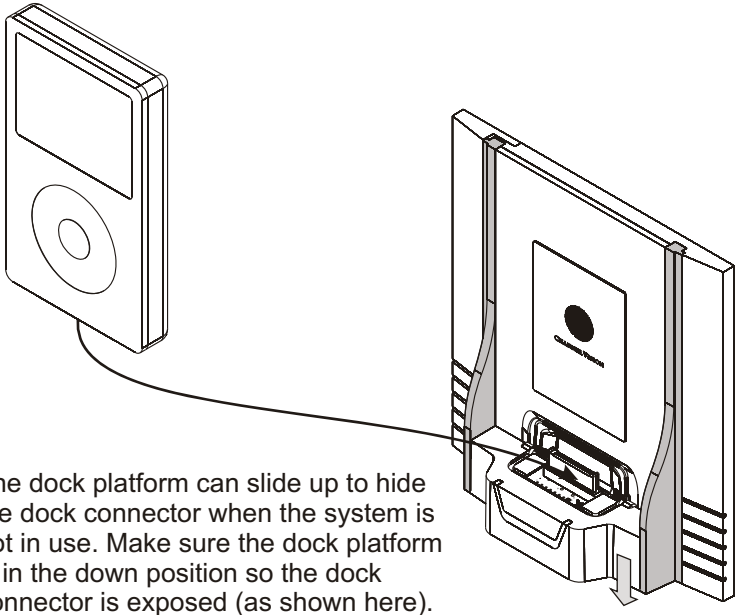
The dock platform can slide up to hide the dock connector when the system is not in use. Make sure the dock platform is in the down position so the dock connector is exposed (as shown here).
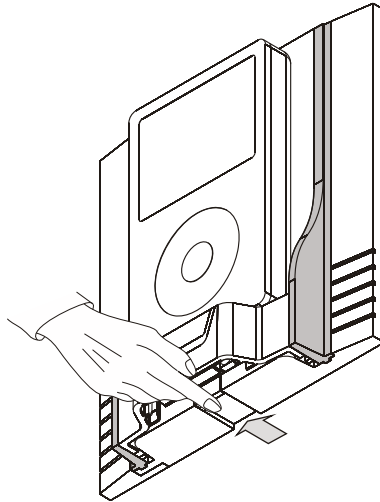
The sliding dock lever beneath the dock adjusts the position of the dock connector to create a perfect fit for all compatible iPods (see page 3 for a list of compatible iPods).

Using the A0505 Remote Control

The buttons above the iBus label on the A0505 remote control will mimic the functions on the iPod wheel.
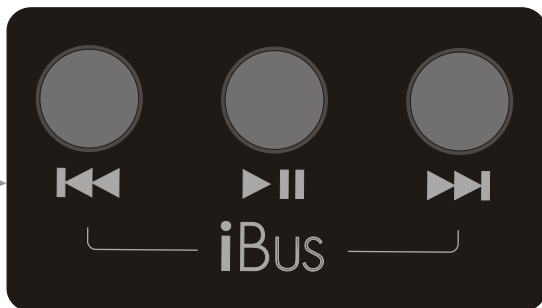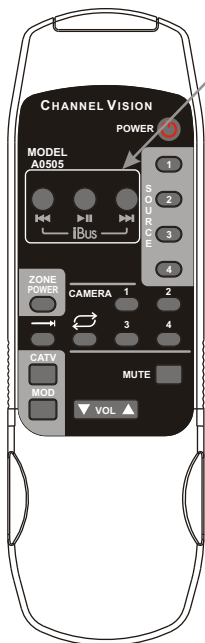
The volume, mute, power, and source buttons on the A0505 are designed to control Channel Vision's whole-house audio systems such as the A4603 and P-1044.

Please note that this remote will only function when your iPod is docked in the A0316 wall dock. It can be pointed directly at the wall dock or at an IR receiver that is part of an external whole-house IR system. An IR-4180 cable can be used to connect the emitter output of the whole-house IR system into the IR IN of the A0316 output wall plate. See page 5 of this manual for an example.

