

ARCAM Google Certificate Burner- Manual

Version v2.0

Version

Version	Date	By	Description
1.0	27/09/2019	Chris Mann	First Version.
2.0	03/10/2019	Chris Mann	Added section for Ethernet burner

Overview

This document describes the key points of the ARCAM Google Certificate Burner that can be used to generate a device specific Google Certificate.

A device specific certificate is required to enable devices to be discovered by the Google Home app. Generation of the certificate must be performed on the device itself and requires a private key generated by ARCAM.

The process uses the ARCAM.GoogleCertificate.Builder application.

The application provides mechanisms for burning the certificates into an Avatar either using RS232 which updates avatar modules using a programmer, or over an Ethernet connection which can update the Avatar in-situ.

Process

The Google Certificate Generation process takes the following steps:

As a one-off procedure:

- A public / private key pair are generated for the device type.
- The private key is encrypted using a script provided by Stream Unlimited.
- The encrypted private key is built into the ARCAM.GoogleCertificate.Burner software.

RS232

For each device:

- The ARCAM.GoogleCertificate.Burner is connected to an AP72598_EVB_V03 board via USB.
- The Avatar module is loaded into the board, and the board switched on.
- The encrypted key file is copied to the Avatar and a process run to generate the Google Certificate.
- The process is repeated for as many Avatars modules as required.

Ethernet

- The device is switched on and connected to a network.
- The IP Address of the device is ascertained
- The encrypted key file is copied to the Avatar and a process run to generate the Google Certificate.
- The process is repeated for as many Avatars modules as required.

RS232 Google Certificate Burner

The Google Certificate Burner is used by the Manufacturer to generate the device specific Google certificate.

Connecting to the AP72598_EVB_V03 board

The computer running the Google Certificate burning software should be connected to the AP72598_EVB_V03 board via USB as shown below:



Starting the Application

The ARCAM.GoogleCertificate.Burner.exe can then be run, and the RS232 tab selected.

Before burning, the board should be connected to over RS232. Device, COM Port, Baud Rate options are provided and the Connect button connects to the device. The Baud rate defaults to 115200.

Device	COM Port	Baud Rate	
SA30	COM3 - Intel(R) Active Management Technology - S	115200	Connect

Once connected the **Connect** button is hidden, and the Port/Baud Rate defined are used for the duration of the burning session.

The steps performed in a burning session are as follows:

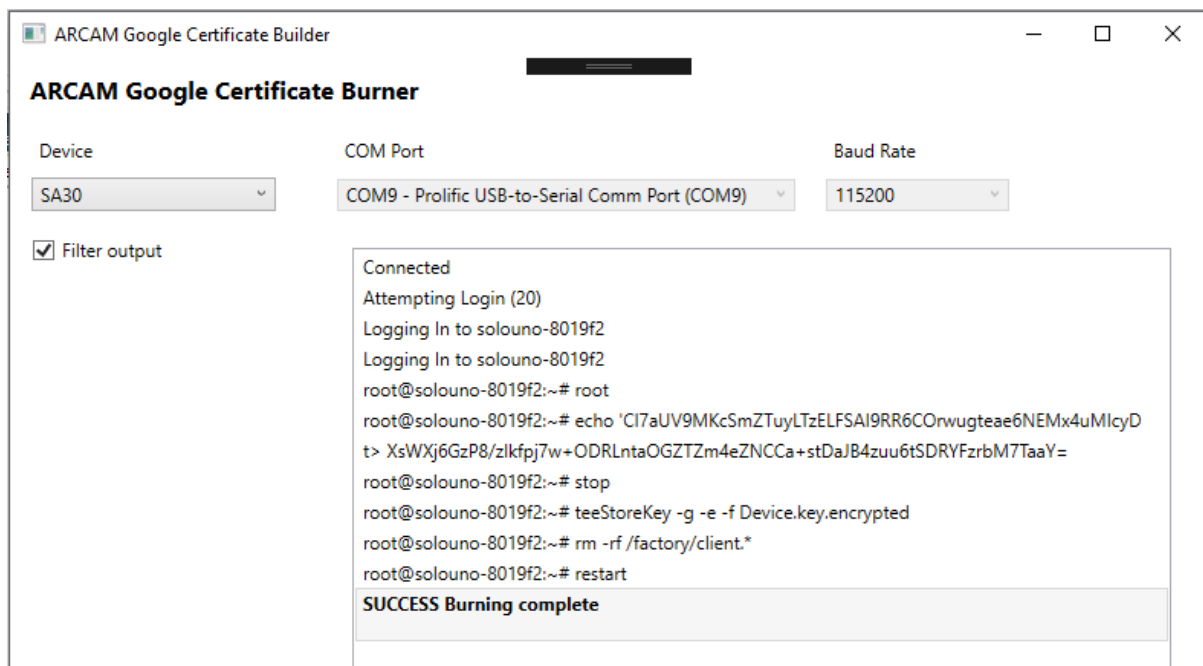
First time:

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- Start the application
- Load the AP72598_EVB_V03 board with a new Avatar board.
- Switch on the AP72598_EVB_V03 board.
- Connect the software to the AP72598_EVB_V03 board using the COM Port/Baud Rate and **Connect** button.
- The software attempts to logon to the Avatar board, and generate the certificate.
- When successful, switch off the AP72598_EVB_V03 board.

Subsequent times

- Load the AP72598_EVB_V03 board with a new Avatar board.
- Switch on the AP72598_EVB_V03 board.
- The software connects to the AP72598_EVB_V03 board using the initial connection details.
- The software attempts to logon to the Avatar board, and generate the certificate.
- When successful, switch off the AP72598_EVB_V03 board.
- Repeat for each Avatar board to be programmed.

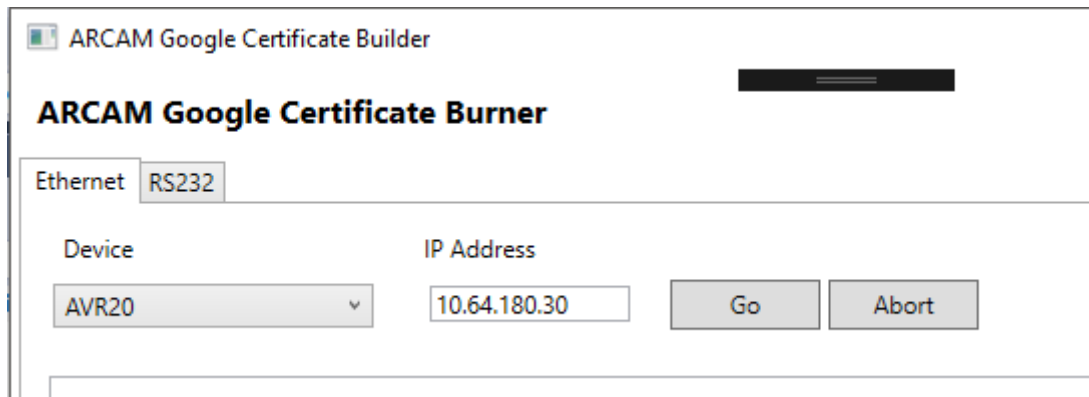


If problems are encountered while generating a certificate the Filter output checkbox can be unticked to display the full output from the Avatar (Note: This can be verbose and contains many messages not relevant to the certificate generation process)

