

## SPECIFICATIONS

<b>UNIT CAPACITY:</b>	One SABER I, II, or III, or SYSTEMS SABER I, or III Portable Radio
<b>DIMENSIONS (L x H x W):</b>	9.85" (over rf connector) x 3.03" x 6.64" (over knob) (250 x 76 x 168 mm) 9.59" (without rf connector) x 3.03" x 6.26" (without knob) (243 x 76 x 159 mm)
<b>WEIGHT:</b> (without portable radio)	3.16 lbs. (1434 g)
<b>NOMINAL INPUT VOLTAGE:</b>	13.8 Vdc (negative ground)
<b>CURRENT DRAIN</b>	<b>CHARGED BATTERY</b> <b>DISCHARGED BATTERY</b>
Standby:	0.4A    0.8A
Receive with 12W Audio:	2.3A    2.7A
Transmit:	1.8A    1.8A
<b>CHARGE RATE:</b>	Three hours (Medium- and Ultra-High-Capacity Batteries)
<b>ANTENNA INPUT IMPEDANCE:</b>	50 Ohms
<b>AUDIO OUTPUT:</b>	12 Watts External

Specifications subject to change without notice

## MODEL CHART

MODELNUMBER					DESCRIPTION	
NTN1043B					SVA PACKAGE 1 (SVA WITH MOBILE [PALM] MIC)	
NTN1044B					SVA PACKAGE 2 (SVA WITH MINI-MOBILE MIC)	
NTN1045B					SVA PACKAGE 3 (SVA WITH SABER DISPLAY/KEYPAD MIC)	
NTN1066B					SVA PACKAGE 4 (SVA WITH SYSTEMS SABER DISPLAY/KEYPAD MIC)	
					ITEM NO.	DESCRIPTION
X	X	X	X		NTN5487B	CONSOLE
X					HMN1035A	MOBILE (PALM) MICROPHONE
	X				HMN1056A	COMPACT (MINI-MOBILE) MICROPHONE
		X			NMN6150A	SVA DISPLAY/KEYPAD MICROPHONE (SABER)
			X		NMN6169A	SVA DISPLAY/KEYPAD MICROPHONE (SYSTEMS SABER)
X	X	X	X		NSN6054A	12-WATT SPEAKER
A	A	A	A		HAD4006A	ANTENNA, 1/4 WAVE ROOFTOP (136-144MHz)
A	A	A	A		HAD4007A	ANTENNA, 1/4 WAVE ROOFTOP (144-150.8MHz)
A	A	A	A		HAD4008A	ANTENNA, 1/4 WAVE ROOFTOP (150.8-162MHz)
A	A	A	A		HAD4009A	ANTENNA, 1/4 WAVE ROOFTOP (162-174MHz)
A	A	A	A		RAE4012ARB	ANTENNA, 5dB GAIN ROOFTOP (406-420MHz)
A	A	A	A		RAE4014ARB	ANTENNA, 5dB GAIN ROOFTOP (445-470MHz)
A	A	A	A		RAE4015ARB	ANTENNA, 5dB GAIN ROOFTOP (470-494MHz)
A	A	A	A		RAE4016ARB	ANTENNA, 5dB GAIN ROOFTOP (494-512MHz)

**KEY:** X = INCLUDED    A = ALTERNATE ITEM SUPPLIED; CHOICE DEPENDS ON CARRIER FREQUENCY

# DESCRIPTION

## 1. GENERAL

The Motorola SABER Vehicular Adapter (SVA) adapts SABER and SYSTEMS SABER Handie-Talkie® portable radios for mobile operation. The vehicular adapter consists of a console, an external 12-watt speaker/amplifier, a hand-held mobile microphone, a rooftop antenna, mounting hardware, and cables.

When the radio is inserted into the console, the resulting combination acts as a mobile radio, with the following functions occurring automatically:

- The vehicular adapter's external antenna is connected to the radio, and the radio's internal antenna is disconnected.
- The vehicular adapter's mobile microphone is connected to the radio, and the radio's internal microphone is disconnected.
- The console's charging circuits are connected to the radio to charge the radio's battery.
- The radio's audio output is connected to the external 12-watt speaker/amplifier, and the radio's internal speaker is disconnected.

## 2. CONSOLE

The NTN5487B Console is the vehicular adapter's central unit. The console includes an illuminated front control panel, a radio battery charger, a radio latching mechanism with lock, and circuitry for interconnecting the radio, microphone, 12-watt speaker, and external antenna.

When the radio is mounted in the console, the combined radio/console operates as a mobile two-way radio. The radio must have a battery attached when it is inserted into the console; this battery will be automatically charged when the radio is inserted. A key lock is provided on the console to minimize theft when the vehicle is left unattended. Appropriate mounting hardware is provided with the console to facilitate mounting at any suitable location.

## 3. EXTERNAL 12-WATT SPEAKER

The NSN6054A 12-Watt Speaker provides 12 watts of audio output power for use in high noise level environments. The audio level of the speaker can be adjusted from the console's control panel.

## 4. MOBILE MICROPHONE

Four different types of mobile microphones are available for the SABER Vehicular Adapter: the HMN1056A Compact Microphone, the HMN1035A Palm Microphone, the full-featured NMN6150A Display/Keypad Microphone (for SABER radios), and the full-featured NMN6169A Display/Keypad Microphone (for SYSTEMS SABER radios).

All four mobile microphones are palm-type, weatherproof, cartridge microphones, with transistorized preamplifiers as an integral part of the cartridge. Each microphone is equipped with a push-to-talk (PTT) switch on the side, and has a coiled cord with an 8-pin connector which plugs into a jack on the left side of the console. Mounting hardware is provided as part of the console package.

