ZTT GROUP

Established in 1992, ZTT started from optical fiber communications and was listed on Shanghai Stock Exchange (SSE) in 2002 (Stock Code in SSE: 600522). ZTT has pictured a diversified industrial portfolio for marine equipment, renewable energy, new materials, smart grid, optical communications and other diversified industrial products. ZTT Group is now hosting 80 subsidiary companies and over 16,000 employee, operating 5 overseas plants located in India, Brazil, Indonesia, Morocco and Turkey . ZTT owns more than 2500 patents with independent intellectual property rights, presided over or participated in more than 500 international and national industry standards. The products of ZTT are exported to 160 countries and regions .The company has ranked among the top 500 Chinese enterprises for consecutive years and broke through $13.4 billion in sales revenue in 2022. ZTT follows the new economic model of fostering cleaner production and accelerating green and low-carbon development, works hard to serve as the pioneer of persistent endeavor to achieve national goal involving carbon dioxide emissions peaking by 2030 and carbon neutrality by 2060, emerging as a green manufacturing technology group assuming regional economy.

Leaky Coaxial Cable

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2023.6

ZTT was established in 1992, and now becomes a public high-tech enterprise with 76 subsidiaries, and about 16,000 employees (Code: 600522).

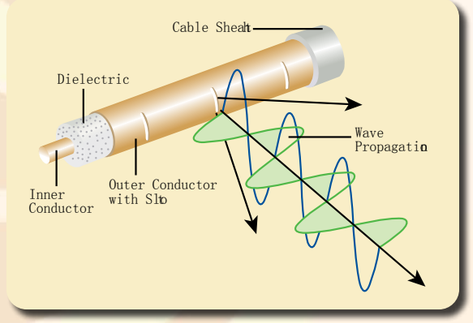
We provide products such as radio frequency cables, leaky coaxial cables, railway digital signal cables and accessories for mobile communications, which are widely used in over 20 countries. We have excellent R&D ability and with advanced equipments such as Maillefer and Rosendahl. We have capacity of manufacturing 80,000km radio frequency cables,10,000km leaky coaxial cables , 13,000km railway digital signal cables and accessories per year.

Our products have passed the tests in many third laboratories, such as TLC&ROHS. We devote ourselves to offering safe and reliable products and quick and thoughtful service for our customers.

Type of Leaky Coaxial Cables for Communication Base Station

- HLRCTSHYZ-50-22 (7/8″)
- HLRCTSMYZ-50-22 (7/8″)
- HLRCTSLYZ-50-32 (1-1/4″)
- HLRCTCMYZ-50-32 (1-1/4″)
- HLRCTSHYZ-50-32 (1-1/4″)
- HLRHTSMYZ-50-42 (1-5/8″)
- HLRHTCHYZ-50-42 (1-5/8″)
- HLCTAYZ-50-22-C1 (7/8″)
- HLCTAYZ-50-22-C2 (7/8″)
- HLCTAYZ-50-32-C1 (1-1/4″)
- HLCTAYZ-50-32-C2 (1-1/4″)

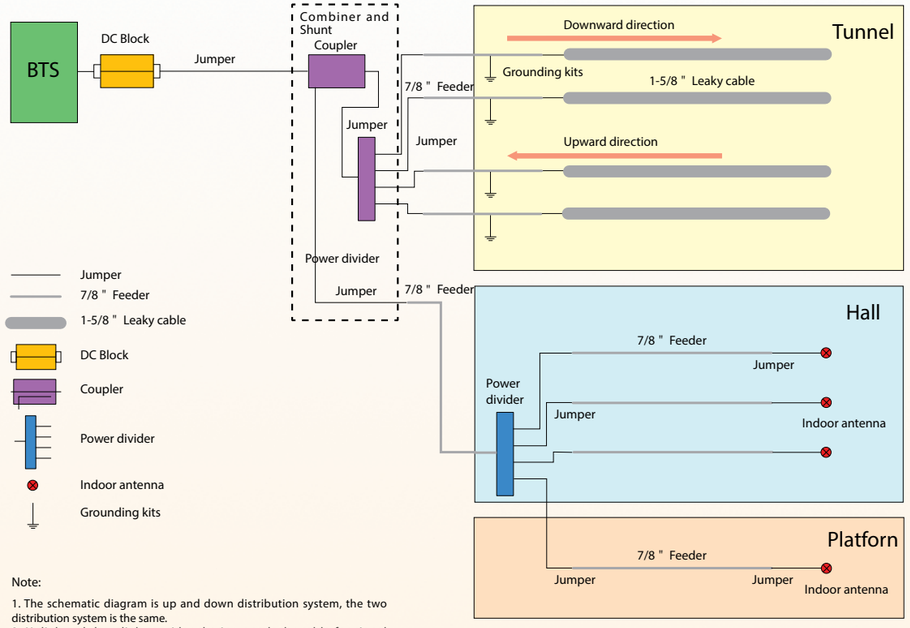
Leaky coaxial cable is mainly used in the long, narrow and enclosed areas that conventional antenna signals can not be effectively covered, for example, track traffic, tunnels, mines, buildings and large edifices, and so on.
Leaky coaxial cable integrates the function of antenna and feeder cable. It has three functions, (a) transmit electromagnetic wave, (b) launch electromagnetic wave, (c) receive outside specific electromagnetic wave.
There are two kinds of leaky coaxial cable, radiating mode and coupling mode.



