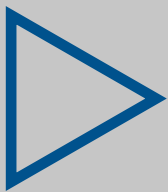


# **NORTHIA**

## **5kW Liquid Cooled**

### **DTV Transmitters**

— 5.0	kWrms	DVB-T/H	TL6D5K
— 5.0	kWrms	DVB-T2	TL6F5K
— 5.0	kWrms	ISDB-T/Tb	TL6I5K
— 6.4	kWrms	ATSC	TL6T6k4
— 10	kWps	ANALOG	TL6A10K



42 | 19"  
HE



# NORTHIA



liquid cooled

The NORTHIA line is the result of years long research in terms of **reliability** - **size reduction** - **structural simplicity** - **modularity and scalability** - **competitive price** (one of the best price in its category).

NORTHIA Liquid Cooled transmitters, perfectly meet the needs of customers that require **Medium / High Power** solutions. The line is able to deliver from **2,5kW up to 10kWrms in DVB.T/H** standard (up to 20kWps Analog), implemented **on a single rack (19")**. Its qualities of **compactness, modularity and redundancy** have been applied to the design of the transmitter design as well as of the **cooling system**.

The new line maintains the traditional safety features of Itelco-Electrosys transmitters and improves the **ease of intervention by the operators** thanks to the extremely simple design.

The homogeneity between product lines and the manufacturing process optimization makes Itelco-Electrosys offer, meeting also customer needs in terms of **operating costs reduction, ease of maintenance** and **spare parts management**, extremely competitive.

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# THE BROADCASTING & TELECOMMUNICATION PIONEER

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## ITELCO Numbers

19.000 INSTALLATIONS  
700 DIFFERENT CONFIGURATION  
200 DVB-T2 TX installed (July 2015)  
1.000 high and medium power TV transmitters  
still in service since 1985.  
130 Operating Countries

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## Why ITELCO?

INNOVATION → Always Pioneers in the  
broadcasting industry  
STRENGTH → 1.000 high and medium power  
TV transmitters still on-air since 1985  
EASY MAINTENANCE &  
POWER EFFICIENCY → Save money and pay  
back your transmitter  
RESEARCH & DEVELOPMENT → 10% of our  
revenue reinvested into R&D



