IEEE P802.11
Wireless LANs

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| IEEE 802.11 TGbp Ambient Power CommunicationTeleconference Minutes December |
| Date: 2024-12-03 |
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Abstract

This document contains the IEEE 802.11 TGbp minutes for the teleconferences in December 2024.

Rev 0: Minutes for the IEEE 802.11 TGbp teleconference on 2024-12-03 added

TG Chair: Bo Sun (Sanechips)

TG Vice Chairs: Steve Shellhammer (Qualcomm)

 Rakesh Taori (Infineon)

TG Secretary: Sebastian Max (Ericsson)

Exceutive TG Secretary: Yinan Qi (OPPO)

TG Technical Editor: Yinan Qi (OPPO)

Abbrevations:

Q Question

A Answer

C Comment

SP Straw Poll

# Tuesday, December 03 2024, 09:00am - 11:00am (EDT)

## Opening

The TG Chair, Bo Son (Sanechips), presents the TG bp meeting agenda slides (IEEE 802.11-24/1996r1).

* Chair calls the meeting to order at 09:00 EDT.
* Chair instructs members to record attendance in IMAT.
* Chair reviews the meeting rules and patent policy (slides 2-6).
* No response to the call for patents.
* Chair reviews IEEE-SA COPYRIGHT POLICY (slides 7-8)
* Chair reviews other Guidelines, Participation, Suggested Best Practices (slides 9-10).
* Chair reviews the current TGbp session submission list (slide 11-12), and the meeting agenda for the telephone conference (slide 13).

## Agenda

Chair presents the agenda of the session: https://mentor.ieee.org/802.11/dcn/24/11-24-1996r1 (slide 15).

* + Call meeting to order and remind the group to record attendance on imat.ieee.org
	+ IEEE-SA IPR policies and meeting rules
	+ Approve meeting agenda
	+ Review updated FRD (11-24/1307r3) and SFD (11-24/1613r3)
	+ Contribution discussion
		- 11-24/1537r1, Wireless connectivity challenges for AMP only IoT devices under 802.11 specification, Solomon Trainin (Wiliot) [30 mins]
		- 11-24/1982, Considerations For Sync Sequence Selection, Amichai Sanderovich (Wiliot)
		- 11-24/1998, Secure Transaction Methods with Low Computation Complexity for AMP Devices, Hui Luo (Infineon)
		- t.b.d.
	+ Any other business?
	+ Recess

Chair calls for approval of the agenda of the TGbp session.

C: Can contribution 11-24/2002 be inserted?

A: 11-24/2002 inserted after 11-24/1537r1 and the new contribution discussion is updated as follows:

* + - 11-24/1537r1, Wireless connectivity challenges for AMP only IoT devices under 802.11 specification, Solomon Trainin (Wiliot) [30 mins]
		- 11-24/2002, Low Complexity Backscatter AMP STS, Vytas Kezys (Haila)
		- 11-24/1982, Considerations For Sync Sequence Selection, Amichai Sanderovich (Wiliot)
		- 11-24/1998, Secure Transaction Methods with Low Computation Complexity for AMP Devices, Hui Luo (Infineon)

Agenda approved.

## Review updated FRD (11-24/1307r3) and SFD (11-24/1613r3)

Bin Qian (Huawei) presents the current updated FRD (IEEE 802.11-24/1307r3), that now includes the motions passed during the IEEE 802.11 November meeting. No discussion.

Yinan Qi (OPPO) presents the current updated SFD (IEEE 802.11-24/1613r3), that now includes the motions passed durig the IEEE 802.11 November meeting plus some additional comments from the TG members. No discussion.

## Contributions

### Presentation of IEEE 11-24/1537r1, Wireless connectivity challenges for AMP only IoT devices under 802.11 specification, Solomon Trainin (Wiliot)

Q (Hui, Infineon): Association is big overhead. AMP capable non-AP STA part of the AP?

A: AMP capable non-AP STA can associate with AP via normal association procedure and act as bridge between AP and AMP only STA.

Q (Dror, HW): relation between WUR and AMP capable non-AP STA?

