L. A configuration and diagnostic device shall be provided for local display of signals, programming and fault diagnosis.

M. RTU's shall be capable of being equipped with RS232/485 links for interconnection to standalone control systems, standard equipment packages and PLCs.

N. A dedicated serial port shall be provided for connecting a hand held programming unit or the PC.

O. Connection to other devices will use Modbus ASCII or RTU protocol as standard. The SCADA system communication has been standardised on the DNP3 protocol, which being an object-based application layer protocol, has the flexibility to support multiple operating modes such as poll-response, polled report-by-exception, unsolicited responses and peer-to-peer.

P. RTU's shall be configured such that a single RTU failure will not interrupt or degrade equipment monitoring and control functions of other RTU's. RTU failure shall be alerted to the operator at the highest alarm priority.

Q. The modem used for PSTN communications shall be of a type approved by Etisalat or another company and be fitted with a surge diverter.

R. The RTU shall include input / outputs circuits as per site requirements but as a minimum the following input/output circuits:

a. 32 digital inputs

b. 16 digital outputs

c. 12 analogue inputs

d. 4 analogue outputs

S. The RTU shall be modular in design and expandable allowing plugging a wide range of modules on to a backplane of an RTU rack without aid of any tool.

T. All components of the RTU assembly shall be capable of operating satisfactorily in an ambient temperature of 65 Degree C and up to 100 % non-condensing RH.

1.3.23.3 Central Processing Unit (CPU)

A. The CPU shall be minimum Intel 32 bit CMOS microprocessor with 16 MHz clock speed and 2MB RAM.