

Google TV / Android TV (TV Proxy) — Control4 Driver

DTI Automation · driver file `googletv_tv_drivermate.c4z` · sold through DriverCentral and DTI Automation

Native control of Google TV and Android TV devices from Control4. The driver pairs with the device once, with a code the television puts on screen, and then controls it directly over the network from the Control4 controller — the same way the remote in Google's own phone app does.

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What this driver is

A native Google TV and Android TV driver for Control4. The driver runs on the Control4 controller itself and controls the device directly over the network.

There is nothing else to install. No bridge, no helper application, no always-on box, no cloud relay, and no Google account on the controller.

What it does

- **Finds the television for you.** One action lists every Google TV and Android TV device on the network, with its name and address. Pick one and the driver fills in the address, connects, and starts pairing.
- **Follows a television that moves.** If a DHCP lease changes and the television comes back on a different address, the driver finds the same television again and reconnects to it. Nobody retypes an address and nothing is re-paired.
- **Full remote control** from Navigator, touchscreens, keypads and programming: the d-pad, Home, Back, Menu, Settings, transport, volume and mute, the number pad, channel up and down, direct channel entry, the four coloured buttons, Guide, Info and captions.
- **Buttons you can remap.** Twenty-two buttons can be pointed at a different key from a list, for the apps that read them differently.
- **Holding a button works.** Held arrows, Page Up and Page Down repeat, and holding Fast Forward or Rewind skips through a video in the way you choose.
- **Launches apps.** 25 app tiles a dealer can assign, so Netflix, YouTube or anything else the customer uses is one press away in Navigator.

- **Opens a title, not just an app.** Given a link to a film or a programme, the driver opens it in the right app — the same command the DTI Media Finder driver uses.
- **Reads the installed app list off the television,** so a dealer picks apps from a list instead of hunting for their names.
- **Searches from the Control4 app. Google TV Search** is a search box with a remote under it: what you type appears on the television as you type, and the arrows and **Select** pick the result you want - without picking up the television's own remote.
- **Reports what it knows:** power, the app in front, volume and mute, the television's name and model, and a plain sentence in **Last Error** whenever something does not work.
- **Programming that follows the television:** events when it turns on, goes to sleep, changes app or returns to its home screen — including when somebody uses the television's own remote.

This driver presents the Google TV device as a **TV**, the Control4 device type for a display: power, volume, HDMI inputs and channels. Use it for a television with Google TV or Android TV built in. The 25 app tiles are inputs on the television itself, beside HDMI 1 to HDMI 4. **Google TV Search** comes with it from the same file.

Choosing the right Google TV driver

DTI Automation sells three Google TV drivers. They control the device in exactly the same way and differ only in how it appears in the Control4 project. Pick one per device.

DRIVER	APPEARS IN CONTROL4 AS	BEST FOR
<code>googletv_drivermate.c4z</code>	a satellite receiver	A streaming player feeding a display or a receiver, where the full remote — coloured buttons, Guide, channels — matters.
<code>googletv_tv_drivermate.c4z</code>	a television	A television with Google TV or Android TV built in, with its HDMI inputs and power managed by Control4.
<code>googletv_mediaplayer_drivermate.c4z</code>	a media player	A streaming player where the transport bar in the Control4 app matters most.

This page describes `googletv_tv_drivermate.c4z`. The three are separate drivers: to move a device from one to another, remove it and add the other. See [Updating the driver](#).

Requirements

Control4

ITEM	REQUIREMENT
Controller OS	4.0.0 or later.
Network	The controller must reach the television over the local network. For Find Devices to work, the controller and the television must be on the same network — the search is commonly not carried between VLANs or onto a guest network. If they are separated, type the address by hand instead.
Licence	A DriverCentral licence, with the DriverCentral Cloud driver in the project. A new install runs on a 30-day trial. See Licensing and support .

The Google TV or Android TV device

Any Google TV or Android TV device that pairs with a remote by showing a code on screen: streaming players such as Chromecast with Google TV and NVIDIA SHIELD, and televisions with Google TV or Android TV built in. The driver reports the device's **name**, **model** and **hardware address** on the Properties tab once it has connected, so you can see which device a driver is attached to without walking to it.

A **DHCP reservation or a static address** is still the tidiest way to run the device, but it is not required: a paired driver finds the same television again when its address changes.

Network debugging is needed for the installed app list (**Installed Apps**, **List Apps**, and the DTI Media Finder driver), read automatically once paired, and optionally for switching HDMI inputs on televisions that ignore the input keys (**HDMI Switching Method**). Everything else works without it.

Pairing with the television

Pairing is done **once**, at the television. The driver finds the television for you.

On a DriverCentral install, the licence comes first. Find Devices, Pair with TV and Enter Pairing Code are refused along with everything else until the licence or trial is valid, and Last Error names the one you pressed. See [Licensing and support](#).

A driver with no address looks for televisions by itself a few seconds after it is added, so on a fresh install the list is often already filled in before you get here.

1. **Actions** → **Find Devices**. Wait a few seconds.
2. **Properties** → **Discovered Devices** — pick the television. Each row shows its name and its address, so two devices with the same name can still be told apart. Choosing one fills in **IP**

Address, connects, and — because this driver is not paired yet — asks the television to show a **pairing code**.

3. **Properties** → **Pairing Code**. Type the six letters and digits the television is showing. The field is masked, clears itself, and pairing finishes.
4. **Pairing Status** reads **Paired with** and the television's name, and **Connection Status** reaches **Connected – remote control ready**.

The first pairing takes a few seconds longer. The driver creates its own security certificate on the controller the first time it pairs; Pairing Status reads **Creating this driver's own security certificate – pairing starts in a moment** while it does. The certificate belongs to this installation alone and is never shown or exported.

