

Specification for Approval

Product Part Number

- TFR2304T##

Product Description

- S/FTP, 23AWG solid bare copper, CAT.7A, CMR
- Each pair twist with metal foil screen
- With braid wire

Product Features

- High performance of transmission.
- High quality of safety property.
- Sweep frequency up to 1000 MHz.

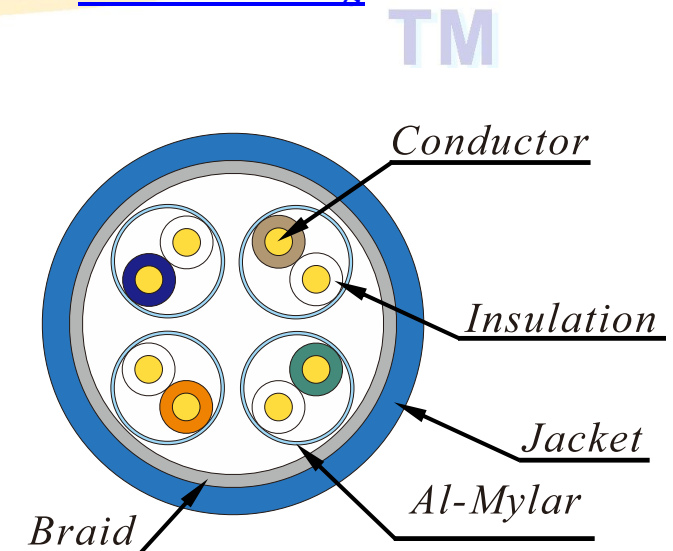
Application

- Structure cabling for horizontal and building backbone cable.
- Transmission of digital and analogue for data, video and audio applications.
- Metal shielded and braided providing good protection from EMI noise.
- Beyond IEEE 802.3an 10GBASE-T and legacy speeds.
- CDDI / ATM / Token Ring
- IEEE 802.3af (PoE) / IEEE 802.3at (PoE+)

Applicable Standard

- Electrical Transmission
 - ISO/IEC 11801 (Edition 2.2)
 - IEC 61156-5 (Edition 2.1)
- Flame Test
 - UL 1666 (CMR)
- Material and Construction
 - UL 444
 - CSA 22.2 NO.214
- EU Directive 2011/65/EC (RoHS2)
- EU Directive 2006/95/EC (LVD)
- CE compliance date: 2010.01.01

Sectional Drawing



Establish Date	2014.03.01	Edition	1.1	Revised Date	2014.10.13
----------------	------------	---------	-----	--------------	------------

ABA Industry, Inc.

Specification for Approval

Material and Construction

Conductor	Material	23AWG solid bare copper	
Insulation	Material	Polyolefin (PO)	
	Color code & diameter	Blue & white	1.45 ± 0.02 mm
		Orange & white	1.45 ± 0.02 mm
		Green & white	1.45 ± 0.02 mm
Brown & white		1.45 ± 0.02 mm	
Twisted	Description	Left hand direction	
Pair shield	Material	Al Mylar tape	
	Description	100 % coverage and aluminum side facing out	
Assembly	Description	Left hand direction	
Braid	Material	Tinned copper	
	Description	> 40 % coverage	
Jacket	Material	Flame retardant polyvinyl chloride (FRPVC)	
	Diameter	8.00 ± 0.2 mm	
	Thickness	0.50 ± 0.05 mm	
	Color	Per customer's request	
Marking	ELITE 40GS CAT.7A / CLASS F _A S/FTP 23AWG 4PR CMR ETL VERIFIED TO IEC 61156-5 mmyy XXXXM		
	Note 1: mmyy is date code.		

Usage & Environmental Condition

Temperature range	Storage & shipping	-20°C to 75°C
	Installation	0°C to 60°C
	Operation	-20°C to 60°C
Minimum bending radius	≥ 4 times of overall diameter	
Maximum pulling tension	≤ 110 N	

ABA Industry, Inc.

Specification for Approval

Physical & Electrical Characteristics (at 20°C)

Temperature & voltage rating	75°C / 300V
Spark test	2.5 KV DC
AC leakage current through overall jacket	≤ 10mA (1.5KV AC)
Cable cold bend	-20°C for 4 hr
Conductor DC resistance	≤ 9.5 Ω/100m
Resistance unbalance	≤ 5%
Dielectric strength	1.5 KV ac for 2 s
Insulation resistance	≥ 5000 MΩ · m
Mutual capacitance	≤ 5.6 nF/100m
Capacitance unbalance pair-to-ground	≤ 160 pF/100m

Transmission Performance (at 20°C)

