

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE, INC.,

Petitioner,

v.

APEX BEAM TECHNOLOGIES, LLC,

Patent Owner.

Patent No. 10,979,128

Filing Date: December 7, 2020

Issue Date: April 13, 2021

Inventor: Alireza Babaei

Title: BEAM FAILURE AND CONSISTENT LISTEN BEFORE
TALK FAILURE RECOVERY

PATENT OWNER'S PRELIMINARY RESPONSE

Case No. IPR2025-00910

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EXHIBIT LIST

Exhibit No.	Description of Document
2001	Scheduling Order, Dkt. 40, <i>Apex Beam Techs. LLC v. Apple Inc.</i> , Case No. 6:24-cv-00223-ADA (W.D. Tex. June 18, 2025)
2002	Apex Beam Technologies LLC's Infringement Contentions and P.R. 3-1 and 3-2 Disclosures in <i>Apex Beam Techs. LLC v. Apple Inc.</i> , Case No. 6:24-cv-00223-ADA (W.D. Tex.), dated May 27, 2025
2003	Complaint, Dkt. 1, <i>Apex Beam Techs. LLC v. Apple Inc.</i> , Case No. 6:24-cv-00223-ADA (W.D. Tex. April 29, 2024)

I. INTRODUCTION

On April 25, 2025, Apple, Inc. (“Apple” or “Petitioner”) filed a Petition requesting *inter partes* review of Claims 1-19 (the “Challenged Claims”) of U.S. Patent No. 10,979,128 (the “’128 Patent”) (APPLE-1001). Paper 2 (“Petition” or “Pet.”). The declaration of Dr. Robert Akl (APPLE-1003) accompanied the Petition. On May 16, 2025, the Board issued a Notice of Filing Date Accorded for the Petition and set the time for filing patent owner’s preliminary response. Paper 5.

The Board should deny Apple’s Petition because Apple’s first Ground fails to address the limitation, “receiving, by a wireless device, one or more messages comprising: first configuration parameters for beam failure recovery, ***comprising*** first random access parameters,” and advances no support to show that the limitations are disclosed or rendered obvious. At most, the Petition asserts that the proposed combinations separately disclose receiving configuration parameters and receiving first random access parameters. But the Petition does not address the requirement that the configuration parameters ***comprise*** the first random access parameters, let alone advance any support for that proposition.

Apple’s second Ground similarly fails to provide any substantive analysis of the limitation “receiving, by a wireless device, one or more messages comprising: first configuration parameters for beam failure recovery, comprising first random

access parameters,” and fails to show that either of the alleged “configurations” on which Apple relies disclose the limitation.

Having failed to address a limitation, Apple cannot show a reasonable likelihood that it would prevail with regard to any of the Challenged Claims. Institution should be denied.

II. THE RELEVANT ALLEGED PRIOR ART

A. US 2021/0100031 (“Cirik”)

Cirik was filed on September 30, 2020 and published on April 1, 2021. Cirik discusses a “listen-before transmit (LBT) procedure for an uplink transmission.” APPLE-1004, Abstract.

B. US 2022/0110153 (“Wu”)

Wu claims priority to a PCT filing date of February 13, 2019, and published on April 7, 2022. Wu discusses a method of “bandwidth part (BWP) switching” including “determining, at a terminal device, whether continuous Listen-Before-Talk (LBT) failures occur on a first bandwidth part (BWP), the terminal device operating on the first BWP.” APPLE-1006, Abstract.

III. LEVEL OF ORDINARY SKILL IN THE ART

For the purposes of this Preliminary Response only, Patent Owner utilizes Petitioner’s proposed level of skill in the art—“a bachelor’s degree in electrical

engineering, computer engineering, computer science, or a similar field, along with two years of experience designing or developing wireless networks, including long-term evolution LTE/4G or 5G new radio (NR) cellular technology. Additional years of experience could substitute for an advanced-level degree (and vice versa).” Pet. at 4.

