

# National Standards Commission



## Certificate of Approval

**No 11/1/2**

Issued under Regulation 9  
of the  
National Measurement (Patterns of Measuring Instruments) Regulations

This is to certify that an approval for use for trade has been granted in respect of the

Telstra Model ECM-ARK Telecommunication Metering System

submitted by TELECOM AUSTRALIA  
Network Operations  
7/35 Collins Street  
Melbourne VIC 3000.

**NOTE:** This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

### CONDITIONS OF APPROVAL

This approval is subject to review on or after 1 June 1999.  
This approval expires in respect of new instruments on 1 June 2000.

Instruments purporting to comply with this approval shall be marked NSC No 11/1/2 and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the Commission and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with the Commission's Document 106.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

#### DESCRIPTIVE ADVICE

**Pattern:** approved 6 May 1994

- The Telstra model ECM/ARK telecommunication metering system is a microprocessor based system designed to replace the mechanical meters in an ARK telecommunication exchange.

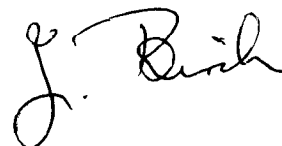
Technical Schedule No 11/1/2 describes the pattern.

#### FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 11/1/2 dated 30 September 1994  
Technical Schedule No 11/1/2 dated 30 September 1994 (incl. Test  
Procedure)  
Figures 1 to 4 dated 30 September 1994

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.





## National Standards Commission

### TECHNICAL SCHEDULE No 11/1/2

**Pattern:** Telstra Model ECM-ARK Telecommunication Metering System.

**Submittor:** Telecom Australia  
Network Operations  
7/35 Collins Street  
Melbourne VIC 3000.

#### 1. Description of Pattern

The Telstra model ECM/ARK telecommunication metering system (Figure 1) is a microprocessor based system designed to replace the mechanical meters in an ARK telecommunication exchange.

##### 1.1 Installation

The ECM/ARK system is installed and maintained in accordance with Telecom Technical Publication No TP01052(S) ECM(ARK) *Installation, Maintenance & Conversion Procedures* Issue 1, dated December 1993.

##### 1.2 The System

The ECM-ARK System consists of two eurocard subrack components designated a model MS (Metering Shelf) unit (Figures 2 and 3) and a model OMP (Operational and Maintenance Processor) unit (Figures 2 and 4).

Up to 2000 customers can be connected to an ARK exchange, which can support a maximum of 160 simultaneous calls. The EMC-ARK system operates in accordance with Telecom Technical Publication No 602/UD-03-001, *System Requirements Specification for the ECM-ARK System* Issue 1.2, dated 24 August 1993.

The main functions of the ECM/ARK system are:

- . To provide electronic metering for a maximum of 2000 customers;
- . To allow manual or automated downloading of metering data from the exchange for billing purposes;
- . To provide a non-volatile memory for the storage of customer meter data, the system configuration and the exchange configuration;
- . To record all system events and metering faults; and
- . To provide dual software registers for system security and integrity.