Picking a television you are already paired to does not re-pair it. It reconnects to that address and leaves the pairing alone. Picking a *different* television starts pairing with it, and Last Error says so.

The Actions still work if you prefer them, or if the code is no longer on screen: **Pair with TV** asks the television for a fresh code, and **Enter Pairing Code** accepts it. They do exactly what the properties above do.

If no television is found, it is nearly always the network rather than the television: the search is commonly not carried between VLANs, between wired and guest wireless, or across some managed switches. Put the controller and the television on the same network, or type the address into **IP Address** and run **Pair with TV**.

Things that go wrong here, and why

- **Type the code while it is on screen.** A pairing nobody finishes is ended by the driver after five minutes; Pairing Status says so, and you simply run **Pair with TV** again.
- **A mistyped code is caught before it is sent.** Pairing Status says the code was rejected; read it off the screen again and type it once more.
- **The television must be switched on.** If it does not answer within 20 seconds, Pairing Status says so. Check **IP Address** and that the television is on, then run **Pair with TV** again.
- **Walked away mid-pairing? Clear Pairing** ends it at once.

Re-pairing, and moving to a different television

Run **Clear Pairing**, pick the new television in **Discovered Devices** (or type its address), then pair. Clear Pairing forgets the pairing and this driver's own security certificate, so the television's entry for this driver no longer works: remove it from the television's list of remotes when convenient. There is no undo — the next **Pair with TV** creates a new certificate and the television shows a new code.

A factory reset of the television also ends the pairing. Pair again.

Properties

They appear in Composer in the order below. **Cloud Settings comes first**, so the licence state is the first thing you read on a driver that does nothing without one.

Cloud Settings

Added by the licensing clients, above the driver's own properties. This driver carries **two** licence systems and **either one satisfies it**: a valid DriverCentral licence or a valid DTI activation is enough, and you only need the one that matches where you bought the driver. See [Licensing and support](#).

PROPERTY	TYPE	WHAT IT IS
Cloud Status	Text, read only	The DriverCentral licence and account state, in DriverCentral's own words — for example a trial with the days left, or licensed.
Automatic Updates	Off / On	Whether DriverCentral may update this driver automatically.
Activation Key	Text	Where a DTI licence key is typed. Leave it empty on a DriverCentral install. The key is never written to the log, and only its last four characters are stored on the controller.
Activation Status	Text, read only	The DTI activation state: Not activated, Checking..., Trial running or Trial – N hour(s) left, Activated (with the date it was last confirmed), Trial ended – activation key required, or Activated for a different controller — the project was restored onto different hardware, and a DTI activation is bound to the controller, so it needs a key issued for the new one. A status ending the licence key could not be checked yet – retrying means DTI could not be reached: the driver keeps trying, and a running trial carries on meanwhile.

Activation Method — set this first. The property at the top of the tab says where you bought the driver, and only that channel's rows are shown:

ACTIVATION METHOD	THE TAB SHOWS
DriverCentral (default)	Cloud Status, Automatic Updates
DTI	Activation Key, Activation Status

A DriverCentral dealer changes nothing. A dealer who bought from DTI Automation sets it to **DTI** once, and the Activation Key field appears. **Choosing wrongly breaks nothing**: the setting decides what you *look* at, never which licence the driver honours.

The two trials are 30 days, measured differently. DriverCentral's runs on the **calendar** and shows in **Cloud Status**. DTI's is **720 hours of controller uptime** and shows in **Activation Status** — a controller that runs eight hours a day takes about ninety calendar days to use it up.

Driver Version

PROPERTY	TYPE	WHAT IT IS
Driver Version	Text, read only	The build number, for example 1039 — the same on all three Google TV drivers. After Add or Update Driver (or a remove and re-add), check that it shows the number you were sent: if it has not changed, Composer is still running the previous build.

Connection

PROPERTY	TYPE	DEFAULT	WHAT IT IS
Discovered Devices	List	<i>(empty)</i>	Every Google TV or Android TV device Find Devices found, as its name and address. Picking one fills in IP Address, connects, and asks the television for a pairing code if this driver is not paired with it yet.
Pairing Code	Text, masked	<i>(blank)</i>	The six letters and digits the television shows while pairing. Type them here and pairing finishes; the field clears itself.
IP Address	Text	<i>(blank)</i>	The television's address — picked in Discovered Devices, or typed here. Changing it reconnects at once. A paired driver follows its television to a new address by itself.
TV Public Key Modulus	Text	<i>(hidden)</i>	Leave it alone. It stays hidden on nearly every television, and appears only if this driver cannot read the television's security key by itself, in which case Pairing Status says so. DTI support will then tell you what to paste in.

Device Status (read only)

The driver writes all of these. Nothing here needs to be set, and these are the rows to read when logging is off.

PROPERTY	WHAT IT TELLS YOU
Pairing Status	Not Paired, Paired with the television's name, a step of pairing in progress, or a sentence naming what stopped it.
Connection Status	Connected – remote control ready is the working state. Otherwise it says what the driver is doing – Connecting to the television... – or why it is not connected, such as Offline – not paired. Run Actions > Pair with TV. or Disconnected on request.
ADB Status	Shown only while a feature that uses network debugging is on. Connected, Connecting, Waiting for Allow on the television, Refused, Reconnecting, Offline or Unavailable.
Power State	on, off or unknown, as the television last reported it — it follows the television's own remote too. unknown while the driver is not connected. Programming reads it as the POWER_STATE variable.
Current App	The app in front now, with its Android package name in brackets — for example Netflix (com.netflix.ninja). It follows the television's own remote too. Blank while the television is off or not connected. Programming reads it as CURRENT_APP and CURRENT_APP_PACKAGE.
Volume Status	The television's own volume, as it last reported it, on its own scale (for example 12/100).
Mute Status	Muted or Not muted, as the television last reported it.
Device Name	The name the television gives itself.
Device Model	The television's make and model, as it reports them each time the driver connects.
Remote Service Version	The version of the television's remote-control service, as it reports it each time the driver connects. This is not the Android or Google TV version.
MAC Address	The hardware address of the device at the current IP Address, for reference.

