



AC11

Meridian SpeakerLink Hub

Product Information & User Guide



Meridian's SpeakerLink is a component interlink system allowing balanced high resolution digital audio and Meridian Comms signals, or RS232 firmware updates, to be transmitted via a standard Cat 5 STP (shielded twisted pair) cable terminated with standard RJ45 connectors. This results in unprecedented ease of installation, which can often employ existing network-ready wiring. A single cable can supply all the data and audio information between two Meridian components that would previously have required separate audio and control cables. As time goes by an increasing number of Meridian products will be fitted with SpeakerLink connections.

The AC11 Meridian SpeakerLink Hub allows the interfacing of SpeakerLink DSP Loudspeakers with existing Meridian source and control products including DIN and/or BNC Comms ports and Digital audio or MHR digital audio connections. The AC11 permits the building of a complete system utilising components and loudspeakers using a combination of these connections. The unit is particularly useful for interfacing Meridian sources and surround controllers with DSP loudspeakers. Additional connections include an IR Out port, which can carry IR received by the Master loudspeaker to the Controller's IR input. Front panel indicators show the presence of power and Master and Slave SpeakerLink connections. The AC11 is designed for systems with between two and eight channels.

Typical Systems

In a typical system, the Meridian 'Controller' product will be connected to a Meridian Comms socket (DIN or BNC) on the rear panel of the AC11. BNC or DIN cables can be run from the 'Slave' ports to (and from, depending on configuration) non-SpeakerLink speakers (via a 511 if needed).

The Master SpeakerLink socket is connected to the Master DSP Loudspeaker and carries digital audio sourced from Digital Audio Input A. The slave speakers are connected to the remaining SpeakerLink connectors as required (Ch A–D) and carry digital audio sourced from the controller (for example), via the corresponding digital audio inputs.

The Front Panel

The front panel of the AC11 includes only indicator lights. On the left is the power indicator, and in the centre of the panel are indicators that illuminate when an active RJ45 SpeakerLink connection is plugged into the corresponding rear panel connector (whether the AC11 is powered or not).

The Rear Panel

From left to right, the rear panel includes the following connectors:

Power input. This barrel connector is designed for the wall-socket power supply included with the unit.

Trigger In. This 3.5mm jack socket is not currently used.

IR Out. This 3.5mm jack socket operates in conjunction with the IR Return RJ45 socket on the rear panel, delivering infrared commands back to the Controller in systems where the latter is hidden.

Master RS232. This DB9 connector allows a serial link to be established with the Master loudspeaker to enable firmware updating from the AC11 (rather than having to connect direct to the loudspeaker). To update the firmware in a series of loudspeakers with SpeakerLink connectors, plug each loudspeaker in turn to the Master RJ45 socket and perform the update.

Product highlights

Allows Meridian loudspeakers using the new SpeakerLink Cat 5-based interlink system to interface with existing components using the DIN- or BNC-based Meridian Comms system.

SpeakerLink carries balanced MHR digital audio and Meridian Comms, or RS232 firmware updates via standard Cat 5 cabling. AC11 allows the integration of both simple and complex Meridian installations using virtually any Meridian digital components.

Technical specification

Form factor

- 1U 19in rack mounting

Power

- External power supply, 12VDC 300mA max

Connections

- Power input
- Trigger in (3.5mm jack)
- IR Out to controller (3.5mm jack)
- RS232 DB9 master control port
- BNC Meridian Comms & Slave Comms
- DIN Meridian Comms & Slave Comms
- IR Return and Slave Comms Return (RJ45)
- SpeakerLink connections to Master and Slave speakers, Ch A (Master) to D (RJ45)
- Digital Audio Inputs (MHR or S/PDIF) Ch A (Master) to D (phono)

Front-panel Indicators

- Power LED
- Master (x1) and Slave (x7) LEDs

When all the loudspeakers have been updated, reconnect the actual “Master” loudspeaker to the Master socket and connect the other loudspeakers to their correct RJ45 ports.

BNC and DIN Meridian Communications Connectors.

These are labelled “Meridian Comms” and “Slave Comms”. They carry Meridian communications signals between the components that provide them; the AC11; and non-SpeakerLink loudspeakers. Connect the Comms connector on the component to the “Meridian Comms” socket. The “Slave Comms” socket delivers the Meridian communications signal back from the Master loudspeaker if it is connected via SpeakerLink, and can be used to supply Slave Comms to non-SpeakerLink loudspeakers in the system.