We realize that custom integrators way wish to design advanced control systems. To provide assistance we have published the hex codes for the IR commands (see below). (IR codes can be downloaded at: **www.channelvision.com**)

Hex codes for IR commands:
iBus Play/Pause:
0000 006D 0000 000B 001F 001F 001F 001F 003F 003F 001F 001F 001F 001F 001F 001F 003F 001F 001F 001F 001F 003F 003F 003F 001F 0CA2
iBus Skip <<:
0000 006D 0000 000B 001F 001F 003F 001F 001F 003F 001F 001F 001F 001F 001F 001F 003F 001F 001F 003F 001F 001F 003F 003F 001F 0CA2
iBus Skip >>:
0000 006D 0000 000A 001F 001F 001F 001F 003F 003F 001F 001F 001F 001F 001F 001F 003F 003F 003F 001F 001F 003F 003F 0CC3

A0316 Serial Protocol

RS-232 Control Code:
For more complex installations, the A0316 supports RS-232 making it well suited for use with automation systems. Baud Rate: 57600, 8N1 (8-Bit Data, No Parity, 1 Stop Bit)

The **checksum** is calculated by adding the bytes together as signed 8-bit values, discarding any signed 8-bit overflow, and then negating the sum to create the signed 8-bit checksum byte.
When calculating the checksum of iPod responses, the sum of all the bytes from the packet payload length to and including the packet payload checksum is 0x00.
When calculating the checksum of commands issued to the iPod, the sum of ALL bytes, including the "A36" prefix, as well as the checksum is 0x00.
Responses in the Special Lingo are also calculated in this way.
NOTE: to issue commands without calculating a checksum, you can use the ASCII lowercase 'z' (0x7A) as a wildcard checksum value.

There are two possible responses generated when a command is received:
#(0x23) - This acknowledges that the command was received and it had a valid check sum.
Y(0x59) - This means there was a length error with the command.
ZZZ(0x5A) - This means that the command was not understood. It could also mean that the check sum was not valid.

Serial Cable Pin Out

A0316 RS-232 Pins
DB-9P, Female

PC RS-232 Pins
DB-9P, Male
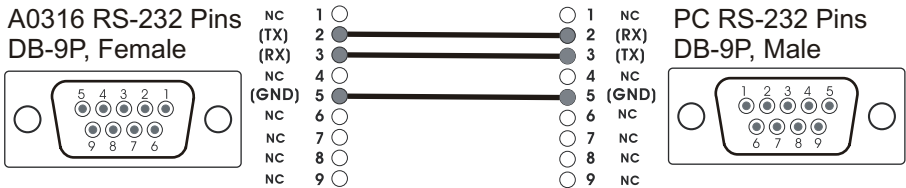
The format of responses is as follows:
{Length} {Lingo} {CommandID} {Message} {Checksum} {Carriage Return} {Line Feed}

HEX 0A
HEX 0D
Checksum value
Message from the iPod
Com ID
The iPod Lingo
Length of the response, which measures the Lingo, Com ID, and the Message.
Acknowledge the command was received
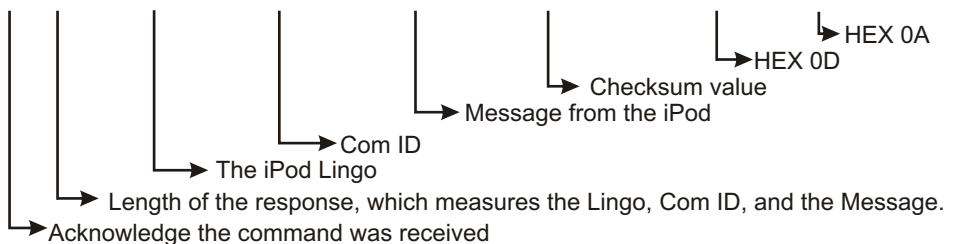
Message Payloads are shown in italics: *1 2 3 4 5 ...* are represent a HEX byte, followed by [cs] = Check Sum. All understood commands will elicit a **'#' (0x23) acknowlegement**, which is not shown in the tables below. Other commands will also elicit an additional response in the form of a "Return" command.

A0316 Serial Protocol

Note: The gray sections in the following tables denote responses from the iPod or iPod dock. The Special Lingo contains special messages and errors indications to provide useful status information.