## TEST PROCEDURE

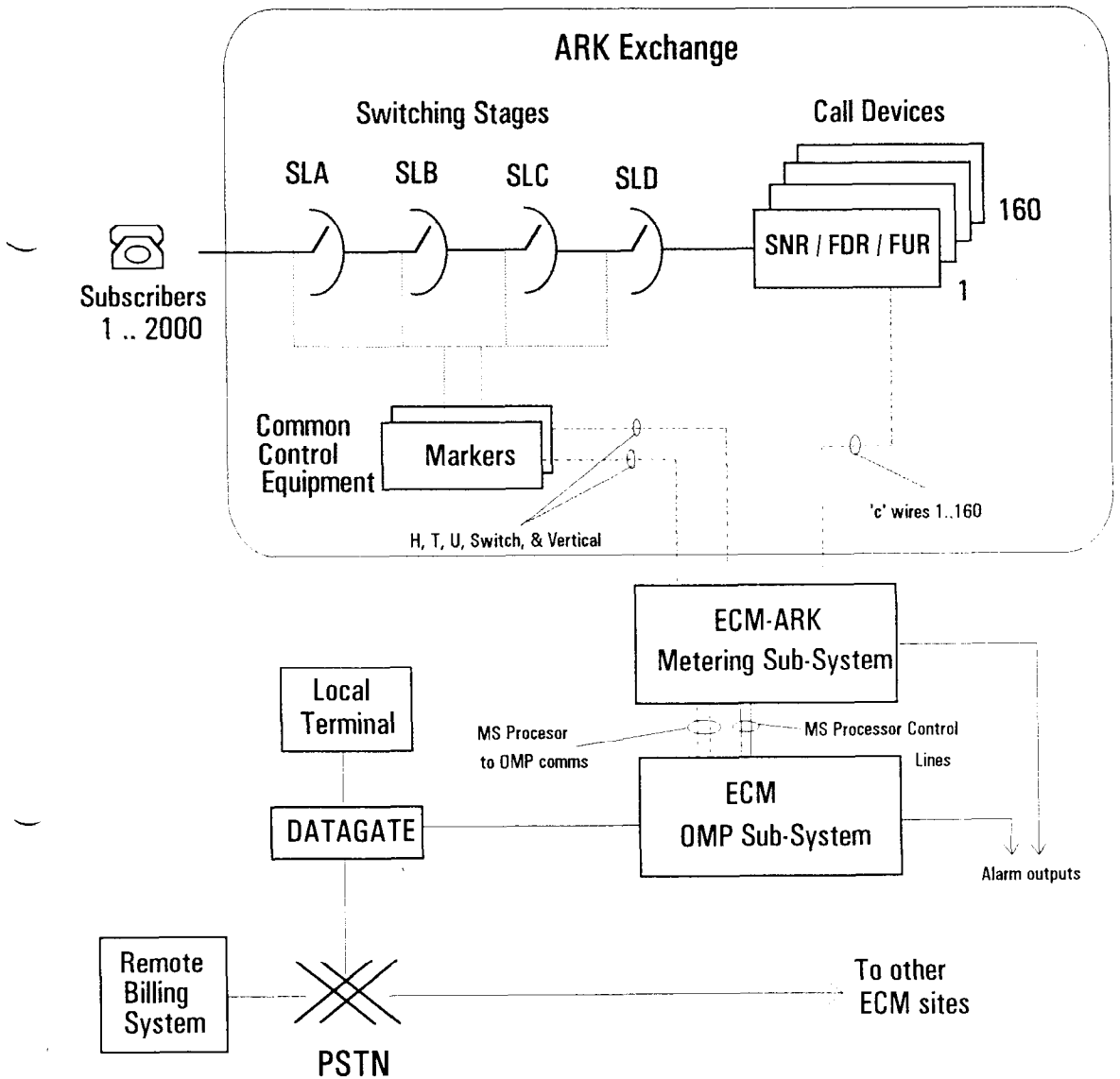
The ECM-ARK metering system shall be verified/certified using the test procedures given in the following Telecom Technical Publications:

- No TP 01052 (S), *ECM-ARK Installation, Maintenance & Conversion Procedures* Issue 1, dated December 1993;
- No TP 01406(S), *ECM-ARK/Network Interface NSC Acceptance Test Plan* Issue 1.00, dated 14 December 1993; and
- No 602/VV-01-003, *ECM-ARK NSC Acceptance Test Plan*.

