



**ELVA-1 Ltd.**

46 Robezu str., LV-1004 Riga, Latvia

T: +371-7-065100

F: +371-7-065102

**Mm-wave Division in St. Petersburg, Russia**

T: +7-812-326-5924, F: +7-812-326-1060

<http://www.elva-1.com>

Email: [sales@elva-1.com](mailto:sales@elva-1.com)

**City1 TV Test Kit**

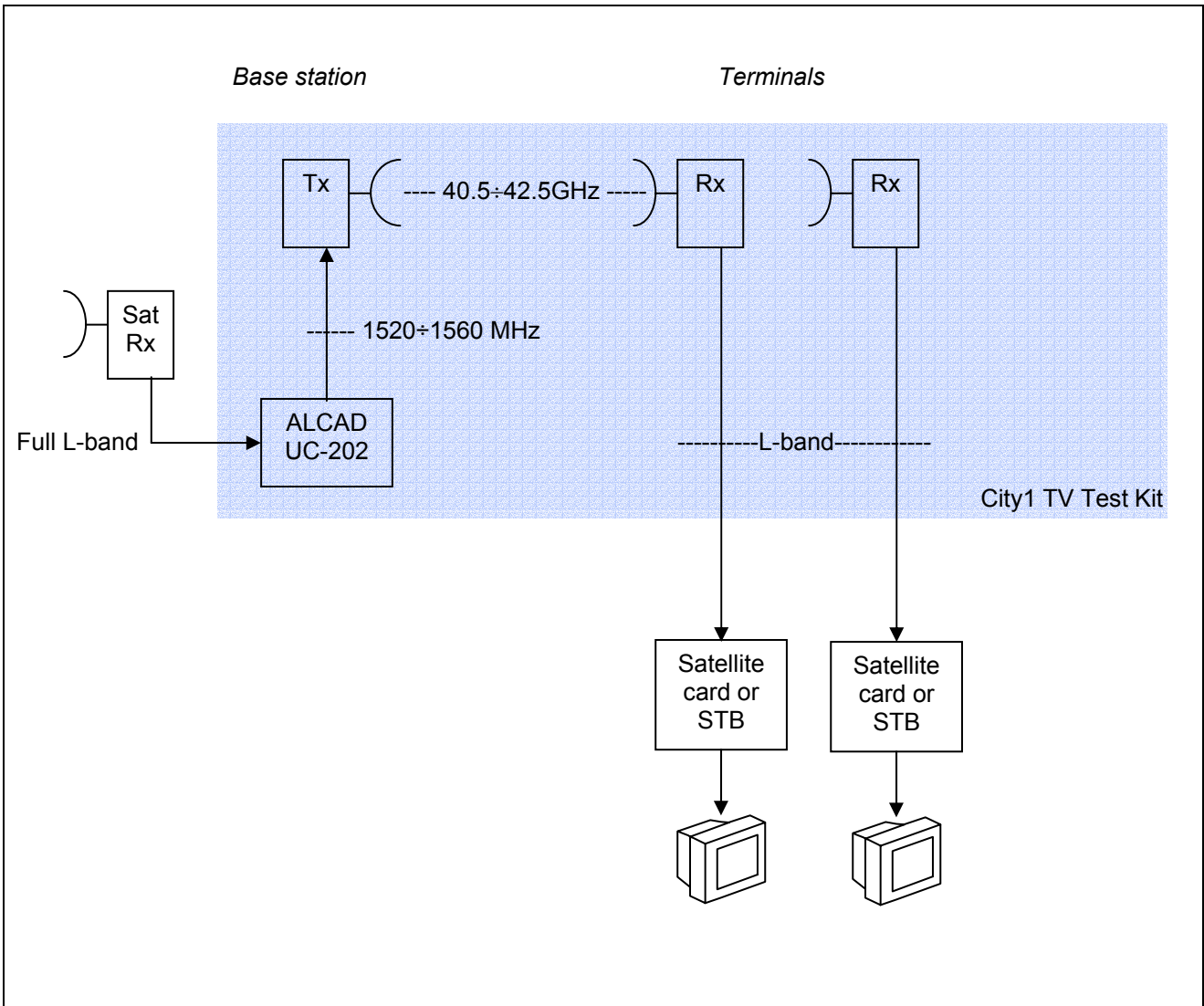
The City1 TV Test Kit is designed for evaluation of the field environment for a City1 digital TV system. It consists of one base station, two terminals and a "Satellite receiver/Base station" interface unit. This equipment, together with a standard satellite receiver and digital TV receiver is sufficient to test the transmission quality of a City1 system in digital TV.