	Com ID	Notification Messages	ASCII Message	Hex Message
Special Lingo (0x21)	0x00	ACK of command received & executed by iPod	[non-ASCII values]	03 21 00 00 DC
	0x20	Is iPod Connected?	A361[sp][cs]	41 33 36 31 20 05
	0x21	iPod Removed/Not Connected	[non-ASCII values]	03 21 21 00 BB
	0x22	iPod Inserted/Connected	[non-ASCII values]	03 21 22 00 BA
	0x23	Incompatible iPod (No Auth) (Automatic Response)	[non-ASCII values]	03 21 23 00 B9
	0x24	Not in Extended Mode (Automatic Response)	[non-ASCII values]	03 21 24 00 B8
	0x25	NACK (repeat command) (Automatic Response)	[non-ASCII values]	03 21 25 00 B7
	0x15	Dock Soft Reset	A362[nak][nul][cs]	41 33 36 32 15 00 0F
	0x15	Dock Hard Reset {reboot}	A362[nak][sch][cs]	41 33 36 32 15 01 0E

	Com ID	Function/Question/Response	ASCII Com	Hex Com
General Lingo (0x00)	0x03	Request Remote UI Mode	A361&[cs]	41 33 36 31 26 FF
	0x04	Return Remote UI Mode	[non-ASCII values]	ON: 03 00 04 01 F8 0D 0A OFF: 03 00 04 00 F9 0D 0A
	0x05	Enter Remote UI Mode	A361'[cs]	41 33 36 31 27 FE
	0x06	Exit Remote UI Mode	A361([cs]	41 33 36 31 28 FD
	0x07	Request iPod Name	A361)[cs]	41 33 36 31 29 FC
	0x08	Return iPod Name	[iPod data*]	[iPod data*]

*All name data from the iPod (iPod name, song name, etc.) is transmitted as a null-terminated UTF-8 character array, so the presence of 0x00 marks the end of the name.

Parsing Example: Suppose we have Requested the Remote UI Mode and we want to understand the response. Assume the response (in Hex) was:
23 03 00 04 01 F8 0D 0A

→ Line Feed } We know the message has ended
→ Carriage Return
→ Checksum value
→ Message from the iPod is 01, so, the Remote UI Mode is "On".
→ Com ID is 04, so, this is the "Return Remote UI Mode" message.
→ The iPod Lingo is 00, which is the basic lingo.
→ The Length is 3 bytes, which are the Lingo, Com ID, and the Message.
→ Acknowledge the command was received
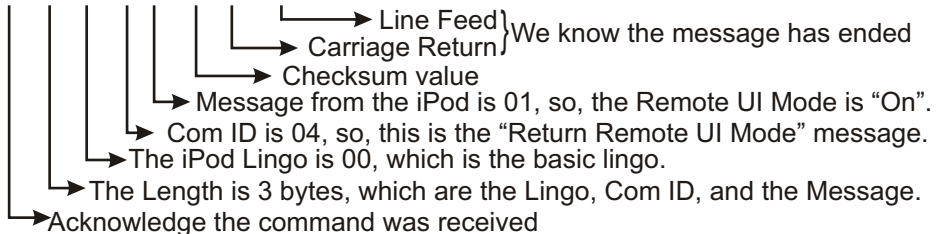
The commands below are for simple transport control of the iPod.
There is no reply from the iPod dock beyond the basic '#' acknowledgment.

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	Com ID	Function/Question	ASCII Command	Hex Command
Simple Remote Lingo (0x02) Commands	0x00	Context Button Status, Play/Pause	A3611[cs]	41 33 36 31 31 F4
	0x00	Context Button Status, Next Track	A3612[cs]	41 33 36 31 32 F3
	0x00	Context Button Status, Prev Track	A3613[cs]	41 33 36 31 33 F2
	0x00	Context Button Status, Stop	A3614[cs]	41 33 36 31 34 F1
	0x00	Context Button Status, Play/Resume	A3615[cs]	41 33 36 31 35 F0
	0x00	Context Button Status, Pause	A3616[cs]	41 33 36 31 36 EF
	0x00	Context Button Status, Next Playlist	A3617[cs]	41 33 36 31 37 EE
	0x00	Context Button Status, Prev Playlist	A3618[cs]	41 33 36 31 38 ED
	0x00	Context Button Status, Shuffle Advance (No shuffle, shuffle song, shuffle album)	A3619[cs]	41 33 36 31 39 EC
	0x00	Context Button Status, Repeat Advance (No repeat, Repeat one, Repeat all)	A361:[cs]	41 33 36 31 3A EB
	0x00	Context Button Status, Begin FFW	A361;[cs]	41 33 36 31 3B EA
	0x00	Context Button Status, Begin RRW	A361<[cs]	41 33 36 31 3C E9
	All Simple Remote Lingo commands will receive a double # (0x23) ACK from the dock with no further ACK command or reply.			

You must Enter the Remote UI Mode before issuing any of the "Extended Interface Lingo" commands. If an Extended Interface command is issued when the system is not in Remote UI Mode, it will respond with the "Not in Extended Mode" response (See "Special Lingo" section).

