Rauland

AMETEK

Responder 5000

System Build and Quotation

Rauland Responder 5000

Topics This Session

- **Responder 5000 System Build and Quotation**
- **Responder 4000 Discontinuance Timeline**

Responder 5000 Quote Process and Tools

- **Collect Site Information**
- **Responder 5000 Quotation Tools**
- **Important System Design Rules**
- **Prepare Proposal**

Perform Needs Assessment

- **Case #1: New Responder 5000 site**

1. System info: *Responder 5000 Application & Design Guide*
2. Perform site Needs Assessment
3. Use Responder 5000 design tools: Autoquote & Power Calculation tool

Perform Needs Assessment

- **Case #2: Convert existing Responder 4000**

  1. Refer to *R4000 Conversion to R5000 Application Note*

     - Collect Responder 4000 configuration from live site if needed

     - Print Reports of deployed hardware, priority names, etc.

Perform Needs Assessment

- **Case #2: Convert existing Responder 4000**

2. System info: *Responder 5000 Application & Design Guide*

3. Perform site Needs Assessment

4. Use Responder 5000 design tools: Autoquote & Power Calculation tool

Responder 5000 Quotation Tools

- **Responder 5000 Application & Design Guide**
  - System Overview
  - Hardware info: details on continuing SKUs
  - Software application
  - SIP phone configuration
  - Licensing overview

- **RNC Application & Design Guide (separate document)**

R5000 Application & Design Guide

Responder® 5000 System Overview

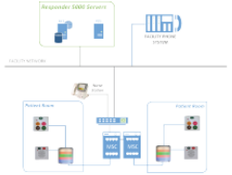
The Responder 5000 Nurse Communication System is designed to minimize installation complexity while providing a highly functional communication system that provides patient-to-staff and staff-to-staff communication. The system provide either full audio or tone/visual annunciation of nurse call events. The system also provides for wireless phone integration allowing for nearly instantaneous connection via SIP protocol to wireless smart phones or other wireless devices. An option Software package provides multiple detailed reports of all nurse call events, a real-time Activity Board showing all active calls, a patient registration function, and other system administrator functions. The basic functionality of the Responder 5000 system has been implemented without the need for external servers - all core Responder 5000 functions are delivered via Responder 5000 system devices. Servers are required for optional features such as the Responder 5000 Software package or when the Responder SIP phone server is used.

The heart of the Responder 5000 system is the Main System Controller (MSC). This device provides control and communication with all Responder 5000 components including other MSCs. It allows the Responder 5000 to interface with the facility's Local Area Network (LAN), while providing the necessary isolation of the critical life-safety functions of the Responder 5000 system. The MSC contains (4) Ethernet ports for connection to the facility LAN, Responder 5000 VoIP Nurse Consoles, or the Responder 5000 8-port Ethernet switch. The output of the MSC is (4) L-Net high speed data buses, each capable of managing up to 23 corridor lights and/or domeless controllers and their associated room stations. Each L-Net port can manage (1) active voice session for a total of (4) active voice sessions per MSC.

The MSC connects to the RSKL2KA L-Net to K-Bus Adapter module, (1) RSKL2KA per L-Net. The RSK2KA is the interface between the L-Net and the K-Bus which is used by the Responder 5000 corridor lights and domeless controllers. The K-Bus typically originates at the RSKTRM Termination Module which provides a convenient method to connect the K-Bus run and inject power into the K-Bus, dependent on the power required for the quantity and type of stations on the K-Bus.

While the MSC is the system controller, the corridor light and domeless controller provide the management of the individual room stations. Each room station connects to its associated corridor light or domeless controller which then communicates with its assigned MSC. The corridor light can accommodate up to 6 room stations with (1) or (4) audio station connections. A visual-only corridor light is also available which provides (6) room station connections for a tone/visual only system. Similar models are available for domeless controllers but the largest domeless controller can accommodate up to 16 room stations in a tone/visual only system. The corridor light and domeless controllers are fully supervised and a failure is immediately annunciated at the VoIP Nurse Console(s). The corridor light also operates in a fail-safe mode if connection to the MSC is not available. The corridor light will continue to function when a room station is activated and it will flash its LEDs according to a pre-programmed flash rate.

