

# IEEE802.11a WLAN MAC マクロ

IEEE802.11a 準拠の Wireless LAN Medium Access Control を行うマクロです。

## 主要機能

36M, 24M, 18M, 12M, 9M, 6Mbps 対応

ビーコン自動送出機能

RTS, CTS, ACK 自動送出機能

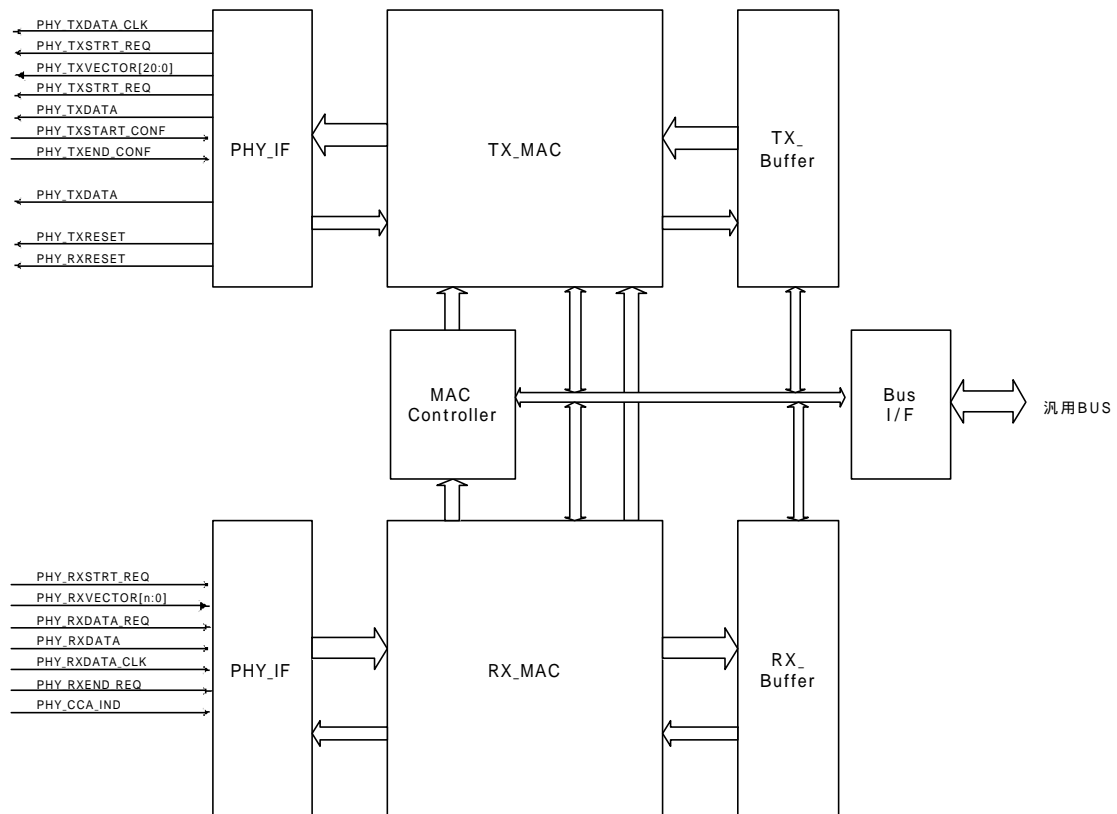
NAV 管理機能

TSF 自動管理機能

Infrastructure/IBSS モード動作

AP/STA モード動作

## 構成



## 設計言語

VHDL

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### サポート一覧

| Item   | Protocol capability                           | Support                       |
|--------|---|-------------------------------|
| PC1    | Authentication service                        | Yes ? No ?                    |
| PC1.1  | Authentication state                          | Yes ? No ?                    |
| PC1.2  | Open System authentication                    | Yes ? No ?                    |
| PC1.3  | Shared Key authentication                     | Yes ? No ? N/A ?<br>ファームウェア依存 |
| PC2    | WEP algorithm                                 | Yes ? No                      |
| PC2.1  | WEP Encryption procedure                      | Yes ? No ? N/A ?              |
| PC2.2  | WEP Decryption procedure                      | Yes ? No ? N/A ?              |
| PC2.3  | Security services management                  | Yes ? No ?                    |
| PC3    | Distributed Coordination function             | Yes No ?                      |
| PC3.1  | Net Allocation Vector (NAV) function          | Yes No ?                      |
| PC3.2  | Interframe space usage and timing             | Yes No ?                      |
| PC3.3  | Random Backoff function                       | Yes No ?                      |
| PC3.4  | DCF Access procedure                          | Yes No ?                      |
| PC3.5  | Random Backoff procedure                      | Yes No ?                      |
| PC3.6  | Recovery procedures and retransmit limits     | Yes No ?                      |
| PC3.7  | RTS/CTS procedure                             | Yes No ?                      |
| PC3.8  | Directed MPDU transfer                        | Yes No ?                      |
| PC3.9  | Broadcast and multicast MPDU transfer         | Yes No ?                      |
| PC3.10 | MAC level acknowledgment                      | Yes No ?                      |
| PC3.11 | Duplicate detection and recovery              | Yes No ?                      |
| PC4    | Point coordinator (PC)                        | Yes ? No N/A ?                |
| PC4.1  | Maintenance of CFP structure and timing       | Yes ? No ? N/A ?              |
| PC4.2  | PCF MPDU transfer from PC                     | Yes ? No ? N/A ?              |
| PC4.3  | PCF MPDU transfer to PC                       | Yes ? No ? N/A ?              |
| PC4.4  | Overlapping PC provisions                     | Yes ? No ? N/A ?              |
| PC4.5  | Polling list maintenance                      | Yes ? No ? N/A ?              |
| PC5    | CF-Pollable                                   | Yes ? No N/A ?                |
| PC5.1  | Interpretation of CFP structure and timing    | Yes ? No ? N/A ?              |
| PC5.2  | PCF MPDU transfer to/from and CF-Pollable STA | Yes ? No ? N/A ?              |
| PC5.3  | Polling list update                           | Yes ? No ? N/A ?              |
| PC6    | Fragmentation                                 | Yes No ?                      |
| PC7    | Defragmentation                               | Yes No ?                      |

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|         |   |                               |