PROPERTY	WHAT IT TELLS YOU
Last Error	The most recent thing the driver could not do, and why, in plain words. Blank means nothing has gone wrong. It clears itself when the connection comes up and when pairing starts or succeeds. This is the single most useful row on the tab, because it needs no logging to be read.

Apps, Inputs and Channels

PROPERTY	TYPE	DEFAULT	WHAT IT IS
App Deep Links	Text	<i>(blank)</i>	Optional: what an app tile or Launch App opens, when this driver's own list does not already know. See App Deep Links format . The driver adds a line here by itself when it pins a tile.
Installed Apps	List	<i>(empty)</i>	Every app installed on the television, read automatically once this driver is paired. Pick one and its Android package appears in Selected App Id. Picking opens nothing.
Selected App Id	Text, read only	<i>(blank)</i>	The Android package of the app picked in Installed Apps, ready to copy into App Deep Links.
HDMI Switching Method	Keycodes only / ADB, falling back to keycodes	Keycodes only	How the driver selects an HDMI input. See HDMI inputs .
HDMI Input Keycodes	Text	HDMI 1=243; HDMI 2=244; HDMI 3=245; HDMI 4=246	The key number each HDMI input sends, as <code>name=number</code> pairs separated by semicolons. The names match the HDMI connections. See HDMI inputs .

PROPERTY	TYPE	DEFAULT	WHAT IT IS
Passthrough Mode	On / Off	On	What happens to the room after an app tile launches an app. See Passthrough Mode .
Channel Digit Gap	Number, 50–2000 ms	300	The pause between digits when a channel number is entered. Raise it if the television drops digits.

Button Mapping

PROPERTY	TYPE	DEFAULT	WHAT IT IS
Fast Forward Mode	Remote Presses / Fast Forward Key Presses / Held Fast Forward Key / Single Press Only	Remote Presses	What holding Fast Forward or Rewind does. See Fast Forward and Rewind .
Fast Forward Step Interval	Number, 100–2000 ms	250	The time between repeats while Fast Forward or Rewind is held, for the two repeating modes.
Custom Button Keycodes	Text	(blank)	Raw key numbers for buttons set to Custom (see Custom Button Keycodes), as button name=number pairs separated by semicolons — for example Guide Button=243.

Twenty-two more rows each choose what one button sends. Each is a list: leave it on Default for the key shown below, or pick any other key.

PROPERTY	DEFAULT SENDS
Power On Button	the wake key (ON in the list)

PROPERTY	DEFAULT SENDS
Power Off Button	the sleep key (OFF in the list)
Guide Button	GUIDE
Info Button	INFO
Cancel Button	BACK
Exit Button	BACK — choose HOME if Exit should leave the app entirely
Recall Button	LAST_CHANNEL
Program A Button	PROG_RED
Program B Button	PROG_GREEN
Program C Button	PROG_YELLOW
Program D Button	PROG_BLUE
Record Button	MEDIA_RECORD
Menu Button	MENU
Home Button	HOME
Settings Button	SETTINGS
TV/Video Button	TV_INPUT
Closed Captioned Button	CAPTIONS
Page Up Button	PAGE_UP

PROPERTY	DEFAULT SENDS
Page Down Button	PAGE_DOWN
Scan Forward Button	the fast-forward key (SCAN_FWD) — what a tap of Fast Forward sends
Scan Reverse Button	the rewind key (SCAN_REV) — what a tap of Rewind sends
Input Toggle Button	TV_INPUT — sent by the Input button, and opens the television's own input list on most sets

See [Buttons, and changing what they send](#).

Retry Timers

PROPERTY	DEFAULT	WHAT IT IS
Power On Retry Timer	Enable	Sends power-on again until the television reports itself on.
Set Power On Retry Max Count	3	How many times it tries.
Set Power On Delay Seconds	4	The wait between tries.
Power Off Retry Timer	Enable	Sends power-off again until the television reports itself off.
Set Power Off Retry Max Count	3	How many times it tries.
Set Power Off Delay Seconds	4	The wait between tries.
Input Retry Timer	Disable	Leave it disabled. The driver confirms an app input itself, from the app the television reports, and switches this back off when it starts.

PROPERTY	DEFAULT	WHAT IT IS
Set Input Retry Max Count	4	Not used while Input Retry Timer is disabled.
Set Input Retry Delay Milliseconds	2000	Not used while Input Retry Timer is disabled.
Channel Retry Timer	Disable	Leave it disabled; the driver switches it back off when it starts.
Set Channel Retry Max Count	4	Not used while Channel Retry Timer is disabled.
Set Channel Retry Delay Milliseconds	2000	Not used while Channel Retry Timer is disabled.

Support and Troubleshooting

PROPERTY	TYPE	DEFAULT	WHAT IT IS
Update Notice	Text, read only	(blank)	Blank on a new install. After an update from an older version, it names any button setting that had to be reset, with the value it held, so you can set it again.
Log Level	0 – Fatal ... 5 – Trace	2 – Warning	How much the driver writes when logging is on.
Log Mode	Off / Print / Log / Print and Log	Off	Where logging is written. Off means nothing is written at any level.

Both have to move to get output: raising Log Level alone does nothing while Log Mode is **Off**. Set Log Mode before reproducing a problem and put it back afterwards — it returns to **Off** by itself 45 minutes after it was last changed. Every log line starts with the date and time.

Connections

Found in Composer's **Connections** view.