The BNC and DIN sockets have identical functionality. If your component includes both types of connector, BNC and DIN, you only need to use one set.

Slave Comms Return RJ45. (*This socket is seldom required.*) You can connect the SpeakerLink Output RJ45 connector on the Master loudspeaker to this socket if it is necessary to provide Slave Comms to other speakers in the system via the AC11. The signal received at this socket also appears at the Slave Comms BNC and DIN sockets (described above) to provide Slave Comms to any non-SpeakerLink loudspeakers in the system.

IR Return RJ45. In systems where the Master speaker is *not* the Controller, connect an RJ45 cable from the SpeakerLink Output on the Master loudspeaker to this socket to provide an IR signal from the IR Out socket, which can be returned to the source component. For example, if the system Controller is remotely located in a rack, you can connect the SpeakerLink Output from the Master speaker to the IR Return on the AC11, and run a 3.5mm jack cable from the AC11’s IR Out to the Controller’s IR In.

Master RJ45 socket. If the Master loudspeaker in the system is a SpeakerLink type, then connect it to this socket. The other end of the cable should be plugged into the SpeakerLink Input RJ45 socket on the Master loudspeaker. Ensure that the audio for this loudspeaker is fed into the corresponding digital audio input on the AC11. This connector also encompasses the functionality of the Slave Comms Return connector (see above).

SpeakerLink RJ45 sockets A–D. Connect the other SpeakerLink loudspeakers in the system to these sockets. Each pair of sockets corresponds to the digital audio input socket with the same letter. For example,

the signal to feed the Surround/Rear pair of loudspeakers in a surround system might be connected to the “D” sockets. In this case, the surround or rear digital audio signals from the surround processor would be connected to the digital audio socket on the AC11 labelled “D”. Each RJ45 socket carries two channels of digital audio (the same two channels as the corresponding digital audio phono connectors). During configuration, “Type” the loudspeaker to pick up the appropriate channel.

Digital Audio Input phono sockets

A–D. These sockets carry the digital audio signals from the source or controller product to the AC11. Digital audio sockets each carry two channels. As a result, it is important to connect the correct channel pair to each Digital audio input socket. Ensure that the pair of signals applied to each Digital audio input socket corresponds to the similarly-labelled pair of RJ45 connectors. Whether a loudspeaker picks up the left or right signal of the pair is determined by the loudspeaker Type configuration (except in the case of a subwoofer, where it is set with a switch on the rear panel).

Typical Port Assignments

In the case of a surround system, there may be up to eight outputs. A typical set of port assignments in such a system might be as follows. *Also see the table below.*

- A (Master):** The master speaker in the system, typically the Centre loudspeaker.
A (Slave): the other channel alongside the Master in the 2-channel pair from the controller. Typically the Subwoofer (if present).
B: Left & Right Front speakers.
C: Sides (if present).
D: Surround/Rear speakers.

In cases like the above, you will typically run cables from the AC11 out to the loudspeakers (a “star” network configuration). In the case of a simple SpeakerLink stereo system, one loudspeaker will be the Master and the other a Slave. One way of connecting the pair of speakers would be to run an RJ45 cable from the AC11 Master socket to the SpeakerLink Input on the Master speaker, and another cable from the AC11 A Slave socket to the other loudspeaker’s SpeakerLink Input.

Typical Port Assignments for Digital Audio I/O and Speaker pairs

Signal Pair	Stereo	5.1	7.1
A	Left & Right	Centre & Sub	Centre & Sub
B	—	Left & Right Front	Left & Right Front
C	—	—	Left & Right Side
D	—	Rear (Surrounds)	Rear (Surrounds)
Notes	Either can be Master	Typically Centre = Master	Typically Centre = Master

However, you are not obliged to run cables from both speakers back to the AC11. Instead, if it makes more sense, you can connect the “Master” socket on the AC11 to the Master loudspeaker’s SpeakerLink Input and “daisy-chain” from that speaker’s SpeakerLink Output to the SpeakerLink Input of the second loudspeaker in the pair.

Examples

Please note that these examples are provided solely for the illustration of principles. There may be alternative, more appropriate methods of connecting these components. See diagrams following.

