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(12) **United States Patent**
Ohkita

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(54) **RELAY DEVICE AND RELAY METHOD**

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- (73) Assignee: **Kabushiki Kaisha Toshiba**, Tokyo (JP)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 65 days.

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(21) Appl. No.: **12/463,928**

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(65) **Prior Publication Data**

Explanation of Non-English Language Reference(s).

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(30) **Foreign Application Priority Data**

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(74) *Attorney, Agent, or Firm* — Knobbe, Martens, Olson & Bear LLP

(51) **Int. Cl.**

(57) **ABSTRACT**

- H74N 7/18* (2006.01)
- G06F 15/16* (2006.01)
- H04L 12/28* (2006.01)
- H04L 12/56* (2006.01)

According to one embodiment, a relay device includes an address management module which executes processing of acquiring a first physical address assigned to the relay device based on a sink device, processing of acquiring a second physical address assigned to the relay device based on another sink device, determination processing of determining, in the case where it is determined that the command needs to be transmitted to the other sink device, whether to perform conversion of the physical address included in a parameter in the other sink device, and conversion processing of converting, in the case where it is determined that the conversion of the physical address is not performed in the other sink device, the physical address included in the parameter into a physical address based on the other sink device using the first and second physical addresses.

(52) **U.S. Cl.** **725/74; 725/78; 725/80; 709/245; 370/402**

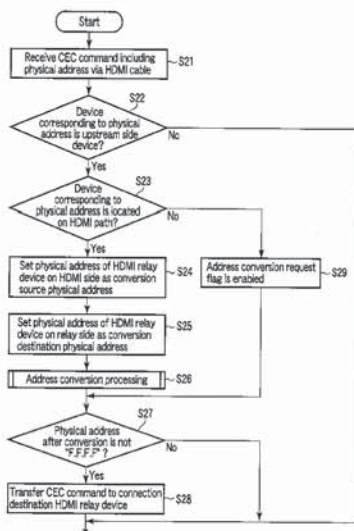
(58) **Field of Classification Search** **370/402; 709/245; 725/74, 78, 80-82, 85**
See application file for complete search history.

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14 Claims, 14 Drawing Sheets



