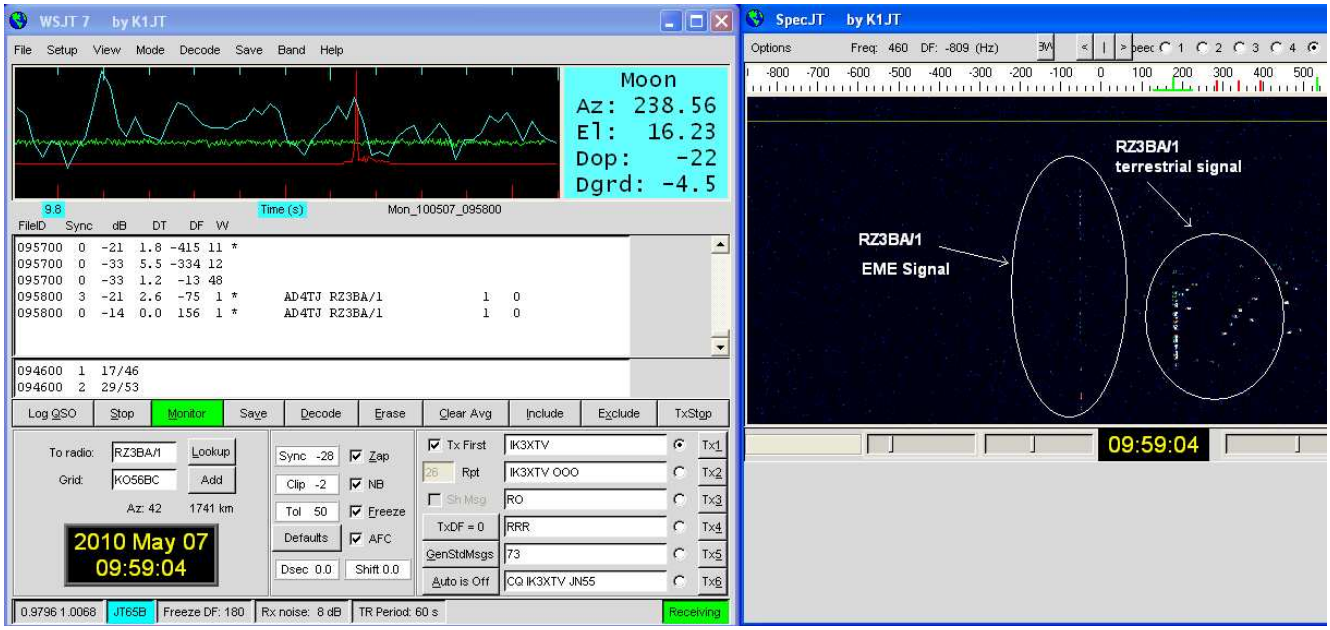
EME and terrestrial propagation with Russia on 144 mhz

Doc. N.15.47.23 may 7 2010 F.Egano, ik3xtv

The propagation effects on the 144 mhz band are amazing. In this document I related up the test on a double play about EME and terrestrial heard of Russian station RZ3BA/1 at the distance of over 1740 km. My yagi antenna pointed toward the moon and then to west direction at the opposite side than great circle with RZ3. Despite this offset angle I heard a strong terrestrial signal with no any time offset (please see at the wsjt page below with DT=0 and -14 db). The left trace is the eme signal with a delay time DT of 2.6 sec and with frequency Doppler of - 231 Hz, this is normal for a moon bounce communication signal. The outstanding case is the terrestrial signal considering the 1741 km of distance and on the other hand, the reception with the back side of my yagi (20 db Front/back ratio) . I should consider some different point of reflection toward the direction of my beam. By the way I can make only some hypothesis at the time.

- Reflection from satellite located in the area at the front side of my beam
- Strong meteor reflection heard with the back side of the beam
- Scattering from field aligned ionization at 250-300 km of height heard with back side of the beam
- Super tropo with ground gain enhancement from Russian side
- Sporadic E reflections



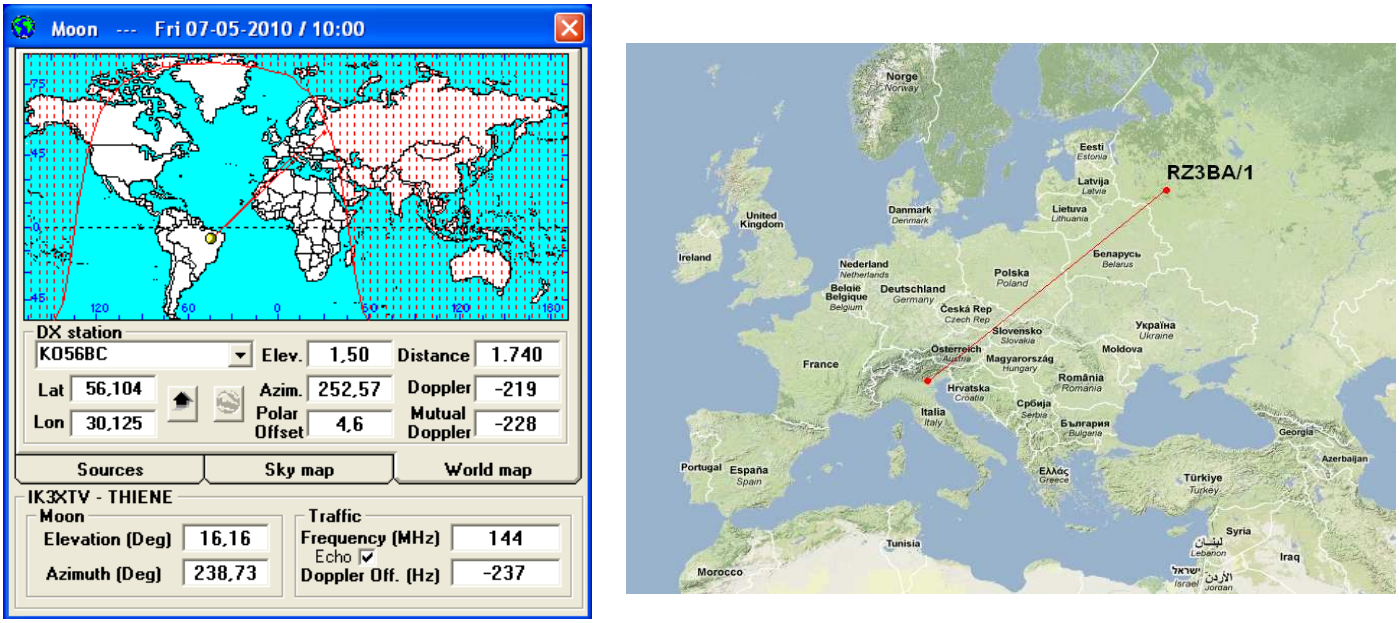


Fig.2 Left side: The world map with Moon and dx information. Right side: terrestrial map of RZ3BA/1

Path and Scatter Map - SM7LCB

Home: JN55RQ Ant [deg]: 0 DX: KO56BC Ant [deg]: 1 Scatter [km]: 10 Update

Middle JO91UG Distance [km] 1737.9 Direction 41.5