	Com ID	Function/Question	ASCII Command	Hex Command
Extended Interface Lingo (0x04) Commands	0x000C	Get Indexed Playing Track Info	A365Z *1 2 3 4* [cs]	41 33 36 35 5A *1 2 3 4* [cs]
	0x000D	Return Indexed Playing Track Info	[iPod data]	[iPod data]
	0x000E	Get Artwork Formats	A361Y[cs]	41 33 36 31 59 CC
	0x000F	Ret Artwork Formats	[iPod data]	[iPod data]
	0x0010	Get Track Artwork Data +	A36;*1 2 3 4 5 6 7 8 9 10*[cs]	41 33 36 3B 5C *1 2 3 4 5 6 7 8 9 10* [cs]
	0x0011	Ret Track Artwork Data +	[iPod data]	[iPod data]
	0x0016	Reset DB Selection	A361A[cs]	41 33 36 31 41 E4
	0x0017	Select DB Record	A366B *1 2 3 4 5*[cs]	41 33 36 36 42 *1 2 3 4 5* [cs]
	0x0018	Get Number Categorized DB Records	A362C *1* [cs]	41 33 36 32 43 *1* [cs]
	0x0019	Return Number Categorized DB Records	[iPod data]	[iPod data]
	0x001A	Retrieve Categorized Database Records+	A36:D *1 2 3 4 5 6 7 8 9*[cs]	41 33 36 3A 44 *1 2 3 4 5 6 7 8 9* [cs]
	0x001B	Return Categorized Database Records+	[iPod data]	[iPod data]

A0316 Serial Protocol

The Macro commands listed below simplify a multi-step process into a single command. They work as shortcuts to make programming easier.

	Com ID	Function/Question	ASCII Command	Hex Command
Extended Interface Lingo (0x04) Commands	0x001C	Get Play Status	A361E[cs]	41 33 36 31 45 E0
	0x001D	Return Play Status	[iPod data]	4-bytes, track length mS 4-bytes, track position mS play state: 00 = stopped 01 = playing 02 = paused
	0x001E	Get Current Playing Track Index	A365F[cs]	41 33 36 35 46 [cs]
	0x001F	Return Current Playing Track Index	[iPod data]	[iPod data]
	0x0020	Get Indexed Playing Track Title	A365G *1 2 3 4* [cs]	41 33 36 35 47 *1 2 3 4* [cs]
	0x0021	Return Indexed Playing Track Title	[iPod data]	[iPod data]
	Macro	Get Current Playing Track Title	A361a[cs]	41 33 36 31 61 C4
	0x0022	Get Indexed Playing Track Artist Name	A365H *1 2 3 4* [cs]	41 33 36 35 48 *1 2 3 4* [cs]
	0x0023	Get Indexed Playing Track Artist Name	[iPod data]	[iPod data]
	Macro	Get Current Playing Track Artist Name	A361b[cs]	41 33 36 31 62 C3
	0x0024	Get Indexed Playing Track Album Name	A365I *1 2 3 4* [cs]	41 33 36 35 49 *1 2 3 4* [cs]
	0x0025	Return Indexed Playing Track Album Name	[iPod data]	[iPod data]
	Macro	Get Current Playing Track Album Name	A361c[cs]	41 33 36 31 63 C2
	0x0026	Set Play Status Change Notification Notification Off Full Notification - updates every 500ms	A362J *1* [cs]	41 33 36 32 4A *1* [cs] 41 33 36 32 4A 00 DA 41 33 36 32 4A 01 D9
	0x0027	Play Status Change Notification	[iPod data]	00 - Playback Stopped 01 - New Track Index, Index 02 - Playback FFW seek stop 03 - Playback REW seek stop 04 - Time offset, 4 bytes mSec 05 - New Chapter Index, Index 06 - Extended Playback Status 07 - Time Offset, 4 bytes Sec
	0x0026	Set Play Status Change Notification (Command only works on newer iPods) Notification Off Full Notification - updates every 500ms Limited Notification	A362] *1* [cs]	41 33 36 32 5D *1* [cs] 41 33 36 32 5D 00 C7 41 33 36 32 5D 01 C6 41 33 36 32 5D 02 C5

There are 3 Macro commands listed below. These special commands automatically start playing one of the first 3 Playlists by alphabetical order.