### Maximum Permissible Errors

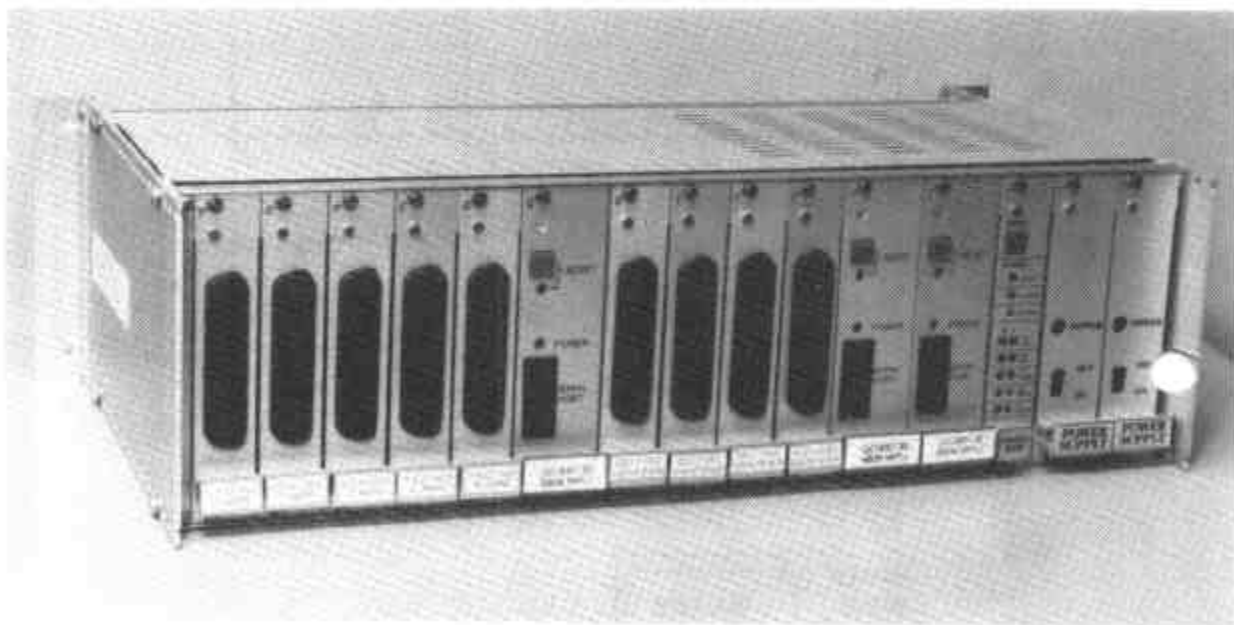
The maximum permissible errors applicable at verification/certification for the acquisition of metering data are +1 meter count per 10 000 000 meter counts (over-metering) and -1 meter count per 10 000 meter counts (under-metering).