The figure below shows a simplified network diagram for the Responder 5000 system.



Responder 5000 Components

Head End Equipment

RSKMSC: Main System Controller	
	The Main System Controller (MSC) is the data, audio, and configuration controller for up to 92 K-Bus devices. It contains (4) L-Net output ports, each supporting 46 K-Bus devices. Each L-Net can support (1) active audio path for a total of (4) audio paths per MSC. The MSC also provides (4) Ethernet ports for connectivity to VoIP Nurse Consoles, servers, or Ethernet Switches. The MSC requires 36V DC power.
RSKL2KA: L-Net to K-Bus Adaptor	
	The RSKL2KA L-Net to K-Bus Adaptor provides bi-directional data conversion to and from Responder 5000 K-Bus devices and the Main System Controller (MSC). One L2KA adaptor is required for each L-Net port on the MSC (4 max per MSC). Each L2KA supports up to 46 K-Bus devices and their associated stations. Each L2KA can support (1) active audio path. The L2KA supports dynamic hot plug. The RSKL2KA receives its power directly from the MSC so a separate power connection is not provided.
RSKMTRM: Termination Board	
	The Termination Board is the distribution point for the K-Bus audio and data of Responder 5000 devices. It also provides a convenient connection to insert power into the K-Bus. The board contains (2) separate power injection points and (6) K-Bus connection points. It also contains K-Bus In and K-Bus Out connections. The board provides protection circuitry to prevent an overvoltage connection of K-Bus devices.
RSKMPR15: 15v Power Supply with Battery Backup	
	The RSKMPR15 Power Supply provides 15.5V DC power for patient stations, corridor lights, domeless controllers, and all K-Bus accessories. It provides up to 4.65 A output current. Three separate output terminations are available. A battery backup is included and provides up to 5 minutes of power @83% load to allow backup power to start. Please refer to the Responder 5000 Power Calculation worksheet for proper power distribution. Note that Responder 5000 also requires the RSKMPR36.
RSKMPR36: 36v Power Supply with Battery Backup	
	The RSKMPR36 Power Supply provides 36V DC power for the Main System Controller, VoIP Nurse Console, 8-port Ethernet Switch, and Responder Network Concentrator. It provides up to 2.4 A output current. Three separate output terminations are available. A battery backup is included and provides up to 5 minutes of power @83% load to allow backup power to start. Please refer to the Responder 5000 Power Calculation worksheet for proper power distribution Note that Responder 5000 also requires the RSKMPR15.

