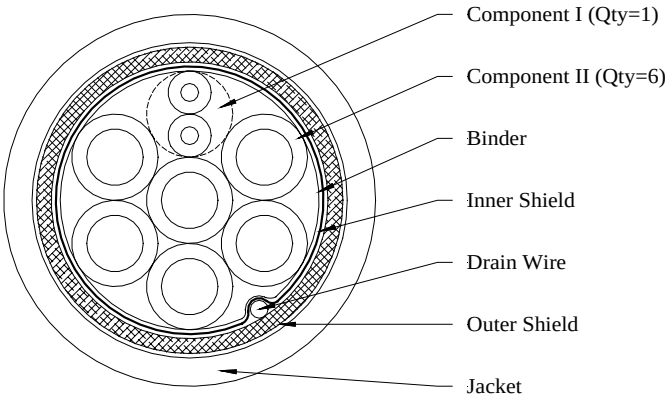
6 CONDUCTOR 20 AWG + 1 PAIR 28 AWG USB2.0 LEAD-FREE COMPOSITE CABLE



CONSTRUCTION

Component I – 28 AWG Pair
Conductor: 28 AWG 7/36 Tin Plated Copper, 0.015 Inch Diameter
Insulation: 0.0065 Inches of Polypropylene, 0.028 Inch Diameter
Pair: 2 Insulated Conductors Twisted Together

Component II – 20 AWG Singles
Conductor: 20 AWG 7/28 Tin Plated Copper, 0.038 Inch Diameter
Insulation: 0.0075 Inches of XPbT, 0.053 Inch Diameter

Final Assembly
Core: 1 Component II (#2)
Layer #1: 1 Component I (#1) and 5 Component II (#3-7) Cabled Together Around Core
Binder: Polyester Tape, 25% Overlap
Inner Shield: Aluminum/Polyester Tape, Alum Side Facing Out, 25% Overlap
Drain Wire: 28 AWG 7/36 Tin Plated Copper, 0.015 Inch Diameter
Outer Shield: 36 AWG Tin Plated Copper Braid, 85% Minimum Coverage
Jacket: 0.028 Inches of Flexible XPbT, Color – TBD
Diameter: 0.245 ± 0.010 Inches
Print Legend (Black Ink): "TYPE CM 2C/28 AWG AND 6C/20 AWG (UL) MADISON CABLE C(UL) TYPE CMH"

COLOR CODE

Component #	Component	Conductor #1	Conductor #2
1	I	Green	White
2	II	Brown	
3	II	Blue	
4	II	Orange	
5	II	Yellow	
6	II	Red	
7	II	Black	

ELECTRICAL CHARACTERISTICS

Component I[1] – 28 AWG Signal Pair
Differential Impedance: 90 Ohms ± 15% @ TDR
Common-Mode Impedance: 30 Ohms ± 30% @ TDR
Time Delay: 1.54 ns/ft Maximum
Time Delay Skew: 100 ps/4.5 m Maximum
Attenuation:

Frequency (MHz)	Attenuation (dB/4.5 m Maximum)
0.064	0.08
0.256	0.11
0.512	0.13
0.772	0.15
1	0.20
4	0.39
8	0.57
12	0.67
24	0.95
48	1.35
96	1.90
200	3.20
400	5.80

Dielectric Withstanding Voltage: 500 VAC for 1 Minute
Insulation Resistance: 15,000 Megohm-ft Minimum @ 20°C
Conductor DC Resistance: 0.070 Ohms/ft Maximum @ 20°C

[1] Tested per USB 2.0 – 2000

Component II – 20 AWG Singles
Dielectric Withstanding Voltage: 500 VAC. For 1 Minute
Insulation Resistance: 15,000 Megohm-ft Minimum @ 20°C
Conductor DC Resistance: 0.011 Ohms/ft Maximum @ 20°C

SAFETY CERTIFICATION

UL Listing: Type CM as specified in Article 800 of the National Electrical Code
C(UL) Listing : Type CMH

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REVISION HISTORY

1	08/12/04	HA	Initial Release

Spec Number:	**101-1624**				
Part Number:					
Customer:		**Prepared By:**	H. Abusamra	8/12/04	**Page**
Customer #:		**Reviewed By:**	A. Fan	8/12/04	1 of 1