CONNECTION	WHAT TO DO WITH IT
Network	Nothing: the driver fills it in from IP Address .
HDMI 1 ... HDMI 4	Bind the device plugged into each of the television's HDMI inputs, such as a Blu-ray player or a console.
Google TV App 1 ... Google TV App 25	Inputs on the television. Bind a Control4 app tile (mini-app) driver to each, such as Netflix or YouTube.
Audio Output	Bind to the receiver or soundbar the television's sound goes to, if there is one.
Room Selection - Output	The television as a room's display, as for any Control4 television.

Actions

Ten actions, on the driver's Actions tab.

ACTION	WHAT IT DOES
Find Devices	Looks for Google TV and Android TV devices on the network and fills Discovered Devices . Takes a few seconds.
Pair with TV	Starts pairing: the television shows a code. The first time, the driver creates its own security certificate first. With no IP Address, Pairing Status asks for one instead.
Enter Pairing Code	The second half of pairing, with the code in its Pairing Code field — the same as typing it into the Pairing Code property.
Clear Pairing	Forgets the pairing and this driver's own security certificate, drops the connection and stays disconnected. Also ends a pairing somebody started and walked away from. There is no undo — the next Pair with TV pairs afresh.
Connect Now	Connects immediately, and cancels a Disconnect . On a working connection it starts a fresh one.

ACTION	WHAT IT DOES
Disconnect	Drops the connection and stays disconnected — through a controller restart too — until Connect Now or the Connect command. Every button is refused meanwhile.
Connect ADB (allow on TV when asked)	Opens the network-debugging connection again — this driver already keeps it open once paired, so this is for forcing a fresh attempt. The first time, the television asks to allow this driver: tick Always allow from this computer .
List ADB Inputs	Writes to the log which HDMI number selects which of the television's inputs, over network debugging. It turns logging on for itself.
Forget ADB Key (TV will ask again)	Throws away this driver's network-debugging key and makes a new one. The television will ask to allow it again. Use it after a factory reset of the television, or when it keeps refusing.
List Apps	Writes to the log every app this driver can open, and how — your App Deep Links lines, the apps it knows by itself, and every app installed on the television. It turns logging on for itself and puts Log Mode and Log Level back afterwards.

Programming commands

Ten commands, on the driver in Composer's Programming view.

COMMAND	PARAMETERS	WHAT IT DOES
Send Remote Command	<code>Keycode</code> (list)	Presses one key. The list is below.
Send Raw Keycode	<code>Keycode</code> (text)	Presses a key by its Android key number, for a key the list does not name.
Hold Remote Command	<code>Keycode</code> (list), <code>Action</code> (Start / Stop)	Holds a key down: send <code>Start</code> , then the same key with <code>Stop</code> when it should let go. The keys are <code>SCAN_FWD</code> , <code>SCAN_REV</code> , <code>UP</code> , <code>DOWN</code> , <code>LEFT</code> , <code>RIGHT</code> , <code>PAGE_UP</code> , <code>PAGE_DOWN</code> , <code>VOLUME_UP</code> and

COMMAND	PARAMETERS	WHAT IT DOES
		<code>VOLUME_DOWN</code> . A <code>Start</code> with no <code>Stop</code> lets go by itself, as a held Navigator button does.
Launch Deep Link	<code>Deep Link URL</code> (text)	Opens a link — an app's own address such as <code>netflix://</code> , or its web deep link. This is the command for "open <i>this title</i> ". The DTI Media Finder driver sends this command.
Launch App	<code>App Name</code> (text)	Opens an app by name, such as <code>Netflix</code> or <code>YouTube</code> : a name in App Deep Links , or one of the apps this driver knows by itself. An Android package name that one of those lines carries works too.
Volume Up	—	One volume-up press.
Volume Down	—	One volume-down press.
Next Track	—	Skips to the next track or chapter.
Connect	—	The same as the Connect Now action.
Disconnect	—	The same as the Disconnect action.

Send Remote Command accepts: `ASSIST`, `BACK`, `CAPTIONS`, `CHANNEL_DOWN`, `CHANNEL_UP`, `DOWN`, `DVR`, `ENTER`, `GUIDE`, `HOME`, `INFO`, `LAST_CHANNEL`, `LEFT`, `MEDIA_RECORD`, `MENU`, `MINUS`, `NUMBER_0` to `NUMBER_9`, `OFF`, `ON`, `PAGE_DOWN`, `PAGE_UP`, `PAUSE`, `PLAY`, `PLAY_PAUSE`, `POUND`, `POWER`, `PROG_BLUE`, `PROG_GREEN`, `PROG_RED`, `PROG_YELLOW`, `RIGHT`, `SCAN_FWD`, `SCAN_REV`, `SEARCH`, `SETTINGS`, `SKIP_FWD`, `SKIP_REV`, `STAR`, `STOP`, `TV_INPUT`, `UP`, `VOLUME_DOWN`, `VOLUME_MUTE` and `VOLUME_UP`.

- `ON` wakes the television and `OFF` puts it to sleep; neither does anything to a television already in that state. `POWER` is the television's own power button, which switches it whichever way it is not.
- `PLAY_PAUSE` toggles playback, `SEARCH` opens the television's search and `ASSIST` its assistant.
- **Launch Deep Link** and **Launch App** do not change what a room is watching. The television is the room's display, not one of its sources, so select one of the television's app tiles first, as in the [examples](#).

If a command cannot be carried out — the television is not connected, or a parameter is empty — nothing is sent and Last Error says why.

Events and variables

The events and variables belong to this driver in Composer's Programming view. They follow the television itself, so they move when somebody uses the television's own remote as well as when Control4 sends something.

Events

EVENT	FIRES WHEN
Turned On	the television reports that it has turned on
Went To Sleep	the television reports that it has gone to sleep
App Changed	a different app comes to the front
Home Screen Shown	the television returns to its home screen (App Changed fires first)

Events fire only on a real change the television reports: never when the driver starts or reconnects to a television that is doing what it was doing before.

