

Tender No. :						Ref. No. : LSGS-13-CX0139-01
User / Customer :						Page No. : 1 of 6
Tender Title :						
Bidder :	LS Cable & System Ltd.					
Document Title :	<h1>Specification</h1> <p>For</p> <h2>COAXIAL Cable</h2> <p><5C-HFBT></p>					
01	JAN. 28, 2014	Added '5C-HFBT-A'	Tae-Woo Kim	Dong-Wan Kang	Jong-Seb Baeck	
00	JAN. 17, 2014	Original Issue	Tae-Woo Kim	Dong-Wan Kang	Jong-Seb Baeck	
Rev. No.	Date	Descriptions	Prepared By	Reviewed By	Approved By	



1. SCOPE

This specification covers the coaxial cable for connection of devices intended for television reception like a satellite broadcasting of 75ohms characteristic impedance or related devices.

2. CONSTRUCTION OF THE CABLE

ITEM		UNIT	5C-HFBT	5C-HFBT-A	
Inner conductor	Material	-	Copper	CCS	
	Diameter	mm	1.20 ± 0.03	1.02 ± 0.05	
Insulation	Material	-	Foamed PE	Foamed PE	
	Thickness	mm	1.90 ± 0.05	1.73 ± 0.05	
	Diameter	mm	5.00 ± 0.1	4.57 ± 0.1	
	Color	-	Natural	Natural	
Outer conductor	1 st shield	Material	-	Al/mylar tape	Al/mylar tape
		Thickness	mm	0.042 ± 0.003	0.051 ± 0.003
	2 nd shield	Material	-	Tin-coated Annealed Copper (TA)	Aluminum wire (A)
		Individual wire diameter	mm	0.120 ± 0.005	0.150 ± 0.01
		Construction	Number of wires per carrier x number of carriers	6 x 16	3 x 16
		Lay length	mm	46 ± 5	32 ± 5
	3 rd shield	Material	-	Al/mylar tape	Al/mylar tape
		Thickness	mm	0.025 ± 0.003	0.025 ± 0.003
Jacket	Material	-	PVC	PVC	
	Color	-	Black	Black	
	Thickness	mm	0.90 ± 0.1	0.83 ± 0.1	
	Diameter	mm	7.40 ± 0.5	7.06 ± 0.5	

3. ELECTRICAL CHARACTERISTIC

ITEM		UNIT	5C-HFBT	5C-HFBT-A
DC Resistance	Inner Conductor	Ω/km	≤ 19.24	≤ 100
	Outer Conductor	Ω/km	≤ 21.35	≤ 44
	DC Loop	Ω/km	≤ 40.59	≤ 144
Insulation Resistance		$\text{M}\Omega/\text{km}$	≥ 1000	≥ 1000
Dielectric Withstand Voltage		V/min	AC 1000/1	AC 1000/1
Capacitance		pF/km	52 ± 3	52 ± 3
Relative Propagation Velocity		%	≥ 83	≥ 83
Standing Wave Ratio	50~2150MHz (5C-HFBT)	-	≤ 1.2	≤ 1.2
	10~864MHz (5C-HFBT-A)			
Impedance	MEAN	Ω	75 ± 3	75 ± 3
Attenuation (@ 20°C)	10 MHz	dB/km (Max.)	-	23.8
	50 MHz		47.2	47.2
	150 MHz		77.2	77.2
	250 MHz		98.9	98.9
	350 MHz		117.1	117.1
	450 MHz		137.0	137.0
	750 MHz		178.0	178.0
	806 MHz		188.9	188.9
	864 MHz		195.0	195.0
	950 MHz		201.8	-
	1200 MHz		244.7	-
	1450 MHz		262.4	-
	1800 MHz		287.3	-
2150 MHz	315.3	-		
Shield Coverage		%	≥ 60 (3 layer shield)	≥ 45 (3 layer shield)

* The shield coverage complies with KS C 3326 specification.