Transmit theory of leaky coaxial cable

Leaky cable application system

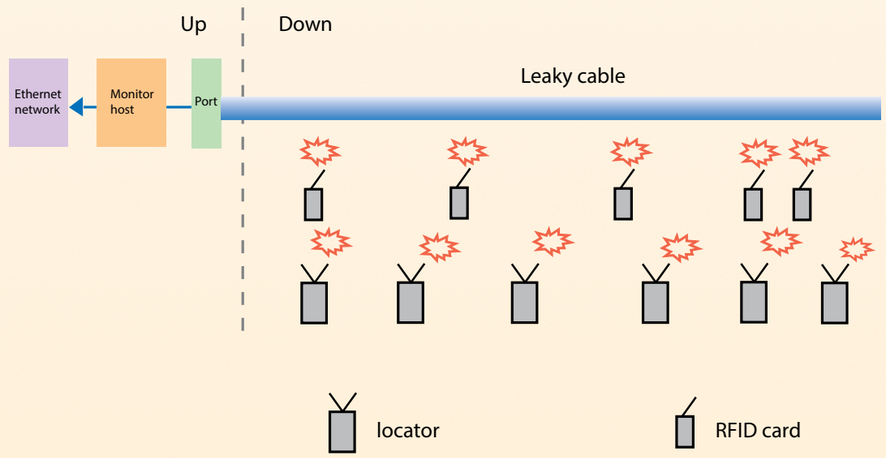
Wireless communication system in subway



Note:

1. The schematic diagram is up and down distribution system, the two distribution system is the same.
2. Uplink and downlink consider sharing one leaky cable for signal transmission.

Wireless communication system in mine



HLRCTSHYZ-50-22 (7/8")

Advantages

- The product characterized long electromagnetic radiation distance and is suitable for the coverage of enclosed areas, such as rail tunnels, high speed railway tunnels, underground parking and so on. It has strong radiation performance and uniform fluctuation in narrow band.
- Best working frequency range: 800~1000 & 1700~2400MHz

Performances

Structure

Cable type	Radiating
Size	7/8"
Inner conductor material / OD	Copper tube / 9.0 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Overlapping copper foil / 23.0 mm
Jacket material	LSOH polyolefin
Diameter over Jacket / color	25.8 mm / black
Weight	490 kg/km

Mechanical characteristics

Tensile force	>2000 N
Minimum bending radius， single bend	350 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	0.9 m
Installation temperature	-25~+60°C
Operation temperature	-40~+85°C
Storage temperature	-70~+85°C

Electrical characteristics

Cut-off frequency	1.3~1.4GHz & Its multiples
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	4.5 Ω/km
Insulation dielectric strength	15000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	91 kW
Velocity	89 %

Frequency (MHz)	Attenuation （dB/100m，20°C）	Coupling Loss （50% / 95%，2m，dB）
150	1.58	70/82
450	2.97	73/81
800	4.19	69/75
900	4.54	69/77
1800	8.69	65/72
2200	11.30	66/72
2400	13.10	64/70

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLRCTSMYZ-50-22 (7/8″)

Advantages

- The product characterized long electromagnetic radiation distance and is suitable for the coverage of enclosed areas, such as rail tunnels, high speed railway tunnels, underground parking and so on. It has strong radiation performance and uniform fluctuation in narrow band.
- Best working frequency range: 150~500 & 600~1000MHz

