

Data Sheet



RPA 2004

A Real-time Protocol Analyzer

Version 3.0

...accurate Analysis, better decisions, faster results

Document Version 1.3



RPA 2004: Sample View

The screenshot shows a window titled "Protocol Analysis ..." with three columns of data. The first column contains raw hex data with timestamps and device identifiers. The second column contains interpreted protocol text, including "TESTFR CON", "TESTFR ACT", and "Response: Double Point Information". The third column contains mapped SCADA information, such as "Bay:RWP", "Description:PUMP-1 OUTLET VALVE V-5", and "DI Info:OFF".

Raw Information From RTU/SCADA	Protocol Interpreted Information	RTU/SCADA Information Mapped to user database displayed similar to SCADA/DSC Alarms views
Master (May 31, 2007 - 18:53:30:845) : 68 04 83 00 00 00	TESTFR CON	
Slave (May 31, 2007 - 18:53:30:845) : 68 04 83 00 00 00	TESTFR CON	
Master (May 31, 2007 - 18:53:31:845) : 68 04 43 00 00 00	TESTFR ACT	
Slave (May 31, 2007 - 18:53:31:861) : 68 0E 00 00 00 00	Response: Double Point Information	Bay:RWP
03 01	ASDU->Double Point Info<03>,Count:1[SQ:0]	Description:PUMP-1 OUTLET VALVE V-5
03 FF 05 00	COT:<No Test><Positive Confirm>Cause of Trans:Spontaneous[3]	DI Info:OFF,
F9 2A 00 01	Obj Addr:11001,DI Info:OFF,[BL:0,SB:0,NT:0,IV:0]	
Slave (May 31, 2007 - 18:53:31:861) : 68 04 83 00 00 00	TESTFR CON	
Slave (May 31, 2007 - 18:53:33:111) : 68 0E 00 00 00 00	Response: Double Point Information	Bay:RWP
03 01	ASDU->Double Point Info<03>,Count:1[SQ:0]	Description:PUMP-1 OUTLET VALVE V-5
03 FF 05 00	COT:<No Test><Positive Confirm>Cause of Trans:Spontaneous[3]	DI Info:OFF,
F9 2A 00 01	Obj Addr:11001,DI Info:OFF,[BL:0,SB:0,NT:0,IV:0]	
Slave (May 31, 2007 - 18:53:33:970) : 68 0E 02 00 00 00	Response: Double Point Information	Bay:RWP
03 01	ASDU->Double Point Info<03>,Count:1[SQ:0]	Description:PUMP-1 OUTLET VALVE V-5
03 FF 05 00	COT:<No Test><Positive Confirm>Cause of Trans:Spontaneous[3]	DI Info:OFF,
F9 2A 00 01	Obj Addr:11001,DI Info:OFF,[BL:0,SB:0,NT:0,IV:0]	
Master (May 31, 2007 - 18:53:34:970) : 68 04 43 00 00 00	TESTFR ACT	
Master (May 31, 2007 - 18:53:34:970) : 68 04 01 00 04 00	Supervisory Frame Ack No: 2	
Slave (May 31, 2007 - 18:53:36:111) : 68 04 43 00 00 00	TESTFR ACT	
Master (May 31, 2007 - 18:53:36:127) : 68 04 83 00 00 00	TESTFR CON	
Slave (May 31, 2007 - 18:53:36:595) : 68 0E 00 00 00 00	Response: Double Point Information	Bay:RWP
03 01	ASDU->Double Point Info<03>,Count:1[SQ:0]	Description:PUMP-1 OUTLET VALVE V-5
03 FF 05 00	COT:<No Test><Positive Confirm>Cause of Trans:Spontaneous[3]	DI Info:OFF,
F9 2A 00 01	Obj Addr:11001,DI Info:OFF,[BL:0,SB:0,NT:0,IV:0]	
Slave (May 31, 2007 - 18:53:38:595) : 68 04 43 00 00 00	TESTFR ACT	
Master (May 31, 2007 - 18:53:38:611) : 68 04 83 00 00 00	TESTFR CON	
Slave (May 31, 2007 - 18:53:38:642) : 68 0E 00 00 00 00	Response: Double Point Information	Bay:RWP
03 01	ASDU->Double Point Info<03>,Count:1[SQ:0]	Description:PUMP-1 OUTLET VALVE V-5
03 FF 05 00	COT:<No Test><Positive Confirm>Cause of Trans:Spontaneous[3]	DI Info:OFF,
F9 2A 00 01	Obj Addr:11001,DI Info:OFF,[BL:0,SB:0,NT:0,IV:0]	
Master (May 31, 2007 - 18:53:39:642) : 68 04 01 00 02 00	Supervisory Frame Ack No: 1	

