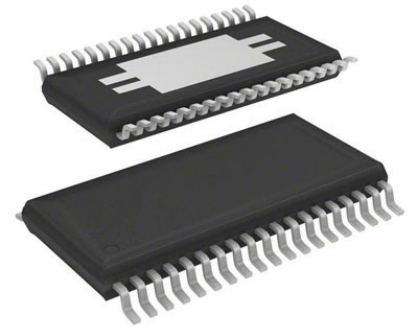


## Automotive Display LED backlight with Six 150 mA Channels



Images are for reference only

[Inquiry](#)

**Manufacturer:** [Texas Instruments, Inc](#)

**Package/Case:** HTSSOP-38

**Product Type:** Optoelectronics

**RoHS:** RoHS Compliant/Lead free 

**Lifecycle:** Active

### General Description

The LP8866S-Q1 is an automotive high-efficiency LED driver with boost controller. The Six high-precision current sinks support phase shifting that is automatically adjusted based on the number of channels in use. LED brightness can be controlled globally through the I2C interface or PWM input. The boost controller has adaptive output voltage control based on the headroom voltages of the LED current sinks. This feature minimizes the power consumption by adjusting the boost voltage to the lowest sufficient level in all conditions. A wide-range adjustable frequency allows the LP8866S-Q1 to avoid disturbance for AM radio band. The LP8866S-Q1 supports built-in hybrid PWM dimming and analog current dimming, which reduces EMI, extends the LED lifetime, and increases the total optical efficiency.

## Key Features

AEC-Q100 qualified for automotive applications:  
Device temperature grade 1: -40°C to +125°C, T<sub>A</sub>

Device HBM ESD classification level 2

Device CDM ESD classification level C4B

Input voltage operating range 3 V to 48 V

Six high-precision current sinks  
Up to 150-mA DC current for each current sink

Current matching 1% (typical)

Dimming ratio 32 000:1 using 152-Hz LED output PWM frequency

Up to 16-bit LED dimming resolution with I2C, or PWM input

8 Configurable LED strings configuration

Auto-phase shift PWM dimming

12-bit analog dimming

Up to 48-V V<sub>OUT</sub> boost or SEPIC DC/DC controller  
Switching frequency 100 kHz to 2.2 MHz

Boost spread spectrum for reduced EMI

Boost sync input to set boost switching frequency from an external clock

Output voltage automatically discharged when boost is disabled

Extensive fault diagnostics

## Recommended For You

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### LP8860AQVFPQ1

Texas Instruments, Inc  
HLQFP32

### LP8860RQVFPQ1

Texas Instruments, Inc  
HLQFP-32

### LP8860NQVFPQ1

Texas Instruments, Inc  
HLQFP-32

### DLP9500UVFLN

Texas Instruments, Inc  
DLP-TYPEA.9-355

### DLP2000AFQC

Texas Instruments, Inc  
CLGA(FQC)

### DLP3010AFQK

Texas Instruments, Inc  
CLGA57

### DLPA200PFP

Texas Instruments, Inc  
HTQFP-80

### DLP4500AFQE

Texas Instruments, Inc  
CLGA-80

### DLP4710FQL

Texas Instruments, Inc  
CLGA-100

**DLP6500FLQ**

Texas Instruments, Inc

CLGA203

**DLP4500FQE**

Texas Instruments, Inc

DLP

**DLPC350ZFF**

Texas Instruments, Inc

BGA-419

**DLP9500BFLN**

Texas Instruments, Inc

LCCC355

**DLP6500BFYE**

Texas Instruments, Inc

DLP-S600-350

**DLPC410ZYR**

Texas Instruments, Inc

BGA