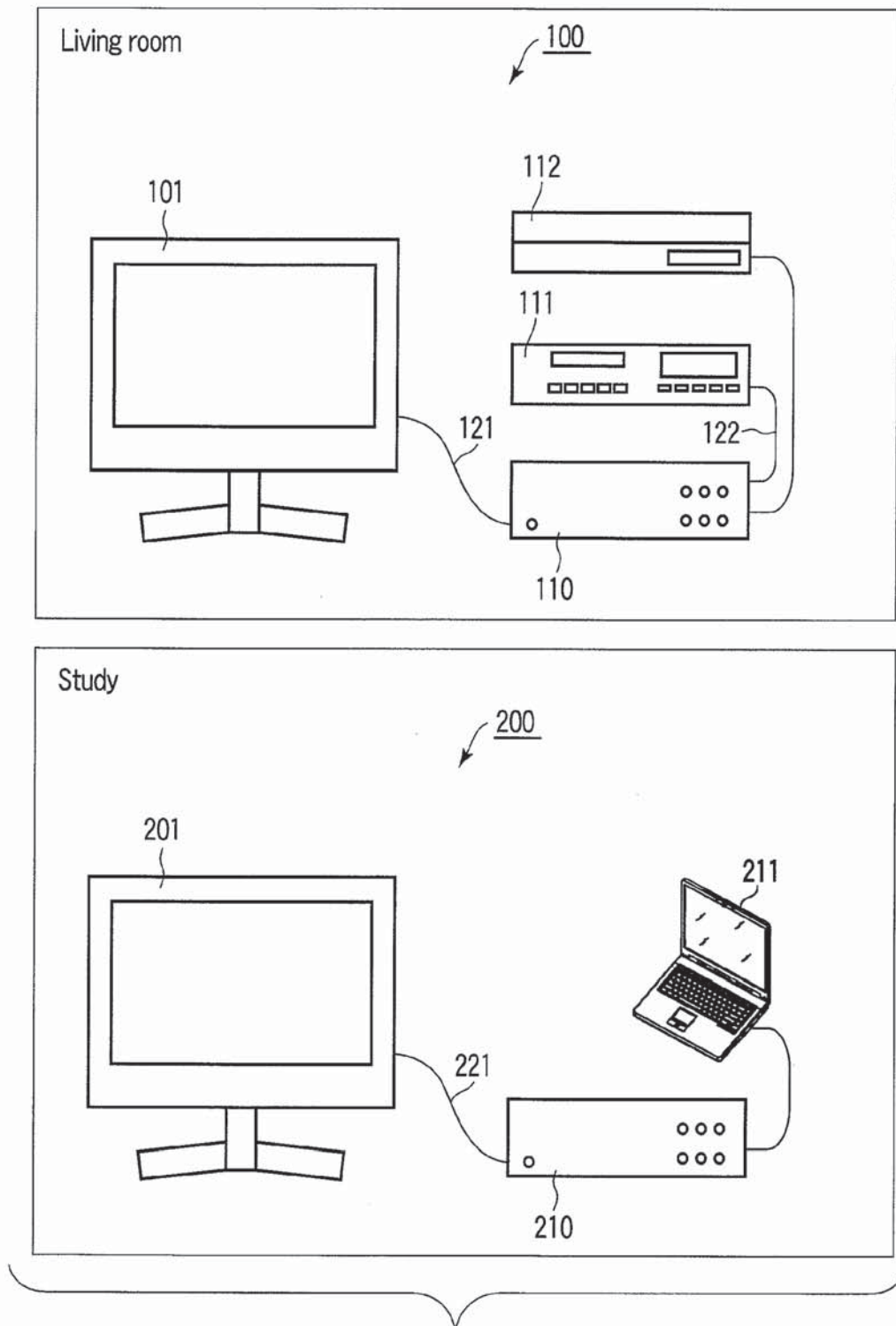


FIG. 1

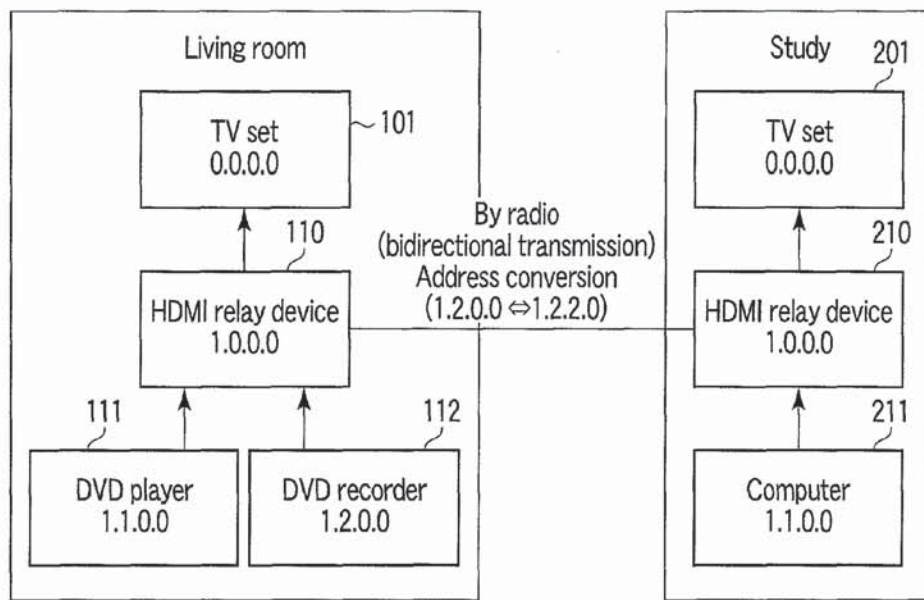


FIG. 2

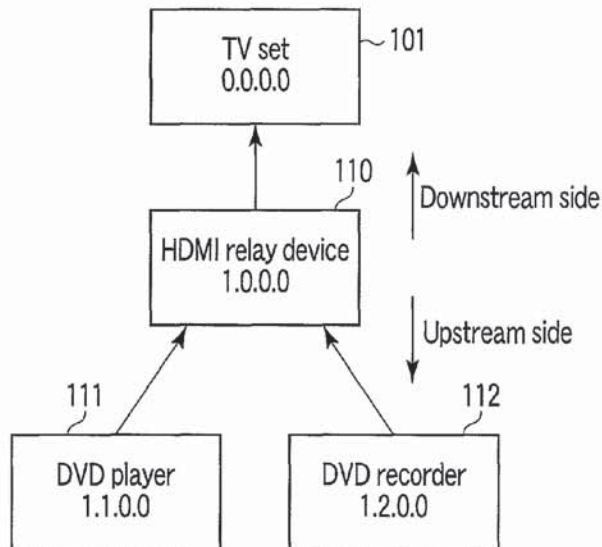


FIG. 3

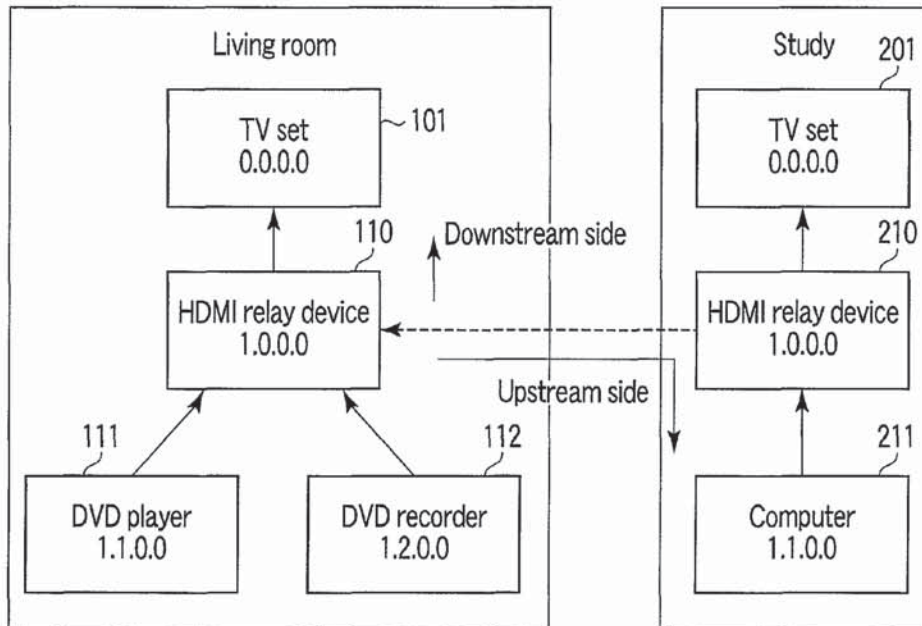