Performances

Structure

Cable type	Radiating
Size	7/8″
Inner conductor material / OD	Copper tube / 9.0 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Overlapping copper foil / 23.0 mm
Jacket material	LSOH polyolefin
Diameter over Jacket / color	25.8 mm / black
Weight	490 kg/km

Mechanical characteristics

Tensile force	>2000 N
Minimum bending radius，single bend	350 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	0.9 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Cut-off frequency	525~550 MHz & Its multiples
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	4.5 Ω/km
Insulation dielectric strength	15000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	91 kW
Velocity	89 %

Frequency (MHz)	Attenuation （dB/100m，20˚C）	Coupling Loss （50% / 95%，2m，dB）
150	1.56	62/74
350	2.76	59/68
450	3.10	62/70
800	4.40	62/71
900	4.94	61/71

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLRCTSLYZ-50-32 (1-1/4″)

Advantages

- The product characterized long electromagnetic radiation distance and is suitable for the coverage of enclosed areas, such as rail tunnels, high speed railway tunnels, underground parking and so on. It has strong radiation performance and uniform fluctuation in narrow band.
- Best working frequency range: 300~500MHz

Performances

Structure

Cable type	Radiating
Size	1-1/4″
Inner conductor material / OD	Copper tube / 13.1 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Overlapping copper foil / 33.1 mm
Jacket material	LSOH polyolefin
Diameter over Jacket / color	38.0 mm / black
Weight	800 kg/km

Mechanical characteristics

Tensile force	>2300 N
Minimum bending radius，single bend	500 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	1~1.2 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Cut-off frequency	Non stop bands in working frequency
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	15000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	200 kW
Velocity	88 %

Frequency (MHz)	Attenuation （dB/100m，20˚C）	Coupling Loss （50% / 95%，2m，dB）
350	1.93	66/76
450	2.21	67/77

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLRCTCMYZ-50-32 (1-1/4″)

Advantages

- The product characterized long electromagnetic radiation distance and is suitable for the coverage of enclosed areas, such as rail tunnels, high speed railway tunnels, underground parking and so on. It has strong radiation performance and uniform fluctuation in narrow band.
- Best working frequency range: 300~600 & 670~950MHz

Performances

Structure

Cable type	Radiating
Size	1-1/4″
Inner conductor material / OD	Copper tube / 13.1 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Overlapping corrugated copper foil / 33.6 mm
Jacket material	LSOH polyolefin
Diameter over Jacket / color	38.0 mm / black
Weight	800 kg/km

Mechanical characteristics

Tensile force	>2300 N
Minimum bending radius，single bend	500 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	1~1.2 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Cut-off frequency	510~550 MHz
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	15000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	200 kW
Velocity	88 %

Frequency (MHz)	Attenuation (dB/100m，20˚C)	Coupling Loss (50% / 95%，2m，dB)
350	1.70	75/83
450	2.00	73/79
800	2.90	66/68
900	3.10	64/68

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLRCTSHYZ-50-32 (1-1/4″)

Advantages

- The product characterized long electromagnetic radiation distance and is suitable for the coverage of enclosed areas, such as rail tunnels, high speed railway tunnels, underground parking and so on. It has strong radiation performance and uniform fluctuation in narrow band.
- Best working frequency range: 800~1000 &1700~2400MHz

Performances

Structure

Cable type	Radiating
Size	1-1/4″
Inner conductor material / OD	Copper tube / 13.1 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Overlapping copper foil / 33.1 mm
Jacket material	LSOH polyolefin
Diameter over Jacket / color	38.0 mm / black
Weight	800 kg/km

Mechanical characteristics

Tensile force	>2300 N
Minimum bending radius，single bend	500 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	1~1.2 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Cut-off frequency	1.1~1.5 GHz
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	15000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	200 kW
Velocity	88 %

Frequency (MHz)	Attenuation (dB/100m，20˚C)	Coupling Loss (50% / 95%，2m，dB)
150	1.10	81/87
450	1.81	82/89
800	2.80	67/71
900	2.96	65/71
1800	5.82	57/62
2200	6.14	61/68
2400	7.67	61/68

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLRHTSMYZ-50-42 (1-5/8″)

Advantages

- The product characterized long electromagnetic radiation distance and is suitable for the coverage of enclosed areas, such as rail tunnels, high speed railway tunnels, underground parking and so on. It has strong radiation performance and uniform fluctuation in narrow band.
- Best working frequency range: 300~900 MHz

