

# ***RATAN-600***



# RATAN-600 Continuum Receivers

$\lambda$ cm	f GHz	$\Delta f$ GHz	$\Delta T$ mK/c <sup>1/2</sup>	T <sub>sys</sub> K	Comments
1.0	30.0	4.0	6	220	«MARS-2», 3 chan.
1.4	21.7	2.5	4.5	80	COOLED (15K)
2.7	11.2	1.4	3	70	COOLED(15K) ( <i>Satellites</i> )
3.9	7.7	1.0	3	62	COOLED(15K) ( <i>Communic.</i> )
6.3	4.8	0.8	2.2	38	COOLED(15K), 2 chan.
13	2.4	0.4	12	95	<i>Communication</i>
31	0.96	0.12	15*	105	<i>Communication (GSM)</i>
49	0.6	0.13	25**	125	<i>TV</i>

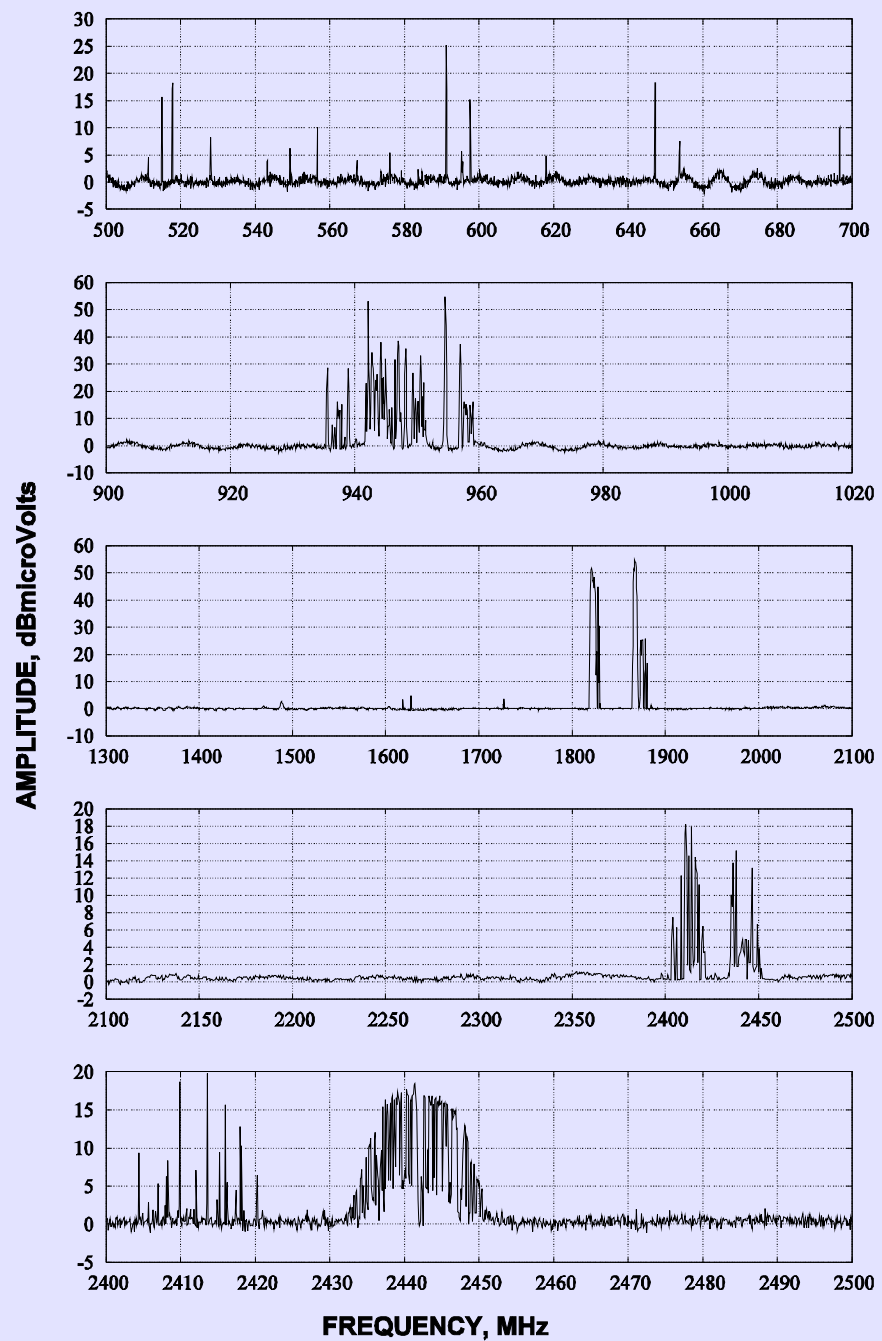


# RFI

- Communications (mobile phone, satellites “up & down link”, and etc.);
- Radars;
- TV;
- General civil (cars, ...)

