Introduction

RFID (Radio Frequency Identification)
Technology for identifying and managing people and goods using small wireless chip

Conventional load modulation
It can’t attain high-speed data transmission
It can’t meet demand for recent data rate

Passive MIMO Transmission

System model
Continuous waves are transmitted
Multi-antenna
Multi-level modulation using Variable impedance

Decoding algorithm is MLD
Parallel transmission

Results
4 types of impedance
16 types of impedance
The number of ideal received signal points are increased by proposed multi-level modulation method

Determinant of the termination impedance pattern of the tag
Transmission rate: 2 Bits/symbol/tag-antenna

Examples of constellation at tag

Conclusion
Proposed method allows high-speed data transmission by increasing the number of antennas at the tag side.