Macro	Play 1st Playlist (Alphabetic order) Play 2nd Playlist (Alphabetic order) Play 3rd Playlist (Alphabetic order)	A361q[cs] A361r[cs] A361s[cs]	41 33 36 31 71 B4 41 33 36 31 72 B3 41 33 36 31 73 B2

A0316 Serial Protocol

	Com ID	Function/Question	ASCII Command	Hex Command
	0x0028	Play Current Selection	A365K *1 2 3 4* [cs]	41 33 36 35 4B *1 2 3 4* [cs]
	0x0029	Play Control	A362L *1* [cs]	41 33 36 32 4C *1* [cs] *01 - Toggle Play/Pause, 02 - Stop,* *03 - Next Track, 04 - Prev Track,* *05 - Start FFW, 06 - Start REW,* *07 - End FFW/REW, 08 - Next, 09 - Prev,* *0A - Play, 0B - Pause, 0C - Next Chap* *0D - Prev Chap*
	0x002A	Get Track Artwork Times	A367[*1 2 3 4 5 6* [cs]	41 33 36 37 5B *1 2 3 4 5 6* [cs]
	0x002B	Return Track Artwork Times	[iPod data]	[iPod data]
	0x002C	Get Shuffle	A361M[cs]	41 33 36 31 4D D8
	0x002D	Return Shuffle	[non-ASCII values]	None: 04 04 00 2D 00 CB 0D 0A Song: 04 04 00 2D 01 CA 0D 0A Album: 04 04 00 2D 02 C9 0D 0A
	0x002E	Set Shuffle (00 = No shuffle, 01 = Song, 02 = Album)	A362N *1* [cs]	41 33 36 32 4E *1* [cs]
	0x002F	Get Repeat	A361O[cs]	41 33 36 31 4F D6
	0x0030	Return Repeat	[non-ASCII values]	None: 04 04 00 30 00 C8 0D 0A One: 04 04 00 30 01 C7 0D 0A All: 04 04 00 30 02 C6 0D 0A
	0x0031	Set Repeat (00 = No repeat, 01 = One, 02 = All)	A362P *1* [cs]	41 33 36 32 50 *1* [cs]
	0x0035	Get Num Playing Tracks	A361Q[cs]	41 33 36 31 51 D4
	0x0036	Return Num Playing Tracks	[iPod data]	[iPod data]
	0x0037	Set Current Playing Track	A365R *1 2 3 4* [cs]	41 33 36 35 52 *1 2 3 4* [cs]
	0x0038	Select Sort DB Record	A367S *1 2 3 4 5 6* [cs]	41 33 36 37 53 *1 2 3 4 5 6* [cs]
	0x003B	Reset DB Select Hierarch	A362T *1* [cs]	41 33 36 32 54 01 CF - Audio 41 33 36 32 54 02 CE - Video

Extended Interface Lingo (0x04) Commands

Non-Essential Commands

	Com ID	Function/Question	ASCII Command	Hex Command
	0x0F	Request Lingo Protocol Version	A362+ *1* [cs]	41 33 36 32 2B *1* [cs]
	0x10	Return Lingo Protocol Version	[iPod data]	[iPod data]
	0x09	Request iPod Software Version	A361,[cs]	41 33 36 31 2C F9
	0x0A	Return iPod Software Version	[iPod data]	[iPod data]
	0x0D	Request iPod Model Num	A361*[cs]	41 33 36 31 2A FB
	0x0E	Return iPod Model Num	[iPod data]	[iPod data]

Lingo (0x00)

	Com ID	Function/Question	ASCII Command	Hex Command
0x02	0x00	Context Button Status, All Up	A3610[cs]	41 33 36 31 30 F5

A0316 Serial Protocol

Example:
The following example describes how to query the iPod database.
There are several database categories that can be queried.

Category	(HEX Number)
Playlist	(01)
Artists	(02)
Albums	(03)
Genres	(04)
Tracks	(05)

All numbers are HEX values.
Note: commands begin with ASCII A36, which converts to HEX: 41 33 36
The database must be reset prior to a query. Use **Reset DB Selection**: 41 33 36 31 41 E4

Ask how many artists records there are by using the
Get Number Categorized DB Records command.

41, 33, 36, 32, 43, 02, 7A
→ ASCII letter z is used as a wildcard checksum
→ Artists Category
→ Command
→ Length

The iPod will **Return Number Categorized DB Records.** For example:
07, 04, 00, 19, 00, 00, 00, 70, 6C, 0D, 0A
→ Checksum
→ There are 0x70 records (112 Artists)
→ Command ID
→ Lingo is the Extended Interface Lingo (0x04)
→ Length is 7 bytes (excluding checksum and end markers)

Get 5 database records for artists starting at record index 0, by using the
Retrieve Categorized Database Records command.