Performances

Structure

Cable type	Radiating
Size	1-5/8″
Inner conductor material / OD	Helical copper tube / 17.3 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Overlapping copper foil / 43.5 mm
Jacket material	LSOH polyolefin
Diameter over Jacket / color	48.0 mm / black
Weight	1000 kg/km

Mechanical characteristics

Tensile force	>3000 N
Minimum bending radius，single bend	700 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	1~1.5 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Cut-off frequency	510~530MHz & Its multiples
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	15000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	310 kW
Velocity	89 %

Frequency (MHz)	Attenuation （dB/100m，20˚C）	Coupling Loss （50% / 95%，2m，dB）
150	0.88	75/84
350	1.45	69/76
450	1.71	70/75
800	2.45	68/72
900	2.70	69/73

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLRHTCHYZ-50-42 (1-5/8″)

Advantages

- The product characterized long electromagnetic radiation distance and is suitable for the coverage of enclosed areas, such as rail tunnels, high speed railway tunnels, underground parking and so on. It has strong radiation performance and uniform fluctuation in narrow band.
- Best working frequency range: 800~1000 &1700~2700MHz

Performances

Structure

Cable type	Radiating
Size	1-5/8″
Inner conductor material / OD	Helical copper tube / 17.3 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Overlapping corrugated copper foil / 43.5 mm
Jacket material	LSOH polyolefin
Diameter over Jacket / color	48.0 mm / black
Weight	1000 kg/km

Mechanical characteristics

Tensile force	>3000 N
Minimum bending radius，single bend	700 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	1~1.5 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Cut-off frequency	1100~1500 MHz
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	15000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	310 kW
Velocity	89 %

Frequency (MHz)	Attenuation （dB/100m，20˚C）	Coupling Loss （50% / 95%，2m，dB）
150	0.92	80/90
450	1.70	84/91
800	2.30	66/70
900	2.51	66/68
1800	4.30	65/70
2200	5.45	62/66
2400	6.25	61/66

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLCTAYZ-50-22-C1 (7/8")

Advantages

- The product is applicable for the coverage of density in long, narrow and enclosed areas, such as mines, buildings and elevators etc. It has little fluctuation of electromagnetic density and uniform coverage in broadband.
- Best working frequency range: 50~3000 MHz

Performances

Structure

Cable type	Coupling
Size	7/8"
Inner conductor material / OD	Copper tube / 9.0 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Annular corrugated copper tube milled / single slots
Jacket material	LSOH polyolefin
Diameter over Jacket / color	27.5 mm / black
Weight	510 kg/km

Mechanical characteristics

Tensile force	>1500 N
Minimum bending radius，single bend	300 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	0.9 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Operating frequency	50~3000 MHz
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	6000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	91 kW
Velocity	88 %

Frequency (MHz)	Attenuation (dB/100m，20˚C)	Coupling Loss (50% / 95%，2m，dB)
150	1.60	68/78
450	2.75	68/79
800	3.73	69/79
900	4.21	69/79
1800	6.36	68/78
2200	7.23	69/79
2400	7.56	70/80

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLCTAYZ-50-22-C2 (7/8")

Advantages

- The product is applicable for the coverage of density in long, narrow and enclosed areas, such as mines, buildings and elevators etc. It has little fluctuation of electromagnetic density and uniform coverage in broadband.
- Best working frequency range: 50~3000 MHz

Performances

Structure

Cable type	Coupling
Size	7/8"
Inner conductor material / OD	Copper tube / 9.0 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Annular corrugated copper tube milled / single slots
Jacket material	LSOH polyolefin
Diameter over Jacket / color	27.5 mm / black
Weight	510 kg/km

Mechanical characteristics

Tensile force	>1500 N
Minimum bending radius，single bend	300 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	0.9 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Operating frequency	50~3000 MHz
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	6000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	91 kW
Velocity	88 %

Frequency (MHz)	Attenuation (dB/100m，20˚C)	Coupling Loss (50% / 95%，2m，dB)
150	1.80	64/74
450	3.30	70/80
800	4.80	78/80
900	4.90	77/79
1800	7.95	71/79
2200	8.75	72/78
2400	9.20	71/80

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLCTAYZ-50-32-C1 (1-1/4")

