Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM T. MORGAN, MARVIN L. MILHOLLAND, BRENDA D. COOMES, GERALD R. GREEN and CHIN-MIN WANG

Appeal No. 2003-2027
Application No. 08/804,908

ON BRIEF

Before HAIRSTON, FLEMING, and GROSS, ***Administrative Patent Judges***.

FLEMING, ***Administrative Patent Judge***.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-12, all the claims pending in the instant application.

Invention

The present invention relates to a network test system. In particular, the invention relates to test systems for analyzing the performance for wide area networks such as cable television networks used to provide bi-directional communications. See page 1 of Appellants' specification. Figure 1 is a block diagram of a cable system in which a test system according to Appellants'

invention is operating. The cable 73 originates at the cable head end 21. Various subscribers 60 are connected to the cable via couplers 61. At each subscriber location being tested, a remote unit such as remote unit 30 is connected. The remote unit 30 communicates with the head end unit to initiate various tests and provide data from the tests to the service technician. See page 4 of Appellants' specification. The operation of the present invention is based on the observation that the communication path from the cable head end to the subscriber premises is known to be functioning correctly, since the subscriber is already receiving television programming. Communications from the head end to the subscriber locations will be referred to as taking place in the "forward" direction in the following discussion. The forward direction communications are typically within the 50-550 MHz frequency range of the cable. Similarly, communications from a subscriber location to the head end will be referred to as taking place in the "return" direction. The return direction communications typically occupy the 5-40 MHz frequency range of the cable. See page 5 of Appellants' specification.

Head end unit 20, when operating in the test mode, periodically broadcasts a sign-on message and looks for a

response during a defined time period with respect to the sign-on message on a specific frequency. Assume that remote unit 30 wishes to sign on to the system. Remote unit 30 then responds with a sign-on message. Head end unit 20 receives a sign-on response in the expected time slot on the expected frequency. In this case, the head end unit responds to the sign-on response and performs tests requested in the response and subsequent messages from the remote unit. See page 5 of Appellants' specification. If head end unit 20 does not detect a sign-on response, there are three possible reasons for lack of response. The first possibility is that no response was sent. The second possibility is the return path is not functioning properly. The third possibility is noise or other carrier interference with the transmission. Head end unit 20 distinguishes between these possibilities by measuring the power in the return path frequency band specified for the response. See page 5 of Appellants' specification. If the peak level detected was sufficient to interfere with communications, head end unit 20 sends an error message in the forward direction indicating that the return path had sufficient noise to interfere with communications thereon. In the preferred embodiment of the present invention, the message includes a spectral measurement of the entire return frequency

path. That is, head end unit 20 scans the return frequency range and measures the power as a function of frequency in that range. This data is then included in the message sent in the forward direction. See page 6 of Appellants' specification.

Claim 1 is representative of Appellants' claimed invention and is reproduced as follows:

1. A method for analyzing a bi-directional communication path connecting a headend station to a remote station, said communication path being used for sending and receiving messages, messages in a forward direction being sent by modulating a carrier at a forward frequency and messages sent in a return direction being sent by modulating a carrier at a return frequency, said method comprising the steps of:

sending a sign-on message in said forward direction from said headend station;

monitoring said return frequency for a response message, said response message being sent in response to said sign-on message being received by a remote unit connected to said bi-directional communication path, said monitoring step including determining a power level for signals received at said return frequency; and

sending an error message in said forward direction if no response message is received on said return frequency and said power level is greater than a threshold value.

References

The references relied on by the Examiner are as follows:

Chappell et al. (Chappell)	5,585,842	Dec. 17, 1996
Hendricks et al. (Hendricks)	5,600,364	Feb. 4, 1997

Rejections at Issue

Claims 1, 6 and 11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hendricks.

Claims 2-5, 7-10 and 12 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hendricks in view of Chappell.

Throughout our opinion, we will make reference to the briefs[1] and the answer for the respective details thereof.

OPINION

With full consideration being given the subject matter on appeal, the Examiner's rejection and the arguments of Appellants and the Examiner, for the reasons stated ***infra***, we reverse the Examiner's rejection of claims 1-12 under 35 U.S.C. § 103.

