A coplanar waveguide (CPW) fed patch antenna array is proposed in this paper. The resonance frequency of the antenna is 2.47 GHz and is inside of ISM 2.45 GHz band. The dimension of proposed antenna is 230 mm x 91.5 mm. For the substrate the material used is Roger 5870. The relative permittivity of the substrate material is 2.33. For increasing the gain, an array antenna has been designed. The antenna gain reaches up to 12 dB. The working has been simulated in the HFSS Ansoft. The reflection coefficient has been measured by Agilent Network Analyzer. The proposed antenna can be used in applications necessaried high gain such as wireless power transmission.