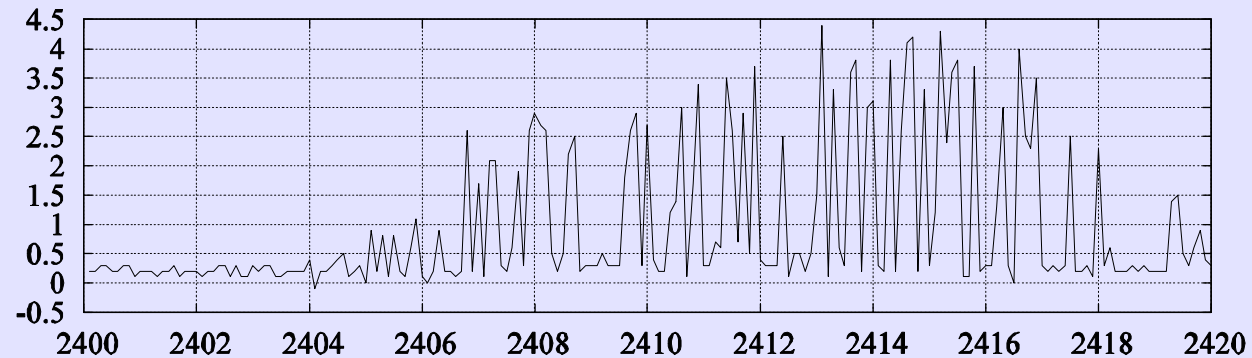
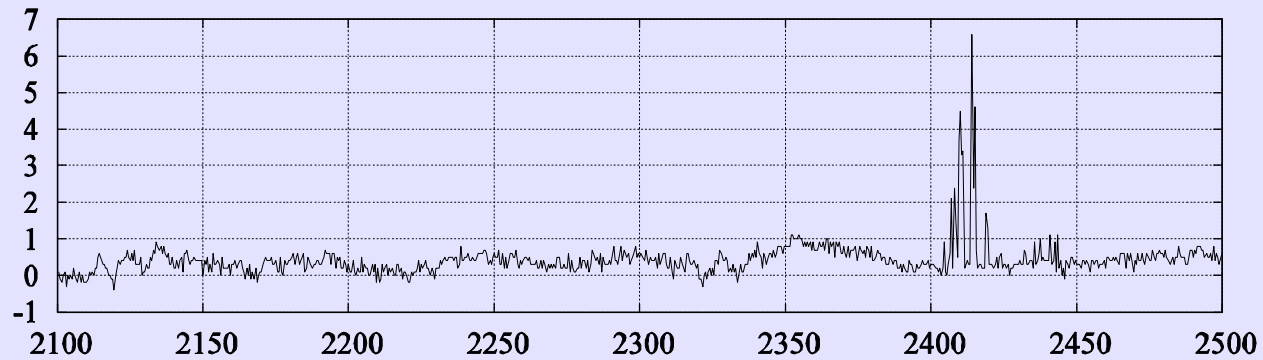
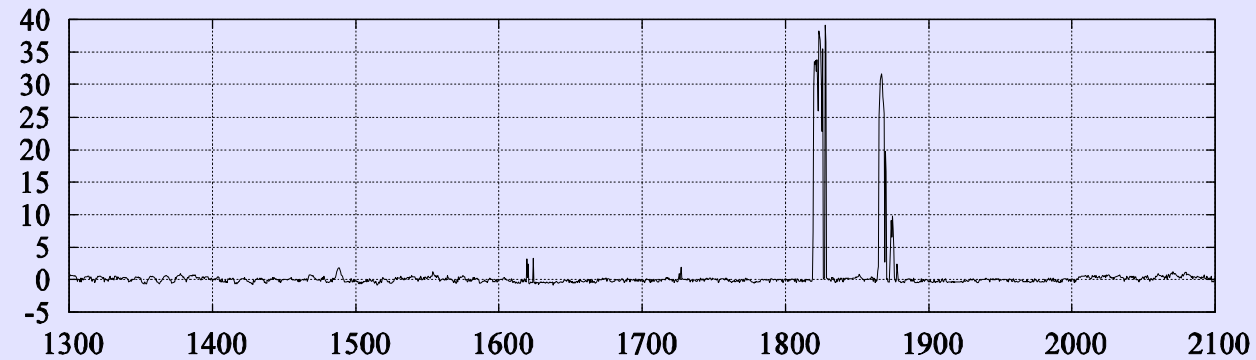


