

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

ASUSTEK COMPUTER, INC.; and  
ASUS COMPUTER INTERNATIONAL  
Petitioner,

v.

AVAGO TECHNOLOGIES GENERAL IP (SINGAPORE) PTE. LTD,  
Patent Owner.

---

Case IPR2016-00647  
Patent 6,430,148 B1

---

Before GLENN J. PERRY, PATRICK R. SCANLON, and  
J. JOHN LEE, *Administrative Patent Judges*.

PERRY, *Administrative Patent Judge*.

DECISION GRANTING PETITIONER'S  
REQUEST FOR RECONSIDERATION  
Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

## I. INTRODUCTION

Petitioner requested rehearing (Paper 14, “Req. Reh’g”) of our Decision to Institute (Paper 7, “Decision” or “Dec.”). Our Decision to Institute instituted *inter partes* review as to claims 8–10, 12, 13, and 18 as being anticipated by Schmidl, but denied institution as to claims 8, 11, 12, 14, 15, 18, and 19 as being anticipated by Cioffi. Dec. 33–34. Petitioner’s requests that we reconsider our decision not to institute trial based on the Cioffi challenge. Req. Reh’g 2.

Petitioner’s request is granted. By this Decision, we modify our Decision to Institute to include the challenge to claims 8, 11, 12, 14, 15, 18, and 19 as being anticipated by Cioffi.

## II. DISCUSSION

Petitioner argues that our decision was based on an incorrect conclusion that synchronization signals, which are multiplexed with data signals but transmitted or received on dedicated sub-carriers, are not within the scope of the challenged claims of Count 2. Req. Reh’g 1.

Petitioner further argues that to the extent the Board’s decision is based on a finding that Cioffi’s synchronization signals are transmitted in a “handshake” procedure during symbol periods before the remote unit transmits data to the central unit, the Board overlooked the agreed upon claim construction, which covers this exact scenario described in the ’148 Patent, and additionally the Board overlooked evidence in the Petition and supporting declaration showing that data and synchronization signals are sent at the same time from the central modem. Req. Reh’g 2.

Independent claim 8 is reproduced below.

8. An apparatus for use in an OFDM communication system, the apparatus comprising a first OFDM device for communicating with a second remote OFDM device at a remote station, the first OFDM device configured to

- (i) add a synchronisation signal to a plurality of data signals,
- (ii) generate a plurality of sub-carrier signals in response to modulating the synchronisation signal and the data signals, and
- (iii) generate a plurality of sub-carrier frequency signals in response to an inverse fast fourier transformation of the sub-carrier signals for transmission to the remote station.

In denying institution of the challenge based on Cioffi, we concluded that Cioffi did not anticipate the challenged claims because, for example, the disclosed remote units transmit and receive synchronization signals on dedicated sub-carriers that do not carry data. Dec. 18–30. Our analysis focused on the synchronization process initiated by remote units wishing to establish communication with the central office, as shown in Cioffi's Figure 7. That process does not appear to meet the limitations of the claims at issue.

However, the process carried out in Figure 7 does not negate the process carried out at the central office modem shown in Cioffi's Figure 3, which we insufficiently credited.

Claim 8 describes a process for generating sub-carriers from data and synchronization signals multiplexed in the frequency domain and ultimately transformed into the time domain. Claim 8 and the other claims at issue in this Request do not speak to which sub-carriers are used for data and which

sub-carriers are used for synchronization signals. We do not read into the claims any requirement that synchronization and data be transmitted on particular sub-carriers and whether or not those sub-carriers must be different from one another.

The Petition relies on Cioffi's Figure 3, a Petitioner annotated version of which is reproduced below, which explains a process that takes place at the central office modem. Pet. 34.

