



## Network Communication Overview

The RALS connectivity system utilizes your hospital's LAN to carry out many of its core functions. It is important to understand how the different components of the RALS system interact for the system to function optimally. This document outlines the network communication between the different RALS components.

### All RALS systems require the following:

- **RALS CORE SERVER (RCS) Inbound**
  - TCP 80 – (HTTP for RALS)
  - TCP 443 – (HTTPS for RALS)
  - TCP 3001 – (Incoming device downloads)
  - TCP 3389 – (Remote Desktop)
  - TCP 4507 – (MIG Status)
  - TCP 4508 – (Evaluator Status)
  - ICMP Ping – (Diagnostics)
- **RCS Outbound**
  - TCP 23 – (Telnet for Dataport configuration)
  - TCP 25 – (SMTP for emailing reports from RALS)
  - TCP 80 – (HTTP for Dataport Configuration)
  - TCP 3002 – (RRC control communications)
  - TCP 3389 – (Remote Desktop)
  - ICMP Ping – (RALS status page and diagnostics)
- **ARDx Informatics Support Site to Site VPN (To RCS and VHost)**
  - TCP 80 – (HTTP for RALS)
  - TCP 443 – (HTTPS for RALS)
  - TCP 3389 – (Remote Desktop)
  - ICMP Ping – (Diagnostics)
  - ICMP Traceroute – (Diagnostics)
- **Networked Device Inbound (Meter or Base Unit)**
  - TCP 23 – (Telnet for Device configuration)
  - TCP 80 – (HTTP for Device Configuration)
  - ICMP Ping – (RALS status page and diagnostics)
- **Network Device Outbound (Meter or Base Unit)**
  - TCP 3001 – (Device Download)
- **RRC Workstation Inbound**
  - TCP 3002 – (RRC control communication)
  - ICMP Ping – (RALS status page and diagnostics)
- **RRC Workstation Outbound**
  - TCP 3001 – (Device downloads)
- **Dataport Inbound**
  - TCP 23 – (Telnet for Dataport configuration)
  - TCP 80 – (HTTP for Dataport Configuration)
  - ICMP Ping – (RALS status page and diagnostics)
- **Dataport Outbound**
  - TCP 3001 – (Device downloads)
- **RALS Web Client**
  - TCP 80 – (HTTP for RALS)
  - TCP 443 – (HTTPS for RALS)
  - TCP 4507 – (MIG Status)
  - TCP 4508 – (Evaluator Status)



The following interfaces require additional connectivity:

### RALS-LIS and/or RALS-ADT Interfaces

- **RCS Inbound**
  - TCP Custom Port – (ADT Feed)
  - TCP Custom Port – (LIS bi-directional communication)
  - TCP 1433 – (SQL browser) [If separate INTF server is installed]
  - TCP Dynamic (SQL named instance) [If separate INTF server is installed]
  - UDP 1433 – (SQL browser) [If separate INTF server is installed]
- **RCS Outbound**
  - TCP 3389 – (Remote Desktop) [If separate INTF server is installed]
  - TCP Custom Port – (Upload to LIS System)
- **INTF Server Inbound [if present]**
  - TCP Custom Port – (ADT Feed Incoming)
  - TCP Custom Port – (LIS bi-directional communication)
- **INTF Server Outbound [if present]**
  - TCP Custom Port – (Upload to LIS System)

The following device modules require additional connectivity:

### Cepheid® GeneXpert®

- **RCS Inbound**
  - TCP 3101 – (Device Download)
- **Networked Device Outbound**
  - TCP 3101 – (Device Download)

### epoc® Blood Analysis Analyzer

- **RCS Inbound**
  - TCP 8000 – (Device download)
- **epoc® Outbound**
  - TCP 8000 – (Device download)

### Haemonetics® TEG® 6s

- **RCS Inbound**
  - TCP 3101 – (TEG Manager)
- **Networked Device Outbound**
  - TCP 3101 – (TEG Manager)

### Haemonetics® TEG® 5000

- **RCS Inbound**
  - TCP 3101 – (TEG Manager)
- **Networked Device Outbound**
  - TCP 3101 – (TEG Manager)

### HemoCue® 201 DM

- **RCS Inbound**
  - TCP 3101 – (Device Download)
- **Networked Device Outbound**
  - TCP 3101 – (Device Download)



The following device modules require additional connectivity:

### i-STAT® Analyzer

- **RCS Inbound**
  - TCP 4509 – (i-STAT Status)
- **RCS Outbound**
  - TCP 80 – (HTTP DE DMS communication and HTTP i-STAT base configuration)
  - TCP 3389 – (Remote Desktop)
  - TCP 9999 – (Telnet i-STAT base configuration)
  - ICMP Ping – (RALs status page and diagnostics)
- **DE Inbound**
  - TCP 80 – (HTTP DE DMS communication and configuration)
  - TCP 3389 – (Remote Desktop)
  - TCP 6000 – (i-STAT 200 series download)
  - TCP 6004 – (i-STAT download)
- **DE Outbound**
  - TCP 80 – (HTTP i-STAT base configuration)
  - TCP 9999 – (Telnet i-STAT base configuration)
  - ICMP Ping – (Diagnostics)
- **i-STAT® Inbound**
  - TCP 80 – (HTTP i-STAT base configuration)
  - TCP 9999 – (Telnet i-STAT base configuration)
  - ICMP Ping – (RALs status page and diagnostics)
- **i-STAT® Outbound**
  - TCP 6000 – (i-STAT 200 series download)
  - TCP 6004 – (i-STAT download)
- **RALS Web Client**
  - TCP 80 – (HTTP DE configuration)
  - TCP 4509 – (i-STAT Status)

