

● Topics

Super-Thin Leaky Coaxial Cable ZLCX-2.5D

Fujikura has developed the world's thinnest, most lightweight*¹ leaky coaxial cable ZLCX-2.5D, which is mainly used for short-range wireless communication. The cable's small outer diameter of 4 mm and lightweight of 21 g/m provide high flexibility and allows easy wiring even in small spaces. The structure and standard characteristics of ZLCX-2.5D are listed in Table 1.

For a conventional LCX with zigzag slots, it is difficult to adequately emit radio waves when its diameter is super-thin. As illustrated in Fig. 1, the slot pattern of ZLCX-2.5D is of two sections, a partially shielded section to cover the insulator with metal tape as an outer conductor and an aperture section without metal tape. The outside of these sections is covered with a rough braided shield. Figure 2 shows the appearance of ZLCX-2.5D.

In addition, this leaky coaxial cable provides perpendicular radio wave emission, which is difficult for a conventional LCX to do. This eliminates the blind zone around cable ends and secures a stable communication area near the LCX. Figure 3 shows the schematic diagram of radio wave emission.

By making full use of its thin diameter and lightweight, ZLCX-2.5D is expected to be used in confined area such as a conference room and an ICT device, and for secure communications.

*1: Examined by Fujikura as of August 2014

Table 1. Structure and Standard Characteristics.

Item	Component and characteristic value
Inner conductor	Annealed copper wire, 0.9 mm
Insulator	Foamed polyethylene, 2.6 mm
Outer conductor	Copper tape with slots + Tin-plated low-density annealed copper wire braid
Sheath	Non-halogen flame-retardant polyethylene
Outer diameter of cable	4.3 mm
Estimated weight	21 g/m
Characteristic impedance	50 Ω
Coupling loss	62 dB at 2.4 GHz
Transmission loss	0.91 dB/m at 2.4 GHz

● *Topics*

*Super-Thin Leaky Coaxial
Cable ZLCX-2.5D*

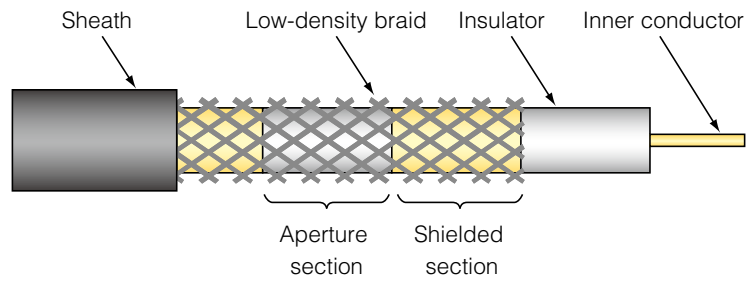


Fig. 1 Structure of ZLCX-2.5D



Fig. 2 Appearance of ZLCX-2.5D

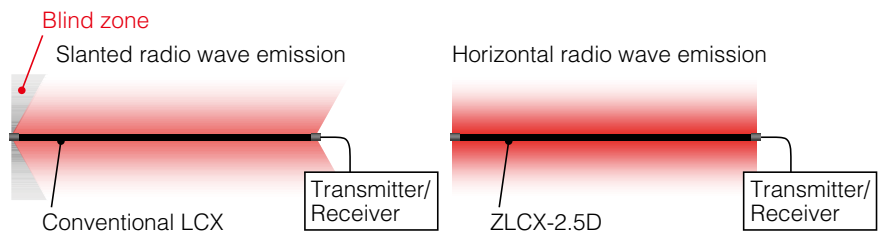


Fig. 3 Schematic Comparison of Radio Wave Emission

[Information]
Domestic Power & Telecommunication
Cable System Department, Power and
Telecommunication System Strategy & Sales
Engineering Division
Tel : +81 3 5606 1272 Fax : +81 3 5606 1538
E-mail : mc-info@jp.fujikura.com