Ethernet Certificate Burner

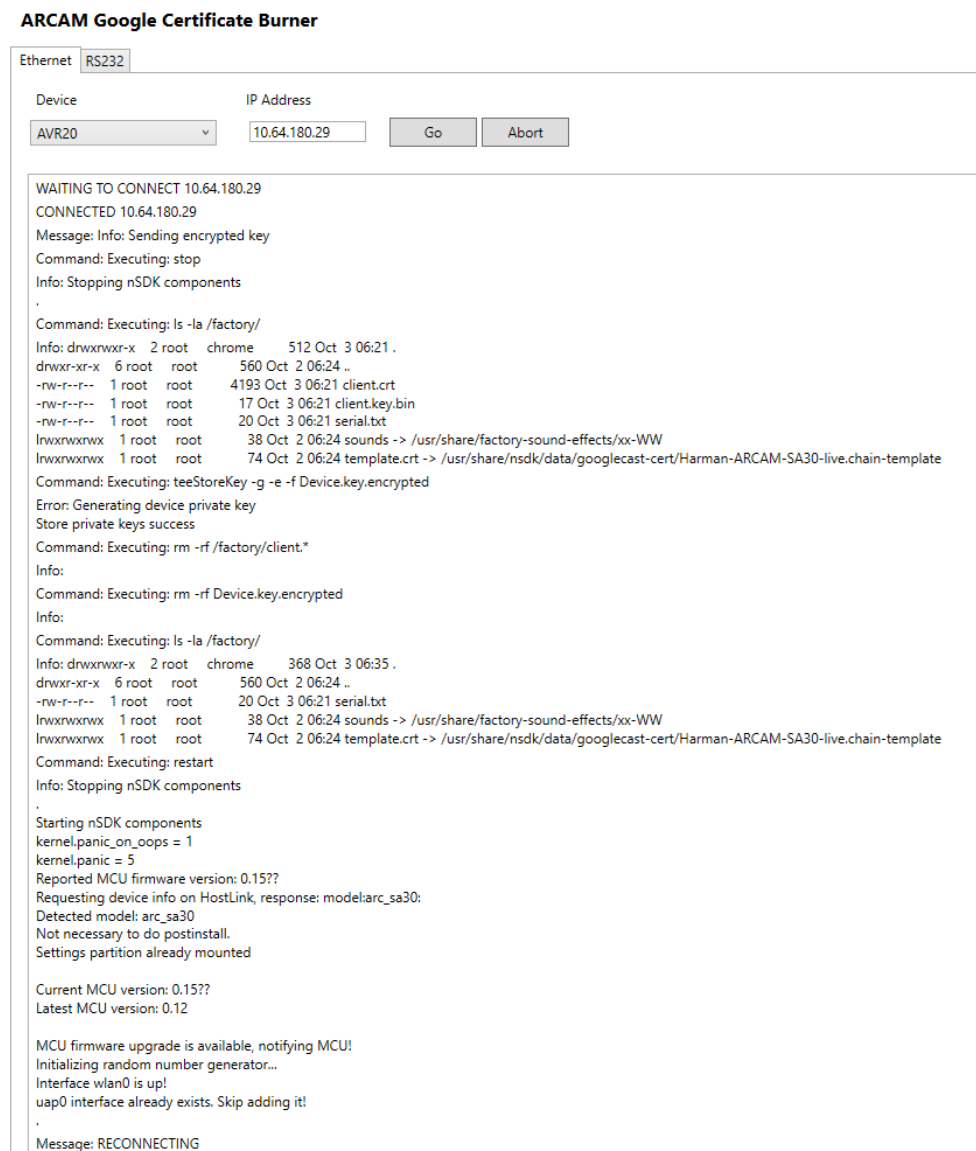
The Ethernet certificate burner can be accessed using the Ethernet tab of the ARCAM.GoogleCertificate.Burner.

Before burning the device should be connected to a network and be accessible from the PC running the Burning software. The IP Address of the device should be ascertained, and entered into the IP Address field on the Ethernet tab. The Device type should also be selected.



When ready the “Go” button should be pressed which begins the burning process:

- The software connects to the devices Avatar over the Ethernet connection
- The software copies the encrypted key to the Avatar, and executes the commands required for the Avatar to generate the certificate.



- Once complete to software prompts the user to disconnect the device.

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- NOTE: The device must be disconnected, and the software displays “DISCONNECTED” before burning another device.

```
Message: RECONNECTING
Message: RECONNECTED
Command: Executing: ls -la /factory/
Error: dnwrxwx-x 2 root chrome 368 Oct 3 06:35 .
dnwrx-xr-x 6 root root 560 Oct 2 06:24 ..
-rw-r--r-- 1 root root 20 Oct 3 06:21 serial.txt
lnwrxwxrxwx 1 root root 38 Oct 2 06:24 sounds -> /usr/share/factory-sound-effects/xx-WW
lnwrxwxrxwx 1 root root 74 Oct 2 06:24 template.crt -> /usr/share/nsdk/data/googlecast-cert/Harman-ARCAM-SA30-live.chain-template
Message: YOU CAN NOW DISCONNECT
DISCONNECTED
```