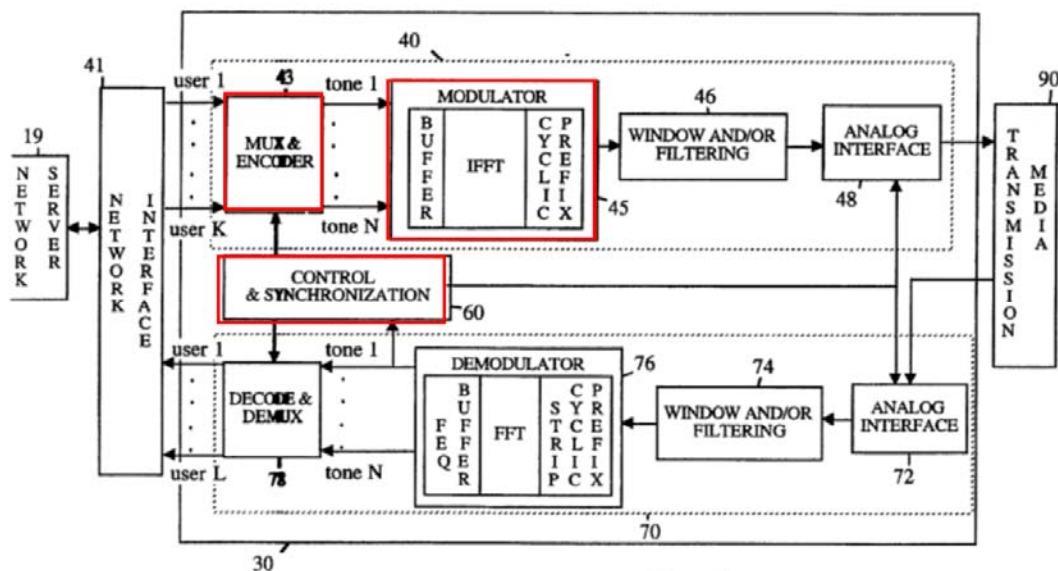


Figure 3

Upon review on rehearing, we are persuaded the Petition demonstrates sufficiently for purposes of institution that data and synchronization signals are multiplexed and encoded by MUX & ENCODER 43 in Cioffi's Figure 3. Multiplexed sub-symbols are passed to modulator 45, which incorporates an inverse fast Fourier transform (IFFT).

Based on this understanding of Cioffi, the detailed reading of claims 8, 11, 12, 14, 15, 18, and 19 on Cioffi at Petition pages 35–53, supported by the Lyon Declaration (Ex. 1003), presents a reasonable likelihood of

Petitioner prevailing as to this challenge. We, therefore, modify our Decision on Institution to include this challenge.

Patent Owner has already filed a Response to the Dec. to Institute (Paper 7). We, therefore, authorize Patent Owner to file a Supplemental Response, within 20 days of the date of this decision and limited to 4,000 words, to address the challenge added by this decision.

Petitioner may file a Supplemental Reply within 20 days of Patent Owner's Supplemental Response and also limited to 4,000 words.

### III. CONCLUSIONS

For the foregoing reasons, we are persuaded that our Decision to Institute overlooked or misapprehended the matters discussed in this Decision, and that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail with respect to its challenge as to the patentability of claims 8, 11, 12, 14, 15, 18, and 19 as being anticipated by Cioffi.

The Board has not made a final determination on the patentability of any challenged claims or the construction of any claim terms. Our final decision will be based on the record as fully developed during trial.

### IV. ORDER

For the reasons given, it is hereby:

ORDERED that the Decision to Institute (Paper 7) is modified to have instituted *inter partes* review of the '148 patent, pursuant to 35 U.S.C. § 314(a), on the following additional ground:

A. Claims 8, 11, 12, 14, 15, 18, and 19 as being unpatentable under 35 U.S.C. § 102 as being anticipated by Cioffi;

FURTHER ORDERED that Patent Owner is authorized to file a Supplemental Response of up to 4,000 words within 20 days of the date of this Decision; and

FURTHER ORDERED that Petitioner is authorized to file a Supplemental Reply of up to 4,000 words within 20 days of the date of Patent Owner's Supplemental Response.

PETITIONER:

Christopher Douglas  
Derek Neilson  
ALSTON & BIRD LLP  
[christopher.douglas@alston.com](mailto:christopher.douglas@alston.com)  
[derek.neilson@alston.com](mailto:derek.neilson@alston.com)

PATENT OWNER:

Kristopher L. Reed  
Matthew Holohan  
KILPATRICK TOWNSEND & STOCKTON LLP  
[kreed@kilpatricktownsend.com](mailto:kreed@kilpatricktownsend.com)  
[mholohan@kilpatricktownsend.com](mailto:mholohan@kilpatricktownsend.com)