FIG. 4

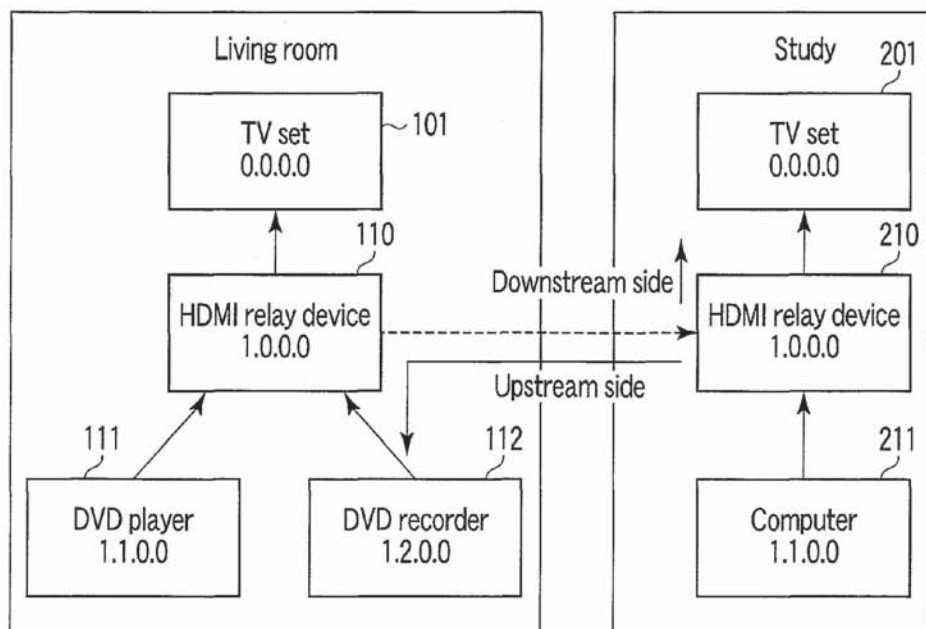


FIG. 5

FIG. 6A

Hierarchy as viewed from TV in living room

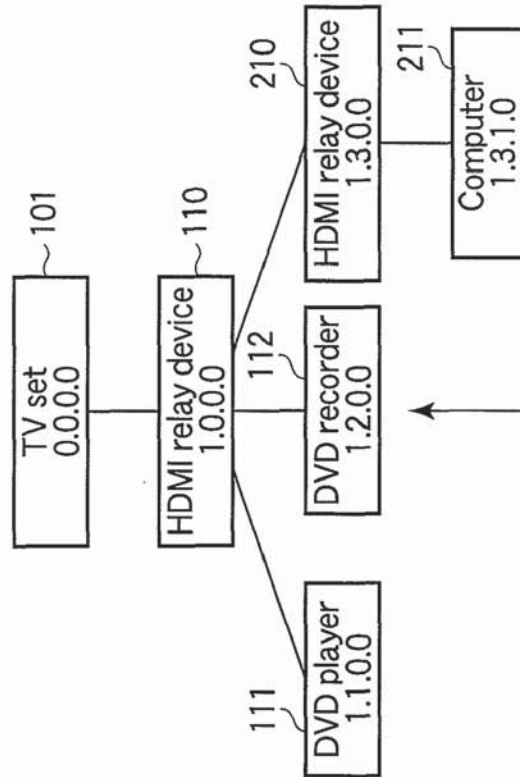
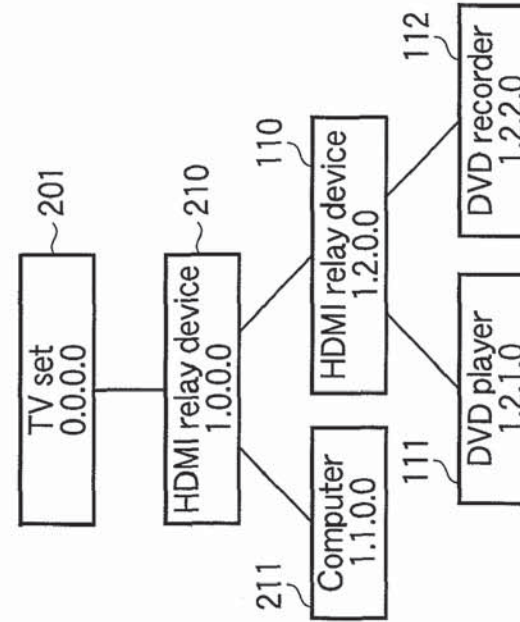


FIG. 6B

Hierarchy as viewed from TV in study



Physical address differs → Physical address needs to be converted
(1.2.0.0 ↔ 1.2.2.0)

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