[1] Appellants filed an appeal brief on May 24, 2000. Appellants filed a reply brief on September 21, 2000. The Examiner mailed an Office communication on November 8, 2000 stating that the reply brief has been entered.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a ***prima facie*** case of obviousness. ***In re Oetiker***, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). ***See also In re Piasecki***, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing that some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. ***In re Fine***, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellants. ***Oetiker***, 977 F.2d at 1445, 24 USPQ2d at 1444. ***See also Piasecki***, 745 F.2d at 1472, 223 USPQ at 788.

An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. "In reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and argument." ***Oetiker***, 977 F.2d at 1445, 24 USPQ2d at 1444. "[T]he Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion." ***In re Lee***,

277 F.3d 1338, 1344, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). With these principles in mind, we commence review of the pertinent evidence and arguments of Appellants and Examiner.

Rejection of claims 1, 6 and 11 over Hendricks

Appellants argue that Hendricks does not teach a method for analyzing a bi-directional communication path. Appellants also argue that Hendricks does not disclose sending an error message in a forward direction if no message is received in response to a sign-on message and the power level on the return frequency is greater than the threshold level. See pages 6 and 7 of the brief and the reply brief. Appellants further argue that claim 11 includes the additional limitation of receiving a frequency spectrum, and means for displaying said frequency spectrum in the remote unit. Appellants argue that Hendricks does not teach this limitation as well. See page 8 of the brief.

Upon our review of Hendricks, we find that Hendricks discloses a novel network controller for use with a digital cable head end capable of monitoring and controlling set top terminals in a television program delivery system. The invention is able to identify program choices of subscribers. The invention processes this data to generate packages of advertisement targeted towards each set top terminal. See Hendricks, column 3,

line 44 through column 4, line 65. Upon our complete review of Hendricks, we fail to find any teachings directed to a method for analyzing a bi-directional communication path or sending an error message in the forward direction if no response message is received on the return frequency and said power level is greater than the threshold value as recited in Appellants' claims 1 and 6. Furthermore, we fail to find any teaching of means for monitoring said forward frequency for an error message including frequency spectrum, and means for displaying said frequency spectrum as recited in Appellants' claim 11. Therefore, we will not sustain the Examiner's rejection of claims 1, 6 and 11 under 35 U.S.C. § 103.

Rejection of claims 2-5, 7-10 and 12 over Hendricks in view of Chappell

Appellants argue that Chappell does not provide the teachings missing from Hendricks as pointed out above. Appellants argue that there is no teaching of an error message being sent to remote units in response to the head end unit not finding a response to a sign-on or login message. See page 9 of the brief. Appellants further argue that Chappell does not teach means for monitoring said forward frequency for an error message

including a frequency spectrum and means for displaying said frequency spectrum. See page 11 of the brief.

Chappell is a method and system for frequency sweep testing at a CATV system. The apparatus comprises a head end test unit coupled to the CATV system at its head end. The system further includes a remote test unit which is coupled to the CATV system at a location remote from the head end of the CATV system. The remote test unit has a controller having a memory and a RF receiver for receiving the test signals, television signal test signals and telemetry signals transmitted over the CATV system. The remote test unit converts the telemetry signals to data which contains the list of frequencies to be swept during the next sweep cycle and the measured signal levels of the frequencies swept during the prior sweep cycle transmitted from the head end test unit which is stored in its controller's memory. The controller of the remote test unit causes the remote test unit to begin the next sweep cycle at the end of the telemetry cycle and during the sweep cycle the remote test unit measures the signal levels of the test signals and television signal test signals received by the RF receiver of the remote test unit and data indicative of the measured signal levels is input into and stored in memory of the remote test unit controller. Based on the

measured signal levels received from the head end test unit and the signal levels the remote test unit measures, the remote test unit determines the frequency response of the CATV system. See Chappell, column 2, line 58 through column 3, line 17. We fail to find that Chappell teaches sending an error message in the forward direction if no response message is received on said return frequency and said power level is greater than a threshold value. Furthermore, we fail to find that Chappell teaches means for monitoring said forward frequency for an error message including a frequency spectrum and means for displaying said frequency spectrum.

In view of the foregoing, we have not sustained the Examiner's rejection of claims 1-12 under 35 U.S.C. § 103.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)	
MICHAEL R. FLEMING Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ANITA PELLMAN GROSS Administrative Patent Judge	)	

MRF/lbg

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