FIGURE 11/1/2 - 1

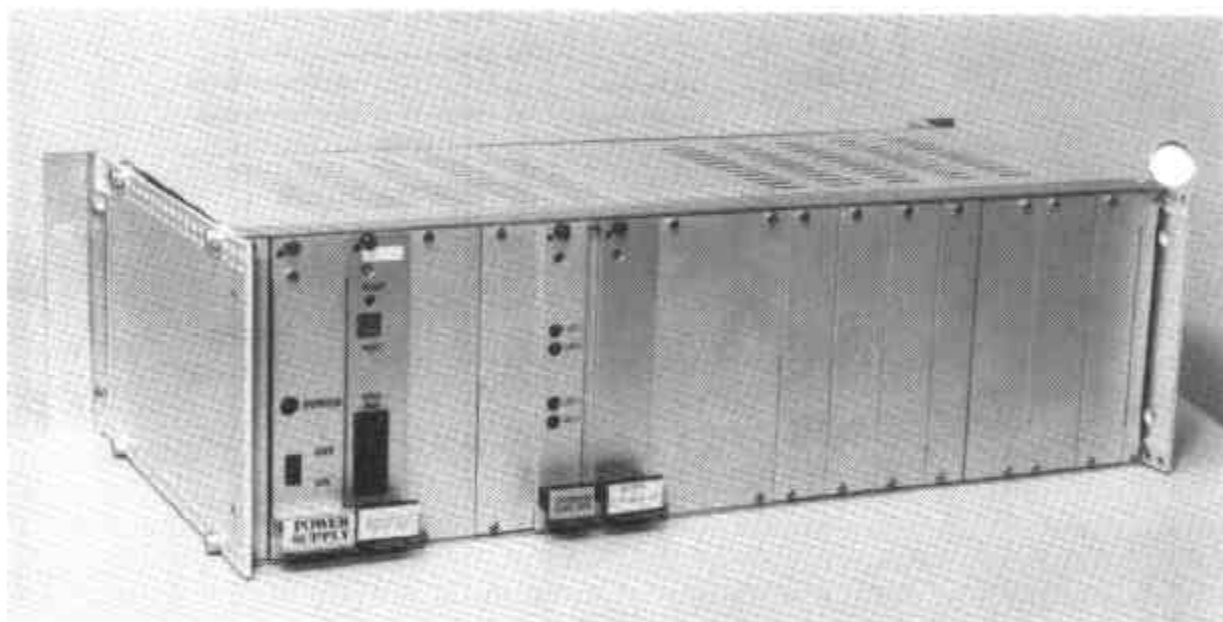


Schematic Diagram Showing a Typical Telstra ECM-ARK Metering System

FIGURE 11/1/2 - 2

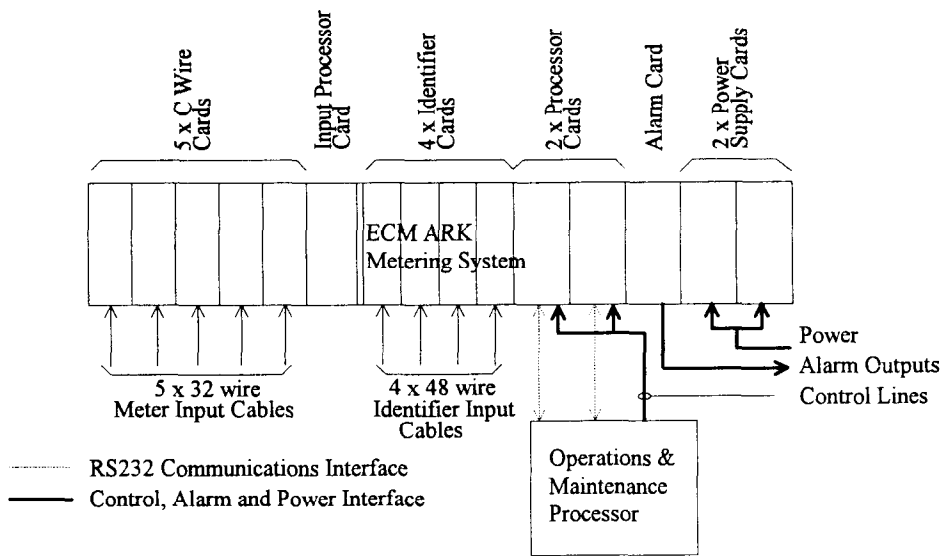


Telstra Model MS Unit

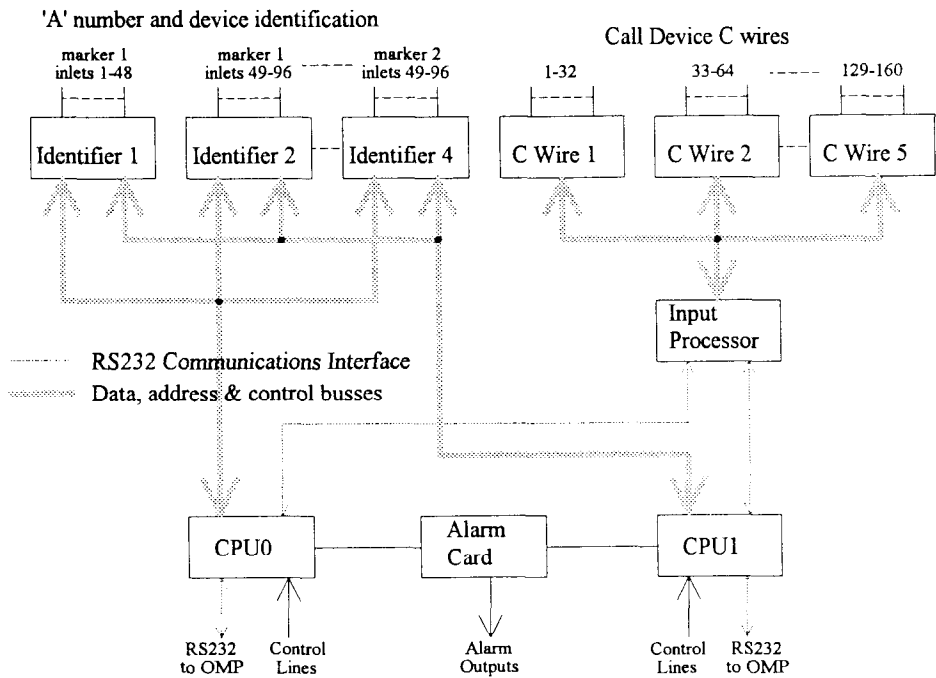


Telstra Model OMP Unit

FIGURE 11/1/2A - 3