# UHF 4HPA

# NORTHIA LIQUID COOLED TRANSMITTERS

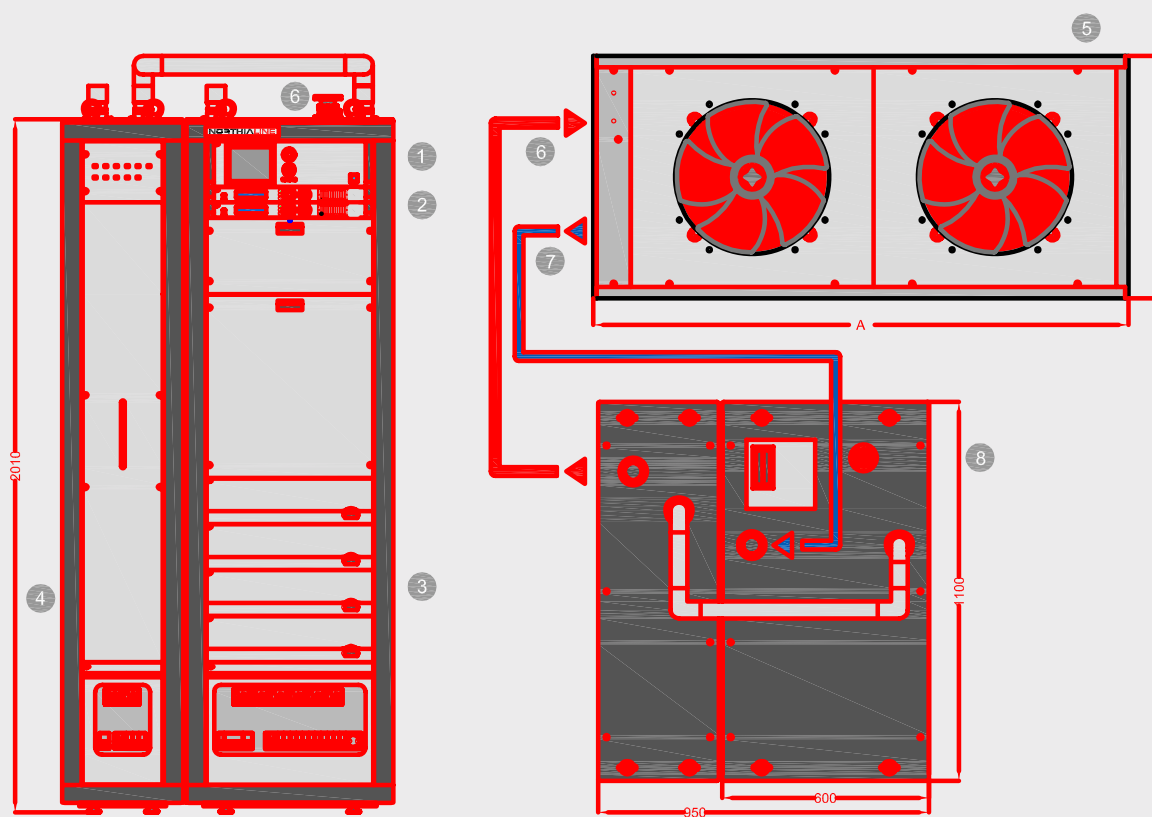
## Northia UHF transmitter

in the configuration realized with 4 Amplifier Modules (4HPAs) in its compact version in a 42 units rack, is characterized by:

- Multi-Standard operation  
(DVB-T/H/T2, ATSC, ISDB-T/Tb, Analog)
- Dual-Cast operation
- Fully broadband on UHF frequencies
- Low power consumption
- Extremely compact design
- Easy installation and maintenance
- Modular design
- Hot-pluggable amplifier modules
- Latest LDMOS technology for power amplifiers
- Band-pass filter inside transmitter rack
- Itelco-Electrosys state-of-the-art multi-standard MEXII Exciter
- Adaptive precorrection
- 2 ASI (4 for DVB), GbE available inputs
- SNMP / Web Server remote control
- CAN-bus internal communication
- Internal GPS for SFN operation
- Remote software/firmware upgrade
- 1 USB port for each control unit
- I.CCU optional management with iPad
- High efficiency liquid cooling system



scheme / projects



- 
- [ 1 ] CCU TX CONTROL UNIT

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  - [ 2 ] MEX// MULTISTANDARD MODULATOR

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  - [ 3 ] BP Filter (optional inside rack)

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  - [ 4 ] HPA SECTION (W6-230L UHF liquid cooled)

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  - [ 5 ] COOLING UNIT (dual pump)

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  - [ 6 ] RF OUT TO ANTENNA / COMBINER

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  - [ 7 ] HEAT EXCHANGERS

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  - [ 8 ] COOLING CIRCUIT

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### **General / Environmental Specifications**

Operation Temperature Range	0°C to +45°C
Storage Temperature Range	-30°C to +70°C
Relative Humidity (at 40°C)	90%
Altitude a.s.l.	up to 2000m
Safety	EN 60215 / EN 60950
EMC	EN 301489
AC Supply	3 x 400Vac (± 15%) Three Phase + N + PE
Power factor	>0.9

