cable from the ADAT device to the FC-8's ADAT In optical connector. If you use the TDIF device as sync source, connect the special cable referred to above.

Indicators

We have included three green LED indicators on the FC-8 to confirm correct operation of the unit during transfer activities. From top to bottom, these LEDs (which are adjacent to the BNC Word Clock output) indicate: ADAT Receive; TDIF Receive; and Lock. If all 3 LEDs are off, either the unit has no power, or there are FC-8 clock/sync errors. There are 3 possible FC-8 clock/sync error conditions:

1 the FC-8 PLL is not locked to the ADAT optical input,
2 there is no LRCK clock being driven by the TDIF device to the TDIF connector, and
3 the ADAT and TDIF units are not locked together.

The ADAT Receive LED illuminates to indicate that: a) there are no FC-8 clock/sync errors; and b) non-zero ADAT data is being received (note that if no inputs are selected on the ADAT machine, it will only transmit zero data). If the Lock LED is on but the ADAT Receive LED is off, no or zero ADAT data is being received. If the ADAT Receive LED flashes, it indicates that errors exist in the ADAT data. This could be caused by a damaged ADAT optical input cable.

The TDIF Receive LED illuminates to indicate that: a) there are no FC-8 clock/sync errors and b) non-zero TDIF data is being received (note that if no inputs are selected on the TDIF machine, it will only transmit zero data). If only the ADAT Receive LED is off, no or zero ADAT data is being received. If the Lock LED is on but the TDIF Receive LED is off, no or zero TDIF data is being received.

The Lock LED will illuminate when the two devices are locked (no FC-8 clock/sync error), be off when there are FC-8 clock/sync errors, and flash if there are ADAT input data errors but no FC-8 clock/sync errors.

Normally, all three LEDs will be permanently lit during successful transfers of non-zero data.

How it works

In normal operation, the FC-8 extracts word clock information from the input ADAT data stream and provides it at the BNC Word Clock output for connection to the TDIF device. In addition, the FC- 8 extracts the audio data from the ADAT stream and supplies this data to the TDIF connector. Simultaneously, data input to the TDIF connector is translated into ADAT format and supplied at the ADAT Out optical connector for bi-directional use. The unit will lock to any sample rate in the range 28–54 kHz.

Questions

If you have any queries about FC-8 operation, please contact your Apogee dealer or our Technical Support department. You can reach Tech Support by calling +1 310/915-1000 during Pacific Time office hours. You can also find information, application notes and tutorials on all Apogee products on our Web site: http://www.apogeedigital.com/.

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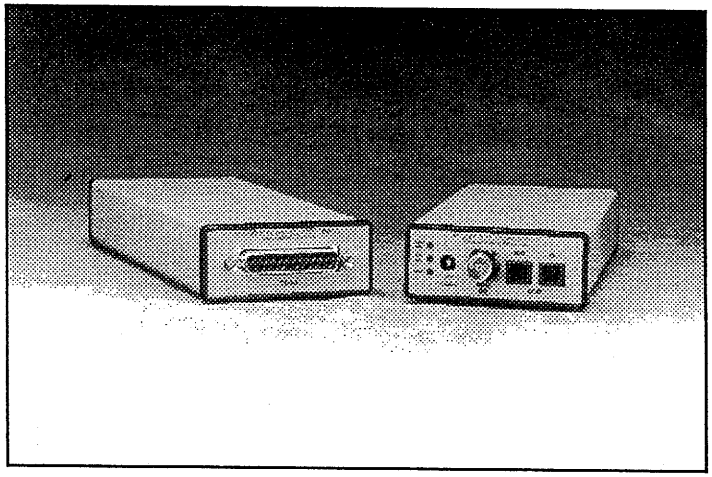

APOGEE FC-8
ADAT/TDIF FORMAT CONVERTER
Operating Guide

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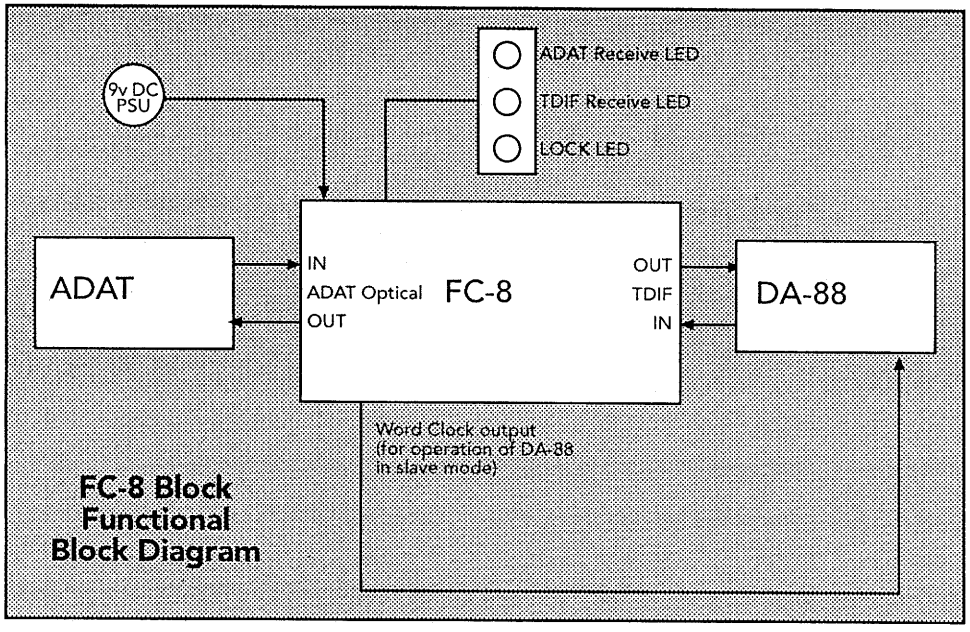
APOGEE FC-8
ADAT/TDIF FORMAT CONVERTER
Operating Guide