4. PHYSICAL CHARACTERISTIC

ITEM		UNIT	SPECIFICATION	REMARK
Jacket (before heat-aged)	Tensile Strength	kgf/mm ²	≥ 1.02	According to KS C 3004 / clause 19
	Elongation	%	≥ 200	
Jacket (after heat-aged)	Tensile Strength	%	≥ 80	According to KS C 3004 / clause 20
	Elongation	%	≥ 80	
Jacket Shrinkage (100°C/4h)		%	≤ 10	According to KS C 3004 / clause 24
Cold Bend Test (-20°C/1h)		-	No visible crack	According to KS C 3004 / clause 23
Cold Impact Test (-10°C/2.5min.)		-	No visible crack	According to KS C 3004 / clause 25
Conductor Discoloration		-	No corrosion/discoloration on inner & outer conductor	According to KS C 3002 / clause 3
Min. Bending Radius		-	6 X Cable Diameter	-

5. BENDING CHARACTERISTIC

It shall be no visible crack on jacket and outer conductor by 3 cyclic test that 180° bending tightly on 20 times size's cylinder of cable diameter and then 180° bending in the opposite direction.

6. CABLE MARKING

The jacket shall be marked as white color by method of indent type or ink printing on completed cable.

- Communications equipment certification mark
- Communications equipment certification number
- Product description : 5C-HFBT, 5C-HFBT-A
- Manufacturer
- Country Of Origin : KOREA
- Manufactured Year & Month
- Supplier : LS Cable & System
- Cable Length

For example,

'Certification Mark' 'Certification No.' 'Product Description' Manufacturer' KOREA/2014 01 LS Cable & System 0000M

7. PACKING

7.1 Cable Packing

Each cable shall be wound on a plywood reel or packaged as a bundle type.

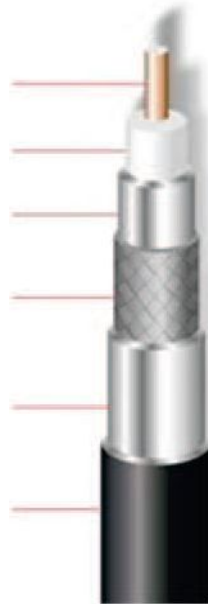
Cable packing shall be done in order that there is no cable damage on passage.

7.2 Standard length of cable shall be 200 meters. Other cable length is also available if required.

7.3 The completed cable shall be terminated by PVC cap to prevent infiltration of moisture or debris inside cable and vinyl-wrapped after loaded on pallet.

Appendix 1 : Cable construction drawing

Inner Conductor	Copper
Insulation	Foamed PE
1 st Shield	Al/mylar tape
2 nd Shield	Tinned copper braid
3 rd Shield	Al/mylar tape
Jacket	PVC



- The drawing appearing on this page is not a warranty, and may be subject to change or modification without any prior notice. -

== End of Specification ==

Tender No. :	Ref. No. : LSGS-13-CX0140-02				
User / Customer :	Page No. : 1 of 6				
Tender Title :					
Bidder : LS Cable & System Ltd.					
Document Title :					
<h1>Specification</h1> <p>For</p> <h2>COAXIAL Cable</h2> <p><7C-HFBT></p>					
02	JUN. 02, 2014	Added C/TA 45%	Tae-Woo Kim		Jong-Seb Baeck
01	JAN. 28, 2014	Changed loop resistance	Tae-Woo Kim	Dong-Wan Kang	Jong-Seb Baeck
00	JAN. 17, 2014	Original Issue	Tae-Woo Kim	Dong-Wan Kang	Jong-Seb Baeck
Rev. No.	Date	Descriptions	Prepared By	Reviewed By	Approved By



1. SCOPE

This specification covers the coaxial cable for connection of devices intended for television reception like a satellite broadcasting of 75ohms characteristic impedance or related devices.