Raw Information From RTU/SCADA

Protocol Interpreted Information

RTU/SCADA Information Mapped to user database displayed similar to SCADA/DSC Alarms views

RPA 2004: Introduction

RPA-2004 is a state-of-the-art solution designed for reliable & precise SCADA protocol analysis and simulation. Designed for Electrical Professionals as users, RPA does not require specific Protocol Knowledge. RPA is developed using latest technologies, which helps to integrate SCADA/DCS database into analyser resulting in faster analysis. RPA 2004 is a full-featured protocol test unit that provides the user with a powerful and flexible tool for testing and monitoring of SCADA system (including SCADA Master and SCADA RTUs/IEDs). Advanced features like integration with Reports Generation in MS Excel and refined Graphical User Interface (specifically designed considering Electrical professionals as users) allows faster and accurate diagnosing of communication problems. RPA is available in two variations:

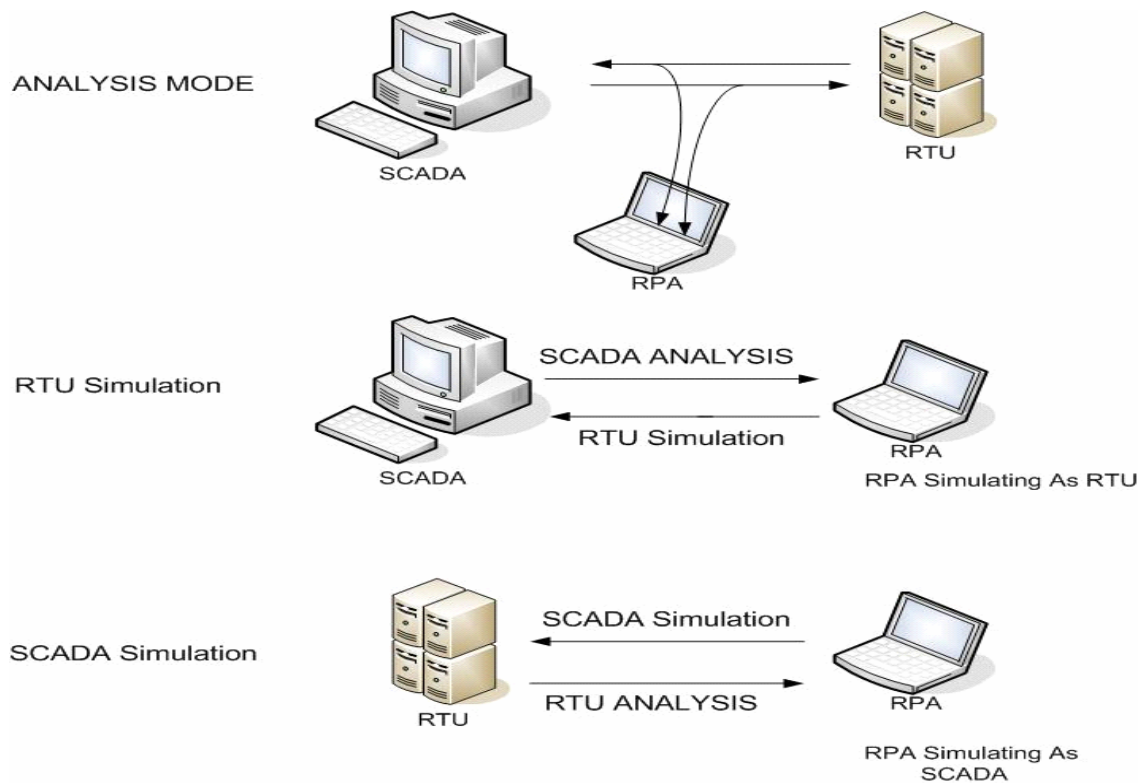
- ✓ RPA 2004 Professional: Richly featured analysis and simulation covering all protocol related activities. This variation is developed for End Users, Utilities and Onsite Testing Activities
- ✓ RPA 2004 Enterprise: includes all features of Professional Version and extended capabilities for archiving and reporting. This variation is developed for SCADA OEMs and SCADA Integrators.