ECM ARK METERING SYSTEM LAYOUT

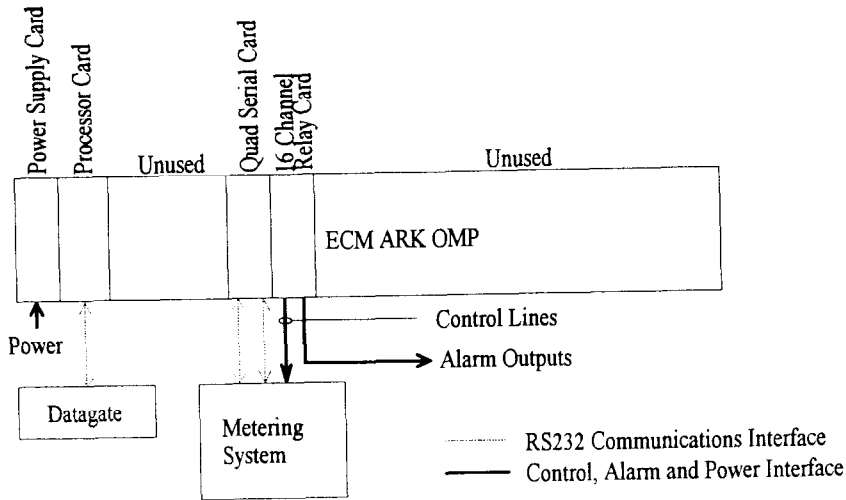


ECM ARK METERING SYSTEM OPERATION

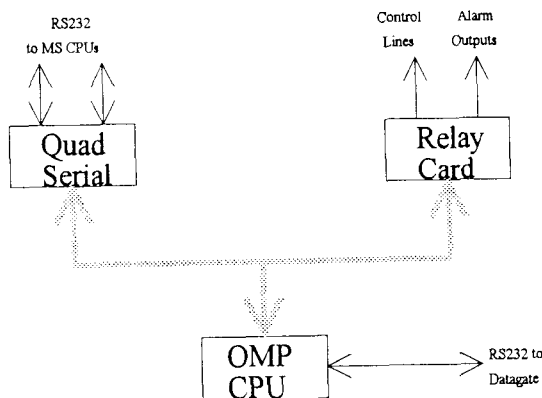
Showing MS Layout and Operation



FIGURE 11/1/2A - 4



ECM ARK OMP LAYOUT



ECM ARK OMP OPERATION

Showing OMP Layout and Operation