

Trend of the Development of Millimeter Wave Technology for Railway Applications

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Nowadays, everybody can easily use various wireless communications and receive radio broadcasting services anytime and anywhere. But then, frequency spectrum allocations have been tightened because of the diversification of the utilization of frequency spectrums and the expansion of the usage of broad band communications. Therefore, Ministry of Internal Affairs and Communications has drawn up “Action Plan for Spectrum Reallocation”, and has been promoting various projects to open up new applications by using extra high frequency range and to develop new technologies for improving the usability of the frequency spectrum. The action plan mentions the radio communication systems used in railways. Thereupon, Ministry of Internal Affairs and Communications has started some research and development projects of railway application using a 40 GHz band and a 90 GHz band. This review article describes the trend of the development of applications by using millimeter wave technology, and the efforts of our institute in this field are also reported.