Variables

VARIABLE	HOLDS
POWER_STATE	on, off or unknown, as the Power State row shows it.
CURRENT_APP	The name of the app in front, such as <code>Netflix</code> . Blank while the television is off.
CURRENT_APP_PACKAGE	The Android package of the app in front, such as <code>com.netflix.ninja</code> .
INSTALLED_APPS_REVISION	A value that changes whenever the television's installed app list changes. Another driver — the DTI Media Finder — watches it.

Use them in conditionals — if `CURRENT_APP` is `Netflix`. Match `POWER_STATE` without regard to case.

The remote

Buttons, and changing what they send

Every Control4 button the television can use is sent as the television's own key. What happens next is up to the app in front, exactly as with the television's own remote.

Changing a button. The Button Mapping rows point a button at a different key. Leave a row on **Default** for the key the table in [Button Mapping](#) shows, or pick any key from its list. For a key the list does not name, pick **Custom** (see [Custom Button Keycodes](#)) and give the button its number in **Custom Button Keycodes**, for example [Guide Button=243](#). A button set to Custom with no number there sends nothing, and the log says so. The arrows and the number keys always send themselves.

Back, Exit and Cancel all go back one screen, which is how you leave a screen on Google TV. Set **Exit Button** to **HOME** if Exit should leave the app entirely.

Captions. The CC button sends the television's captions key, which the app in front switches on or off.

Holding a button

Holding an arrow, Page Up, Page Down, Volume Up or Volume Down repeats the press about five times a second while it is held. It stops when the button is released, and stops by itself after 25 presses if the release never arrives.

Fast Forward and Rewind

A tap sends what **Scan Forward Button** or **Scan Reverse Button** says — the fast-forward or rewind key by default. Some apps read that key as "go faster" and others as a jump; if Fast Forward changes speed instead of jumping in the apps the customer uses, set the two buttons to **RIGHT** and **LEFT**.

Holding does what **Fast Forward Mode** says:

FAST FORWARD MODE	WHAT HOLDING FAST FORWARD DOES
Remote Presses <i>(default)</i>	Repeats the right arrow, like holding the arrow on the remote, which skips through the video in most apps.
Fast Forward Key Presses	Repeats whatever a tap sends.
Held Press	Holds the right arrow down until you let go.
Held Fast Forward Key	Holds the fast-forward key down until you let go.

Single Press Only

Nothing more than a tap.

Rewind follows the same setting in the other direction. The two repeating modes repeat at **Fast Forward Step Interval**; if holding moves the picture only once, raise it — try 600, then 1000. The held modes let go by themselves after 30 seconds if the release never arrives. Changing the mode needs no restart: the next press uses it.

Volume and mute

Volume Up and Down are presses of the television's own volume keys.

The volume slider works. The television reports its volume and its scale, so the driver presses Volume Up or Down until the television reports the level the slider asked for. Press Volume Up or Down once after the driver connects, so the television has reported its level. If the sound goes through a receiver or soundbar, set the volume there: the television stops reporting its volume, and the slider stops after two presses and says so in Last Error.

Mute. Mute On and Mute Off press the television's mute key only when its last reported state needs it, so pressing Mute On twice does not unmute. Mute Toggle always presses it. **Volume Status** and **Mute Status** show what the television last reported.

Power and Room Off

On wakes the television and **Off** puts it to sleep — including from **Room Off**. Neither does anything to a television already in that state, and the **Retry Timers** send them again until the television reports the change.

If the television ignores On or Off — the picture stays lit although the television went to sleep — set **Power On Button** and **Power Off Button** to **POWER**, the television's own power button, which switches it whichever way it is not.

The Input button sends **Input Toggle Button**, which opens the television's own input list by default.

Channels

Channel Up and Channel Down, and the number pad, reach the live-TV app in front — YouTube TV, or the television's own Live Channels. Entering a channel number sends its digits one at a time, spaced by **Channel Digit Gap**, and then OK. A sub-channel written 4-1 works. 4.1 is sent with the television's period key; if your tuner does not take it, use 4-1. If digits go missing, raise Channel Digit Gap.

HDMI inputs

Bind a device to **HDMI 1** to **HDMI 4** in Connections, and selecting it in a room switches the television to that input.

- **Keycodes only** (*default*) sends the key number **HDMI Input Keycodes** gives that input. The defaults are Android's standard HDMI keys; if your television answers to other numbers, put them there, for example **HDMI 1=243;HDMI 2=244**.
- **ADB, falling back to keycodes** selects the input over network debugging, for televisions that ignore the input keys. Switch on network debugging in the television's Developer options (they are unlocked by selecting the build number in the television's About screen seven times), choose this method, and allow the driver when the television asks — tick **Always allow from this computer**. **ADB Status** reads **Connected**. Run **List ADB Inputs** to see which HDMI number selects which input; the key numbers are still used whenever that connection is down, for an HDMI number the television does not list, and for an input it refuses to switch to over it.

The app tiles are inputs too — see [Apps and deep links](#).

Apps and deep links

How an app tile launches an app

Bind a Control4 app tile (mini-app) driver — Netflix, YouTube and so on — to one of the 25 app inputs on the television, **Google TV App 1** to **Google TV App 25**. Selecting the tile in Navigator opens that app on the television.

The driver works out what to open for the tile, in this order:

1. A line in **App Deep Links** for that slot number.
2. A line in **App Deep Links** naming that app tile's driver.
3. The apps this driver knows by itself: **Netflix**, **YouTube**, **Prime Video**, **Disney+**, **Plex** and **Hotstar**.
4. The television's installed app list, read automatically once paired: a tile named exactly as an installed app opens it through a line that names its package.
5. A **close** match for the names in 2 and 3 — for example a tile called **Netflix Kids**. The name must appear in the tile's name as whole words, and a tile named after another Control4 app tile driver, such as **YouTube TV** or **Disney Now**, is never matched to a different app: give it its own line. Once the television confirms the app opened, the driver writes the answer into App Deep Links as a line for that slot, so the next press never guesses. Your own text is kept exactly as you wrote it; the new line is added after it. Edit or delete it to change what the tile opens.