1. 861 Surround Controller with seven DSP7200s

(all speakers have SpeakerLink)

- Connect the 861 digital audio outputs to the Digital Audio Inputs on the AC11. Determine which pair will carry the Master and connect it to the A input on the AC11.
- Connect a Meridian Comms port on the 861 to a Meridian Comms port on the AC11.
- Run an RJ45 cable from the Master socket on the AC11 to the Master loudspeaker.
- Hook up the remaining RJ45 SpeakerLink Slave connections on the AC11 to the SpeakerLink Input sockets of the corresponding loudspeakers.

Note that this is an instance of a “star” or “home run” network topology: all the speaker cables run back to the AC11 with no daisy-chaining.

2. G08.2 with a pair of DSP7200 speakers

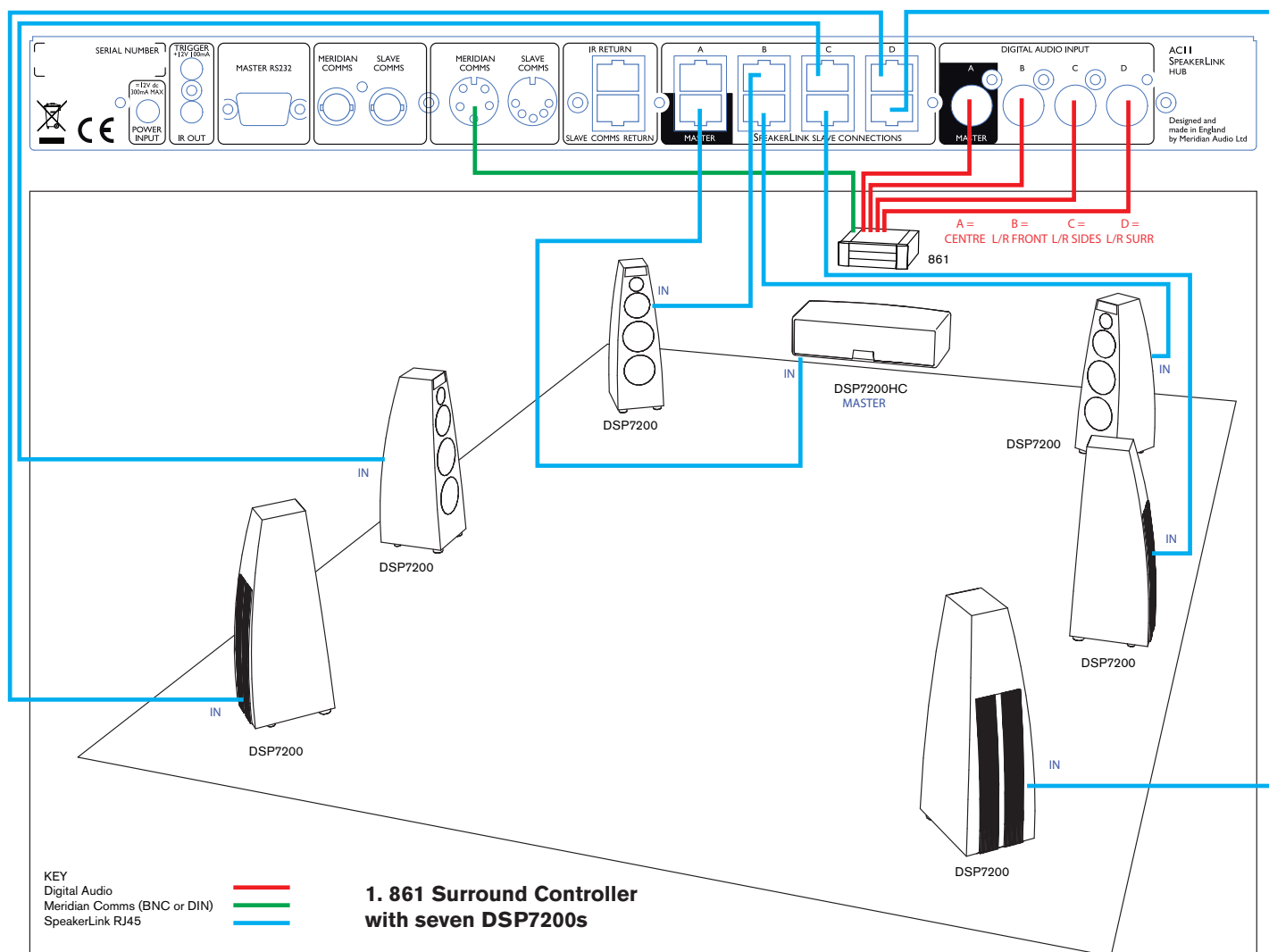
(all speakers have SpeakerLink)