Responder 5000 System Architecture

36v power supply

15v power supply

L2KA

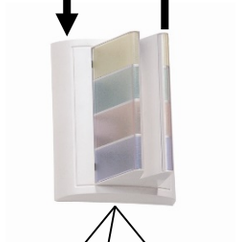
K-Bus

Next Room

Main System Controller

VoIP Console

Responder Feature Server



1 2 … 6

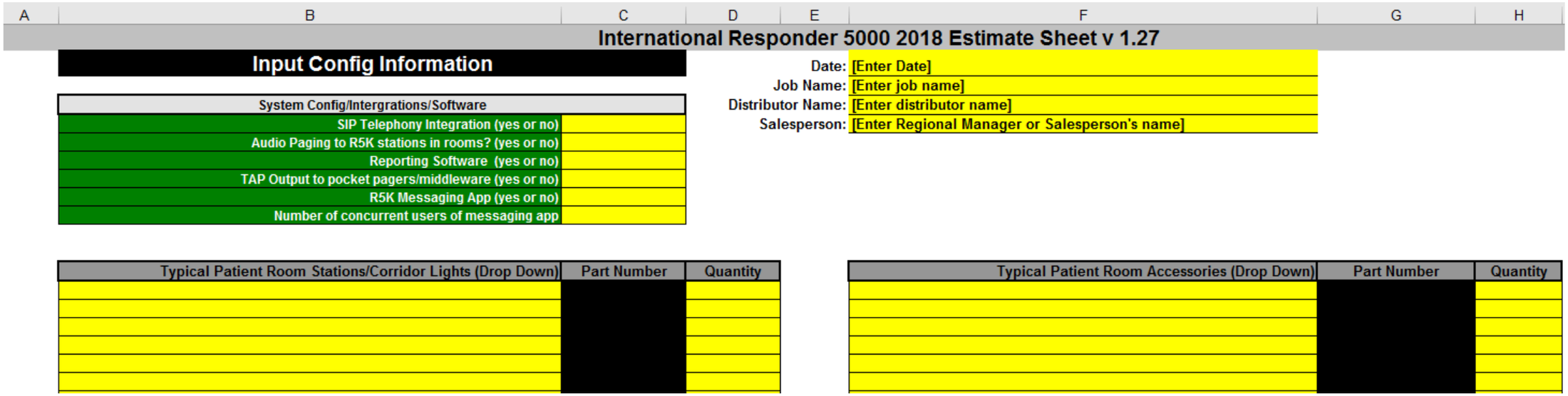
Room Stations

1 2 … 6

Room Stations

Responder 5000 Quotation Tools

- **Autoquote Tool**
  - Excel spreadsheet performs calculations and pricing summary
    - Enter Room Summary information or…….



A	B	C	D	E	F	G	H

International Responder 5000 2018 Estimate Sheet v 1.27

Input Config Information

Date:	[Enter Date]
Job Name:	[Enter job name]
Distributor Name:	[Enter distributor name]
Salesperson:	[Enter Regional Manager or Salesperson's name]

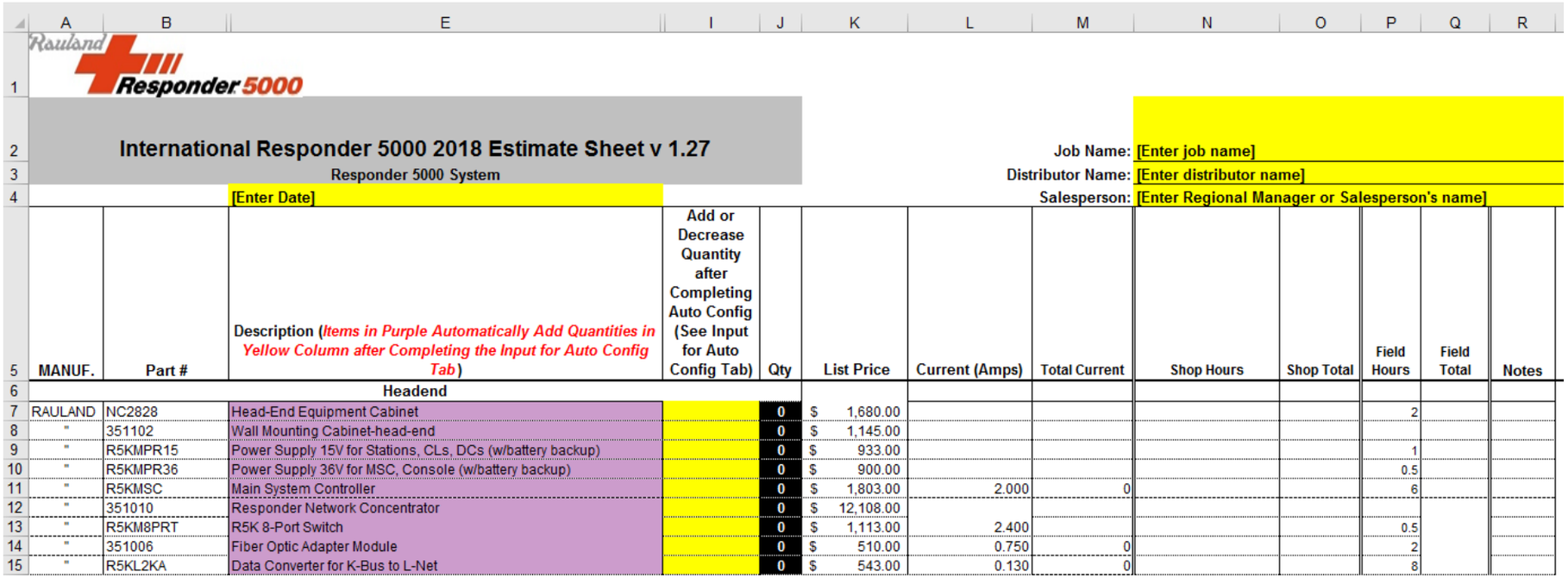
System Config/Intergrations/Software	
SIP Telephony Integration (yes or no)	
Audio Paging to R5K stations in rooms? (yes or no)	
Reporting Software (yes or no)	
TAP Output to pocket pagers/middleware (yes or no)	
R5K Messaging App (yes or no)	
Number of concurrent users of messaging app	