The transmitter and receivers used in a City1 TV Test Kit are identical to standard system components, and can be used in the subsequent City1 system.

**Specifications**

**City1 TV Test Kit**

<b>General</b>	
Sector radius	
at 5mm/h rain rate	9 km
at 12mm/h rain rate	5 km
Sectors angle	90°
Number of sector transmitters	1
Number of terminals	2
<b>Radio interface</b>	
Frequency band	40.5-42.5 GHz
Polarization	Vertical (Horizontal upon request)
Data protocol	DVB-S
Modulation	QPSK
Transmitter Power	150 mW
Base station antenna	90°x10°, 16 dB
Terminal antenna	30 cm, 38 dB
<b>Transmitter input</b>	
Frequency band	950-2150 MHz
Channel bandwidth	39 MHz
TV programs per 39 MHz channel	8 (422P@ML)
TV format	DVB-S
<b>Receiver output</b>	
Frequency band	950-2150 MHz
<b>ENVIRONMENTAL</b>	
Temperature range	-10 °C to +50 °C (operating) -40 °C to +70 °C (storage)
Humidity	100%



## Specifications

## 40.5-42.5 GHz Transmitter

Part Number	TM-4xxx-xx/xx-x
<b>GENERAL</b> Operating Channels Type approval Operational Temperature range Power supply Size	Any channel in 40.5-42.5 GHz band MPT 1560 -10 to +50°C -60VDC, 1.5A Cylinder Ø270mm, length 340mm
<b>ELECTRICAL</b> <b>IF INPUT</b> Input frequency Input level Modulation Input Connector Input Spurious  <b>RF OUTPUT</b> Central output frequency Polarization Channel Spacing Output Power Spurious Emissions in band 30 MHz to 21.2 GHz 21.2GHz to 40.5GHz 42.5GHz to 43.5GHz 43.5GHz to 80 GHz Antenna	L-band -5 dBm nominal QPSK F- type -55 dBc maximum in 4kHz Bandwidth relative to unmodulated carrier  Any in 40.5-42.5 GHz band Vertical (Horizontal upon request) 39MHz > +22 dBm Psat min In line with MPT1560 I.E.: < - 45 dBc (MPT1560 MASK) < - 90 dBW < - 60 dBW < - 80 dBW < - 60 dBW 90°x10°, 16dBi (other polar patterns available)
<b>TX CHANNEL</b> Channel bandwidth Amplitude Ripple (33 MHz) Group Delay Variation (33 MHz) Phase Noise Performance	33 MHz ≤2dB < 10 ns in line with DAVIC Specs I.E: At 1 KHz OFFSET <-51 dBc/Hz At 10 KHz OFFSET <-81 dBc/Hz
<b>ENVIRONMENTAL</b> Temperature range  Humidity	-10 °C to +50 °C (operating) -40 °C to +70 °C (storage) 100%
<b>MOUNTING</b>  Adjustment: Elevation Horizontal	Transmitter should be mounted on vertical pipe with diameter 40mm...70mm.  +/-25° 360°