RPA 2004: Operating Modes

Three modes of operating are supported by RPA.

- ✓ Monitor Mode: In this mode RPA monitor the communication between SCADA and other end device. Interpreted message is displays for both.
- ✓ RTU Simulation Mode: This allows RPA to act as RTU for Master SCADA Station. Convenient user database mapped set-up menus allow the user to specify points to Simulate. Similar SCADA like displays, with possibility to define sequence of points to be simulated in order to make simulation representing real
- ✓ SCADA Simulation Mode: This allows RPA to act as SCADA for testing the SCADA or remote end

RPA 2004: Operating Modes



RPA 2004: Protocol Support

Protocol	SCADA Mode	RTU Mode	Analysis Mode
IEC 60870 – 5 -101	•	•	•
IEC 60870 – 5 -103	•	•	•
IEC 60870 – 5 -104	•	•	
MODBUS RTU	•	•	•
MODBUS ASCII	•	•	•
MODBUS TCP	•	•	
DNP 3	•	•	•
IEC 61850 (Under Development)	•	•	
HNZ (Under Development)	•	•	•
Profibus DP (Under Development)	•	•	•

RPA 2004: Product Features

- ✓ Full featured Protocol Simulation and Analysis.
- ✓ Full Compatibility with Industry standard Protocol (IEC, MODBUS, DNP etc.)
- ✓ Simulation of Multiple SCADA/ RTUs/IEDs
- ✓ History Logging.
 - » Database Mapped Analysed Data with Time Stamping
 - » Protocol Mapped Analysed Data with Time Stamping
 - » RAW Data with Time Stamping
 - » All communication and protocol related communication errors with time stamping
- ✓ Status Indication Showing Success and Failure of Messages.
- ✓ Reporting is the one of the highlights of RPA. Supports direct report generation in Microsoft® EXCEL® showing:
 - » Time Tagged Raw Data
 - » Time Tagged Protocol Analysed Data
 - » Time Tagged Raw Data Databased Mapped Data
 - » Failure Analysis Reports
- ✓ Reported Data can also be stored into any ODBC Compliant Database like MS Access, MS SQL Server and Oracle.
- ✓ Full integration of With SCADA/RTU Data Base, helping in faster and accurate simulation and analysis. Supported File Formats for Database imports
 - » TEXT
 - » EXCEL / WORD
 - » BINARY / XML
- ✓ RPA records all the protocol related statistics that facilitates continuous monitoring. Following counters are provided:
 - » Total Message Sent / Received
 - » Parity Errors
 - » Framing Errors
 - » Protocol Errors

RPA 2004: Variation Comparison

Features	RPA 2004 Professional	RPA 2004 Enterprise
Simulation Type		
• Monitor Mode	•	•
• RTU Mode	•	•
• SCADA Simulation Mode	•	•
• Multiple SCADA/RTU's/IED's		•
Report Archiving		
• History Logging with Time stamping	•	•
• Fault analysis report	•	•
Report Format		
• EXCEL	•	•
• MS Access		•
• MS SQL Server		•
• Oracle		•
Main Displays		
• Raw data	•	•
• Protocol Interpretation	•	•
• Database Interpretation	•	•
• Parameter setup	•	•
• Database Import	•	•
• Simulation setup	•	•
Error Reporting		
• No. of Master/Slave Messages	•	•
• No. of Master/Slave Correct Messages	•	•
• No. of Master/Slave Port/Hardware Messages	•	•
• No. of Master/Slave Other Error Messages	•	•

RPA 2004: Client List

Customer Name	End User Company Name	Quantity
ALSTOM T & D Systems LTD, Noida	Sasaram, PGCIL	1
AREVA T & D Systems India Ltd, Noida	Salakati, PGCIL	1
Larsen and Toubro Limited, Chennai	NPCIL, Tarapur	2
Bharat Heavy Electricals Limited, Hyderabad	BHEL R & D, Hyderabad	2
AREVA T & D Systems India Ltd, Noida	AREVA R & D	4
AREVA T & D Systems India Ltd, Noida	Jammu, PGCIL	3
SP Paryavaran Pvt. Ltd.	MES, India	1
AREVA T & D India Ltd, Noida	Meghalya, PGCIL	2
IPS Automation, India	PEPSI Co.	1