Typical Patient Room Stations/Corridor Lights (Drop Down)	Part Number	Quantity

Typical Patient Room Accessories (Drop Down)	Part Number	Quantity

Responder 5000 Quotation Tools

- **Autoquote Tool**
  - Or Enter count of individual SKUs



	A	B	E	I	J	K	L	M	N	O	P	Q	R
1	Rauland Responder 5000												
2			International Responder 5000 2018 Estimate Sheet v 1.27					Job Name:	[Enter job name]				
3			Responder 5000 System					Distributor Name:	[Enter distributor name]				
4			[Enter Date]					Salesperson:	[Enter Regional Manager or Salesperson's name]				
5	MANUF.	Part #	Description (*Items in Purple Automatically Add Quantities in Yellow Column after Completing the Input for Auto Config Tab*)	Add or Decrease Quantity after Completing Auto Config (See Input for Auto Config Tab)	Qty	List Price	Current (Amps)	Total Current	Shop Hours	Shop Total	Field Hours	Field Total	Notes
6			Headend										
7	RAULAND	NC2828	Head-End Equipment Cabinet		0	$ 1,680.00					2		
8	"	351102	Wall Mounting Cabinet-head-end		0	$ 1,145.00							
9	"	R5KMPR15	Power Supply 15V for Stations, CLs, DCs (w/battery backup)		0	$ 933.00					1		
10	"	R5KMPR36	Power Supply 36V for MSC, Console (w/battery backup)		0	$ 900.00					0.5		
11	"	R5KMSC	Main System Controller		0	$ 1,803.00	2.000	0			6		
12	"	351010	Responder Network Concentrator		0	$ 12,108.00							
13	"	R5KM8PRT	R5K 8-Port Switch		0	$ 1,113.00	2.400				0.5		
14	"	351006	Fiber Optic Adapter Module		0	$ 510.00	0.750	0			2		
15	"	R5KL2KA	Data Converter for K-Bus to L-Net		0	$ 543.00	0.130	0			8		

Responder 5000 Quotation Tools

- **Autoquote Tool**
  - Output: BOM with pricing

Qty.	Part Number	Description	List Price Ea.	Extended List Price	Distributor Prices	
Head End					Net	Extended Net
Responder 5000						
1	NC2828	Head-End Equipment Cabinet	1680.00	1680.00		
1	R5KMPR15	Power Supply 15V for Stations, CLs, DCs (w/battery backu	933.00	933.00		
2	R5KMPR36	Power Supply 36V for MSC, Console (w/battery backup)	900.00	1800.00		
1	R5KMSC	Main System Controller	1803.00	1803.00		
2	351006	Fiber Adapter Modules	510.00	1020.00		
1	R5KL2KA	Data Converter for K-Bus to L-Net	543.00	543.00		
1	R5KMTRM	Termination Board	183.00	183.00		
15	R5KCL516	5-Bulb, 1-Point Audio Corridor Light	237.00	3555.00		
15	R5KPS1EA	R5K Enhanced Single Station	165.00	2475.00		
15	R4KPC11	SLIM Pull Cord St	93.00	1395.00		
Software						
ACCESSORIES						
1	350018	Responder 8-pin SL Connector (Pack of 100)	338.00	338.00		
Pillow Speakers/Call Cords						
Additional Items						

