



INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

O.162

(10/92)

SPECIFICATIONS OF MEASURING EQUIPMENT

**EQUIPMENT TO PERFORM
IN-SERVICE MONITORING
ON 2048, 8448, 34 368
AND 139 264 kbit/s SIGNALS**



Recommendation O.162

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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Recommendation O.162 was revised by Study Group IV and was approved under the Resolution No. 2 procedure on the 5th of October 1992.

CCITT NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized private operating agency.

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Recommendation O.162**EQUIPMENT TO PERFORM IN-SERVICE MONITORING
ON 2048, 8448, 34 368 AND 139 264 kbit/s SIGNALS***(Published in 1980; revised 1988 and 1992)**Abstract*

Defines the requirements for an equipment to perform in-service monitoring of digital signals at bit rates of 2, 8, 34 and 140 Mbit/s using the frame alignment signal.

Keywords

- frame alignment signal monitoring;
- frame analyser;
- in-service monitoring;
- measurement;
- tester.

PREAMBLE

Section 1 applies to all four bit rates (2048, 8448, 34 368 and 139 264 kbit/s).

Section 2 provides additional information applicable to 2048 kbit/s signals only.

1 General**1.1 Application**

This specification describes equipment for performing in-service error tests on digital signals having frame structures that are in accordance with § 2.3 and 2.4 of Recommendation G.704 [1], and Recommendation G.751 [2].

The equipment is required to monitor signals at the first, second, third and fourth hierarchical levels, as defined in Recommendation G.702 [3].

1.2 Events to be monitored

The following events shall be monitored:

1.2.1 Alarm conditions, frame alignment signal errors

The equipment is required to display any inherent alarm conditions in the signal and to be capable of counting errors in the Frame Alignment Signal (FAS).

1.2.2 Code violations

The equipment may also, if so desired, count and display violations of the relevant code as a separate operation.

1.2.3 Cyclic redundancy check

The equipment is required to monitor any Cyclic Redundancy Check (CRC) procedure signals, in accordance with Recommendations G.704 [1] and G.706 [4].