### Model number structure :

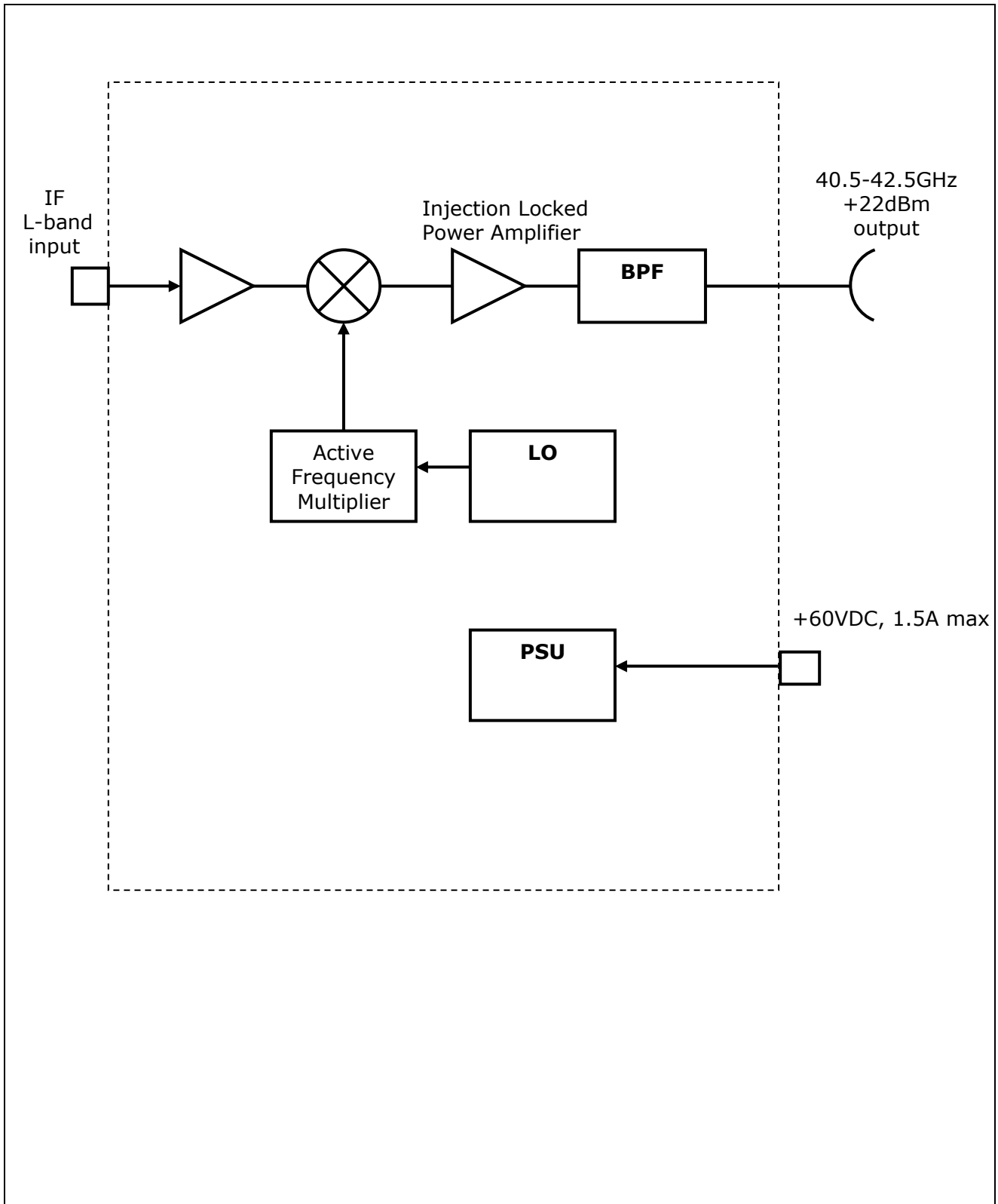
TM-**BBBB-AA/AE-C**

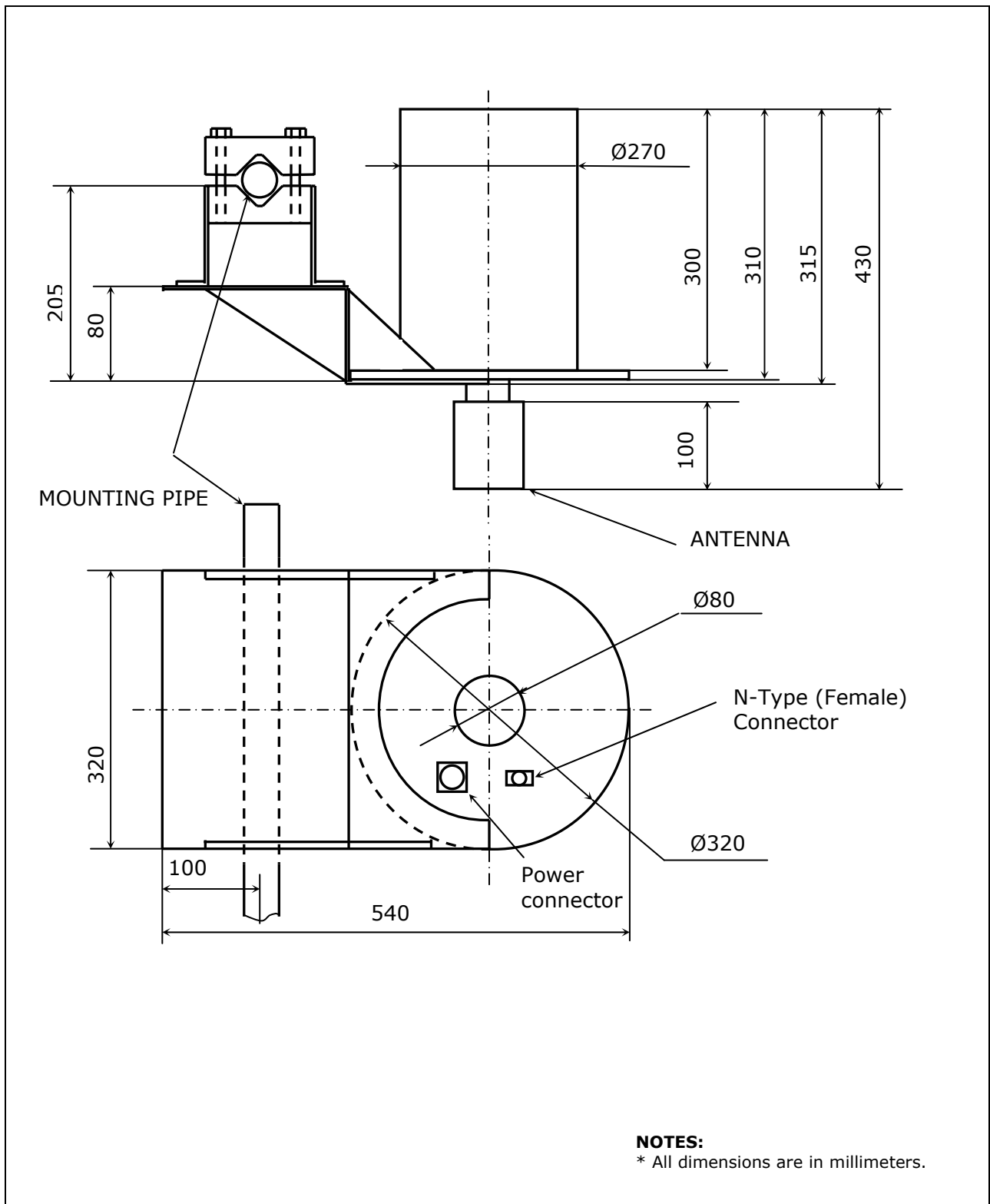
**BBBB**- low end of transmitted RF band (in 10\*MHz)

**AA/AE** – Antenna azimuth/elevation angle at 3 dB level (in degrees)

**C** – environmental conditions (**1** = Normal, **2** = Polar, **3** = Tropical)

*For example: TM-4183-90/10-1 means 41.83GHz is the low end of the transmitted RF band, 90° azimuth/10° elevation angle antenna, normal environmental conditions*





## Specifications

## 40.5-42.5 GHz MVDS Receiver

Part Number	RM-xxx-4xxx-x	
<b>GENERAL</b>		
Frequency range	40.5-42.5 GHz	
LO Frequency	40.5400 or 42.4605 GHz	
Output IF	950-1910 MHz	
Noise figure	≤8 dB	
RF-IF Gain	22 dB	
Cross-polar discrimination	20 dB	
Stability of local oscillator	±2.5 MHz	
Size	Cylinder Ø75mm, length 180mm	
<b>ANTENNA</b>	<i>Size</i>	<i>Gain</i>
RM-100-xxxx-x	10 cm	28 dB
RM-200-xxxx-x	20 cm	34 dB
RM-300-xxxx-x	30 cm	38 dB
RM-450-xxxx-x	45 cm	42 dB
RM-600-xxxx-x	60 cm	44 dB
<b>Electrical</b>		
Biasing current	250 mA (max)	
Biasing voltage	+18~24 VDC	
Output Connector	F- type	
<b>ENVIRONMENTAL</b>		
Temperature range	-10 °C to +50 °C (operating) -40 °C to +70 °C (storage)	
Humidity	100%	
<b>MOUNTING</b>	Receiver should be mounted on vertical pipe with diameter 40mm~70mm.	
Adjustment:		
Elevation	+/-20°	
Horizontal	360°	

### Model number structure :

RM-AAA-BBBB-C

**AAA**- Antenna diameter (in mm)

**BBBB** – low end of received RF band (in 10\*MHz)

**C** – environmental conditions (**1** = Normal, **2** = Polar, **3** = Tropical)

*For example: RM-300-4183-1 means 300 mm diam. antenna, 41.83GHz is the low end of the receiving RF band, normal environment conditions*

