

The Alcatel 7390 LMDS Co-Polarized Radio Termination (Co-Pol RT) is the radio part of the customer premises equipment also called the Alcatel LMDS terminal station. The 7390 Co-Pol RT is responsible for transmitting upstream carriers towards the base station and receiving downstream carriers from it. The 7390 Co-Pol RTs have been designed to operate for split-band licensing in the 24 to 30 GHz frequency bands with Tx/Rx duplex separations adapted to a wide range of geographic standards. For example, 500 MHz (Latin and North America), 723 and 1008 MHz (Europe), and 855 MHz (Asia). The 7390 Co-Pol RT covers sub-bands of 280 MHz to provide radio agility. In order to keep cost structure down, the RTs are designed from widely used, field-proven systems such as digital satellite systems. The 7390 Co-Pol RT is DAVIC (Satellite DVB standard)-compliant.

Highly scalable and fully managed as part of a multiservice solution, Alcatel 7390 LMDS products can be rapidly deployed to provide a powerful, cost-effective access solution for the first mile delivery of a wide range of data, Internet, voice and video services.



High performance
Air interface,
easier installation



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3CL 00428 0005 TQZZA Ed.03

Outstanding compactness

The 7390 Co-Pol RT is compact, to keep mounting infrastructure costs as low as possible. Using state of the art Monolithic Microwave Integrated Circuits (MMICs) technology, the Co-Pol RT is actually the smallest radio of its kind in the industry with a 15 x 15 x 2.5 cm (5.8 x 5.8 x .97 in.) radio bloc – one bloc corresponds to one transceiver (Tx + Rx), coupled with an integrated 26 cm (10 in.) parabolic antenna. It weighs less than 2 kilograms (4.4 pounds).

High reliability

The Alcatel 7390 LMDS Co-Pol RT benefits from automated manufacturing processes, highly qualified components and severe test procedures, providing the highest level of quality and thus limiting maintenance while minimizing the sets of spare parts. In addition to its compactness, the 7390 Co-Pol RT has been designed to operate in very harsh environments (from -33° to 55°C/13° to 63° F) with very low power consumption (less than 12 W).

Flexibility and adaptability

The 7390 Co-Pol RT benefits from a 30 dB output power adjustment to cover TS-BS distance of up to 5 km (3 m.). A higher gain antenna (60 cm/24 in. diameter) with horizontal or vertical polarization is also available.

Easy installation

The 7390 Co-Pol RT includes a directional transmit/receive antenna and a radio frequency (RF) transceiver unit. The small dish antenna provides system gain and directivity. The RF unit is bi-directional, enabling it to access the Alcatel 7390 LMDS Radio Base Station (RBS). A specific pole/wall mounting allows ± 90° accurate antenna alignment for both azimuth and elevation.

An alignment tool permits fast and easy installation (typically less than one hour) requiring no special skills. A single coaxial cable (up to 200 m/656 ft. between the RT and Alcatel 7390 LMDS Network Termination (NT)) interconnects the Co-Pol RT to the indoor unit, transporting all signals: downstream IF (transmitted

to the NT), upstream IF (received from the NT) and DC power supply (no need for any external PSU). For cable length compensation, 20dB extra gain in reception and 10dB in transmission are added.

Multi-NT configuration

One single Alcatel 7390 Co-Pol RT can connect up to eight NTs thus enabling cost sharing between end-users which means only one outdoor installation per building.

Technical Summary

Radio

- ▼ Frequency: 24.25 to 29.5 GHz
- ▼ Tx/Rx duplex separation: 500 to 1480 MHz
- ▼ Maximum bandwidth: 180 to 280 MHz
- ▼ Maximum output power (antenna port): (P 1dB) 15dBm
- ▼ Installation power tuning: 30dB
- ▼ Spurious: 30 MHz - 21.2 GHz: < -50dBm
21.2 GHz - 110 GHz: < -30dBm
- ▼ Phase noise: -77dBc/Hz at 10 kHz
-102dBc/Hz at 100 kHz
-115dBc/Hz at 1 MHz
- ▼ Frequency accuracy: 10 p.p.m.
- ▼ Rx noise figure: < 7dB

IF

IF Interface

- ▼ Tx (NT to RT): 400 - 700 MHz
- ▼ Rx (RT to NT): 950 - 2050 MHz
- ▼ Connector: F female 75Ω, BNO female (for installation)

- ▼ Maximum RT-NT cable length: 3 x 70 m (9.8 x 230 ft.)
- ▼ Cable compensation: Tx (NT to RT): 10dB
Rx (RT to NT): 20dB

Antenna

- ▼ 26 cm (10 in.) integrated (35 dBi)
- ▼ 60 cm (23 in.) (41 dBi)

Power/Environment/ Mechanical Data

- ▼ Power: 18 to 34 V DC, 12 W
- ▼ Environment: -33° to 55° C (13° to 63° F) in operation, ETS 300 019-1-4 class 4.1
- ▼ EMC standards: ETS 300 385 class B
- ▼ Wind loading: 55 m/s
- ▼ Weight: 2 kg (4.4 lb.)
- ▼ Mounting: wall, pole 4 to 5 cm (1.5 to 1.9 in.) mast
- ▼ Adjustment: ± 90° azimuth, ± 90° elevation