Responder 5000 Quotation Tools

Power Calculation Spreadsheet

R5KDC06	Domeless 6 stations		0.016			
R5KDC016	Domeless 16 stations		0.017			
R5KDC16D	Domeless Duty 1 Audio 6 stations		0.058			
R5KDCRC4	Relay Output Controller		0.032			
R5KDCRC4	Solid State Relay Output Controller		0.021			
Consoles and Annunciators						
R4KANNV2	Annunciator Panel		0.375			
R4KMQCV2	Marquee Controller		0.300			
R5KCONS	VOIP Console		0.328			
Network and Control Equipment						
R4KPA25	25W Paging Amp		2.500			
R5KMSC	Main System Controller		2.000			
R5KL2KA	L-Net to K-Bus Adapter		0.130			
351010	Responder Network Concentrator		0.300			
R5KM8PRT	R5K 8 Port POE Ethernet Switch		2.400			
Device Model		**Number Per System**	**Power Draw (mA)**	**Total Draw Per System**		
Stations						
			Grand Total (15V)	0.000		
			Grand Total (36V)	0.000		
R4KPR400 Power Supplies Required				**0**	→	
R5KMPR15 Power Supplies Required				**0**	→	
R5KMPR36 Power Supplies Required				**0**	→	

Important Design Rules

K-Bus:

- **Data bus used for CL, DC, ANN, MQC, Power Amp**
  - 1 audio path per K-Bus

- **(4) K-Bus connections per MSC**
  - 1 K-Bus per L2KA
  - 4 L2KAs per MSC

Important Design Rules

Corridor Lights & Domeless Controllers

- **CL: 6 connection points**
  - Visual only, 1 audio, or 4 audio points
  - No CLAR4 needed for sconce corridor lights

- **Domeless: 6 or 16 connection points**
  - Visual only, or 4 audio points, or 1 Audio Duty connection

Important Design Rules

Power Requirements

- **Two power supplies required**
  - 36volt supply: Headend devices
    - Black case
  - 15volt supply: corridor lights, stations, etc.
    - Gray case (“Gray is for K”)

Important Design Rules

Connectors

- **Responder 5000 uses the R5 8-pin connectors (350018)**
  - Use on all devices except R4KFB1 Feature Bed Module
    - Use R4KCONN6
  - Accepts CAT5 or CAT6 cable

- **Standardizes with R5 to simplify technician tools, etc.**

Important Design Rules

Servers

- **No servers needed for base system**
- **SIP phones:**
  - Use Responder SIP Server: 355005
- **Application Module**
  - Use low-cost server with free SQL Express database

Important Design Rules

Phone Interfaces

- **SIP phones:**
  - Use Responder SIP Server: 355005
- **Pagers:**
  - Use WaveWare STG module
- **Analog phones:**
  - Use Patton box

Important Design Rules

Responder 5000 Licenses

- **Two Licenses for optional features:**
  - SIP module
  - Application Module for software (Reports and Activity Board)
- **Both are site licenses - no bed count needed**
- **ROCO License tool used to create licenses**

Important Design Rules

Software Maintenance Agreement

- **No SMAs for Responder 5000 features**
- **SMA for Responder SIP Server (if used)**

