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受験番号：06IPE001

科目：「電気・電子工学」

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<選択問題解答>

[課題 1]

WHAT IS CLAIMED IS:

1. A method for correcting realtime data in a Bluetooth module configured to include a SCO link and a memory, comprising the steps of:

    recording realtime data of a packet, received from outside via said SCO link, onto said memory while detecting a loss in the received packet;

    if there is a loss in data of said packet, checking a correlation between (i) respective data of packets coming just before and after the lost packet and (ii) respective data of two packets having been sent previously and disposed with one packet therebetween, so as to find data of similar packets to the packets coming just before and after said lost packet; and

    complementing the data of said lost packet by data of a packet interposed between the two packets thus found.

2. The method for correcting realtime data as set forth in claim 1 or 2, wherein: the data of said similar packets are found by comparison using summation of square values of differences.

[課題 2]

【0001】

In recent years, an RF-MEMS device, a high-frequency device utilizing a micro machining technology, has been drawing attention. The subject technology allows manufacture of a high-aspect structure and a membrane structure, so that even a high-frequency circuit manufactured on an inexpensive silicon substrate is less likely to be affected by the substrate. Accordingly, a low cost high-frequency device with high performance is expected to be obtained. Meanwhile, in recent years, the upper limit of frequencies usable in a high-frequency silicon CMOS circuit is extended to a GHz band. Hence, it is expected that integration of a silicon CMOS active circuit and an RF-MEMS passive circuit achieves high performance and downsizing of a high-frequency module.

**【0002】**

For integrating a high-frequency passive circuit element and a semiconductor element serving as an active circuit, there are the monolithic method and the hybrid method. In the monolithic method, both the elements are formed on the same substrate whereas in the hybrid method, either one of the elements is mounted on the other. Each of the methods has advantages and disadvantages. In a high frequency device, a passive circuit element occupies a significant area. Accordingly, utilization of the monolithic method will result in increase in the overall size. Further, in a high frequency band of 10 GHz or higher, a low-resistance silicon substrate used in the active circuit causes loss in the passive circuit side. Thus, there is a problem in the monolithic method.

[課題 3]

**【0001】**

The following explains an embodiment of the present invention with reference to a block diagram of Fig. 1. Now, an action pulse determining section 6 is added to the conventional control device. Further, a storage section 1 and an interpolation operation section 3 have slightly different functions from the conventional ones respectively, as described below. In response to an instruction described to bring into a high locus mode upon an action teach, the interpolation operation section 3 feeds the action pulse determining section 6 an action instruction pulse value for each axis. The action pulse determining section 6 compares the fed instruction pulse for each axis with a predetermined pulse determination value  $P_c$ . If the instruction pulse is larger than the  $P_c$ , a normal action is performed. If the instruction pulse is smaller than the  $P_c$ , the action pulse determining section 6 send the interpolation operation section 3 the name of the axis whose instruction value is smaller than the  $P_c$  and a re-interpolation operation request.

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