DEVELOPMENT STANDARD

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BASIC DRIVE INTERFACE FOR
FLEXIBLE-DISK-CONTROLLER-COMPATIBLE
1/4-INCH (6.35 MM) MINI DATA CARTRIDGE TAPE DRIVES.

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1.0 SCOPE

This standard describes a basic drive interface for flexible disk controller compatibl e 1/4 inch (6.35 mm) mini data cartridge tape drives.

2.0 PHYSICAL INTERFACE

2.1 POWER CONNECTOR

The dri ve shall contain an AMP 1-480426-0 or equivalent power input connector. The mating connector shall be an AMP type 1-480424-0 with type 60619-1 female contacts. Power shall be connected as follows:

p i n	v o 1 t a g e
1	12 V D C
2	12VDC return
3	5VDC return
4	5VDC

2.2 SIGNAL CONNECTOR

The drive shall contain a 34 conductor card edge signal connector. The mating connector shall be an AMP 5837175 or equivalent connector.

2.3 SIGNAL CABLE

The signal cable shall be a 34 conductor, AWG #28 ribbon cabl e with a minimum of two (2) and a maximum of five (5) mating connectors for daisy chain installation. The cable shall be a maximum of six (6) feet.

2.4 SIGNAL AND PIN ASSIGNMENTS

PIN	NAME	DIRECTION	DESCRIPTION
2	/LSD	to drive	NOT USED BY TAPE DRIVE
4	/INU	to drive	NOT USED BY TAPE DRIVE
6	/DS4	to drive	DRIVE SELECT 4 - Selects drive addressed as #4
8	/IDX	to contr.	INDEX PULSE - Initiates and terminates transfer of controller data to drive when formatting, generated by drive at beginning of each segment during read or write operations
10	/DSI	to drive	DRIVE SELECT 1 - Selects drive addressed as #1
12	/DS2	to drive	DRIVE SELECT 2 - Selects drive addressed as #2
14	/DS3	to drive	DRIVE SELECT 3 - Selects drive addressed as #3
16	/MOT	to drive	NOT USED BY TAPE DRIVE
18	/DIR	to drive	NOT USED BY TAPE DRIVE
20	/STP	to drive	STEP - can be used to send commands to drive
22	/WD	to drive	WRITE DATA - a pulse per flux transition for MFM encoded data to be recorded on tape, low going edge indicates transition
24	/WG	to drive	WRITE GATE - asserted when write data is to be recorded on tape
26	/TKO	to contr.	TRACK 00 - used to transfer drive status to f1exib1e disk controller
28	/WP	to contr.	WRITE PROTECT - used to transfer drive status to flexible disk controller
30	/RD	to contr.	READ DATA - a pulse per flux transition recovered from the recorded tape, low going edge indicates transition
32	/SS	to drive	SIDE SELECT - can be used to send commands to tape drive
34	/DC		NOT USED BY TAPE DRIVE
ODDS	GND	---------	SIGNAL GND

2.5 SIGNAL TERMINATION

The standard termination shall be 150 ohms +/- 5% to 5VDC. One of the dri ves connected to the daisy cabl e shall terminate all of the signal lines from controller to drive except for the four drive select lines. Each select line shall be terminated by the drive using it. Unused select lines are not terminated. Signal lines from drive to controller shall be terminated by the controller.

2.6 NUMBER OF DRIVES

There shall be a maximum of 4 drives in any combination of flexible disk drives and flexible disk controller compatible 1/4 inch mini data cartridge tape drives which can be selected by the flexible disk controller.

2.7 DRIVE SELECTION

Each drive shall be provided with a means of connecting any one of the four drive select lines from the interface to the drives internal drive select line.

2.8 SIGNAL LEVELS, DRIVERS AND RECEIVERS

Signal levels required shall be as follows:

logic "one"	0 to 0.8 VDC
logic "zero"	2 to 5.25 VDC

2.9 SIGNAL DRIVER

The signal driver used by the drive shall be a 7438 or equivalent.

2.10 SIGNAL RECEIVER

The signal receiver used by the drive shall be a 74LS14 or equivalent. One signal receiver per line per drive maximum shall be used.