



Futurecom Systems Group, ULC

Siren & Lights Interface Module  
(SLIM) Product Planner

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Note: SLIM is sold exclusively by  
Motorola Solutions, Inc. worldwide.



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# 1 INTRODUCTION

Emergency vehicles are a complex environment. Loaded with specialized equipment and controls, it's not easy to know where to look. An overloaded cockpit can lead to user distraction in critical moments.



**Figure 1: SLIM**

Motorola Solutions has collaborated with Futurecom Systems Group, ULC, to deliver the Siren and Lights Interface Module (SLIM).

The SLIM creates a single touch point to operate all mission critical equipment in an emergency vehicle. It enables APX™ control heads to operate light bars and sirens while also delivering a common microphone for PA and radio communications. Now you have a cleaner, simpler workplace that provides a safer and more efficient emergency vehicle experience.

## 1.1 KEY FEATURES & BENEFITS

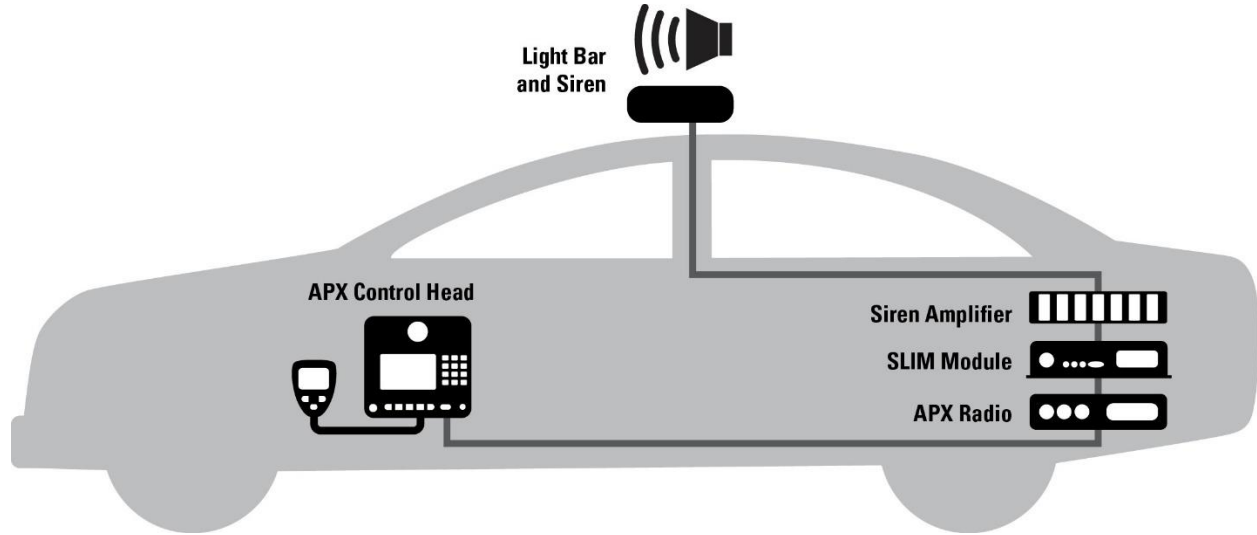
- Operate vehicle lights and siren from your radio's controls
- Cleaner and safer cockpit
- Single common mic for radio and public address
- Faster, more cost effective installation
- Integrates with products from most leading siren and lights manufacturers
- Compact size

## 1.2 APPLICATIONS

- The SLIM module interconnects the APX mobile radio with products from most of the leading siren and lights manufacturers

## 2 SLIM HARDWARE DEPLOYMENTS

SLIM, compact in size, is typically installed in the trunk of the vehicle between the mobile radio brick and the siren amplifier.



## 3 SUPPORTED DEPLOYMENT CONFIGURATIONS

SLIM enables Motorola APX Control Heads and/or DEKs to interact with a wide array of third-party siren and lights. By combining the functionality of radio, siren and lights into one control head, SLIM helps to clean up the cockpit and streamline operation of mission critical devices.

Most SLIM deployments will be configured with one of the following control heads:

- O9 APX Integrated Control Head
- O7 APX Enhanced Control Head
- O3 APX Enhanced Control Head
- DEK APX Direct Entry Keypad

The control heads listed above act as the primary control and status for numerous third party siren and lights modules including products from:

- Code 3<sup>®</sup>
- Federal Signal
- Whelen

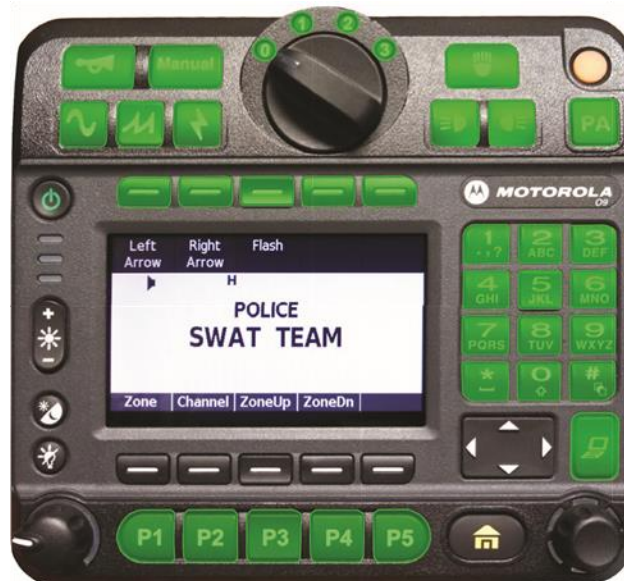
### 3.1 CONTROL HEAD OPTIONS

SLIM interfaces direct to the Motorola APX mobile radio brick in the trunk. APX radio control heads have different capabilities and have been designed for different applications. Since the APX control heads are operating the mobile radio, certain buttons and knobs are dedicated to radio functions only (e.g. volume knob, channel knob, emergency button). To control siren and lights the APX control head should also have 3<sup>rd</sup> Party Capable buttons as well. The number of available 3<sup>rd</sup> Party Capable buttons and knobs varies by control head. Some basic control heads, such as the O2 and O5, do not have any 3<sup>rd</sup> Party Buttons available.