Typical Tone/Visual Patient Room

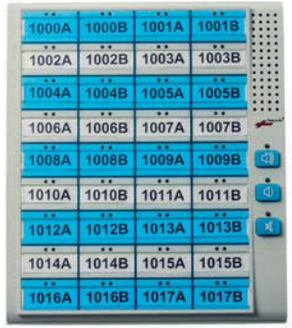
Visual Patient Station

5-segment CL

Marquee Display

Call Cords

- **Simple design with minimal equipment**



Annunciator Panel

Audio Patient Room With Workflow

Audio Patient Station

Pushbutton Station

Pullcord with Audio

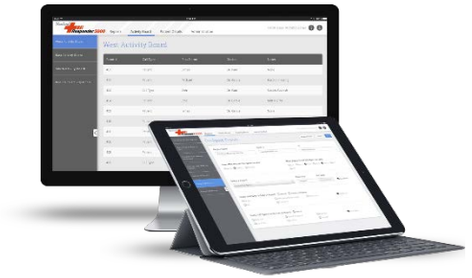
Pillow Speaker

4-Button Workflow/
Registration Station

5-segment CL

VoIP Console

SIP Phone



Application Module

Dual Patient Room With Workflow

Dual Patient Station

4-Button Workflow/ Registration Station

4-Button Workflow/ Registration Station

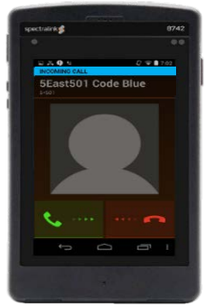
5-segment CL

VoIP Console

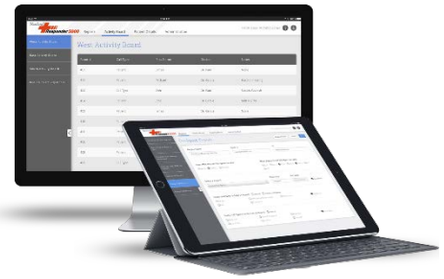
Pillow Speaker

Pillow Speaker

Pullcord with Audio



SIP Phone



Application Module

Legacy Integrations with R5000

- **Relay/contact closure applications**
  - Fire Alarm, Security, Wandering
- **Marquees/Signage**
- **Pocket Pagers and 2-way Radios**
- **Wireless analog phones**

New R5000 Integrations

- Receives Secure Care Wandering event data
- Receives Inovonics protocol event data
- Receives and sends email alerts
- Provides access to new and soon to be released low-cost Bluetooth Wandering product

Fall Prevention In The Room

- **Curbell CSM-BC500**
  - Plug and go

Defining Coverage for Responder 5000

- **Wireless phone example:**
  - Coverage is assigned to phones
  - Coverage groups provide unlimited options
  - For coverage based on Staff Assignment, use R5

Responder 5000 Demo Kit

- **R5KDEMOACT includes:**
  - (1) Pelican case with headend, Demo Panel, console, pillow speaker, call cord, Spectralink phone, wireless router, cables, tablecloth
- **Laptop is not included in Demo Kit**
  - Separate part number: R5KLAPTOP