Advantages

- The product is applicable for the coverage of density in long, narrow and enclosed areas, such as mines, buildings and elevators etc. It has little fluctuation of electromagnetic density and uniform coverage in broadband.
- Best working frequency range: 50~3000 MHz

Performances

Structure

Cable type	Coupling
Size	1-1/4"
Inner conductor material / OD	Copper tube / 13.1 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Annular corrugated copper tube milled / single slots
Jacket material	LSOH polyolefin
Diameter over Jacket / color	38.4 mm / black
Weight	850 kg/km

Mechanical characteristics

Tensile force	>2600 N
Minimum bending radius，single bend	500 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	1~1.2 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Operating frequency	50~3000 MHz
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	10000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	200 kW
Velocity	88 %

Frequency (MHz)	Attenuation (dB/100m，20˚C)	Coupling Loss (50% / 95%，2m，dB)
150	1.20	67/75
450	2.30	73/83
800	3.25	75/85
900	3.60	76/86
1800	6.00	77/88
2200	6.20	78/87
2400	6.90	80/88

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

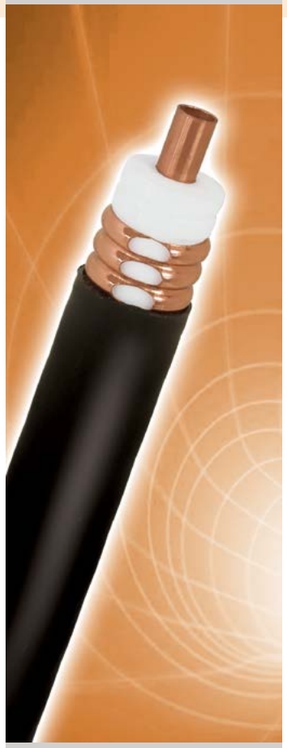
Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

HLCTAYZ-50-32-C2 (1-1/4")

Advantages

- The product is applicable for the coverage of density in long, narrow and enclosed areas, such as mines, buildings and elevators etc. It has little fluctuation of electromagnetic density and uniform coverage in broadband.
- Best working frequency range: 50~3000 MHz

Performances



Structure

Cable type	Coupling
Size	1-1/4"
Inner conductor material / OD	Copper tube / 13.1 mm
Insulating material	Physical foamed polyethylene dielectric
Outer conductor material / OD	Annular corrugated copper tube milled / single slots
Jacket material	LSOH polyolefin
Diameter over Jacket / color	38.4 mm / black
Weight	850 kg/km

Mechanical characteristics

Tensile force	>2600 N
Minimum bending radius，single bend	500 mm
Indication of slot alignment	Guides opposite to slots
Minimum distance to wall	100 mm
Recommended clamp spacing	1~1.2 m
Installation temperature	-25~+60˚C
Operation temperature	-40~+85˚C
Storage temperature	-70~+85˚C

Electrical characteristics

Operating frequency	50~3000 MHz
Polarization	Vertical
VSWR	1.3
Impedance	50±2 Ω
Encircle DC resistance	3 Ω/km
Insulation dielectric strength	10000 V（DC，1min）
Minimum insulation resistance	5000 MΩ·km
Jacket spark test voltage	8000 V（AC）
Peak power	200 kW
Velocity	88 %

Frequency (MHz)	Attenuation (dB/100m，20˚C)	Coupling Loss (50% / 95%，2m，dB)
150	1.25	61/71
450	2.55	67/78
800	3.69	67/78
900	3.87	68/77
1800	6.68	70/79
2200	9.63	66/76
2400	9.85	68/79

Range: Coulping Loss: ±5 dB, Attenuation: ±10 %

Notes:

Coupling Loss & Attenuation is tested by the free-space method according to IEC 61196-4 Standards.

ISO Certificates

ZTT establishes quality control system strictly according to ISO9001, ISO14001 and OHSAS18001 international standards and takes the quality control department as the core, in order to create ZTT brand and make efforts to contribute the mobile communications.

Excellent Test Facilities

All the test instruments for manufacturing are advanced equipment which adopted from home and abroad, and they are including Network analyzer, Digital LCR meter, Digital multimeter, High resistance meter, Milliohm meter, Dielectricity tester, Project profile analyzer, Spectrum Analyzer and Signal generator, Anechoic chamber. The leaky coaxial cable test system is established according to IEC 61196.4-2004, which assures the accuracy of quality control.