**RADIO FREQUENCY EMISSION  
FROM ZELENCHUKSKAYA DIRECTION  
30.05/2006, RATAN-600**



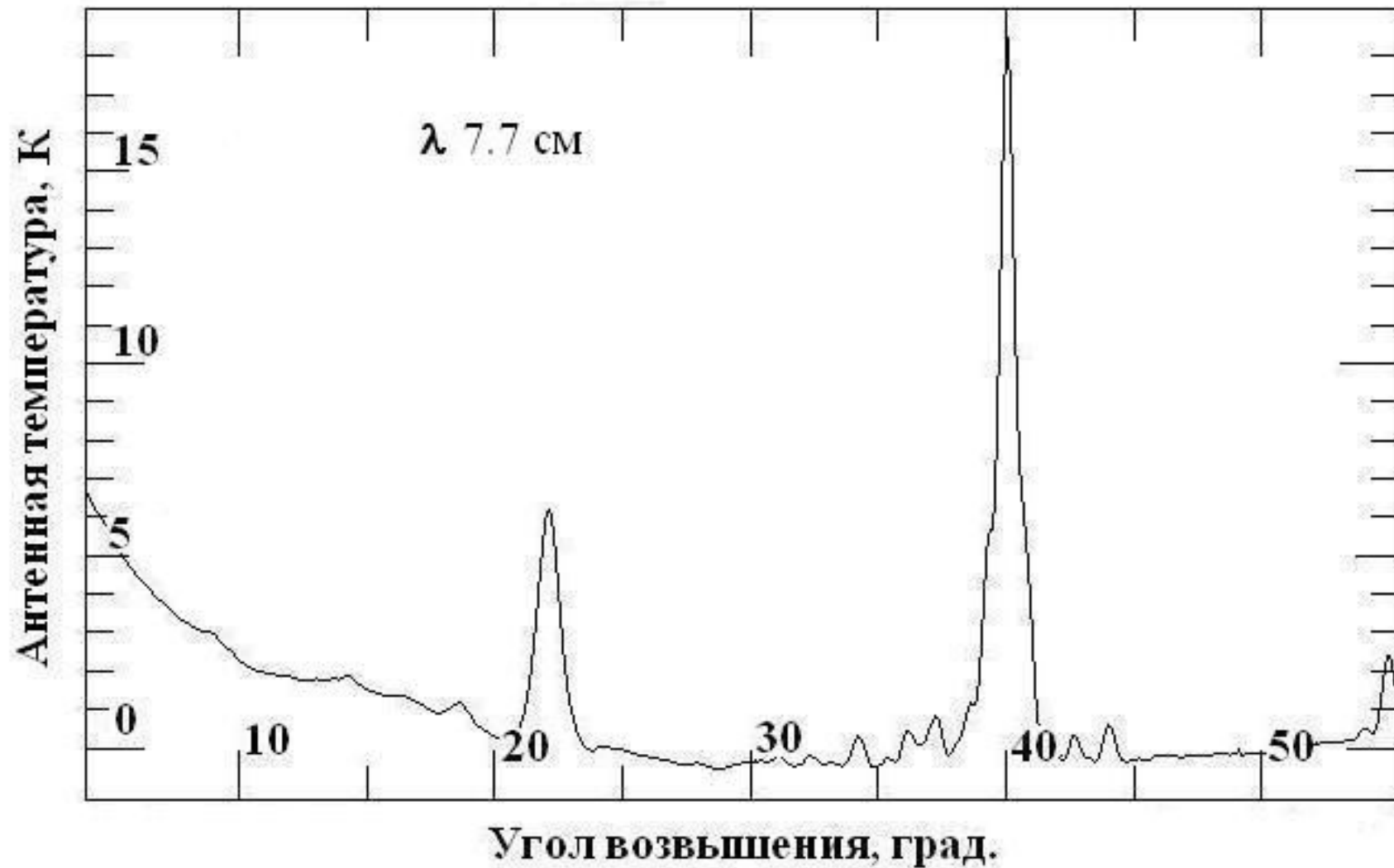
**RADIO FREQUENCY EMISSION  
FROM BTA DIRECTION  
30.05/2006, RATAN-600**

**AMPLITUDE, dBmicroVolts**



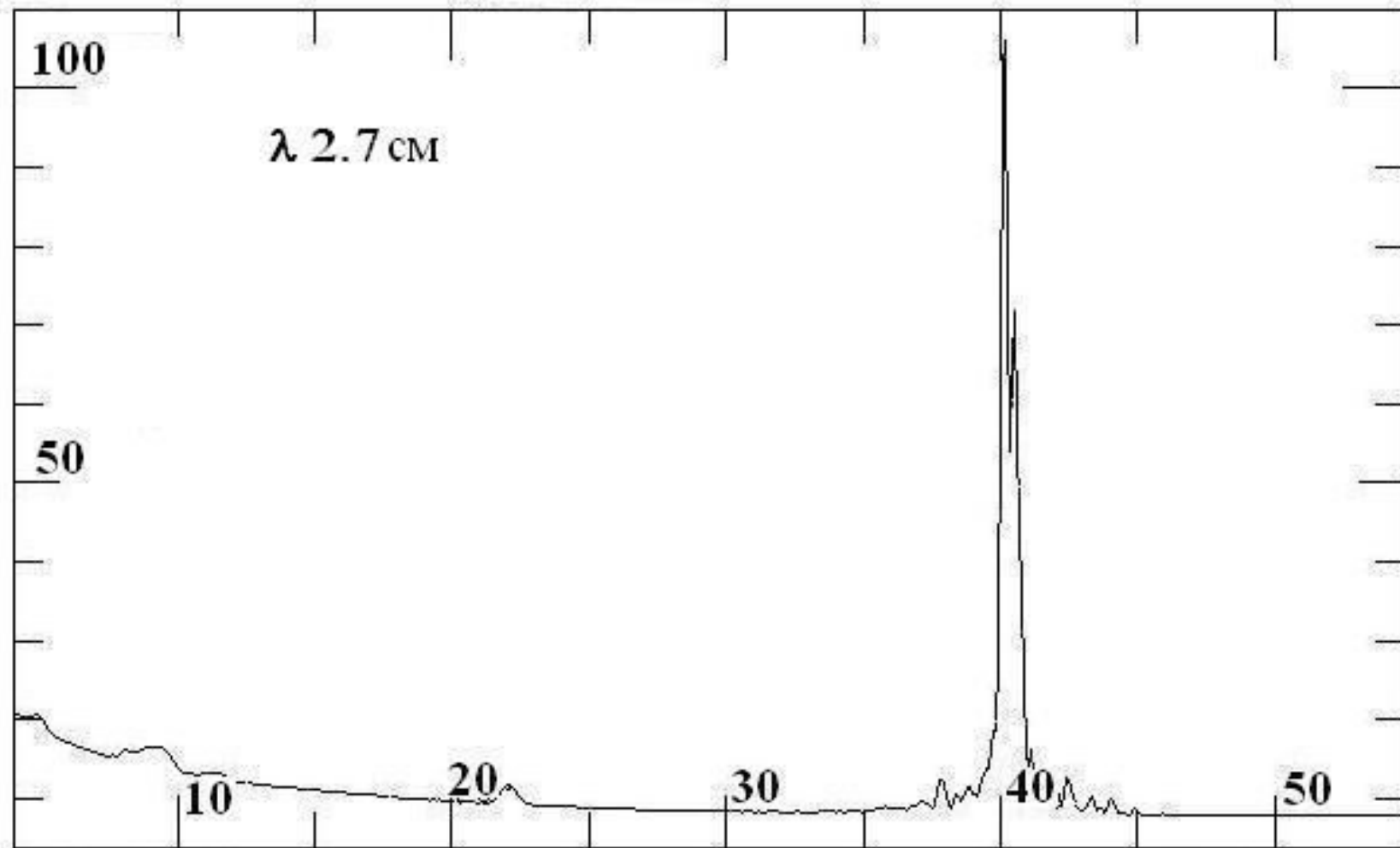
