

New generation of MMDS Equipment

MMDS *MultiSegment* Headend Transmitting Equipment

The MMDS *MultiSegment* headend transmitting equipment is a new format of arranging MMDS wireless TV distribution networks and data transfer systems with service area 5 to 50 km.

MultiSegment transmitting equipment is built based on progressive principle enabling combination of a wideband high-frequency transformer, power amplifier, and antenna phased array within single hermetic enclosure. Due to the *MultiSegment* technology transmitting complexes meet the requests of the most demanding users and possess enhanced operating characteristics.

Absence of a high-frequency waveguide removes all the limitations concerning maximum height where *MultiSegment* may be installed, thus enabling to service a large area. Thus the installation time is kept to a minimum as the only criteria is to position the transmitter correctly on the mast.

The use of ultralinear amplifier modules ensures high output power of the transmitter with minimum intermodulation distortion. It is also possible to transmit simultaneously analog, digital TV channels and data in adjacent frequency bands. There is also a facility to operate in the extended frequency band up to 400 MHz within 2 to 3 GHz range.

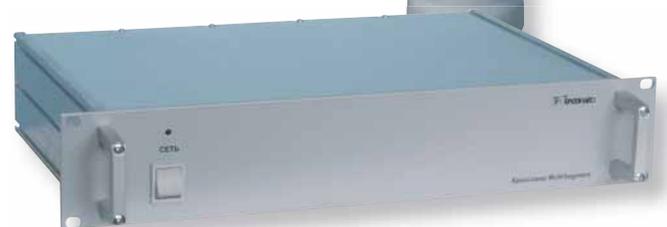
Module design of the complex makes it easy to correct the antenna pattern, enables extension of the coverage area by way of adding extra amplifier modules without the need to change the transmitting equipment, and also significantly increases the service reliability by dispersing the probability of failure.

MultiSegment transmitting equipment is compatible with any CTV and CMTS headends, including DOCSIS 2.0.

The equipment model line comprises over 70 modifications of the transmitting complexes, which may be used both in the local MMDS networks of the district level and as a basis for regional scale broadband telecommunication network.

Key features:

- Possible installation at maximum available height
- Highly efficient antenna in the form of active phased array
- Quick deployment of the system
- Wide model range including models with extended operating frequency range
- High linearity of the transmitter characteristics
- Possible simultaneous transmission of analog and digital channels in adjacent bands
- Flexibility and reliability due to module design
- Compatibility with CMTS standards DOCSIS 1.x, DOCSIS 2.x, Euro DOCSIS, and DOCSIS+
- QAM256 modulation support



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Equipment set: integrated transmitting unit (ITU) and crossover

Specifications of *MultiSegment* Transmitting Equipment (Standard Models)

ITU MultiSegment (transmitter & antenna in one package)	"Little Fiddler"	"Gold Finger"	"Big Bertha"
Frequency range	2,5 – 2,7 GHz *		
LO stability	±1,3 kHz		
Output power (1dB compression point, single-tone mode)	25 W *	50 W *	100 W *
Rated output power per 1 TV channel (24 TV channels, output 3rd intercept -54 dB)	150 mW	300 mW	600 mW
Output spurious	- 60 dB		
Recommended number of analog / digital TV channels	24 / 100 *		
Input signal level	85 – 91dBμV		
Input frequency range	UHF		
Supported digital modulation types	QSPK - QAM256		
Horizontal radiation pattern	360° *		
Vertical radiation pattern	7,5°	3,6°	1,8°
TX antenna gain	10,5 – 15 dB	13,5 – 18 dB	16,5 – 21 dB
Operating range, analog / digital	12 / 25 km **	25 / 50 km **	50 / 100 km **
Operating temperature	-45...+45 °C		
Design	Outdoor design, maintenance-free		
Weight	18 kg	30 kg	50 kg
Physical size	1,2 × Ø 0,17 m	2 × Ø 0,17 m	4 × Ø 0,17 m
Crossover			
Input connector	F-type, 75 Ohm		
Crossover-ITU connector	5/8", 75 Ohm		
Power supply	220±10% V, 50 Hz		
Power consumption	170 W	280 W	500 W
Design	Indoor use only		
Weight	7,8 kg		
Physical size	480 × 280 × 90 mm		

* - Other designs are available

** - 24 analog / 100 digital TV channels, receiving antenna gain – 24 dB, within the area of direct view from the ITU

MultiSegment ITU Directional Radiation Pattern