2. CONSTRUCTION OF THE CABLE

ITEM		UNIT	SPECIFICATION		
Inner conductor	Material	-	CCS	Cu	
	Diameter	mm	1.63 ± 0.1	1.80 ± 0.1	
Insulation	Material	-	Foamed PE	Foamed PE	
	Thickness	mm	2.74 ± 0.1	2.75 ± 0.1	
	Diameter	mm	7.11 ± 0.2	7.30 ± 0.2	
	Color	-	Natural	Natural	
Outer Conductor	1 st shield	Material	-	Al/mylar tape	Al/mylar tape
		Thickness	mm	0.025 ± 0.003	0.042 ± 0.003
	2 nd shield	Material	-	Aluminum wire	Tinned copper wire
		Individual wire diameter	mm	0.156	0.140
		Construction	Number of wires per carrier x number of carriers	6 x 16	5 x 16
	Lay length	mm	42 ± 5	40 ± 5	
	3 rd shield	Material	-	Al/mylar tape	Al/mylar tape
		Thickness	mm	0.025 ± 0.003	0.025 ± 0.003
Jacket	Material	-	PVC	PVC	
	Thickness	mm	1.0 ± 0.125	1.0 ± 0.125	
	Diameter	mm	10.0 ± 0.5	10.0 ± 0.5	

3. ELECTRICAL CHARACTERISTIC

ITEM		UNIT	CCS	Cu
DC Resistance	Inner Conductor	Ω/km	≤ 51.72	≤ 12.95
	Outer Conductor	Ω/km	≤ 27.61	≤ 26.27
	DC Loop	Ω/km	≤ 79.33	≤ 39.22
Insulation Resistance		$\text{M}\Omega/\text{km}$	≥ 1000	≥ 1000
Dielectric Withstand Voltage		V/min	AC 1000/1	AC 1000/1
Capacitance		pF/km	52 ± 3	52 ± 3
Relative Propagation Velocity		%	≥ 83	≥ 83
Standing Wave Ratio	50~2150MHz	-	≤ 1.2	≤ 1.2
Impedance	MEAN	Ω	75 ± 3	75 ± 3
Attenuation (@ 20°C)	50 MHz	dB/km (Max.)	30.7	30.7
	150 MHz		55.1	55.1
	250 MHz		71.0	71.0
	350 MHz		86.2	86.2
	450 MHz		95.9	95.9
	750 MHz		124.3	124.3
	806 MHz		129.7	129.7
	950 MHz		134.7	134.7
	1200 MHz		151.2	151.2
	1450 MHz		165.8	165.8
	1800 MHz		190.2	190.2
	2150 MHz		203.5	203.5
Shield Coverage		%	≥ 60 (3 layer shield)	≥ 45 (3 layer shield)

* The shield coverage complies with KS C 3326 specification.

4. PHYSICAL CHARACTERISTIC

ITEM		UNIT	SPECIFICATION	REMARK
Jacket (before heat-aged)	Tensile Strength	kgf/mm ²	≥ 1.02	According to KS C 3004 / clause 19
	Elongation	%	≥ 200	
Jacket (after heat-aged)	Tensile Strength	%	≥ 80	According to KS C 3004 / clause 20
	Elongation	%	≥ 80	
Jacket Shrinkage (100°C/4h)		%	≤ 10	According to KS C 3004 / clause 24
Cold Bend Test (-20°C/1h)		-	No visible crack	According to KS C 3004 / clause 23
Cold Impact Test (-10°C/2.5min.)		-	No visible crack	According to KS C 3004 / clause 25
Conductor Discoloration		-	No corrosion/discoloration on inner & outer conductor	According to KS C 3002 / clause 3
Min. Bending Radius		-	6 x Cable Diameter	-

5. BENDING CHARACTERISTIC

It shall be no visible crack on jacket and outer conductor by 3 cyclic test that 180° bending tightly on 20 times size's cylinder of cable diameter and then 180° bending in the opposite direction.

6. CABLE MARKING

The jacket shall be marked as white color by method of indent type or ink printing on completed cable.

- Communications equipment certification mark
- Communications equipment certification number
- Product description : 7C-HFBT-CCS, 7C-HFBT
- Manufacturer
- Country of Origin : KOREA
- Manufactured Year & Month
- Supplier : LS Cable & System
- Cable Length

For example,

'Certification Mark' 'Certification No.' 'Product Description' 'Manufacturer' KOREA/2014 01
LS Cable & System 0000M

7. PACKING

7.1 Cable packing

Each cable shall be wound on a plywood reel or packaged as a bundle type.