When nothing matches, the tile opens nothing and Last Error names the line to add. The driver confirms the launch when the television reports the app in front, and Navigator then shows the tile as selected. If the television has not brought the app forward after about twelve seconds, Last Error says so.

App Deep Links format

Entries separated by semicolons:

```
Netflix=netflix://;YouTube=https://www.youtube.com/tv
```

- `<name>=<link>` — a name line. `<name>` is the app tile driver's own name, and the line covers every tile with that name.
- `<slot>=<link>` — a slot line, for one tile. The slots are numbered 1001–1025: `1001` is Google TV App 1, so `1003=netflix://` is Google TV App 3. A slot line wins over everything else.
- A key that is entirely digits is read as a slot; anything else as a name.
- **The link** is one the app itself answers to: its own address, such as `netflix://`, or its web deep link. **An Android package name on its own is NOT a link** and opens nothing; the log names the entry.
- **Optionally**, add a vertical bar and the app's Android package after the link, so the driver can confirm the launch and show the tile selected:

```
Netflix=netflix://|com.netflix.ninja
```

A line here overrides the driver's own entry for the same name. Quotes, angle brackets and markdown pasted around a link are removed before it is used, and the log shows both what was given and what was sent. Run **List Apps** to see everything the driver can open.

Installed Apps and Selected App Id

Once this driver is paired, it reads the television's installed apps automatically and lists them in **Installed Apps**. It only ever reads the list: apps are always opened by their links.

To connect it:

1. On the television, switch on **network debugging** in Developer options. (Developer options are unlocked by selecting the build number in the television's About screen seven times.)
2. Pair with this driver, if it is not already. **ADB Status** reads `Connecting`, then — the first time — `Waiting for Allow on the television`.
3. On the television, tick **Always allow from this computer** and allow it. ADB Status reads `Connected`, and Installed Apps fills.

If network debugging was off when this driver paired, run **Connect ADB** after switching it on, rather than waiting for the next restart.

Pick an app in **Installed Apps** and **Selected App Id** shows its Android package; the log says which link opens it, or gives the exact App Deep Links line to add. Picking a row opens nothing.

The list is read when the connection comes up, when **List Apps** runs, when another driver asks for it and the driver's copy is more than 15 minutes old, and once when an app tile will not resolve. There is no polling. The DTI Media Finder driver uses the same list.

Passthrough Mode

What happens to the **room** after an app tile launches an app.

VALUE	BEHAVIOUR
On (default)	The app tile driver stays selected in the room and passes its buttons on to this driver — but only while the room has an audio path for it (below).
Off	This driver becomes the room's selected video device shortly after the app launches.

Leave it **On** unless apps open on the television but the room shows nothing, or the room has no audio path for the app tiles.

On needs an audio path. Off does not. Control4's app tile drivers pass a button on only to a device that is on the room's current audio path. So open **System Design**, select the room, and check that **Audio Path** reads **YES** for every app tile bound to this driver's app inputs. If it reads **NO**, pressing a tile still opens the app, and then the tile's buttons do nothing. Nothing reaches this driver, so nothing is logged here and **Last Error** stays empty. Set **Passthrough Mode** to **Off**.

Search

Google TV Search appears in the Control4 app next to the television.

Adding this to a project that already has this driver: remove the driver and add it again. Updating the driver in place does not create the **Google TV Search** tile. A project that had **Google TV Keyboard** from an earlier version keeps that device after an update: delete it in Composer. It does nothing any more.

Google TV Search

A search box with a remote under it, so you can type and then pick the result on the television without leaving the page.

1. Select **Google TV Search** in the Control4 app. The room switches to the television, and the television opens its own search.
2. Type what you are looking for. The words appear in the television's search box a moment after you stop typing, and it shows its suggestions.
3. Use the arrows to move to the one you want, and **Select** to open it.

CONTROL	WHAT IT DOES
Typing	Sends the whole box to the television half a second after you stop.

CONTROL	WHAT IT DOES
Search / Enter on the keyboard	Sends it straight away, runs the search, and closes the keyboard so the remote is in view.
✕ (in the box)	Empties both boxes.
Home	Goes to the television's home screen.
Back	Goes back, like the remote's back button.
CC	Turns captions on or off.
Arrows and Select	Move around the television's screen and open what is highlighted.
Rewind, Fast Forward, Previous, Play, Next, Pause, Stop	The television's own playback keys, for whatever is playing.

The page has no volume or mute: use the room's volume in the Control4 app.

A message under the box says why when something could not be sent - the same messages as the table below. The page works from the Control4 app on phones and tablets, and on Control4 touchscreens.

When something stops a search, the page says so:

THE PAGE SAYS	WHAT TO DO
the television is not connected – try again in a moment	Wait for the driver to reconnect, then try again.
the television is still connecting – try again in a moment	Try again in a few seconds.
the connection to the television has been switched off in Control4	Run Connect Now — somebody ran Disconnect.
type something into the search box first	Nothing has been typed yet. Type a word first.

the search box is empty

A search was sent with nothing in the box. Type a word first.

The words are private. The driver never writes what was typed to the log, at any level.

Programming examples

The shapes a dealer writes in Composer's Programming view. The driver is shown here as **Google TV**.