**FREQUENCY, MHz**

# RFI



# RFI

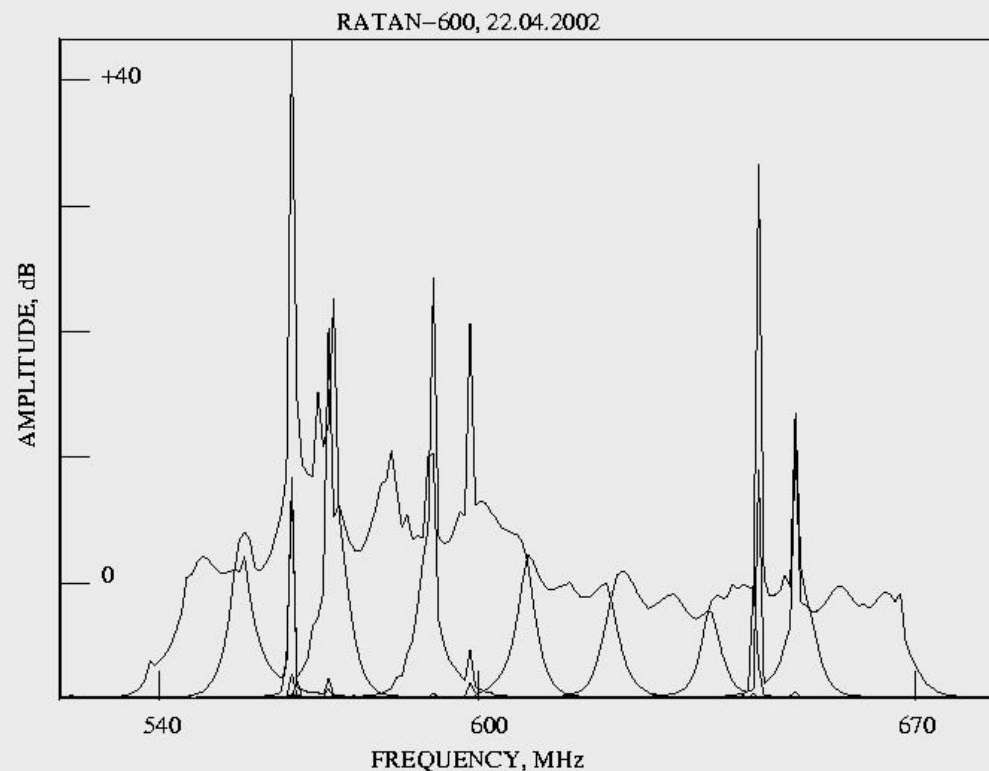
Относительная антенная температура, К



Угол возвышения, град.

# RFIs at 49 cm

- 49 cm (542-670 MHz)
- 8 sub channels
- can use ONLY two of them (606-638 МГц)