Frequency (MHz)	IL	NEXT	PS.NEXT	ACRF	PS.ACRF	RL	Propagation Delay	Delay Skew	PS. ANEXT	PS. AACRF
	Max. dB/100m	Min. dB/100m	Min. dB/100m	Min. dB/100m	Min. dB/100m	Min. dB/100m	Max. ns/100m		Max. ns/100m	Min. dB/100m
4	3.75	78.00	75.00	78.00	75.00	23.01	552.00	25.00	67.00	67.00
8	5.22	78.00	75.00	77.24	74.24	24.52	546.73		67.00	67.00
10	5.82	78.00	75.00	75.30	72.30	25.00	545.38		67.00	67.00
16	7.34	78.00	75.00	71.22	68.22	25.00	543.00		67.00	67.00
20	8.21	78.00	75.00	69.28	66.28	25.00	542.05		67.00	67.00
25	9.18	78.00	75.00	67.34	64.34	24.32	541.20		67.00	65.24
31.25	10.26	78.00	75.00	65.40	62.40	23.64	540.44		67.00	63.30
62.5	14.57	78.00	75.00	59.38	56.38	21.54	538.55		67.00	57.28
100	18.53	75.40	72.40	55.30	52.30	20.11	537.60		67.00	53.20
150	22.82	72.76	69.76	51.78	48.78	18.87	536.94		67.00	49.68
200	26.47	70.88	67.88	49.28	46.28	18.00	536.55		67.00	47.18
250	29.73	69.43	66.43	47.34	44.34	17.32	536.28		67.00	45.24
300	32.69	68.24	65.24	45.76	42.76	17.30	536.08		67.00	43.66
350	35.44	67.24	64.24	44.42	41.42	17.30	535.92		67.00	42.32
400	38.01	66.37	63.37	43.26	40.26	17.30	535.80		67.00	41.16
450	40.45	65.60	62.60	42.24	39.24	17.30	535.70		67.00	40.14
500	42.76	64.92	61.92	41.32	38.32	17.30	535.61		67.00	39.22
600	47.10	63.73	60.73	39.74	36.74	17.30	535.47		65.83	37.64
700	51.13	62.72	59.72	38.40	35.40	16.63	535.36		64.82	36.30
800	54.92	61.85	58.85	37.24	34.24	16.05	535.27		63.95	35.14
900	58.51	61.09	58.09	36.22	33.22	15.54	535.20	63.19	34.12	
1000	61.93	60.40	57.40	35.30	32.30	15.08	535.14	62.50	33.20	

ABA Industry, Inc.

Specification for Approval

Shipping Information

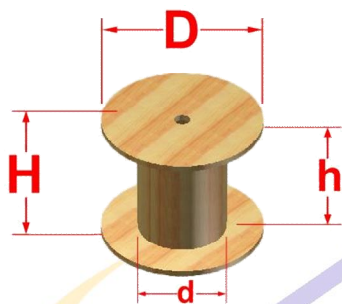
Item	Dimension	Nominal net weight
Cable	305 m	19.21 kg (42.35 lb)
Plywood reel	D440 x d270 x H320 x h290 mm	3.9 kg
Pallet	1150 x1100 x120 mm	14.1 kg

Container type	Capacity of pallet	Capacity of reel
20 feet	20	300
40 feet	40	600

Shipping could use standard delivery form or per customer`s request.

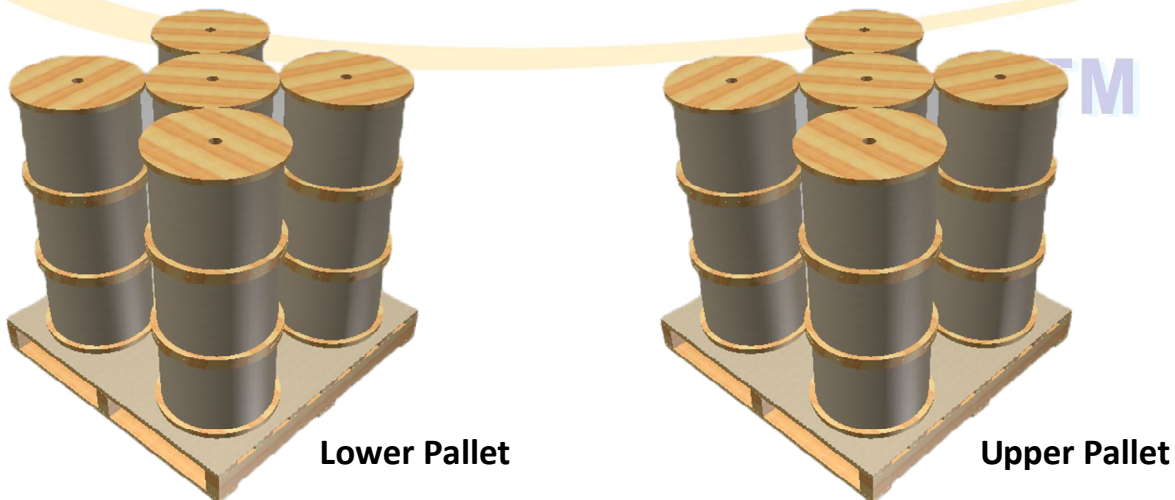
Schematic Drawing of Reel & Package

Fumigated plywood reel.



Schematic Drawing of Package

Each package of pallet delivered with plastic wrap and packing strap.



Revised Information

Edition	Revised Description	Revised Date
1.1	Revised transmission performance table.	2014.10.13