

**MICRODIA®**

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**160XTRAPRO™**  
**SD™+USB Card**  
**Specifications**

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**SD™+USB Card Features**

- Ultra Fast Read and Write Speeds of 24.0MB/sec
- Backward compatible with Multi Media Cards
- Selectable write protect switch for preventing your data from being overwritten
- Direct access via USB 2.0 connector
- Advanced IC packaging technology
- PRIME Grade Flash ICs
- Waterproof, dust proof, ESD proof and extreme temperature resistant
- Durable, reliable and thoroughly tested – temperature tested (heat and cold); shock and vibration tested
- Compliant with the Secure Digital Music Initiative. (SDMI)
- Tested internally by MICRODIA under HD BENCH
- MICRODIA's Exclusive International Lifetime Limited Warranty

## Pin Configuration

Pin No.	SD Mode			SPI		
	Name	Type	Description	Name	Type	Description
1	CD/DAT3	I/O/PP	Card Detect / Data Line	CS	I	Chips Select
2	CMD	PP	Command / Response	DI	I/PP	Data In
3	VSS	S	Supply Voltage Ground	VSS	S	Supply Voltage Ground
4	VDD	S	Supply Voltage	VDD	S	Supply Voltage
5	CLK	I	Clock	SCLK	I	Clock
6	VSS	S	Supply Voltage Ground	VSS	S	Supply Voltage Ground
7	DAT0	I/O/PP	Data Line (Bit 0)	DO	OPP	Data Out
8	DAT1	I/O/PP	Data Line (Bit 1)	N/A		
9	DAT2	I/O/PP	Data Line (Bit 2)	N/A		

## DC Characteristics

(Operating Temperature = -25 to 85°C)

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	$V_{DD}$	2.7	3.3	3.6	V
Operating Current	$I_{CC}$	-	-	50	mA
Standby Current	$I_{SB}$			70	
Input Leakage Current	$I_{LI}$	-10	-	10	V
Output Leakage Current	$I_{LO}$	-10	-	10	V
Input High Voltage	$V_{IH}$	$0.625 \times V_{DD}$	-	$V_{DD}$	V
Input Low Voltage	$V_{IL}$	$V_{SS} - 0.3$	-	$0.25 \times V_{DD}$	V
Output High Voltage	$V_{OH}$	$0.75 \times V_{DD}$	-	-	V
Output Low Voltage	$V_{OL}$	-	-	$0.125 \times V_{DD}$	V

## Electrical Characteristics

Type	Measurement
Card support	2.7V to 3.6V
Card support Frequency	0 to 50Mhz
Data width support	1 and 4 bits
Data Transfer Rate	Up to 24.0MB/s

## Environment Specifications

Type		Standard
Temperature	Operating	-25°C to - 85°C
	Non-Operating	-40°C to - 85°C
Humidity	Operating	8% to – 95%, non-condensing
	Non-Operating	8% to – 95%, non-condensing
Vibration	Operating	15G peak-to-peak Max.
	Non-Operating	15G peak-to-peak Max.
Mechanical Shock	Operating	1,000G Max
	Non-Operating	1,000G Max

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### Physical Dimension Specifications

Type	Measurement
Length	32.00mm $\pm$ 0.10mm
Width	24.00mm $\pm$ 0.10mm
Thickness	2.10mm $\pm$ 0.15mm
Weight	Approx. 2.0 g