DXD-16

Master/Slave Group vs Independent Masters

Menu 5.1 offers 2 different modes for each of its 4 ports: Master/Slave Group and Independent Masters. This documents explains briefly the differences between the two. Note that, although it is not required, for simplicity, all ports are set one way or the other in this document.

MASTER/SLAVE GROUP

With 'Master/Slave Group' the DXD-16 can operate like a PTP **Boundary Clock** where 1 port will act as a slave, receiving time from an external Grandmaster and the other 3 ports as a master, distributing time to downstream slaves (figure 1).

For one port to assume the state of PTP Slave, '**PTP Mode**' must be selected in the Reference menu (1.1). However, depending on the BMCA* result, unlike a true Boundary Clock, all 4 ports of the DXD-16 could be Grandmaster. Typically, that would be determined by how Priority 1 is set (menu 5.2).
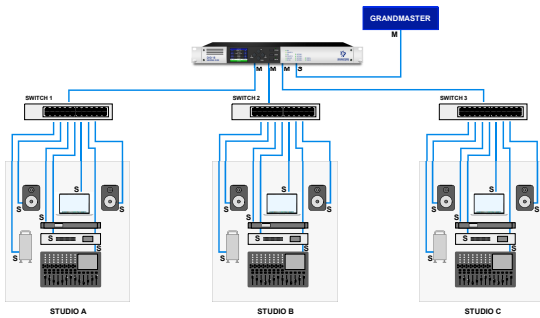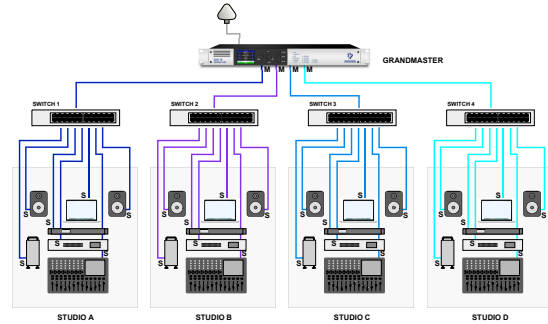

Fig 1: Boundary Clock

Fig 2: 4 Independent Masters

INDEPENDENT MASTERS

With 'Independent Master' each port of the DXD-16 is independent (figure 2) which means that some parameters are set individually for each port such as its PTP Domain and its Priorities (1&2). It also means that these ports can *only* be Master and not follow an external PTP device.

FINAL NOTES

While 'Independent Master' is simpler and more straightforward, 'Master/Slave Group' is more versatile.

With 'Master/Slave Group', the networks attached to the 4 ports are connected as a group in a single domain and, if the BMCA* selects an external device as the Grandmaster, the 4 ports remain in sync.

With 'Independent Master', the networks are in sync only when the DXD-16 is MASTER *on ALL ports*. If another device becomes Master on one of the networks, the DXD-16 port attached to that network will go PASSIVE (as it can only be master) and that network will no longer be in sync with the others.

* BMCA, the Best Master Clock Algorithm, is used to select a Grandmaster autonomously based on several criteria, the first one being Priority 1 (lower values have a higher priority), as defined in IEEE 1588.