

IEEE Standard for Information technology—  
Telecommunications and information exchange between systems  
Local and metropolitan area networks—  
Specific requirements

## Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications

### Amendment 3: Enhancements for Very High Throughput in the 60 GHz Band

IEEE Computer Society

Sponsored by the  
LAN/MAN Standards Committee

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3 Park Avenue  
New York, NY 10016-5997  
USA

28 December 2012

**IEEE Std 802.11ad™-2012**  
(Amendment to  
IEEE Std 802.11™-2012,  
as amended by IEEE Std 802.11ae™-2012  
and IEEE Std 802.11aa™-2012)



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Approved 19 October 2012

**IEEE-SA Standards Board**

**Abstract:** This amendment defines modifications to both the IEEE 802.11 physical layers (PHYs) and the IEEE 802.11 medium access control layer (MAC) to enable operation in frequencies around 60 GHz and capable of very high throughput.

**Keywords:** 60 GHz, A-BFT, announcement transmission interval, association beamforming training time, ATI, beacon transmission interval, beamforming, BTI, CBAP, clustering, contention-based access period, directional multi-gigabit, DMG, dynamic allocation of service period, dynamic extension of service period, dynamic truncation of service period, fast session transfer, FST, GCMP, IEEE 802.11ad, millimeter-wave, multi-band operation, PBSS, PBSS control point, PCP, personal basic service set, relay operation, service period, SP, spatial sharing

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## Introduction

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This amendment defines standardized modifications to both the IEEE 802.11 physical layers (PHYs) and the IEEE 802.11 medium access control layer (MAC) to enable operation in frequencies around 60 GHz and capable of very high throughput.

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**IEEE Standard for Information technology—  
Telecommunications and information exchange between systems  
Local and metropolitan area networks—  
Specific requirements**

**Part 11: Wireless LAN Medium Access Control  
(MAC) and Physical Layer (PHY) Specifications**

**Amendment 3: Enhancements for  
Very High Throughput in the 60 GHz Band**

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<sup>1</sup>Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.