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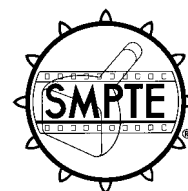
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SMPTE RECOMMENDED PRACTICE

RP 113-1996

Revision of RP 113-1992

Supervisory Protocol for Digital Control Interface



Page 1 of 9 pages

1 General

1.1 Scope

This practice defines the supervisory protocol used within a general purpose communication channel of an interface system which transports data and digital control signals between equipment utilized in the production, post-production, and/or transmission of visual and aural information. It is intended that the supervisory protocol described in this practice be part of an overall system, allowing interconnection of programmable and nonprogrammable equipment as required to configure an operational system with a defined function, and to allow rapid reconfiguration of a system to provide more than one defined function utilizing a given group of equipment.

1.1.1 The primary intent of this practice is to establish supervisory procedures of the communication channel for the purpose of transmitting control messages to equipment by external means. (The contents of the messages are not defined.) This practice, or sections thereof, may be applied to the interconnection of elements within an item of equipment.

1.2 Definitions

(See figure 1.) For the purposes of this practice, the following definitions apply:

1.2.1 bus controller: Each system contains one bus controller which supervises all tributaries in the system. Supervision is exercised through the use of this supervisory protocol.

1.2.2 byte: A byte consists of eight bits of information. Bits used to effect transmission such as byte start, parity, or end are not part of the byte.

1.2.3 tributary: A tributary transfers messages to and from an operational device via the interface system. The tributary is distinct from the function of the operational device and exists to transfer control messages between the communication channel and the device.

1.2.4 word: A word consists of a byte and associated bits used to effect transmission such as start, parity, or end.

2 Message types

Two types of messages shall be transmitted on the channel:

Supervisory messages to supervise the channel and direct the flow of device messages.

Device messages to control operation of equipment functions. This type of message shall be transmitted only within standard message blocks or during device defined communications modes. Details of device messages are specified in RP 138.

3 Tributary addresses

Tributary addresses shall consist of two bytes: the most significant byte, which is transmitted first, and the least significant byte. The most significant bit of both bytes shall be set to binary 1. This provides an address range starting at 8080_h. Each tributary shall be assigned two unique addresses, a SELECT address and a POLL address.

3.1 Select address

An address in which the least significant bit of the least significant byte equals binary 0 is a SELECT address.

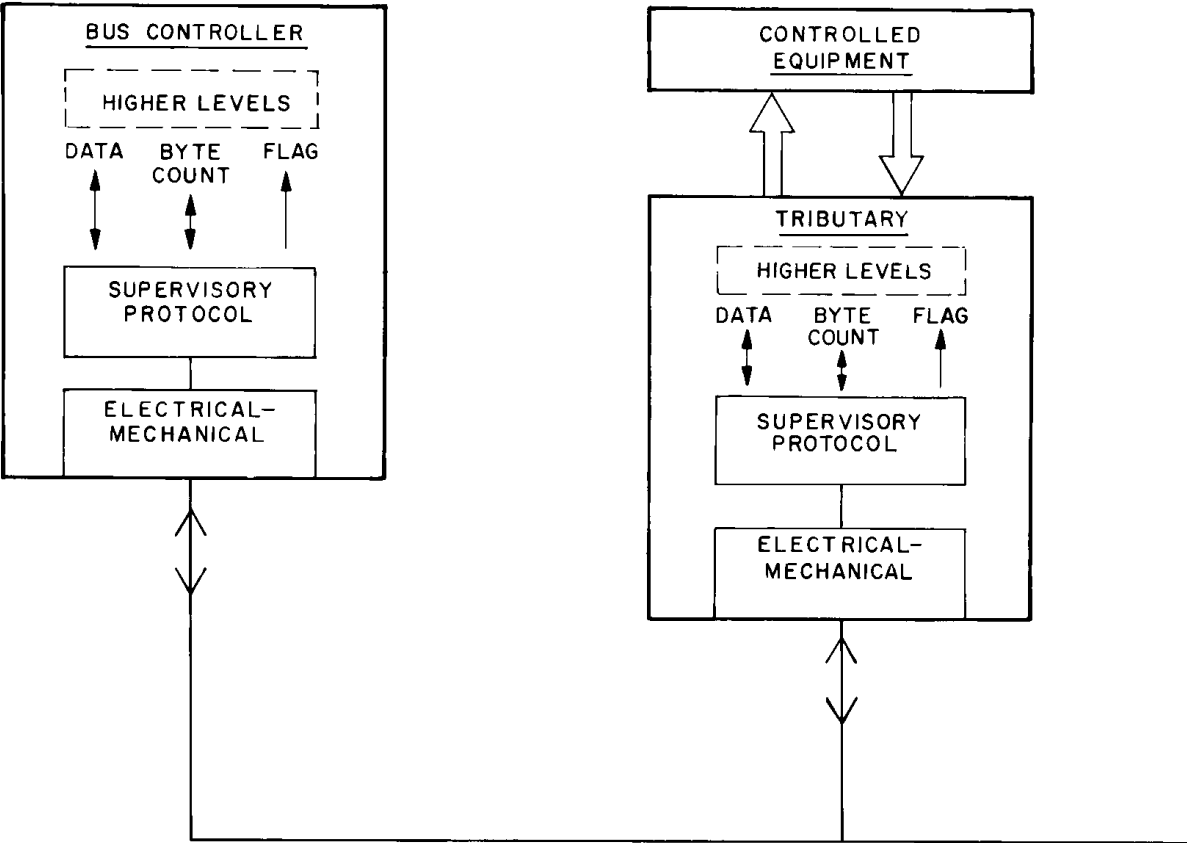


Figure 1 – System elements

3.2 Poll address

An address in which the least significant bit of the least significant byte equals binary 1 is a POLL address.

3.3 Group addresses

Address pairs 8080-8081_h and 8082-8083_h through 81FE-81FF_h are reserved as GROUP SELECT addresses. The addresses in which the least significant bit of the least significant byte equals binary 1 (POLL address) shall not be used but are retained in the address numbering scheme for software considerations.

3.4 Discrete addresses

Tributary addresses shall start at 8280-8281_h. Precisely 8064 discrete tributary address pairs are available.

3.5 Address allocation table

8080–8081 _h	Group select — all call
8082–80FF _h	Group select — groups 1-63
8180–81FF _h	Group select — groups 64-127
8280–82FF _h	64 tributaries
8380–83FF _h	64 tributaries
•	
•	
•	
FF80–FFFF _h	64 tributaries

4 Tributary operational states

A tributary shall be in one of five major operational states:

IDLE: The tributary shall not perform any communications. This state shall be exited only in response to BREAK.