

Alcatel 7390 LMDS Cross-Polarized Radio Base Station (X-Pol RBS) equipment delivers and collects all traffic to and from subscribers in a given coverage area and is the linking point between subscribers and the backbone network. The 7390 X-Pol RBS outdoor radio equipment is a key component of the Alcatel 7390 LMDS Solution.

The 7390 X-Pol RBS outdoor transmitters and receivers are collocated with their respective sector antennas and deliver wide bandwidth up-conversion and down-conversion, as well as power amplification functions. The equipment is fully managed by the Alcatel 5620 Network Manager (NM), formerly the 46020 Network Manager*.

Highly scalable and fully managed as part of a multiservice network, the 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.

* This product belonged to the Newbridge family. Newbridge was acquired by Alcatel in May 2000.



Bringing
the backbone
to subscribers



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Control and switching

The 7390 X-Pol RBS is connected to an Alcatel 7390 LMDS Digital Base Station (DBS). Up to eight X-Pol RBSs can be connected to the same DBS that provides the modems and common control.

To increase the overall system service capacity, TDMA is implemented for the uplink, so that a shared bandwidth environment is created at the ATM Air interface level for subscriber access. Once the individual IF signals are combined, they are subsequently applied to the broadband transmitter or receiver within a given cell or section.

Inter-cell links (ICLs)

In a large metropolitan network system, intercell linking can have significant impact on implementation and/or operating costs. The Alcatel wireless ATM access system allows a wide variety of managed intercell linking options to optimally address this issue.

- ▼ Fiber ICLs: OC-3, OC-12, STM-1, STM-4
- ▼ Wireline ICLs: DS3, nxT1/E1, E3
- ▼ Support of OEM radios and termination of conventional TDM or ATM point-to-point radios

Technical Summary

7390 X-Pol RBS

- ▼ Antenna:
 - separate transmit and receive antenna
 - transmitter and receiver attached to antenna
- ▼ RF output frequency: 24 to 40 GHz
- ▼ Azimuth bandwidth: 90° sector coverage
- ▼ Elevation bandwidth: approximately 2.5°
- ▼ Polarization: vertical or horizontal linear, selected at time of deployment

- ▼ Cross-polarization isolation: approximately -24dB, main, side and back lobes (azimuth)
- ▼ Peak gain: +21dBi, co-polarized
- ▼ DC supply: -48 V DC @ 0.75 A max
- ▼ DC power consumption: < 25 W
- ▼ RS-422 management interface: LEMO connector
- ▼ IF connector - N(f) type: 50Ω (note: the DC input supply is also provided on this connection)
- ▼ Reference oscillator output N(f): 50Ω, AC coupled
- ▼ Weight: 2.2 kg (4.84 lb.), excluding antenna

7390 X-Pol RBS Transmitter

- ▼ Gain: 40dB +/- 3dB
- ▼ Maximum output RF power: > 1 W at PldB (shared among RF carriers)
- ▼ DC supply: -48 V DC @ 0.75 A maximum
- ▼ DC power consumption: < 35 W
- ▼ RS-422 management interface: LEMO connector
- ▼ IF connector - N(f) type: 50Ω (the DC input supply is also provided on this connection)
- ▼ Reference oscillator output - N(f): 50Ω, AC coupled
- ▼ Weight: 2.2 kg (4.84 lb.), excluding antenna

Base Station Receiver

- ▼ Gain: 40dB +/- 3dB
- ▼ RF noise figure: < 6dB at 25° C (77° F)
- ▼ Out-of-band rejection: > 30dB at 50 MHz from defined band EDGE
- ▼ Input RF compression: -25dBm at PldB for single carrier operation

Power/Environment/Mechanical Data

- ▼ DC power consumption: <35 W
- ▼ Height: 38.10 cm (15 in.)
- ▼ Width: 10.16 cm (4 in.)
- ▼ Depth: 20.32 cm (8 in.)
- ▼ Operating environment: -40° to 50° C (-40° to 122° F), 0% to 100% relative humidity
- ▼ Product safety:
 - Bellcore GR-2834-Core (basic electrical, mechanical and environmental criteria)
 - Bellcore TA-NWT-000487 (electronic equipment cabinets requirements)
- ▼ EMC standards: EN 300 385

License Frequency Band	ORU (GHz)	OTU (GHz)	OTRU (GHz)
27.350 - 28.350	27.350 - 27.650	27.850 - 28.350	RX: 27.850 - 28.350 TX: 27.350 - 27.650
27.500 - 28.350	27.350 - 27.650	27.850 - 28.350	RX: 27.850 - 28.350 TX: 27.350 - 27.650
25.350 - 25.850	25.350 - 25.600	25.600 - 25.850	RX: 25.600 - 25.850 TX: 25.350 - 25.600
25.450 - 26.725	25.450 - 25.870	26.305 - 26.725	RX: 26.305 - 26.725 TX: 25.450 - 25.750

* For other frequency bands: 24, 31 and 38 GHz