Open a film in the media room (a keypad button or a scene)

The television is the room's display, not one of its sources, so the room selects the **Netflix** app tile — the one bound to one of this television's app inputs, **Google TV App 1** to **Google TV App 25**. That turns the television on and opens Netflix; the driver then opens the title.

```
When Media Keypad button 1 is pressed:  
  Select Room 'Media' source 'Netflix'  
  Delay 00:00:05  
  Google TV -> Launch Deep Link  
    Deep Link URL: https://www.netflix.com/title/80100172
```

The delay gives the television time to wake and open the app before it is asked for the title. If the title does not open when the television was asleep, lengthen the delay.

Put an app on a keypad button

```
When Media Keypad button 3 is pressed:  
  Google TV -> Launch App  
    App Name: YouTube
```

A "goodnight" macro that puts the television to sleep

```
When 'Goodnight' is executed:  
  Google TV -> Send Remote Command  
    Keycode: OFF
```

Wake the television when the room turns on

```
When Room 'Media' is turned on:  
  Google TV -> Send Remote Command  
    Keycode: ON
```

Lights down when a film starts, up at the home screen

```
When Google TV -> App Changed:  
  If Google TV variable CURRENT_APP is 'Netflix':  
    Set Media Room lights to 20%  
  
When Google TV -> Home Screen Shown:  
  Set Media Room lights to 70%
```

Do something when the television goes to sleep — from any remote

```
When Google TV -> Went To Sleep:  
  Turn off Media Room lights
```

Fast Forward held on a third-party remote

```
When <remote> FFWD is pressed:  
  Google TV -> Hold Remote Command  
    Keycode: SCAN_FWD  
    Action: Start  
  
When <remote> FFWD is released:  
  Google TV -> Hold Remote Command  
    Keycode: SCAN_FWD  
    Action: Stop
```

Free the connection while the house is empty, and take it back on arrival

```
When 'Away' is executed:  
    Google TV -> Disconnect
```

```
When 'Home' is executed:  
    Google TV -> Connect
```

Updating the driver

A newer build of this driver installs over the old one with Composer's **Add or Update Driver**. The pairing, the properties and the bindings are kept. Afterwards, check **Driver Version**: it must show the build you installed.

Moving between the three Google TV drivers — for example from the satellite driver to the TV driver — is **not** an update. They are different drivers with different Control4 devices, and Control4 warns that changing a driver's device types in place causes project corruption. Back up the project, note the properties, remove the old driver, add the new one, bind its connections, set its properties and pair it.

Troubleshooting

Read Last Error first. It needs no logging, it says why in plain words, and it is blank whenever nothing has failed.

On a DriverCentral install, rule out the licence before anything else. An unlicensed driver refuses every action and command in this manual and names the one that was refused:

... was refused because the DriverCentral licence for this driver is invalid or expired (Cloud Status in Composer shows the account state). Renew or activate it on drivercentral.io and the command works again immediately - no restart needed.

While that sentence keeps coming back, nothing below applies — the driver is not failing, it is unlicensed. See [Licensing and support](#).

Every sentence in the left-hand columns below is one this driver writes. Long ones are shortened with ...; match on the opening words.

Nothing connects

The driver keeps trying by itself. A connection that does not answer is retried after 5 seconds, then 10, 20, 40 and every 60 seconds; after two failures in a row the driver looks for its television on the network and follows it if its address has changed.

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
no IP Address is set – enter the television's address in the IP Address property	The address is empty.	Run Find Devices and pick the television, or type its address.
no Google TV device answered the search. That is usually the network rather than the television...	Find Devices heard nothing.	Put the controller and the television on the same network, or type the address by hand.
this driver is not paired with the television – run the Pair with TV action, then Enter Pairing Code with the code the television shows	Normal on a new install.	Pair. See Pairing .
the television did not answer on the network within about 30 seconds...	The television is off at the wall, asleep without its network, or at another address.	Check it is on and on the network. The driver keeps trying and follows a moved television by itself.
the television this driver is paired to did not answer at <address> or anywhere else on the network, so its address was left alone...	The driver looked for its television and did not find it.	Check the television is on and on the same network as the controller.
The television moved from <old> to <new> and this driver followed it. Nothing needs re-pairing.	Its address changed, and the driver reconnected at the new one.	Nothing. A DHCP reservation stops it moving.
... was NOT sent – Disconnect is in force, so the remote is off – run Connect Now, or the Connect command, to use it again	Somebody ran Disconnect .	Run Connect Now .

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
the television was paired with a security certificate this driver no longer holds...	The pairing belongs to a certificate this installation no longer has.	Run Pair with TV and type the new code.
this controller did not provide the encryption library this driver...	The controller cannot create the driver's security certificate.	Check the controller runs OS 4.0.0 or later, then contact DTI support.
this driver could not save its security certificate on the controller...	The controller refused to store the certificate.	Restart the controller and run Pair with TV again; if it repeats, contact DTI support.

Pairing

PAIRING STATUS OR LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
Not Paired – pairing was abandoned after 300 seconds with no code entered. Run Pair with TV again to show a new code	Nobody typed the code in time.	Run Pair with TV and type the code while it is on screen.
Not Paired – the television did not open the pairing connection within 20 seconds. Check the IP Address and that the television is on, then run Pair with TV again	The television did not answer.	As it says.
the pairing code was rejected before sending (...) – check the code on screen and try again	A letter was mistyped.	Read the code off the television again and type it once more.
No pairing code is expected right now – run Pair with TV first	A code was typed with no pairing running.	Run Pair with TV , then type the code the television shows.

PAIRING STATUS OR LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
pairing did not complete – ...	The television ended the pairing; the reason follows.	Run Pair with TV again.