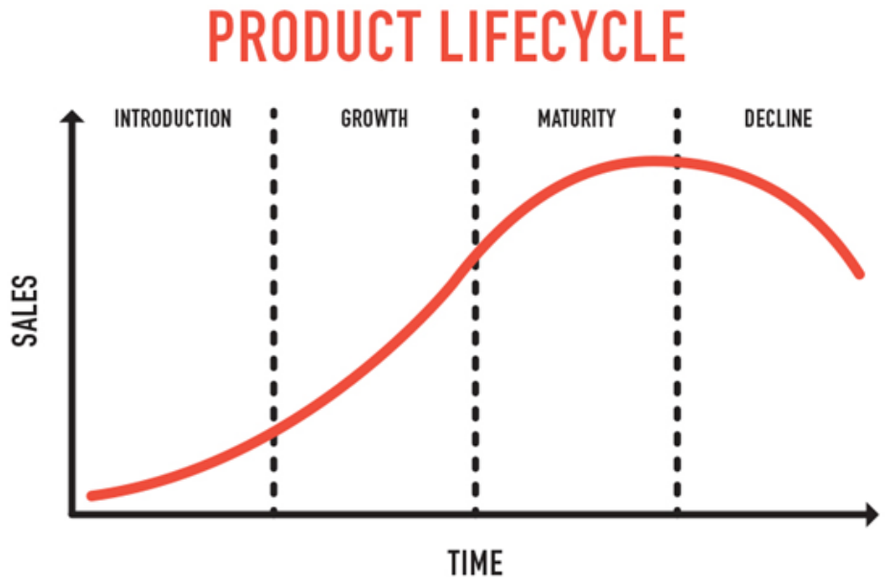
Responder 5000 Demo Kit

- **R5KDEMOACT panel includes a room graphic surrounded by the stations and CL.**

Responder 5000 Demo Kit

- **R5KLAPTOP includes:**
  - A Rauland factory-configured laptop for use with R5KDEMOACT.
  - Laptop specs:
    - Processor: Intel Core i7 (quad-core)
    - Disk: at least 512GB (SSD or mechanical)
    - RAM: 16GB
    - Host Environment: Windows 10
    - Guest VM Environment: Server 2012 R2
    - Guest SQL: SQL Server 2014 Express

Responder 4000 Discontinuance



Responder 4000 Competitive Status

- **Released in April 2002**
  - 15+ years of product success
- **Responder 4000 is no longer competitive**
  - Technology advances: smartphones, web access, apps, ...
  - Obsolete components: key components already discontinued
  - Functionally obsolete: analog phones, client-client, Windows XP
  - Accelerating lifecycle of competitive nurse call products
- **Excellent opportunity for upgrade to Responder 5000**
  - No change to room wiring or room stations
  - Protects majority of site's nurse call system investment

R4000 Devices To Be Discontinued

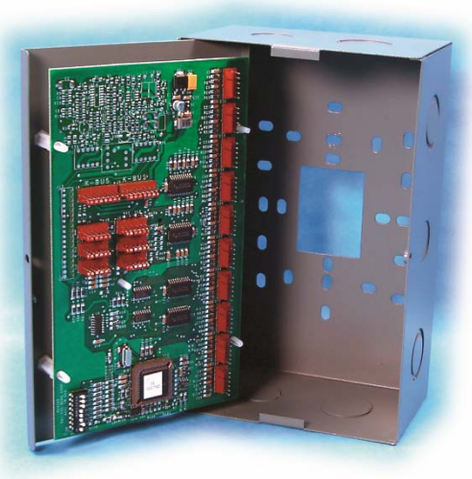
- **Headend devices (6)**
  - NIM: Network Interface Module
  - PLI: Analog phone interface
  - RSPIP: Reports interface
  - PIP: Peripheral port
  - SPA: Serial Peripheral Adaptor
  - XBA: X-Bus Adaptor

- **Console (1)**
  - R4K4020

R4000 Devices To Be Discontinued

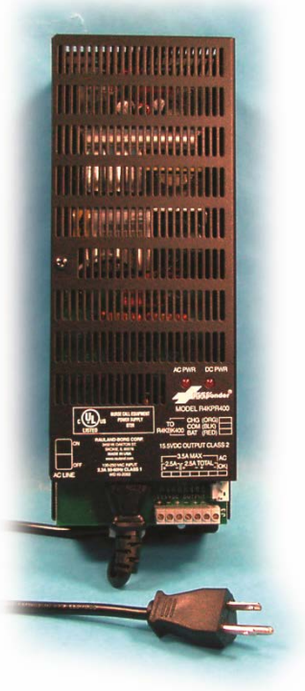
- **Original Stations (18)**
  - R4K12A
  - R4K11V
  - R4K22A
  - R4K13VA
  - R4KPC10
  - R4KSS
  - R4K14SA
  - .
  - .

