

HTPD 2018



Contribution ID : 367

Type : not specified

2.42 Upgrades to the electron cyclotron emission diagnostic in KSTAR

Monday, 16 April 2018 10:46 (120)

The electron cyclotron emission (ECE) diagnostic system with a 48 channel D-band heterodyne radiometer has been routinely used to measure the electron temperature as well as its radial profile on the Korea Superconducting Tokamak Advanced Research (KSTAR) tokamak. However, because the overlap between the second and the third harmonic emission frequencies on the high-field side at 2.0 T is not avoidable, a 28 channel W-band heterodyne radiometer has been added to measure the electron temperature on the low-field side. As main components of a new radiometer, a 94 GHz local oscillator, two double-balanced mixers, and two bandpass filters (78-93 GHz and 95-110 GHz) are used to obtain two separate IF signals (1-16 GHz). Subsequently two sets of second down-conversion modules with a 7 GHz local source and 4 sets of 8 channel detector modules (2-9 GHz) with 1 GHz step are used. In this article, an overview of the upgraded ECE system and preliminary ECE measurements are presented.

Primary author(s) : LEE, KYU-DONG (National Fusion Research Institute)

Co-author(s) : KIM, YONG-SEON (National Fusion Research Institute)

Presenter(s) : LEE, KYU-DONG (National Fusion Research Institute); KIM, YONG-SEON (National Fusion Research Institute)

Session Classification : Session #2, Monday Morning Poster Session