41, 33, 36, 3A, 44, 02, 00, 00, 00, 00, 00, 00, 00, 05, 7A
→ Wildcard checksum
→ *Send 5 artists at a time
→ *Start at record index 0
→ Artists Category

*The commas separate bytes so the largest valid decimal number will be 255 (or HEX FF). 4 bytes are reserved for the record index and 4 bytes are reserved for the number of Artists requested in each transmission. For numbers exceeding 255 (HEX FF), use the preceding (more significant) byte.
Examples:
00, 00, 00, 05 = There are 5 records
00, 00, 00, FF = There are 255 records
00, 00, 01, 01 = There are 257 records

To select the 9th record in the Artists database, use: **Select DB Record**
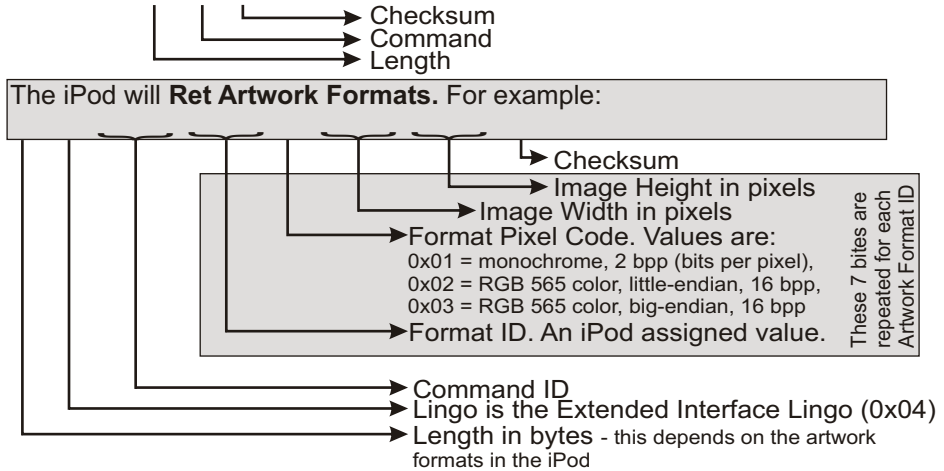41, 33, 36, 36, 42, 02, 00, 00, 00, 09, 7A
→ Wildcard checksum
→ Select the 9th record
→ Artists Category

A0316 Serial Protocol

Obtaining Artwork

All numbers are HEX values.
Note: commands begin with ASCII A36, which converts to HEX: 41, 33, 36
nn is used as a place holder for unknown bytes shown in the example below.
Use **Get Artwork Formats**:

→ Checksum
→ Command
→ Length

The iPod will **Ret Artwork Formats.** For example:

↳ Checksum
→ Image Height in pixels
→ Image Width in pixels
→ Format Pixel Code. Values are:
    0x01 = monochrome, 2 bpp (bits per pixel),
    0x02 = RGB 565 color, little-endian, 16 bpp,
    0x03 = RGB 565 color, big-endian, 16 bpp
→ Format ID. An iPod assigned value.

These 7 bites are repeated for each Artwork Format ID

→ Command ID
→ Lingo is the Extended Interface Lingo (0x04)
→ Length in bytes - this depends on the artwork formats in the iPod

Next, use **Get Indexed Playing Track Info**:
41, 33, 36, 35, 5A nn, nn, nn, nn, [cs]

→ Checksum
→ The index of the playing track
→ Command
→ Length

The iPod will **Return Indexed Playing Track Info.** For example:

↳ Checksum
→ Count of artwork images in this format ID for this track
→ Artwork Format ID