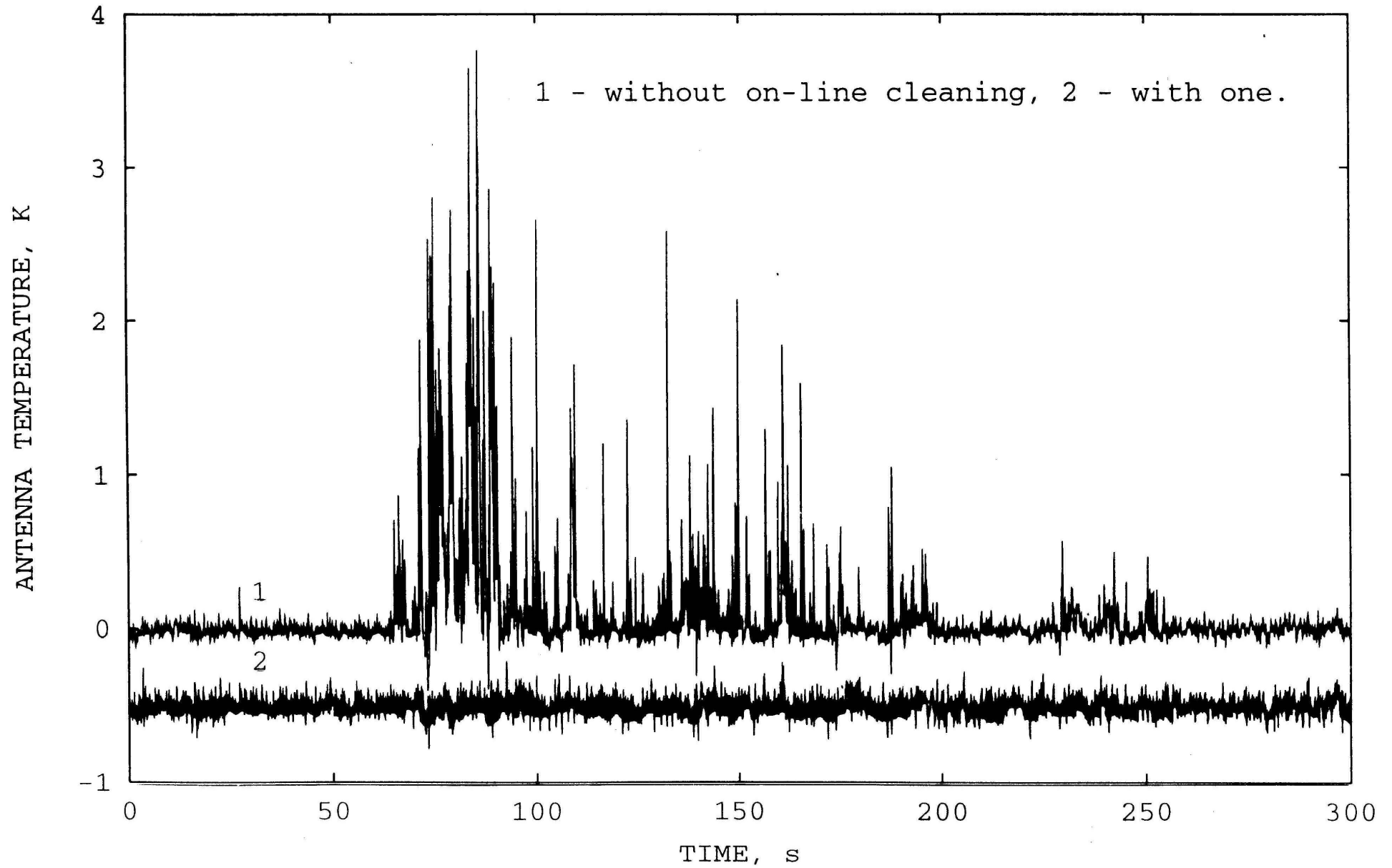
# RFI Mitigation

- 3.9 GHz  $\Rightarrow$  4.8 GHz;
- Broad band  $\Rightarrow$  many narrow bands;