- Connect the digital audio output from the G08.2 to the Master Digital Audio Input on the AC11.
- Connect Meridian Comms (DIN or BNC) from the G08.2 to a Meridian Comms socket on the AC11.
- Connect an RJ45 cable from the Master socket on the AC11 to the SpeakerLink Input socket on the Master loudspeaker (typically the left).
- Connect an RJ45 cable from the SpeakerLink Output socket on the Master loudspeaker to the SpeakerLink Input socket on the Slave loudspeaker.

3. Hybrid System: G68ADV with 3 x DSP7200 (front), 2 x DSP5200 (rear) and SW1600 sub

(fronts have SpeakerLink, others do not)

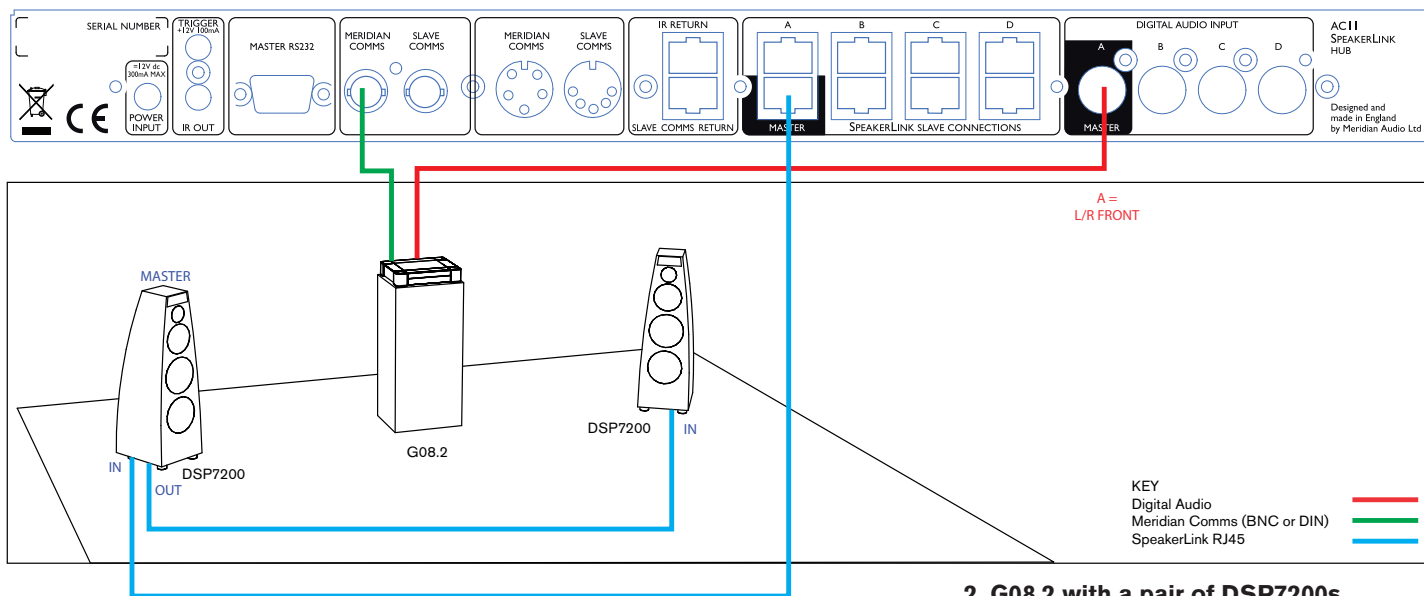
- Run a digital audio cable from the Centre/Sub output of the G68 to the A Digital Input of the AC11.
- Run a digital audio cable from the Front output of the G68 to the B Digital Input of the AC11.
- Run a digital audio cable from the Rear output on the G68 to the Digital Input on one of the rear speakers.
- Run a digital audio cable from the Digital Out of the rear speaker above to the Digital Input of the other rear speaker.
- Run a digital audio cable from the Digital Audio Output of the Centre speaker to the Digital Input of the subwoofer.
- Run Comms cables (DIN or BNC) from the Slave Comms socket on the AC11 to the Comms Input on the subwoofer, from the Comms Output on the sub to the Comms Input on one of the rear speakers, and from the Comms Output on that speaker to the Comms Input of the other rear speaker.
- Connect a G68 Comms socket to Meridian Comms on the AC11 (BNC or DIN)
- Connect an RJ45 cable from the Master socket on the AC11 to the SpeakerLink Input on the Centre speaker.
- Connect an RJ45 cable from the B socket of the AC11 to the SpeakerLink Input socket on the Front Left speaker.
- Connect another RJ45 cable from the SpeakerLink Output of the Front Left speaker to the Input of the Front Right speaker.