These 4 bites are repeated for each Artwork Format ID

→ Artwork info for the track is being returned
→ Command ID
→ Lingo is the Extended Interface Lingo (0x04)
→ Length in bytes - this depends on the artwork formats in the iPod
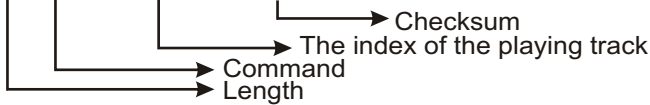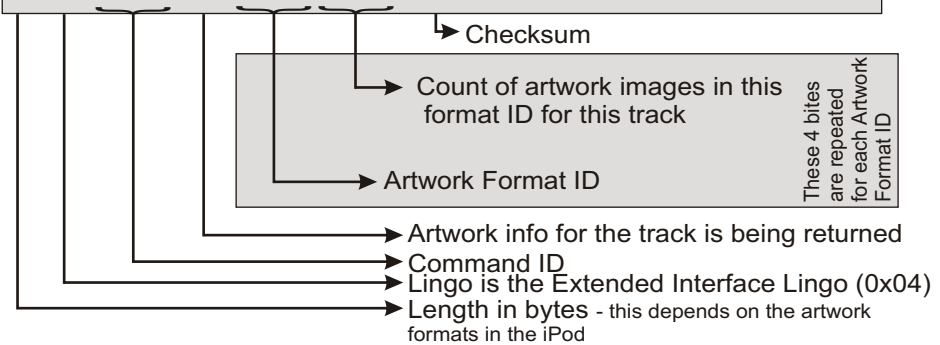
Use **Get Track Artwork Times**:
41, 33, 36, 37, 5B, nn, nn, nn, nn, nn, nn, [cs]

→ Checksum
→ Format ID
→ Track index
→ Command
→ Length

A0316 Serial Protocol

Obtaining Artwork (continued)

The iPod will **Ret Track Artwork Times.** For example:
nn, 04, 00, 2B, nn, nn, nn, nn, [cs], 0D, 0A

→ Checksum

→ Time offset (msec) from start of track where the artwork is located.
Note: There maybe multiple times returned if there are multiple pieces of artwork for a specific format ID.

→ Command ID
→ Lingo is the Extended Interface Lingo (0x04)
→ Length in bytes - this depends on the artwork formats in the iPod

Next, use **Get Track Artwork Data**:
41, 33, 36, 3B, 5C, nn, nn, nn, nn, nn, nn, nn, nn, nn, nn, [cs]

→ Checksum
→ Time
→ Format ID
→ The index of the playing track
→ Command
→ Length

The iPod will **Return Track Artwork Data.** For example:

Note: These bytes are only included in the first telegraph packet. Subsequent packets only include artwork data.

nn,04,00,11,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn,nn [data],[cs], 0D, 0A

→ Checksum
→ Artwork Data
→ Row Size
→ Inset Rectangle Bottom-Right Y value
→ Inset Rectangle Bottom-Rigth X value
→ Inset Rectangle Top-Left Y value
→ Inset Rectangle Top-Left X value
→ Image Height in pixels
→ Image Width in pixels
→ Format Pixel Code. See Description in RetArtworkFormat example
→ Telegraph Index. The data will be sent in multiple telegraph packets.

→ Command ID
→ Lingo is the Extended Interface Lingo (0x04)
→ Length in bytes - this depends on the artwork formats in the iPod

+ Large Data Transfer Notice

Note: Large transfers of information from the iPod to the Dock and Control System such as artwork images or large counts of data records can result in older model iPods to pause playback briefly until the data transfer completes.

Connection Tips and Troubleshooting

1) Be sure you have connected the CAT-5 cable correctly. Follow the TIA-568A standard at both ends. Incorrect wiring can cause distorted sound or prevent the system from working at all!

2) Be sure you have connected the speakers in phase. Follow the label on the product. Out of phase speakers can rob the system of its bass. Especially when driving dual-voice-coil speakers.

3) Trouble with IR control?

a. Make sure you are using the correct remote control. The A0316 will only respond to IR signals from the Apple Remote produced by Apple Computer or the A0505 produced by Channel Vision. Other 3rd party remote controls are not supported.

b. Disconnect anything that is connected to the "IR IN" on the output wall plate. Point the A0505 remote at the Wall Dock and see if you can control the iPod. If this works, you need to troubleshoot your IR repeating system.

c. Troubleshooting an external IR system: Some IR receivers have a feedback LED that flashes whenever IR signals are received. If the IR receiver you are using has this feature, check to make sure the LED flashes whenever you press buttons on your remote control.

   i. If you don't see the feedback LED, try replacing the batteries in your remote control.

4) The A0316 is designed to charge the iPod *(see compatibility notes on page3)*. When the iPod is not playing music, the screen should indicate that the iPod is being charged. If this does not occur, make sure the power supply is connected to the output wall plate of the A0316.

5) Observe wiring distance specifications. The maximum recommended wire length between the wall dock and output wall plate is 350 feet. Although the A0316 has been proven to work at distances of 500 feet, such extreme distances are not recommended because erratic performance may result due to the power loss caused by the CAT5 wire.