In addition to the above, the NMN6150A and NMN6169A Display/Keypad Microphones have a keypad and a display which duplicate the functions of the appropriate radio's keypad and display.

## 5. ROOFTOP ANTENNA

To enable the vehicular adapter to function as a mobile vehicular radio, an external rooftop antenna must be ordered from C & E Parts. This antenna is cut to correspond to the frequency band of the radio used with the vehicular adapter. Refer to the MODEL CHART for specific antenna model numbers and frequencies.

# THEORY OF OPERATION

## 1. GENERAL

The Motorola SABER Vehicular Adapter (SVA) is designed to work in conjunction with SABER and SYSTEMS SABER portable fm two-way radios.

### NOTE

When the SVA is used with a SYSTEMS SABER radio in the trunked mode, the "busy channel" indicator (bottom volume LED) will flash continuously, indicating the presence of a carrier signal on the radio control channel.

Connection between the radio battery and the SVA console is made through the charger contacts (P8) at the rear of the console pocket. Through these contacts, the console's charger circuitry automatically charges the radio battery.

Other connections between the SVA console and the radio are made via the universal and rf connectors on the back of the radio.

When the radio is inserted into the console pocket, and the radio is latched in place by rotating the knob on the side of the console 90° clockwise, the contacts of the console's universal connector assembly are automatically mated with the radio's universal and rf connectors. This makes control of all the basic radio functions available to the SVA. The hand-held microphone and rooftop antenna are also automatically connected to the radio when it is latched into the console.

With the exception of the volume control, all controls on the top of the radio can be used. The radio's volume control is disabled by the SVA, and the volume control buttons on the front of the SVA console must be used instead.

## 2. CIRCUIT DESCRIPTION

When reading the following circuit descriptions, refer to the console functional block diagram, Figure 6, and the schematic diagram at the back of this manual.

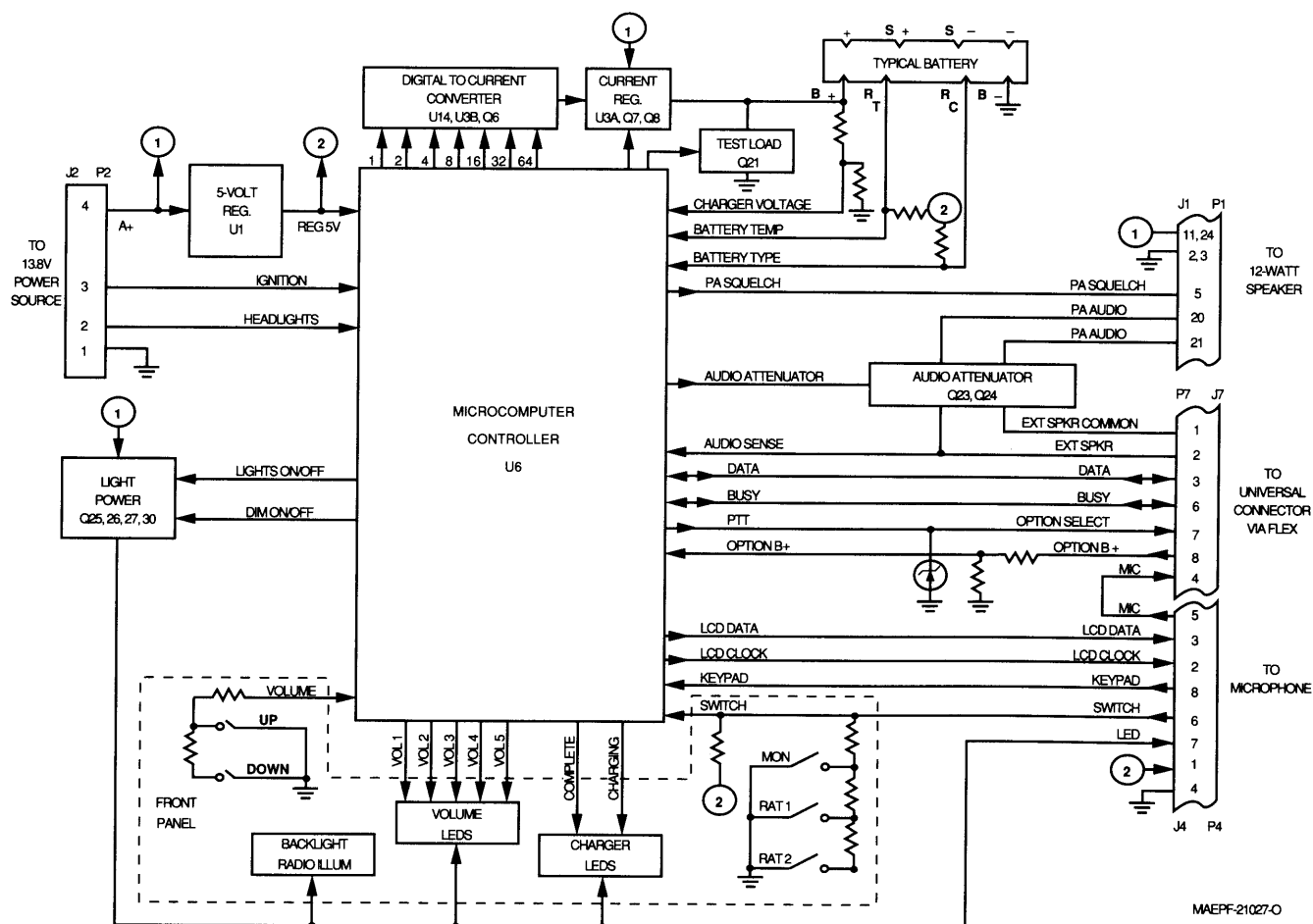


Figure 6. Console Functional Block Diagram