- Rising data sampling.

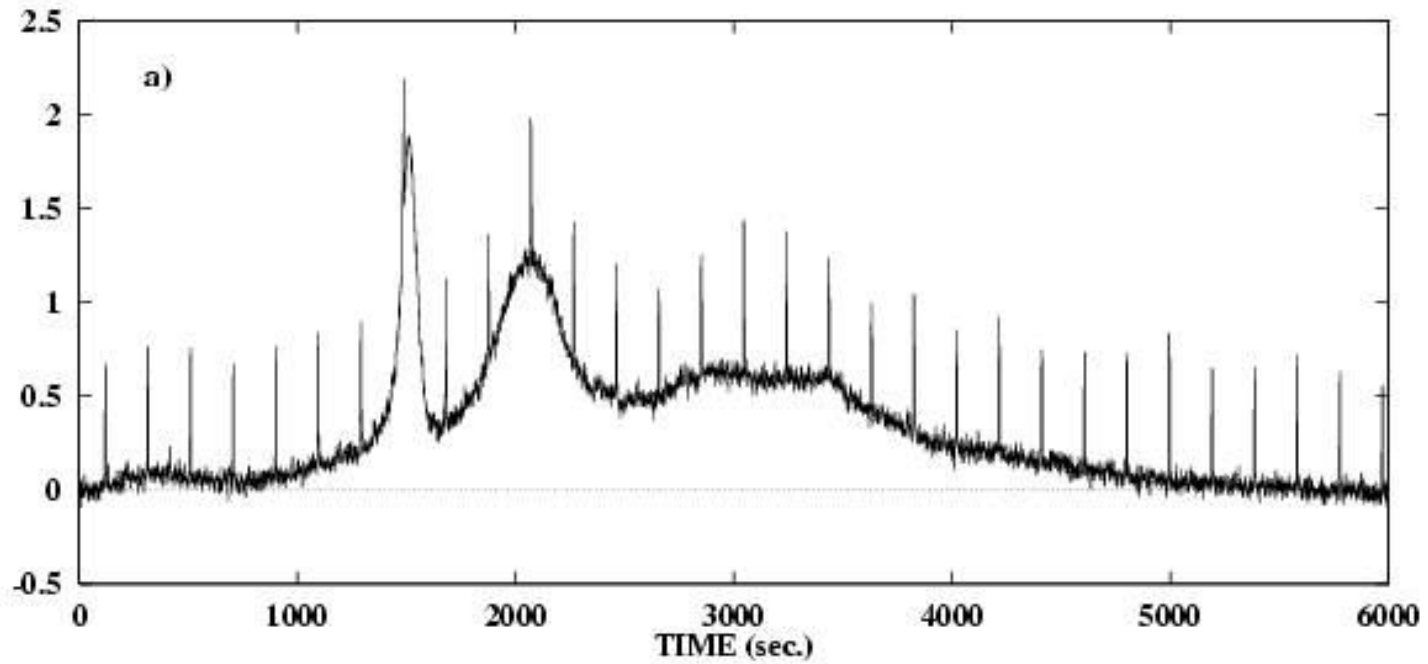
These are help with some type of RFIs...