### M Dialysis ISCUSflex™

- **RCS Inbound**
  - TCP 3101 – (Device Download)
- **Networked Device Outbound**
  - TCP 3101 – (Device Download)

### Medtronic HMS Plus

- **RCS Inbound**
  - TCP 3101 – (Device Download)
- **Networked Device Outbound**
  - TCP 3101 – (Device Download)

### Nova Biomedical StatStrip® Glucose

- **RCS Outbound – Direct Connection**
  - TCP 3001 – (Device Download)
- **RCS Outbound – NovaNet**
  - TCP 3101 – (NovaNet)
- **Network Device Inbound**
  - TCP 3001 – (Device Download)
- **Network Device Inbound**
  - TCP 3001 – (NovaNet)

### Nova Biomedical StatSensor® Creatinine

- **RCS Outbound – Direct Connection**
  - TCP 3001 – (Device Download)
- **RCS Outbound – NovaNet**
  - TCP 3101 – (NovaNet)
- **Network Device Inbound**
  - TCP 3001 – (Device Download)
- **Network Device Inbound**
  - TCP 3001 – (NovaNet)



### Nova Biomedical StatStrip® Lactate

- **RCS Outbound – Direct Connection**
  - TCP 3001 – (Device Download)
- **RCS Outbound – NovaNet**
  - TCP 3101 – (NovaNet)
- **Network Device Inbound**
  - TCP 3001 – (Device Download)
- **Network Device Inbound**
  - TCP 3001 – (NovaNet)

### Nova Biomedical Stat Profile® Prime Analyzer

- **RCS Outbound – Direct Connection**
  - TCP 3001 – (Device Download)
- **RCS Outbound – NovaNet**
  - TCP 3101 – (NovaNet)
- **Network Device Inbound**
  - TCP 3001 – (Device Download)
- **Network Device Inbound**
  - TCP 3001 – (NovaNet)

### Nova Biomedical Stat Profile® Prime Plus Analyzer

- **RCS Outbound – NovaNet**
  - TCP 3101 – (NovaNet)
- **Network Device Inbound**
  - TCP 3001 – (NovaNet)

### Quidel Triage®

- **RCS Outbound**
  - TCP 771 – (Digi RealPort connection)
- **Dataport Inbound**
  - TCP 771 – (Digi RealPort connection)

### Quidel Solana®

- **RCS Inbound**
  - TCP 3001 – (Device Download)
- **RCS Outbound**
  - TCP 6661 – (Orders Upload)

### Radiometer® ABL 80, ABL 90, ABL 800, AQT 90

- **RCS Inbound**
  - TCP 3101 – (Device Download)
- **Networked Device Outbound**
  - TCP 3101 – (Device Download)

### SIEMENS Clinitek Status® Plus

- **RCS Inbound**
  - TCP 3101 – (Device Download)
- **Networked Device Outbound**
  - TCP 3101 – (Device Download)

### SIEMENS DCA Vantage®

- **RCS Inbound**
  - TCP 3101 – (Device Download)
- **Networked Device Outbound**
  - TCP 3101 – (Device Download)

### WERFEN (IL) GEM® 3000, 3500

- **RALS Web Client**
  - TCP 80 – (GEMweb Plus) [3500only]
- **RCS Outbound**
  - TCP 80 – (GEMweb Plus) [3500only]
  - TCP 1182 – (Device polling)
- **Networked Device Inbound**
  - TCP 80 – (GEMweb Plus) [3500 only]
  - TCP 1182 – (Device polling)



The following device modules require additional connectivity:

### WERFEN (IL) GEM® 4000, 5000

- **RALS Web Client**
  - TCP 80, 443 – (GEMweb Plus)
- **RCS Outbound**
  - TCP 80, 443 – (GEMweb Plus)
- **RCS Inbound**
  - TCP 3103 – (Device Download)
- **Networked Device Inbound**
  - TCP 80, 443 – (GEMweb Plus)
- **Networked Device Outbound**
  - TCP 3103

### WERFEN (IL) GEMweb® Plus

- **RCS Outbound**
  - TCP 80, 443 – (GEMweb Plus)
  - ICMP Ping – (RALS status page and diagnostics)
- **RCS Inbound**
  - TCP 3101 – (Device Download)
  - TCP 3102 – (Operators Upload)
- **GEMweb® Plus Inbound**
  - TCP 80, 443 – (GEMweb Plus)
  - ICMP Ping – (RALS status page and diagnostics)

### WERFEN (IL) Sig +, Sig Elite, Hemochron Response

- **RCS Outbound**
  - UDP 3003 – (Baud rate control)
- **Digi/RRC Inbound**
  - UDP 3003 – (Baud rate control)
  - TCP 3102 – (Operators Upload)
- **GEMweb® Plus Inbound**
  - TCP 80, 443 – (GEMweb Plus)
  - ICMP Ping – (RALS status page and diagnostics)

### WERFEN (IL) GEM Hemochron 100

- **RCS Outbound**
  - UDP 3001 – (Baud rate control)
- **Networked Device Inbound**
  - UDP 3001 – (Baud rate control)
- **GEMweb® Plus Inbound**
  - TCP 80, 443 – (GEMweb Plus)
  - ICMP Ping – (RALS status page and diagnostics)

Sig+, Elite, Response | + Denotes port required in addition to the connection method