

CTG Endpoint Technical Marketing: Audio Behaviors on Codec Plus and Quad Camera

Posted by [Enrico Conedera](#) Jan 28, 2018

When using the Codec Plus or Quad Camera for advanced audio visual applications, please observe the following.

Quad Camera

There are two methods of sending a sound signal to the Quad Camera, so that the speakers will work:

1. When using the Codec Plus, the Audio Return Channel is automatically activated. HDMI output #1 on the camera is connected to HDMI input #1 on the codec. Audio is sent, essentially in the opposite direction, from the codec back to the camera over this HDMI cable. The protocol used for this is ARC (Audio Return Channel). HDMI :: Manufacturer :: HDMI 1.4 :: Audio Return Channel
2. When using the SX80, ARC does not work, because the SX80's HDMI inputs were not designed for it. Instead, there is a 3.5mm stereo unbalanced audio input on the Quad Camera that is used. The SX80 uses a special audio cable CAB-SX80-IPQC (that can also be ordered as a spare) that takes the normal Euroblock balanced audio output and adapts it to 3.5mm stereo. You can test this 3.5mm input with an iPod or similar.

Important note: It is not possible to use both the ARC channel and the 3.5mm input at the same time. When ARC is being used, the Quad Camera recognizes this and disables the 3.5mm input. If there is no ARC present on the HDMI #1 output, then the Quad Camera enables the 3.5mm input.

See the attached for the pinout of the cable CAB-SX80-IPQC.

Codec Plus

There are three methods of getting audio output from the Codec Plus: 3.5mm line output, HDMI embedded audio, and ARC.

1. The 3.5mm line output is -10dB nominal unbalanced stereo. It is active at all times and is in audio sync with the other methods.
2. HDMI embedded audio is present on HDMI output #1 only. It is active only if ARC is not being used. The codec knows when ARC is being used, and in that case will disable HDMI audio out (this does not affect the video signal). If ARC is not being used, then HDMI output #1 will contain embedded stereo audio.
3. ARC (Audio Return Channel) is automatically activated when the Codec Plus is using the Quad Camera. As described above, it uses HDMI input #1 on the Codec Plus, and HDMI output #1 on the Quad Camera. A standard HDMI cable is used to connect the two. The signal is 1080p60, so it is not required to use a 4K-certified cable for this connection.

- [CAB-SX80-IPQC pinout.png](#) 65.1 KB

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