|---------|---|-------------------------------|
| PC8     | MAC data service                                    | Yes No ?                      |
| PC8.1   | Reorderable-Multicast service class                 | Yes No ?                      |
| PC8.2   | StrictlyOrdered service class                       | Yes ? No                      |
| PC9     | Multirate support                                   | Yes No ?                      |
| PC10    | Multiple outstanding MSDU support                   | Yes ? No                      |
| PC10.1  | Multiple outstanding MSDU transmission restrictions | Yes ? No ?                    |
| PC11    | Timing synchronization                              | Yes No ?                      |
| PC11.1  | Timing in an infrastructure network                 | Yes No ? N/A ?                |
| PC11.2  | Timing in an Independent BSS(IBSS)                  | Yes No ? N/A ?                |
| PC11.3  | Beacon Generation function                          | Yes No ? N/A ?                |
| PC11.4  | TSF synchronization and accuracy                    | Yes No ?                      |
| PC11.5  | Infrastructure BSS initialization                   | Yes No ? N/A ?                |
| PC11.6  | Independent BSS initialization                      | Yes No ? N/A ?                |
| PC11.7  | Passive scanning                                    | Yes No ? N/A ?                |
| PC11.8  | Active scanning                                     | Yes No ? N/A ?                |
| PC11.9  | Probe response                                      | Yes No ? N/A ?                |
| PC11.10 | Hop Synchronization function                        | Yes ? No ? N/A                |
| PC12    | Infrastructure power management                     | Yes ? No                      |
| PC12.1  | Station power management modes                      | Yes ? No ? N/A ?              |
| PC12.2  | TIM transmission                                    | Yes ? No ? N/A ?              |
| PC12.3  | AP function during                                  | Yes ? No ? N/A ?              |
| PC12.4  | AP function during CFP                              | Yes ? No ? N/A ?              |
| PC12.5  | Receive function during CP                          | Yes ? No ? N/A ?              |
| PC12.6  | Receive function during CFP                         | Yes ? No ? N/A ?              |
| PC12.7  | Aging function                                      | Yes ? No ? N/A ?              |
| PC13    | IBSS power management                               | Yes ? No N/A ?                |
| PC13.1  | Initialization of power management                  | Yes ? No ? N/A ?              |
| PC13.2  | STA power state transitions                         | Yes ? No ? N/A ?              |
| PC13.3  | ATIM and frame transmission                         | Yes ? No ? N/A ?              |
| PC14    | Association and reassociation                       | Yes ? No ?                    |
| PC14.1  | Association state                                   | Yes ? No ?                    |
| PC14.2  | STA association procedure                           | Yes ? No ? N/A ?              |
| PC14.3  | AP association procedure                            | Yes ? No ? N/A ?              |
| PC14.4  | STA reassociation procedure                         | Yes ? No ? N/A ?              |
| PC14.5  | AP reassociation procedure                          | Yes ? No ? N/A ?<br>ファームウェア依存 |