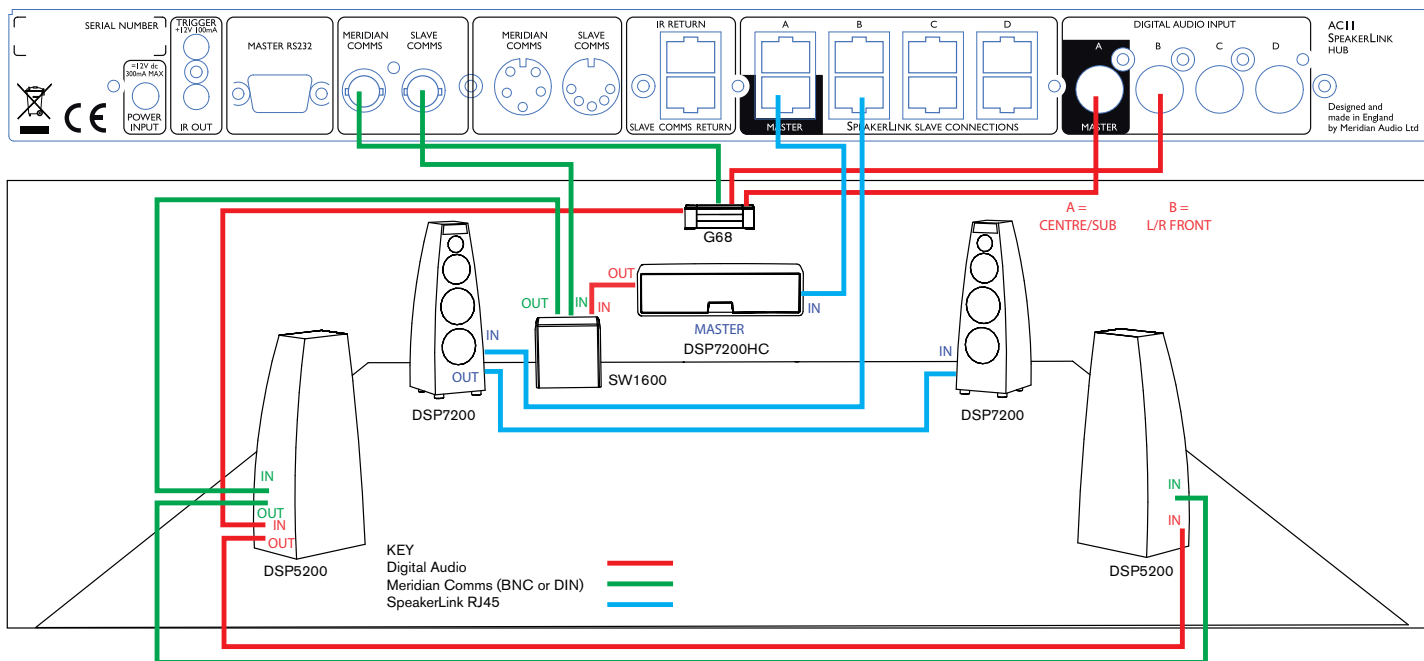
AC11 front and rear panel views

AC11

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2. G08.2 with a pair of DSP7200s



3. Hybrid system: G68ADV with 3 x DSP7200 (front), 2 x DSP5200 (rear) and an SW1600 digital subwoofer