IV. ARGUMENT

A. GROUND 1A: Cirik Does Not Render Obvious Claims 1-19

1. Apple’s Combination Does Not Disclose “first configuration parameters for beam failure recovery, *comprising* first random access parameters” as Required by Claims 1-19

Independent Claim 1, from which Claims 2-19 depend, requires “receiving, by a wireless device, one or more messages comprising: first configuration parameters for beam failure recovery, *comprising* first random access parameters.” Petitioner asserts that this limitation is rendered obvious over Cirik. Pet. at 13-17. But the entirety of Petitioner’s analysis amounts to an assertion that Cirik discloses messages in which a device receives first configuration parameters for beam failure recovery, and also receives first random access parameters. Petitioner fails to address, or advance any support for, the limitation that the first configuration parameters *comprise* first random access parameters.

The Petition first identifies Cirik's "one or more configuration parameters" that "indicate the maximum number of beam failure[s]" as disclosing the claimed "first configuration parameters." *Id.* at 13. The Petition goes on to cite Cirik's FIG. 21, and discussion that "one or more configuration parameters may indicate the maximum number of beam failure counter for the active downlink BWP of the second cell" in support of this disclosure. *Id.* at 14-15.

The Petition then asserts that "Cirik also discloses, in connection with random access (RA) procedures initiated for beam failure recovery, that the base station transmits a configuration message to the wireless device, e.g., as illustrated in each of FIGS. 13A-C." *Id.* at 15. The remainder of Petitioner's argument asserts that the configuration message *for random access procedures* can contain various RACH or PRACH parameters, which Petitioner maps to the "first random access parameters" limitation. *Id.* at 15-17.

But at no point does Petitioner assert that the configuration message for first random access parameters is included within the "one or more configuration parameters [that] indicate the maximum number of beam failures" that it identifies for the "first configuration parameters" limitation. Nor do any of Petitioner's citations support a conclusion that the Cirik's parameter "indicating the maximum

number of beam failure[s]” further comprises any “first random access parameters,” let alone the specific RACH or PRACH parameters that it identifies.

Having entirely failed to address the claimed requirement that the first configuration parameters for beam failure recovery must “comprise” the first random access parameters, Petitioner cannot show any reasonable likelihood that it would prevail as to any claim. The Petition should therefore be denied.

B. GROUNDS 1B and 1C: Cirik, Wu, and Interdigital Do Not Render Obvious Claims 1-19

As shown above, the Petition fails to show, or advance any support for the proposition that Cirik discloses a wireless device receiving a message comprising first configuration parameters for beam failure recovery, *comprising* first random access parameters.” Petitioner does not argue that Grounds 1B or 1C remedy this deficiency. Rather, those grounds only add arguments for other limitations related to switching between bandwidth parts. Accordingly, Apple has not shown that any claim is rendered obvious under Grounds 1B or 1C.

C. GROUND 2A: Wu, and Interdigital Do Not Render Obvious Claims 1-19

1. Apple's Combination Does Not Disclose "first configuration parameters for beam failure recovery, comprising first random access parameters," as Required by Claims 1-19

The Petition presents similar deficiencies in Ground 2A as discussed above in Ground 1A. Petitioner relies solely on Wu's disclosure for this limitation. Pet. at 75 (addressing element [1a.ii]).

The Petition quotes Wu's discussion of a "terminal device [that] receives messages that define a 'configuration' of BWPs from the network device." *Id.* While the Petition fails to specifically identify which of Wu's disclosure it maps to the claimed "first configuration parameters for beam failure recovery" and to the claimed "first random access parameters," subsequent discussion with respect to claim element [1b] clarifies that the Petition relies on "first configuration parameters that indicate, among other things, 'whether to initiate the RA procedure on the first or second BWP for BFR' and 'a resource for performing a RA procedure.'" *Compare* Pet. at 75 *with* Pet. at 77.

But Petitioner fails to show that either of these parameters meets the claimed limitations.