A: WUR frame can be modified to provide new definition.

Q (Dror, HW): AMP capable non-AP STA will wake up AMP only STA?

A: No. Only the format to shorten the duration of the frame.

Q (Dror, HW): For AMP capable non-AP STA, how much is saved in terms of overhead, energy consumption?

A: no specific numbers but could be magnitude level reduction.

### Presentation of IEEE 11-24/2002, Low Complexity Backscatter AMP STS, Vytas Kezys (Haila)

Q (Amichai, Wiliot):Legacy STA will also receive signals from both AMP supporting STA and backscattering? Is the legacy STA AMP capable STA?

A: Frequency shift can be used to avoid self-jamming. Beamforming also can be used. The legacy STA could be AMP capable STA.

Q (Amichai, Wiliot): OFDM is also possible for exicitation

A: Possible but existing OFDM will reduce data rate.

Q (Weijie, OPPO): When backscattering, AMP device needs synchronization with excitation signal. Not sure if the AMP device is able to do correlation with DL sync. Poor clock accuracy of AMP STA leads to difficulty to maintain chip level synchronization. How to achieve synchronization?

A: No need chip level synchronization, flipping bits not chips. Only use the edge of the DL PPDU to establish 1 micro second accuracy.

Q (Weijie, OPPO): What if there is clock drifting?

A: Need to maintain 1000ppm clock accuracy. If not, multiple bits can be flipped.

Q (Solomon, Wiliot): MAC head contains the MAC address of the AMP STA or AMP supporting STA.

A:MAC address can be pre-populated. AMP STA or AMP supporting STA can be regarded as one entity.

Q (Solomon, Wiliot): AMP STA or AMP supporting STA have different PHY. MAC header is generated by the AMP supporting STA.

A: The AMP STA can flip MAC header as well.

C (Dror Regev, Huawei): OFDM also dictates power backoff and hence reduced ranges

### Presentation of IEEE 11-24/1982, Considerations For Sync Sequence Selection, Amichai Sanderovich (Wiliot)

Q (Bin Qian, HW): Why do we need to demodulate OOK symbols first? For soft values, there is no need for demodulation.

A: Threshold is needed before cross correlation.

Q (Yinan, OPPO): How to use preamble for wakeup? If soft values are used, why do we need the threshold?

A: Sync to energy rise can be used. Soft values may not be suitable for correlation with 0.

Q (Steve, QCM): +1 and -1 are used for correlation. Manchester coding for data is synchronized. When not synchronized, how to know which portion is taken to compare?

A: Two correlators can be used with time offset.

## Adjourn

The chair announces the session adjourned at 11:00 EDT.

## List of Attendees

TGbp 11/05/2024 Taori, Rakesh Infineon Technologies

TGbp 11/05/2024 Luo, Hui Infineon Technologies

TGbp 11/05/2024 Campiglio, Ugo Cisco Systems, Inc

TGbp 11/05/2024 Choi, JinHo SAMSUNG ELECTRONICS

TGbp 11/05/2024 Costa, D.Nelson HaiLa Technologies

TGbp 11/05/2024 Ha, Taeyoung Samsung Electronics Co., Ltd.

TGbp 11/05/2024 Kezys, Vytas HaiLa Technologies

TGbp 11/05/2024 Qi, Yinan OPPO Mobile Telecommunications Corp

TGbp 11/05/2024 He, Chuanfeng OPPO Mobile Telecommunications Corp

TGbp 11/05/2024 Xu, Weijie OPPO Mobile Telecommunications Corp

TGbp 11/05/2024 Zuo, Zhisong OPPO Mobile Telecommunications Corp

TGbp 11/05/2024 Sun, Bo Sanechips Technology Co., Ltd.

TGbp 11/05/2024 Shellhammer, Stephen Qualcomm Incorporated

TGbp 11/05/2024 Trainin, Solomon Wiliot

TGbp 11/05/2024 Sanderovich, Amichai Wiliot

TGbp 11/05/2024 Huang, Lei Huawei

TGbp 11/05/2024 Qian, Bin Huawei

TGbp 11/05/2024 Dror, Regev Huawei