6) If you are experiencing problems with your iPod that occur even when it is not docked in the A0316, then please contact Apple customer service for support.

7) If you need additional help troubleshooting the A0316 please contact Channel Vision technical support or check our website for more details: www.channelvision.com.

Stripping and Connecting CAT-5 Wire

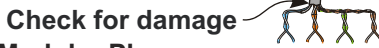CAT-5 cable should be stripped with a proper stripping tool, such as Channel Vision's J-110 tool.

1. Place the CAT-5 between the blade and the first notch of the J-110 tool.

Cat5   **Blade**
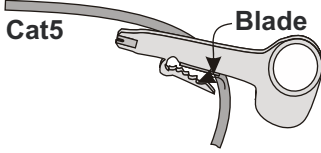
2. Rotate the tool only once. Multiple turns will cause you to cut into the inner wires.

**Rotate
1 turn only**

3. Inspect the inner wires for damage. If any wires are cut start over at step 1.

Check for damage

Slight pressure

TIA-568A RJ-45 Modular Plug

Side view: Top view:

Green/White
Green
Orange/White
Blue
Blue/White
Orange
Brown/White
Brown
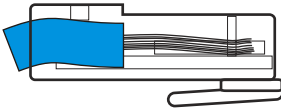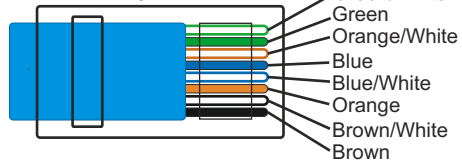
Specifications: (typical @25º C)
<u>**Audio Output**</u>

Output Level:	0.9 Vrms (may vary with iPod model)
THD + Noise:	<0.2%, 20Hz-20kHz
Signal/Noise:	>-96dB
Frequency Response:	20Hz-20kHz +/- 0.3dB
Output Impedance:	600 Ohms
Power Requirements:	15VDC @ 0.500A (500mA)
Power Supply:	15VDC @ 800mA
Wire type:	4-pair, UTP Category 5, 5e or 6
Recommended Max. Cable Length:	350ft.
Video Output:	1 Vp-p (may vary with iPod model)
Video Type:	Composite
RS-232 Protocol Standard:	8-bit data, No Parity, 1 stop bit
Baud Rate	57600
Serial Cable Specification:	Straight through, pins 2, 3, & 5
Dimensions:	
Wall Dock (2-gang):	4.88"W x 5.14"H x 1.24"D(front) Rear Depth: 1.56"
Wall Dock & Keypad (3-gang):	6.73"W x 5.14"H x 1.24"D(front) Rear Depth: 1.56"
Output Plate (1-gang):	3.15"W x 5.14"H x 1.24"D(front) Rear Depth: 1.95"
Color:	White
Operating Temperature:	-10ºC to +50ºC

Specifications subject to change without notice.

CHANNEL VISION™

1 Year Limited Warranty

Channel Vision Technology will repair or replace any defect in material or workmanship which occurs during normal use of this product with new or rebuilt parts, free of charge in the USA, for one year from the date of original purchase. This is a no hassle warranty with no mail in warranty card needed. This warranty does not cover damages in shipment, failures caused by other products not supplied by Channel Vision Technology, or failures due to accident, misuse, abuse, or alteration of the equipment. This warranty is extended only to the original purchaser, and a purchase receipt, invoice, or other proof of original purchase date will be required before warranty repairs are provided.

Mail in service can be obtained during the warranty period by calling (800) 840-0288 toll free. A Return Authorization number must be obtained in advance and can be marked on the outside of the shipping carton.

This warranty gives you specific legal rights and you may have other rights (which vary from state to state). If a problem with this product develops during or after the warranty period, please contact Channel Vision Technology, your dealer or any factory-authorized service center.

Channel Vision products are not intended for use in medical, lifesaving, life sustaining or critical environment applications. Channel Vision customers using or selling Channel Vision products for use in such applications do so at their own risk and agree to fully indemnify Channel Vision for any damages resulting from such improper use or sale.

"Made for iPod" means that an electronic accessory has been designed to connect specifically to iPod and has been certified by the developer to meet Apple performance standards.

Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards.

iPod is a trademark of Apple Inc., registered in the U.S. and other countries.

FC Tested To Comply With FCC Standards   Model: A0316   iPod Wall Dock for Distributed Audio

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

CHANNEL VISION™

500-231 REV C