### 3.1.1 O9 CONTROL HEAD

The O9 control head (discontinued) was purpose built with ergonomic controls for radio, light and siren. The O9 has a wide variety of buttons and knobs that can be used with SLIM to control siren and lights. Available 3<sup>rd</sup> party capable controls are highlighted in green below.



The O9 has a color display that will show the following basic status:

- Lighthbar On
- Siren On
- PA On

In addition to the display status messages, most buttons on the O9 have backlit indicators to signal exactly which functions are on/off.

### 3.1.2 O7 CONTROL HEAD

The O7 can be used to control radio, siren and lights. Light and siren specific keypad buttons are available from Motorola. Available 3<sup>rd</sup> party capable controls are highlighted in green below.



The O7 has a color display that will show the following basic status:

- Lighthbar On

- Siren On
- PA On

Feedback from the O7 is limited to the display status shown above. The buttons on the O7 do not have indicators to signal exactly which functions are on/off.

### 3.1.3 O3 CONTROL HEAD

The O3 can be used to control radio, siren and lights. Light and siren specific keypad buttons are available from Motorola. Available 3<sup>rd</sup> party capable controls are highlighted in green below.



The O3 has a color display that will show the following basic status:

- Lighthbar On
- Siren On
- PA On

Feedback from the O3 is limited to the display status shown above. The buttons on the O3 do not have indicators to signal exactly which functions are on/off.

### 3.1.4 DEK

Motorola DEK (Direct Entry Keypad) boxes can be added to any APX control head to add additional buttons to control siren and lights. Up to three DEK boxes can be added to any configuration. Available 3<sup>rd</sup> party capable controls are highlighted in green below.



Above each DEK button is a LED status indicator to signal which functions are on/off.

## 3.2 SIREN & LIGHTS SYSTEMS

SLIM can be used to operate a wide range of emergency siren and lights equipment. SLIM interfaces directly with most full-featured 3<sup>rd</sup> party siren amplifiers. A complete list of compatible siren amplifiers can be found in the SLIM ordering guide and include certain models from Code3<sup>®</sup>, Federal Signal and Whelen. Once interfaced via the siren amplifier, SLIM can also control any compatible lightbar and auxiliary lighting such as grille lights, deck lights, traffic arrows and wig wags, as well as compatible accessory devices such gun locks and low frequency add-on speakers.

## 4 PRODUCT CAPABILITIES

### 4.1 SIREN & LIGHTS CONTROL

The SLIM creates an intelligent interface between the Motorola APX mobile radio and various light and siren products. With SLIM, Motorola APX control head buttons and knobs can be used to control all vehicle emergency signaling. SLIM also collects feedback from the siren to display status information about the lights and siren on the APX mobile control head. With SLIM, most any function that can be programmed on a siren and lights keypad can be reproduced and enhanced on an Motorola APX mobile control head.

## 4.2 GPIO INPUT

In addition to intelligent siren and lights control, SLIM also has four General Purpose Inputs. The four inputs are ground-triggered and can be used for remote devices to active lights and siren functions or to control radio functions such as channel up, channel down, volume up, etc.

A typical GPIO Input application is to enable a vehicle's steering wheel buttons to control light and radio functions.

## 4.3 GPIO OUTPUT

In addition to intelligent siren and lights control, SLIM also has four General Purpose Outputs. The four outputs can be used to activate remote devices with the APX mobile control head. The outputs are very low current. They can be used directly for low current signalling or used to activate a relay to control higher current devices.

A typical GPIO Output application is to utilize a button on an APX mobile control head to activate a remote gun lock or K9 door pop trigger.

## 4.4 COMMON MICROPHONE

SLIM can provide a common microphone experience in an emergency vehicle. Standard vehicle setups have two microphones, one for the 2-way radio and a separate microphone for the siren public address (PA). SLIM enables a single Motorola microphone, either standard or keypad model, to be used for both 2-way radio communications and PA over the loud speaker. A button on the APX mobile control head is used to switch between the two modes.



## 5 SPECIFICATION SUMMARY

<b>General Specifications</b>	
Dimensions: Width / Height / Depth	201 mm (7.9") x 53 mm (2.1") x 91 mm (3.6")
Weight	1.0 lb (0.4 kg)
DC Supply Voltage	13.8 VDC +/- 20%
DC Current Drain	
Standby	200mA
Operating Temperature	-22 to 140 °F (-30 to +60 °C)
Storage Temperature	40 to 185 °F (-40 to +85 °C)
Reverse Polarity	Protected
GPIO	4 inputs, 4 outputs
Max Input Sink Current	100 mA
Outputs	Ground Trigger

## Appendices

### 6 APPENDIX A: REVISION HISTORY

#### Document Revisions

Revision	Date	Revision
1.0	2018-08-15	Initial Version

## Endnotes