Abstract- Virtual Instrument technology, based on DataSocket, is the product combined with computer technology, network communication technology and instrumentation technology. The paper has described some concepts about virtual instrument and LabVIEW. Now concerning the characteristic of equipment in grassroots units that equipment have diverse models and could be widespread distributed, and it could cause increasing difficulty of repair and maintenance about equipment. Thus, the paper proposed Virtual Instrument technology based on DataSocket and its application in equipment remote condition monitoring and fault diagnosis. DataSocket’s properties, structure and working principle were analyzed at the same time. By developing a set of equipment remote status monitoring and fault diagnosis system, the paper has tried to verify that the use of this technology can monitor real-time data and fault diagnosis.

Index terms: Virtual Instrument; DataSocket; condition monitoring; fault diagnosis.