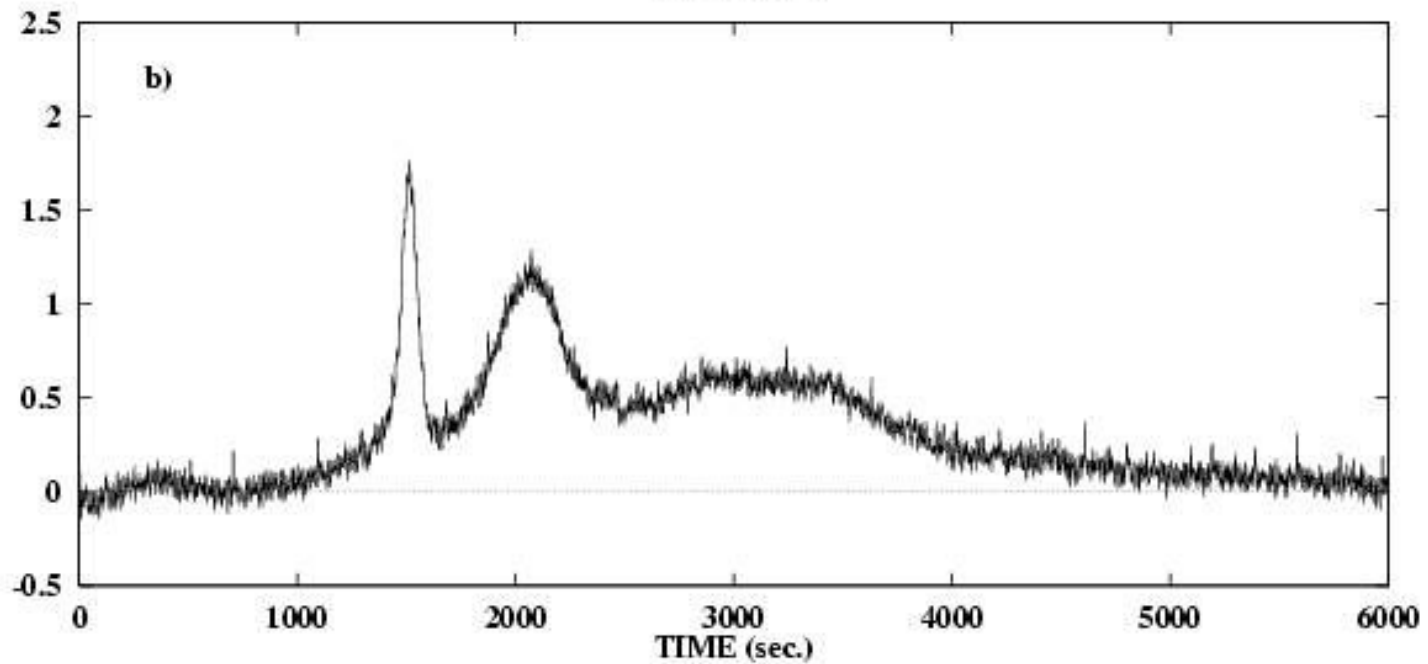
WAVELENGTH 13 cm, 2 SIMULTANEOUS RECORDS, BGR REMOVED

