

# TECHNICAL DATA

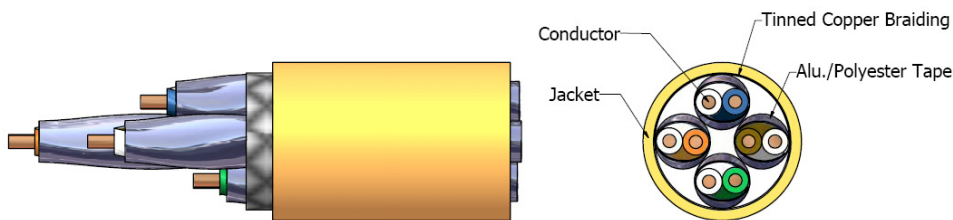
Page	1/4
Edition	2.0
Doc No.	TR-120378

<b>Category 7</b>	<b>4 X 23AWG – 600MHz S-FTP LSHF Cable</b>	<b>67904H</b>
-------------------	--	---------------

**A - APPLICATION :**

For horizontal network and voice application in a structured cabling system, including IEEE 802.3an : 10G Base-T Gigabit Ethernet, 2.4/1.2Gb/s ATM, digital video, broadband & baseband analog video.

**B – CONSTRUCTION :**



Solid bare copper conductors insulated with foam thermoplastics polyolefin. Two insulated conductors twisted together to form a pair shielded with Aluminum/polyester foil. Four such pairs cabled to form the basic unit. Tinned copper braiding overall the 4pairs. Overall jacket with LSHF compound.

**C - REFERENCE STANDARDS :**

IEC 61156-5 ED 2.0

**D - CERTIFICATION :**

Delta EC

**E - CABLE DESCRIPTION :**

<b><u>1 – CONDUCTOR</u></b>	
Size	23AWG
Type	Solid bare copper
Diameter (mm)	0.56± 0.01
<b><u>2 – INSULATION</u></b>	
Type	Foam PE
Diameter (mm)	1.28 ± 0.05
Min. thickness (mm)	0.35

			<b>App. Date :</b> 2011/06
--	--	--	----------------------------

## TECHNICAL DATA

<b>Page</b>	2/4
<b>Edition</b>	2.0
<b>Doc No.</b>	TR-120378

<b>E. CABLE DESCRIPTION :</b>		
<b>Color code</b>		
<b>Pair 1 -</b>		Blue / White
<b>Pair 2 -</b>		Orange / White
<b>Pair 3 -</b>		Green / White
<b>Pair 4 -</b>		Brown / White
<b>4 – SHIELD</b>		
<b>tinned copper drain wire</b>		0.495 mm
<b>Type (each Pair Shielded)</b>		Aluminum Polyester Tape
<b>Type (Overall braiding)</b>		Tinned Copper 40% Braiding
<b>5 – JACKET</b>		
<b>Type</b>		LSHF
<b>Overall Diameter (mm)</b>		7.76± 0.3
<b>F. TECHNICAL DATA – PHYSICAL :</b>		
<b>1. Flame retardant test</b>		
<b>2. Cold bend test</b>	-20 ± 2°C X 4hrs no. crack	
<b>3. Dielectric strength</b>	AC 1.7 KV for 2 s	
<b>4. Insulation</b>	<b>Before Aging</b>	<b>After aging</b>
<b>Min. Tension strength (psi)</b>	1300	75% before aging (100°C X 48hrs)
<b>Min elongation (%)</b>	300	75% before aging (100°C X 48hrs)
<b>5. Jacket</b>		
<b>Min. Tension strength (psi)</b>	1300	85% before aging (100°C X 48hrs)
<b>Min elongation (%)</b>	100	50% before aging (100°C X 48hrs)
<b>6. Min. bending radius (mm)</b>	240	
<b>7. Max. pulling tension (lbs)</b>	40	
<b>8. Installation temperature</b>	0°C to +50°C	
<b>9. Operating temperature</b>	-10°C to +50°C	
<b>G. PACKING :</b>		
500/1000m on a wooden drum overall wrapped over by PE film		