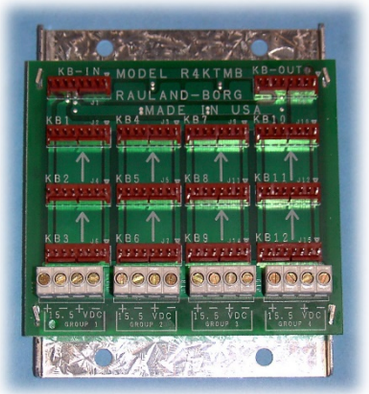
- **CL and DC (11)**
  - CLA222
  - CLV
  - DCA
  - DCV
  - .
  - .
  - .
  - .



R4000 Devices To Be Discontinued

- **Power Supply and Accessories (6)**
  - R4KPR400
  - R4KBK400
  - R4KTMB
  - R4KOUT4R
  - R4KOUT4S
  - R4KWM11



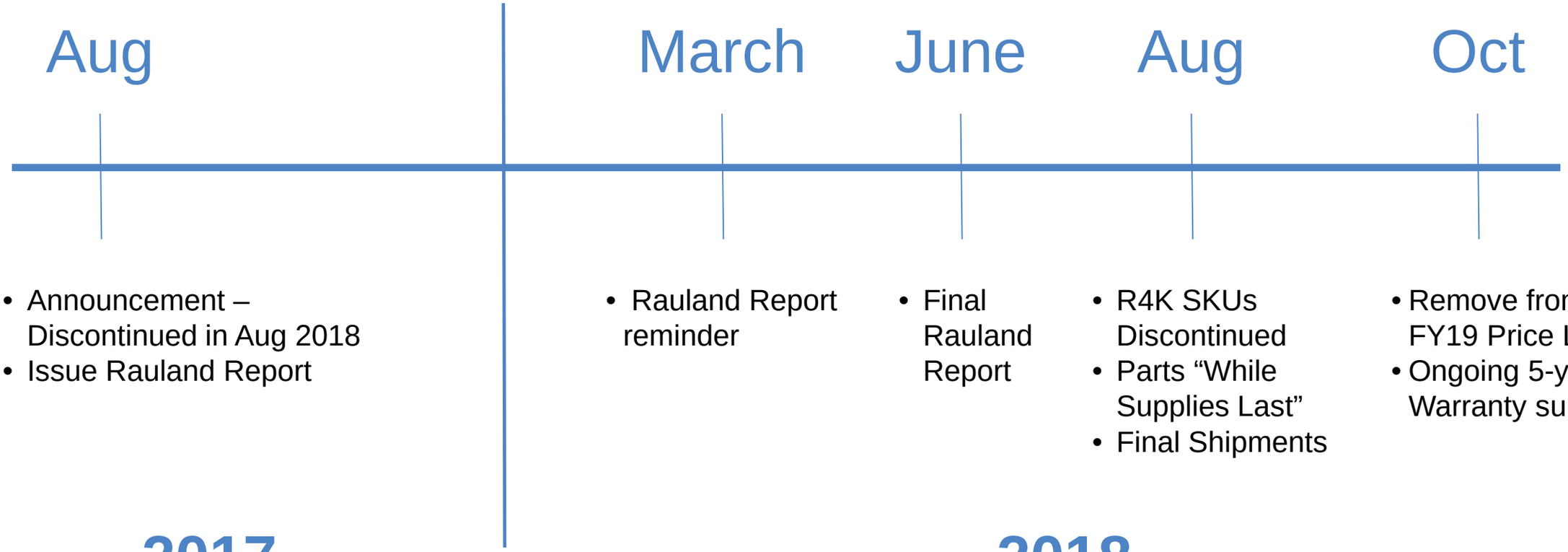


R4000 Devices To Be Discontinued

- **Slim Duty Station and Duty CL, DC (3)**
  - R4KDTY2
  - CLA214D
  - DCA214D

* Speaker module not discontinued

R4000 Discontinuance Timeline



In Summary…Responder 5000

- **Simple to Quote**
  - Easy-to-Use Tools
  - Detailed documentation available now
- **Implementation options tailored to specific needs**
  - Install only the devices needed for the solution
- **Priced competitively**

Thank You