Buttons and commands do nothing

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
<button> was NOT sent – ...	The button could not reach the television; the reason follows, usually that it is not connected.	Wait for Connection Status to read Connected – remote control ready, or press Connect Now .
... was NOT sent – the television's remote control has no bass, treble, balance or loudness key, so there is nothing to send...	Expected: that button has no Google TV equivalent.	Use the television's own sound settings.
... was NOT sent – this driver sends no picture-in-picture key – on a Google TV device, picture-in-picture is started from inside an app that supports it	Expected.	Start picture-in-picture from inside the app.
Send Remote Command sent nothing – the programming step has no Keycode chosen	An empty programming step.	Pick a key in the step.
Send Raw Keycode sent nothing – it needs a number, and was given '<x>'. Use Send Remote Command to pick a key by name	Not a number.	Give it a number, or use Send Remote Command .

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
Hold Remote Command sent nothing – it needs a Keycode from its list and an Action of Start or Stop...	A parameter is missing.	Fill in both.

Holding Fast Forward or Rewind does nothing, or moves the picture only once. There is no Last Error, because the television took the key — the app in front chose what to do with it. Work down [Fast Forward and Rewind](#): try another **Fast Forward Mode**, and raise **Fast Forward Step Interval** if the picture moves once and stops. Note which app it was when reporting it.

Volume

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
... was NOT sent – the television has not reported its volume yet. Press Volume Up or Down once so it does, then use the slider	The slider was used before the television reported a level.	Press Volume Up or Down once, then use the slider.
... was NOT sent – the television reports its volume without a scale, so the slider cannot count presses – use Volume Up and Down	The television reports a level but no scale, so there is nothing to count presses against. Pressing a button again does not change that.	Use Volume Up and Down; the slider cannot set this television's volume.
... stopped – the television stopped reporting its volume, so the slider cannot tell where it is. If the sound goes through a receiver or soundbar, set the volume there	The sound is going somewhere else.	Control the volume on the receiver or soundbar.

App tiles and launching

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
... did not open on the television – check its link in	The television did not bring the app forward.	Check the app is installed, and its

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
the App Deep Links property, and that the app is installed		line in App Deep Links .
the television refused to open ... – correct its link in the App Deep Links property	The television turned the link down.	Correct the link. List Apps shows every link the driver has.
app slot <N> was NOT launched – ...	The tile could not be resolved; the reason follows and names the line to add.	Add the line it names to App Deep Links .

The installed app list

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
the television did not allow this driver's ADB connection – run Connect ADB and tick 'Always allow from this computer' on the television	Nobody allowed the driver on the television.	Run Connect ADB (allow on TV when asked) and allow it.
could not reach the television for ADB – check that network debugging is enabled on it	Network debugging is off.	Switch it on in the television's Developer options.
the television closed the ADB connection without answering – check that network debugging is switched on in its Developer options	As it says.	Switch network debugging on, then Connect ADB (allow on TV when asked) .
List Apps could not read the television's installed apps – ...	The read failed; the reason follows.	Check ADB Status reads Connected , then run List Apps again.

LAST ERROR SAYS	WHAT IT MEANS	WHAT TO DO
'<app>' is not in the app list this driver last read from the television (N app(s)). Run List Apps, then open the property again to refresh the list	The Installed Apps list was out of date.	As it says.

If the television keeps refusing after a factory reset, run **Forget ADB Key (TV will ask again)** and allow the driver again.

HDMI inputs do not switch

- With **Keycodes only**, the television ignored the number it was sent. Put the numbers your television answers to in **HDMI Input Keycodes**, or switch **HDMI Switching Method** to **ADB**, falling back to keycodes.
- With ADB, check **ADB Status** reads **Connected**, and run **List ADB Inputs** to see which HDMI number selects which input.

Getting a log for a support ticket

1. **Log Mode** → **Print and Log**.
2. **Log Level** → **4 - Debug** or **5 - Trace**.
3. Reproduce the problem.
4. Copy the Director log.
5. Put **Log Mode** back to **Off** (the driver does it for you after 45 minutes).

At the shipped defaults the driver writes **nothing at any level**, which is deliberate. Both properties have to move.

Licensing and support

This driver carries **two** licence systems and **either one satisfies it**. The three Google TV drivers are one product in each: one licence works on any of them.

- **DriverCentral**, for dealers who bought it on drivercentral.io. Add the DriverCentral Cloud driver to the project, register it to your drivercentral.io account and assign the licence; **Cloud Status** shows the account state.
- **DTI activation**, for dealers who bought it directly from DTI Automation. Set **Activation Method** to **DTI** and type the key into **Activation Key**; **Activation Status** shows the state.

You need only the one that matches where you bought the driver. See [Cloud Settings](#).

While either licence or trial is valid, the driver behaves exactly as documented here.

Trial period

A new install runs on a **30-day trial** while the licence is arranged. There is nothing to do to start it. DriverCentral's runs on the calendar and shows in **Cloud Status**; DTI's is 720 hours of controller uptime and shows in **Activation Status**. Assign the licence, or type the key, before it ends.

When the licence needs attention

If the licence is invalid or expired, the driver does nothing. Every button, command, action and request is refused until the licence is valid — the remote, power, the inputs and app tiles, search and volume, and **Find Devices**, **Pair with TV**, **Clear Pairing**, **Connect Now**, **Disconnect** and **List Apps** as well. The driver stays loaded, keeps its pairing, and says why on **Last Error**, naming what was refused. The sentence stays there rather than being cleared by the driver going about its business.

Licence state is checked live: renew or assign it on drivercentral.io and every command works again within seconds, with no driver reload and no controller restart. Anything the driver held back meanwhile — its first search for televisions, for example — then runs by itself.

Before you contact support

Have these ready. They answer most of the first round of questions:

1. **Driver Version**, exactly as the property reads it.
2. **Pairing Status**, **Connection Status** and **Last Error**, copied out.
3. The controller model and its OS version, and the television's **Device Model**.
4. What you did, and what happened instead.
5. A log, if the problem can be reproduced — see [Getting a log for a support ticket](#).

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