Mechansm of the wide-band microwave radiation generated by high explosives

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The radiation occures during expansion of products of detonation in highly non-equilibrium medium, oscillatory temperature of which can essentially exceed rotational one. Such medium is basically active to amplificate the microwave radiation.The the frequency of collisions of molecules is about frequency of radiation, therefore the radiation will be wide-band. Due to an air behind a shock wave is strongly ionized, the radiation can leave the explosion zone boundaries only after the decrease of this ionization because of its expansion and instability of border of detonation products. The process would be accelerated with presence of a shell of initiation of the charge after destruction of a conducting layer behind a shock wave.