			<b>App. Date :</b> 2011/06
--	--	--	----------------------------

## TECHNICAL DATA

Page	3/4
Edition	2.0
Doc No.	TR-120378

H. TECHNICAL DTAT - ELECTRICAL			
1. Conductor resistance ( $\Omega/100m @ 20^{\circ}C$ )	Max.	9.5	
2. DC resistance unbalance (%)	Max.	4	
3. Pair-to-ground capacitance unbalance (pF/km)	Max.	1600	
4. Delay skew (ns/100m)	Max.	25	$4 \leq f \leq 600MHz$
5. Insertion Loss (dB/100m)	Max.	$1.8 * \sqrt{f} + 0.01 * f + 0.2/\sqrt{f}$	
6. Pair to Pair NEXT (dB/100m)	Min.	$102.4 - 15 * \log(f)$	
		<i>Values greater than 75dB shall be converted to 75dB</i>	
7. PowerSum pr-pr NEXT (dB/100m)	Min.	$99.4 - 15 * \log(f)$	
		<i>Values greater than 75dB shall be converted to 75dB</i>	
8. ELFEXT (dB/100m)	Min.	$95.3 - 20 * \log(f)$	
		<i>Values greater than 75dB shall be converted to 75dB</i>	
9. PowerSum ELFEXT (dB/100m)	Min.	$92.3 - 20 * \log(f)$	
		<i>Values greater than 75dB shall be converted to 75dB</i>	
10. Return Loss (dB)	Min.	$20 + 5 * \log(f)$	$1 \leq f < 10MHz$
		25	$10 \leq f < 20MHz$
		$25 - 7 * \log(f / 20)$	$20 \leq f \leq 250MHz$
		17.3	$250 < f \leq 600MHz$
11. Propagation Delay (ns/100m)	Max.	$534 + 36 / \sqrt{f}$	
12. Input Impedance ( $\Omega$ )		$100 \pm 15\%$	$1 \leq f \leq 250MHz$
		$100 \pm 22\%$	$f > 250MHz$

			App. Date : 2011/06
--	--	--	---------------------

# TECHNICAL DATA

<b>Page</b>	4/4
<b>Edition</b>	2.0
<b>Doc No.</b>	TR-120378

IEC 61156-5 ed.2.0 Category 7 horizontal cable parameters								
Freq. (MHz)	Ins. Loss	RL	Pair to Pair		Power Sum		Delay Skew	Po. Delay
			NEXT	ELFEXT	NEXT	ELFEXT		
	(dB/100m)	(dB)	(dB/100m)		(dB/100m)		(ns/100m)	(ns/100)
	Max.	Min.	Min.	Min.	Min.	Min.	Max	Max.
1	-	20.0	-	-	-	-	-	-
4	3.7	23.0	75	75	75.0	75.0	25	552.0
10	5.9	25.0	75	75	75.0	72.3	25	545.4
16	7.4	25.0	75	71.2	75.0	68.2	25	543.0
20	8.3	25.0	75	69.3	75.0	66.3	25	542.0
31.25	10.4	24.3	75	65.4	75.0	62.4	25	541.2
62.5	14.9	23.6	75	59.4	72.5	56.4	25	540.4
100	24.0	21.5	72.4	51.5	66.5	48.5	25	538.6
200	27.5	18.0	67.9	49.3	64.9	46.3	25	536.5
250	31.0	17.3	66.4	47.3	63.4	44.3	25	536.3
350	37.2	17.3	64.2	44.4	61.2	41.4	25	536.1
400	40.0	17.3	63.4	43.3	60.4	40.3	25	535.8
500	45.3	17.3	61.9	41.3	58.9	38.3	25	535.6
600	50.1	17.3	60.7	39.7	57.7	36.7	25	535.5

Note1: All tests include 401 points swept frequency measurements.

Note2: All electrical characteristics are given at 20°C

			<b>App. Date :</b> 2011/06
--	--	--	----------------------------