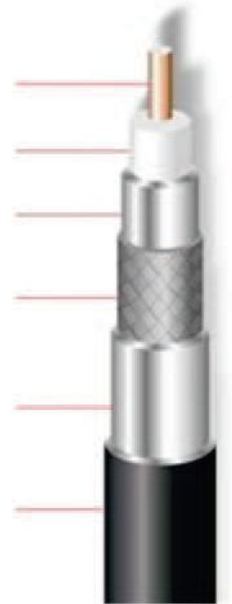
Cable packing shall be done in order that there is no cable damage on passage.

7.2 Standard length of cable shall be 200 meters. Other cable length is also available if required.

7.3 The completed cable shall be terminated by PVC cap to prevent infiltration of moisture or debris inside cable and vinyl-wrapped after loaded on pallet.

Appendix 1 : Cable construction drawing

Inner Conductor	CCS (Copper Clad Steel)	Copper
Insulation	Foamed PE	Foamed PE
1 st shield	Al/Mylar tape	Al/Mylar tape
2 nd shield	Aluminum braid	Tinned copper braid
3 rd shield	Al/Mylar tape	Al/Mylar tape
Jacket	PVC	PVC



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== End of Specification ==

Tender No. :			Ref. No. : LSGS-13-CX0141-01		
User / Customer :			Page No. : 1 of 6		
Tender Title :					
Bidder : LS Cable & System Ltd.					
Document Title :					
<h1>Specification</h1> <p>For</p> <h2>COAXIAL Cable</h2> <p><10C-HFBT></p>					
01	JAN. 28, 2014	Added '10C-HFBT'	Tae-Woo Kim	Dong-Wan Kang	Jong-Seb Baeck
00	JAN. 17, 2014	Original Issue	Tae-Woo Kim	Dong-Wan Kang	Jong-Seb Baeck
Rev. No.	Date	Descriptions	Prepared By	Reviewed By	Approved By



1. SCOPE

This specification covers the coaxial cable for connection of devices intended for television reception like a satellite broadcasting of 75ohms characteristic impedance or related devices.

2. CONSTRUCTION OF THE CABLE

ITEM		UNIT	10C-HFBT	10C-HFBT-CCA	
Inner conductor	Material	-	Copper	CCA (Copper Clad Aluminum)	
	Diameter	mm	2.40 ± 0.03	2.40 ± 0.15	
Insulation	Material	-	Foamed PE	Foamed PE	
	Thickness	mm	3.50 ± 0.1	3.50 ± 0.1	
	Diameter	mm	9.40 ± 0.2	9.40 ± 0.2	
	Color	-	Natural	Natural	
Outer Conductor	1 st shield	Material	-	Al/mylar tape	Al/mylar tape
		Thickness	mm	0.042 ± 0.003	0.042 ± 0.003
	2 nd shield	Material	-	Tin-coated Annealed Copper	Aluminum
		Individual wire diameter	mm	0.160	0.160
		Construction	Number of wires per carrier x number of carriers	7 x 16	7 x 16
	Lay length	mm	40 ± 5	40 ± 5	
	3 rd shield	Material	-	Al/mylar tape	Al/mylar tape
		Thickness	mm	0.025 ± 0.003	0.025 ± 0.003
Jacket	Material	-	PVC	PVC	
	Color	-	Black	Black	
	Thickness	mm	1.0 ± 0.2	1.0 ± 0.2	
	Diameter	mm	12.3 ± 0.5	12.3 ± 0.5	