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|         |   |                         |
|---------|---|-------------------------|
| PC15    | Management information base (MIB)                       | Yes ? No ?              |
| PC15.1* | dot11SMTbase,dot11SmtAuthenticationAlgorithms           | Yes ? No ?              |
| PC15.2  | dot11SMTprivacy   | Yes ? No ? N/A ?        |
| PC15.3* | dot11MACbase,dot11CountersGroup ,dot11MacGroupAddresses | Yes ? No ?              |
| PC15.4  | dot11MACStatistics                                      | Yes ? No ?              |
| PC15.5  | dot11ResourceTypeID                                     | Yes ? No ?<br>ファームウェア依存 |
| FT1     | Association request                                     | Yes No ? N/A ?          |
| FT2     | Association response                                    | Yes No ? N/A ?          |
| FT3     | Reassociation request                                   | Yes No ? N/A ?          |
| FT4     | Reassociation response                                  | Yes No ? N/A ?          |
| FT5     | Probe request   | Yes No ? N/A ?          |
| FT6     | Probe response  | Yes No ?                |
| FT7     | Beacon  | Yes No ?                |
| FT8     | ATIM  | Yes No ? N/A ?          |
| FT9     | Disassociation  | Yes No ?                |
| FT10    | Authentication  | Yes No ?                |
| FT11    | Deauthentication  | Yes No ?                |
| FT12    | PS-Poll   | Yes ? No N/A ?          |
| FT13    | RTS   | Yes No ?                |
| FT14    | CTS   | Yes No ?                |
| FT15    | ACK   | Yes No ?                |
| FT16    | CF-End  | Yes ? No N/A ?          |
| FT17    | CF End+CF-Ack   | Yes ? No N/A ?          |
| FT18    | Data  | Yes No ?                |
| FT19    | Data + CF-Ack   | Yes ? No N/A ?          |
| FT20    | Data + CF-Poll  | Yes ? No N/A ?          |
| FT21    | Data + CF-Ack+CF-Poll                                   | Yes ? No N/A ?          |
| FT22    | Null  | Yes No ?                |
| FT23    | CF-Ack (no data)  | Yes ? No N/A ?          |
| FT24    | CF-Poll (no data)                                       | Yes ? No N/A ?          |
| FT25    | CF-Ack+CF-Poll (no data)                                | Yes ? No N/A ?          |

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|      |                           |       |      |       |
|------|---------------------------|-------|------|-------|
| FR1  | Association request       | Yes   | No ? | N/A ? |
| FR2  | Association response      | Yes   | No ? | N/A ? |
| FR3  | Reassociation request     | Yes   | No ? | N/A ? |
| FR4  | Reassociation response    | Yes   | No ? | N/A ? |
| FR5  | Probe request             | Yes   | No ? | N/A ? |
| FR6  | Probe response            | Yes   | No ? |       |
| FR7  | Beacon                    | Yes   | No ? |       |
| FR8  | ATIM                      | Yes   | No ? | N/A ? |
| FR9  | Disassociation            | Yes   | No ? |       |
| FR10 | Authentication            | Yes   | No ? |       |
| FR11 | Deauthentication          | Yes   | No ? |       |
| FR12 | PS-Poll                   | Yes ? | No   | N/A ? |
| FR13 | RTS                       | Yes   | No ? |       |
| FR14 | CTS                       | Yes   | No ? |       |
| FR15 | ACK                       | Yes   | No ? |       |
| FR16 | CF-End                    | Yes ? | No   | N/A ? |
| FR17 | CF End+CF-Ack             | Yes ? | No   | N/A ? |
| FR18 | Data                      | Yes   | No ? |       |
| FR19 | Data + CF-Ack             | Yes ? | No   | N/A ? |
| FR20 | Data + CF-Poll            | Yes ? | No   | N/A ? |
| FR21 | Data + CF-Ack+CF-Poll     | Yes ? | No   | N/A ? |
| FR22 | Null                      | Yes   | No ? |       |
| FR23 | CF-Ack (no data)          | Yes ? | No   | N/A ? |
| FR24 | CF-Poll (no data)         | Yes ? | No   | N/A ? |
| FR25 | CF-Ack+CF-Poll (no data)  | Yes ? | No   | N/A ? |
| FS1  | Basic frame sequences 9.7 | Yes   | No ? |       |
| FS2  | CF-Frame sequences 9.7,   | Yes ? | No   | N/A ? |
|      | STA universal individual  |       |      |       |
| AD1  | IEEE802 address           | Yes   | No ? |       |
| AD2  | BSS identifier generation | Yes   | No ? |       |
| AD3  | Receive address matching  | Yes   | No ? | N/A ? |

開発

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