First, with respect to Wu’s “resource for performing a RA procedure,” the Petition does not assert that resource is comprised in “first configuration parameters for beam failure recovery,” or even show any relationship to beam failure recovery. Pet. at 75. Indeed Petitioner’s *only* support is to quote, without adding any analysis, Wu’s discussion that “‘If a plurality of BWPs are available . . . , the terminal device 110 may prioritize a BWP configured with a resource for performing a Contention Free Random Access (CFRA) procedure (also referred to as “CFRA resource”)’ or ‘may prioritize a BWP configured with a SR [scheduling request] resource.’” *Id.* These statements are directed to forms of random access on a BWP – they do not suggest that random access has any relationship to beam failure recovery.

Second, with respect to Wu’s configuration of “whether to initiate the RA procedure on the first or second BWP for BFR,” Petitioner fails to show that configuration is a *parameter* at all, or is even sent in a message to the device. Indeed, Petitioner’s highly selective quotations give away the weakness of its position. The quoted sentence states in full, “[a]lternatively, or in addition, in some embodiments, it may be explicitly configured to the terminal device 110 whether to initiate the RA procedure on the first or second BWP for BFR.” APPLE-1006 [0074]. Petitioner does not assert, and Wu does not disclose, that anything “*explicitly configured* to

the terminal device” in this context is a configuration parameter within a message received by the wireless device.

Having failed to show that Wu’s discussion of either identified parameter discloses or renders obvious “receiving, by a wireless device, one or more messages comprising: first configuration parameters for beam failure recovery, comprising first random access parameters,” Petitioner cannot show any reasonable likelihood that it would prevail as to any claim. The Petition should therefore be denied.

D. GROUND 2B: Cirik, Wu, and Interdigital Do Not Render Obvious Claims 1-19

As shown above, the Petition fails to show, or advance any support for the proposition that, Wu discloses or renders obvious “receiving, by a wireless device, one or more messages comprising: first configuration parameters for beam failure recovery, comprising first random access parameters,” Petitioner does not argue that Ground 2B remedies this deficiency. Accordingly, Apple has not shown that any claim is rendered obvious under Ground 2B.

V. CONCLUSION

As discussed above, Apple’s combination fails to disclose key limitations of each claim of the ’128 Patent, and therefore, does not anticipate or render obvious any claims. The Board should, therefore, deny the Petition.

Respectfully submitted,

Dated: August 18, 2025

By: /Vincent J. Rubino, III /
Vincent J. Rubino, III
Lead Counsel for Patent Owner
FABRICANT LLP
411 Theodore Fremd Avenue,
Suite 206 South
Rye, New York 10580
Tel. 212-257-5797
Fax. 212-257-5796

CERTIFICATE OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned PATENT OWNER'S PRELIMINARY RESPONSE specified in 37 C.F.R. § 42.24 has 1,539 words in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft Word for Office 365.

Respectfully submitted,

August 18, 2025

By: /Vincent J. Rubino, III /
Vincent J. Rubino, III (Reg. No. 68,594)
Lead Counsel for Patent Owner
FABRICANT LLP
411 Theodore Fremd Avenue,
Suite 206 South
Rye, New York 10580
Tel. 212-257-5797
Fax. 212-257-5796

CERTIFICATE OF SERVICE

A copy of the foregoing Patent Owner's Preliminary Response has been served on Petitioner's counsel of record as follows:

Email: IPR50095-0240IP1@fr.com

W. Karl Renner

Thomas A. Rozyłowicz

Nicholas W. Stephens

Joseph W. Bauer

FISH & RICHARDSON P.C.

60 South Sixth Street, Suite 3200

Minneapolis, MN 55402

Attorneys for Apple Inc.

August 18, 2025

By: /Vincent J. Rubino, III /
Vincent J. Rubino, III (Reg. No. 68,594)
Lead Counsel for Patent Owner
FABRICANT LLP
411 Theodore Fremd Avenue,
Suite 206 South
Rye, New York 10580
Tel. 212-257-5797
Fax. 212-257-5796