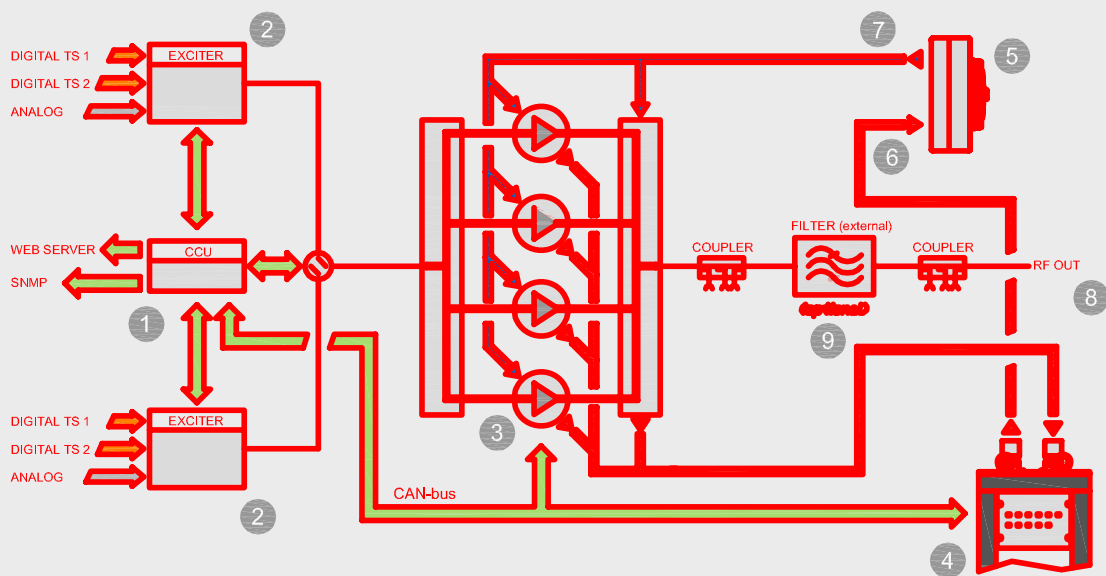
### **Mechanical Specifications**

Transmitter Dimensions (wxdxh)	600 x 1100 x 2000 mm
Transmitter Rack type	N° 1 rack 19" 42 HE
Transmitter Weight	350 kg
Mechanical noise level	≤ 55 dBA

### **Cooling System Specifications**

Cooling Unit Dimensions (wxdxh)	350 x 1100 x 2000 mm
Cooling Unit Weight	180 kg
Coolant (water and glycol) flow rate	70 l/min
Heat Exchangers Dimensions (A x B x h)	800 x 2100 x 90 mm
Heat Exchangers Weight	80 kg
Cooling System Power Consumption	1.8 kW max

## scheme / projects



- [ 1 ] CCU TX CONTROL UNIT
- [ 2 ] MEX// MULTISTANDARD MODULATOR
- [ 3 ] BP Filter (optional inside rack)
- [ 4 ] HPA SECTION (W6-230L UHF liquid cooled)
- [ 5 ] COOLING UNIT (dual pump)
- [ 6 ] RF OUT TO ANTENNA / COMBINER
- [ 7 ] HEAT EXCHANGERS
- [ 8 ] COOLING CIRCUIT



# MODELS/ STANDARDS

## **DVB-T / DVB-T2 / ISDB-Tb Operation**

Model	TL6D5K / TL6F5K / TL6I5K
Output Power	5.0 kWrms (before filter)
Bandwidth	5/6/7/8 MHz
Signal Inputs	4 DVB ASI (BNC), 1 GbE (RJ45)
Spurious Emissions	<-60 dBc (< -70 dBc on request)
Harmonic Emissions	<-60 dBc (< -70 dBc on request)
Adjacent Channel Shoulders	≥ 40 dB (≥ 50dB critical mask)
MER	≥ 36 dB
RF Output Connector	1 5/8 "
Total Efficiency	Up to 40%

## **Analog Operation**

Model	TL6A10K
Output Power	10 kWps (after filter)
Standard	G, H, I, K, K1, L, M, N
Video Inputs	2 BNC connectors
Audio Inputs	2 XLR connectors (additional In for MPX, NICAM, Std M)
Spurious Emissions	<-60 dBc (< -70 dBc on request)
Harmonic Emissions	<-60 dBc (< -70 dBc on request)
IMD	<-60 dBc
RF Output Connector	3 1/8 "
Total Efficiency	Up to 30%

## **ATSC Operation**

Model	TL6T6K
Output Power	6 kWrms (before filter)
Bandwidth	6 MHz
Signal Inputs	4 DVB ASI (BNC), 1 SMPTE 310M (BNC)
Spurious Emissions	<-60 dBc (< -70 dBc on request)
Harmonic Emissions	<-60 dBc (< -70 dBc on request)
Adjacent Channel Shoulders	≥ 40 dB
EVM	≤ 4%
RF Output Connector	3 1/8 "
Total Efficiency	Up to 40%



**Itelco Electrosys**

Certifications:

Quality System UNI EN ISO 9001

ITQS - To provide our customer with  
very reliable equipment and premium solutions,  
we follow a total quality management philosophy



ISO 9001:2000 n°9110.ITE1



THE BROADCASTING &  
TELECOMMUNICATION  
PIONEER

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