

 The National Railway Company "CFR" SA	CFR Network Statement	March 01, 2013 Version 5.0
Country: Romania	Annex 13	Page: 1

Technical Specifications of the Radio Stations accessing the Radio Network of CFR

General parameters:

- Operating band: 146 – 174 MHz
- Programmable frequency synthesis
- Channel range: 12.5 kHz / 25 kHz
- Number of switchable channels: minimum 16
- Operable frequency range: minimum 14 MHz
- Working regime: Simplex and semiduplex
- Frequency stability: $\pm 0.0005\%$
- Standard equipment: CTCSS, 2-tones

Sender's parameters:

- Radio frequency power in antenna – max. 5 W – portable, 10W – mobile and fixed, programmable in at least two steps
- Modulation: FM
- Harmonic level: less than 0.25 μ W, for the frequency range of up to 1 GHz
- Signal to noise ratio: minimum 40 dB
- Audio response: 0.3 – 3 kHz, +1, -3dB
- Audio distortion: maximum 3% for 1000 Hz, deviation 60%

Receiver's parameters:

- Sensitivity: less than 6.0 dB μ V at a ratio of 20 dB SINAD
- Selectivity: 60 dB
- Attenuation of intermodulation products: minimum 65 dB
- Attenuation of image frequency: 70 dB
- Attenuation of parasitic radiations: 70 dB

The configuration set includes:

- Programming kit (software, interface, handbook)
- Licence

Required documents:

- Mentioning in the prospect of the compliance with the standard ETS 300 086
- Bulletins or approvals issued by acknowledged bodies
- Type approval issued by IGCTI (The General Inspectorate for Communications and IT Technology)

Antennas:

- Type: omnidirectional, gain of minimum 3 dB – (only for fixed radio stations)
- Environmental conditions: they shall be fixed and resist to winds of $V=120\text{km/h}$, rain, frost, temperature range between -30°C and $+60^{\circ}\text{C}$ (only for fixed radio stations)
- They shall be constructively equipped with an earthing possibility (only for fixed radio stations)