3. ELECTRICAL CHARACTERISTIC

ITEM		UNIT	10C-HFBT	10C-HFBT-CCA
DC Resistance	Inner Conductor	Ω/km	≤ 7.81	≤ 12
	Outer Conductor	Ω/km	≤ 21	≤ 21
	DC Loop	Ω/km	≤ 28.81	≤ 33
Insulation Resistance		$\text{M}\Omega/\text{km}$	≥ 1000	≥ 1000
Dielectric Withstand Voltage		V/min	AC 1000/1	AC 1000/1
Capacitance		pF/km	52 ± 3	52 ± 3
Relative Propagation Velocity		%	≥ 83	≥ 83
Standing Wave Ratio	50MHz~2150MHz	-	≤ 1.2	≤ 1.2
Impedance	MEAN	Ω	75 ± 3	75 ± 3
Attenuation (@ 20°C)	50 MHz	dB/km (Max.)	25.4	25.4
	150 MHz		42.2	42.2
	250 MHz		54.0	54.0
	350 MHz		65.7	65.7
	450 MHz		73.4	73.4
	750 MHz		96.2	96.2
	806 MHz		101.2	101.2
	950 MHz		107.2	107.2
	1200 MHz		118.1	118.1
	1450 MHz		129.6	129.6
	1800 MHz		148.1	148.1
2150 MHz	162.1	162.1		
Shield Coverage		%	≥ 60 (3 layers shield)	≥ 60 (3 layers shield)

* The shield coverage complies with KS C 3326 specification.

4. PHYSICAL CHARACTERISTIC

ITEM		UNIT	SPECIFICATION	REMARK
Jacket (before heat-aged)	Tensile Strength	kgf/mm ²	≥ 1.02	According to KS C 3004 / clause 19
	Elongation	%	≥ 200	
Jacket (after heat-aged)	Tensile Strength	%	≥ 80	According to KS C 3004 / clause 20
	Elongation	%	≥ 80	
Jacket Shrinkage (100°C/4h)		%	≤ 10	According to KS C 3004 / clause 24
Cold Bend Test (-20°C/1h)		-	No visible crack	According to KS C 3004 / clause 23
Cold Impact Test (-10°C/2.5min.)		-	No visible crack	According to KS C 3004 / clause 25
Conductor Discoloration		-	No corrosion/discoloration on inner & outer conductor	According to KS C 3002 / clause 3
Min. Bending Radius		-	6 x Cable Diameter	-

5. BENDING CHARACTERISTIC

It shall be no visible crack on jacket and outer conductor by 3 cyclic test that 180° bending tightly on 20 times size's cylinder of cable diameter and then 180° bending in the opposite direction.

6. CABLE MARKING

The jacket shall be marked as white color by method of indent type or ink printing on completed cable.

- Communications equipment certification mark
- Communications equipment certification number
- Product description : 10C-HFBT, 10C-HFBT-CCA
- Manufacturer
- Country of origin : KOREA
- Manufactured Year & Month
- Supplier : LS Cable & System
- Cable Length

For example,

'Certification Mark' 'Certification No.' 'Product Description' 'Manufacturer' KOREA/2014 01
LS Cable & System 0000M

7. PACKING

7.1 Cable packing

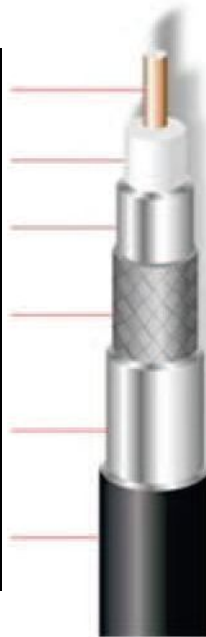
Each cable shall be wound on a plywood reel or packaged as a bundle type.
Cable packing shall be done in order that there is no cable damage on passage.

7.2 Standard length of cable shall be 200 meters. Other cable length is also available if required.

7.3 The completed cable shall be terminated by PVC cap to prevent infiltration of moisture or debris inside cable and vinyl-wrapped after loaded on pallet.

Appendix 1 : Cable construction drawing

Inner Conductor	CCA (Copper Clad Aluminum)
Insulation	Foamed PE
1 st Shield	Al/mylar tape
2 nd Shield	Aluminum braid
3 rd Shield	Al/mylar tape
Jacket	PVC



* The drawing appearing on this page is not a warranty, and may be subject to change or modification without any prior notice.

== End of Specification ==