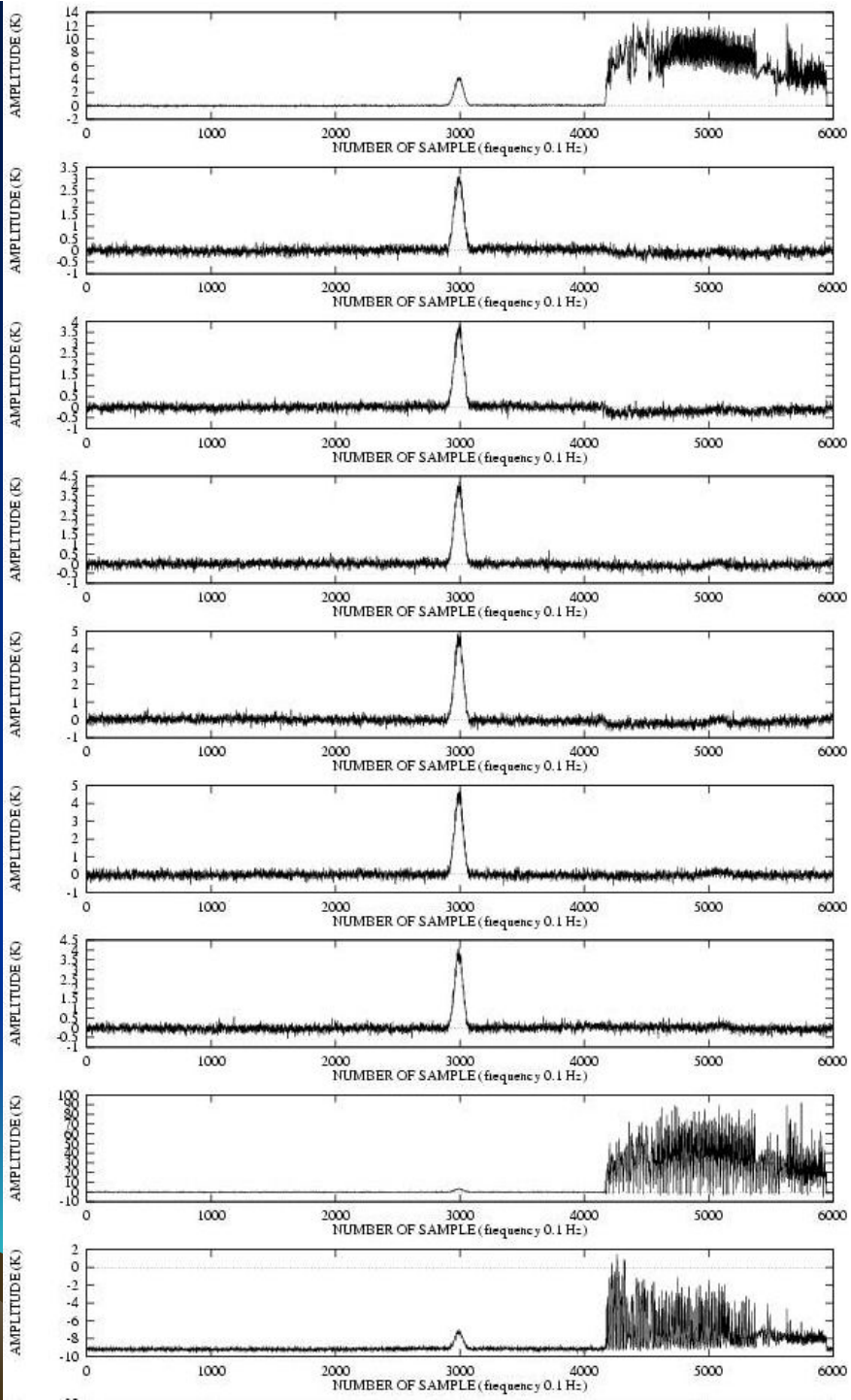


ANTENNA TEMPERATURE (K)



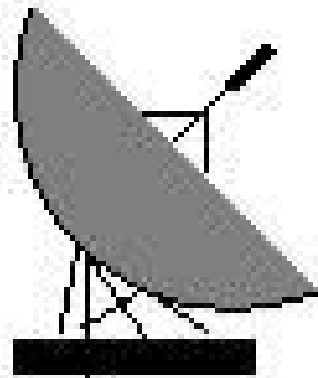
ANTENNA TEMPERATURE (K)



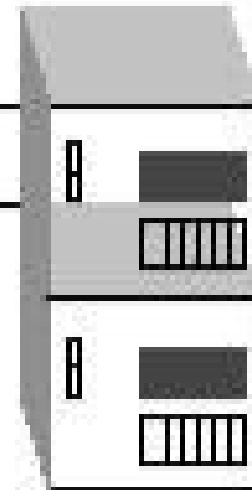
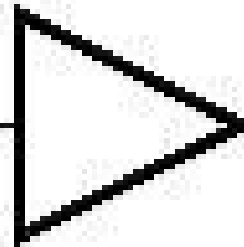


**VHF/UHF ANTENNA**  
**HPBW ~ 15deg**

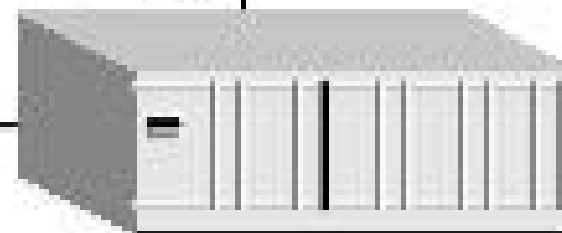
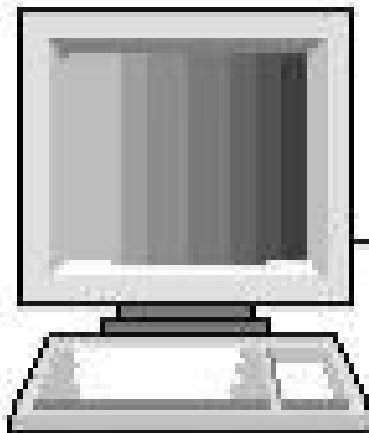
**ROHDE & SCHWARZ**  
**COMPACT RECEIVER**  
**ESMC (VHF/UHF)**



**LNA**  
**(17 dB)**



**GPIB CHANNEL**



**INDUSTRIAL PC**