The Apogee Electronics FC-8 format converter represents a compact, simple and cost-effective solution to the problem of conversion between the two most common modular digital multitrack formats: Alesis ADAT (optical) and Tascam Digital Interface (TDIF), used on machines such as the DA-88. In addition to multitrack recorders, these interfaces appear on an increasing number of other devices including digital mixers and signal processors. If you own an Apogee AD-1000 A/D converter, you can use the FC-8 to allow recording on DA-88-compatible machines in addition to ADAT recorders, using the AD-1000's built-in optical interface.



FC-8 Block Functional Block Diagram

Setup

You should find the FC-8 simple to configure and operate. First, ensure that you have the required interconnects.

For connection with an ADAT machine or interface, you will need at least one, possibly two, ADAT optical fiber cables (TosLink). You can obtain these in 1m lengths from your Apogee dealer: order part number OPT-ADT. The optical cable from the ADAT unit to the FC-8's ADAT input must always be present, as the ADAT input is always used as the sync reference source. You will need a second optical cable if you wish to make TDIF to ADAT transfers.

For connection to a piece of equipment fitted with a Tascam TDIF interface, you will need to obtain a TDIF cable. You can obtain these from Tascam: suitable cables include the PW-88D (1m) and PW-88DL (5m). *Important: This interface requires a unique pinout and cabling. Do not use any cable other than a specific TDIF interface cable for this purpose, or you may cause damage to connected devices! Note that the DB-25 connector on the FC-8, in common with the TDIF connectors on Tascam units, utilizes metric threads. They differ in this respect from commonly-available DB-25 connectors. The connectors on Tascam TDIF cables match these threads. Other cables may not.*

In addition, you will need a Word Clock cable for ADAT master (default) operation. In this mode, the ADAT device provides the clock source to the FC-8, and the FC-8 provides Word Clock to the TDIF device via the BNC socket on the FC-8. Typically this consists of a 75Ω coaxial digital cable with a BNC male connector at each end: for example, the WE-BB-1.0 1m word clock cable available from Apogee.

Now you can connect the FC-8 and power it up. You will find the connection and power-up sequence largely immaterial. However, for trouble-free results, we suggest the following:

1 Ensure that the FC-8 and the source and destination units are powered down.
2 Connect the TDIF interface cable between the DB-25 connector on one end of the FC-8 and the TDIF connector on your source or destination unit.
3 Connect the ADAT Optical interface cables. First, remove the plastic blanking plugs from the connectors and store in a safe place. *For normal operation, ensure that your ADAT source "out" socket remains permanently connected to the ADAT "in" socket on the FC-8.* If you are transferring from a TDIF source to an ADAT destination, connect the ADAT "out" on the FC-8 to the ADAT "in" on your destination device. If you are going to use the unit in both directions, you can leave both optical cables connected.
4 For ADAT master (default) operation (in which the Word Clock source is derived from the ADAT device), connect a Word Clock cable from the ADAT Word Clock BNC connector on the FC-8 to the Word Clock input on the TDIF device. Ensure the TDIF device is set to synchronize to Word Clock signals applied to this connector, and that the ADAT device is set to internal clock at the desired sample rate (the FC-8 will lock to any sample rate in the range 28–54kHz, allowing varispeed of at least ±12% at 44.1 and 48kHz).
5 Power up the equipment.

Note: *Operation of the FC-8 requires the ADAT to provide word sync reference to the FC-8 via the ADAT optical input cable. For ADAT master (default) operation, the FC-8 then provides word sync reference to the TDIF machine via a BNC cable as described above. You can alternatively use the TDIF device as the master. To do this, use the separate word clock output on the TDIF device and connect it directly (ie not via the FC-8) to the ADAT destination device's external sync connector, ensuring that you set the ADAT device to lock to the external clock. For example, to synchronize a Tascam DA-88 to an Alesis ADAT recorder, you will need a sync cable to carry Word Clock from the DA-88's Word Clock Out BNC connector to the Sync In 9-pin D-connector on the rear of the ADAT machine, where the clock should appear at pin 7 and ground on pin 2. We have found that after the use of varispeed, some DA-88 type machines do not reset the word clock accurately. As a result, we strongly recommend that, when using a DA-88-type machine as the master word clock source, you reset the sample rate after the completion of any varispeed operation (eg select another sample rate and then return to the correct setting).*

Operation

You have now set up the FC-8 for operation. You can send data in either direction through the unit, irrespective of whether the TDIF or the ADAT device acts as master or slave. **You can even transfer data in both directions at the same time.** However, you should pay special attention to the synchronization requirements discussed in the previous section. If you use the ADAT device as the sync source, be sure to connect the optical