



# National Sign and Signal Co.

Committed to traffic display devices of better energy efficiency

## NEW TO THE INDUSTRY THE MOST ADVANCED FULL VMS SIGN

A full-colored screen saves **74.5%** power!  
Over any VMS on the market today

### Latest Technology

- **Power Saving**

- Sleep Mode
- Second Optical
- Dual Voltage

- **Reliability**

- Double Dimming Sensor
- LED Level Error Detection
- Total IP65 with Temperature
- Differential Ventilation System



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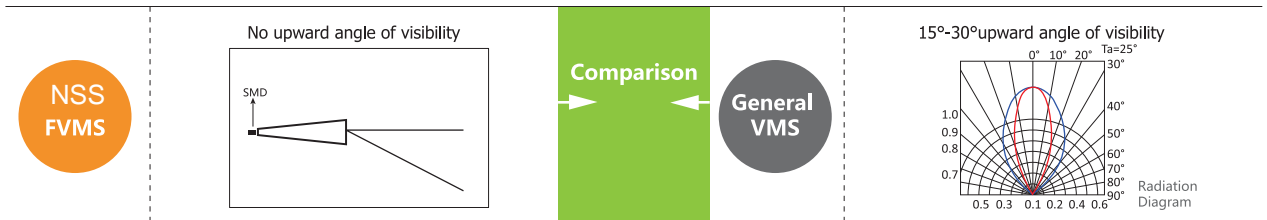
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## FVMS Full Variable Message Sign

### ■ SL High Directivity

- LED lamps are supplied by Nichia, the world largest LED design and product manufacturer. Nichia's LED product is of the best quality with long lifetime, high brightness, low energy consumption and stable endurance for harsh conditions.
- The SMD lamp and other LED components are manufactured in first welding process, avoiding component damage or life reduction result from high temperature by wave soldering.
- Modularized lens design. First layer processed with 3M waterproof glue. Second layer processed with anti-UV silicone. Excellent optical characteristic without negative effect by high or low temperature.
- Strong directivity within visual range. Due to the common application of downward and left and right angle of visibility to VMS, our NSS-DT20 is designed without upward angle of visibility to save energy and to reduce light pollution.

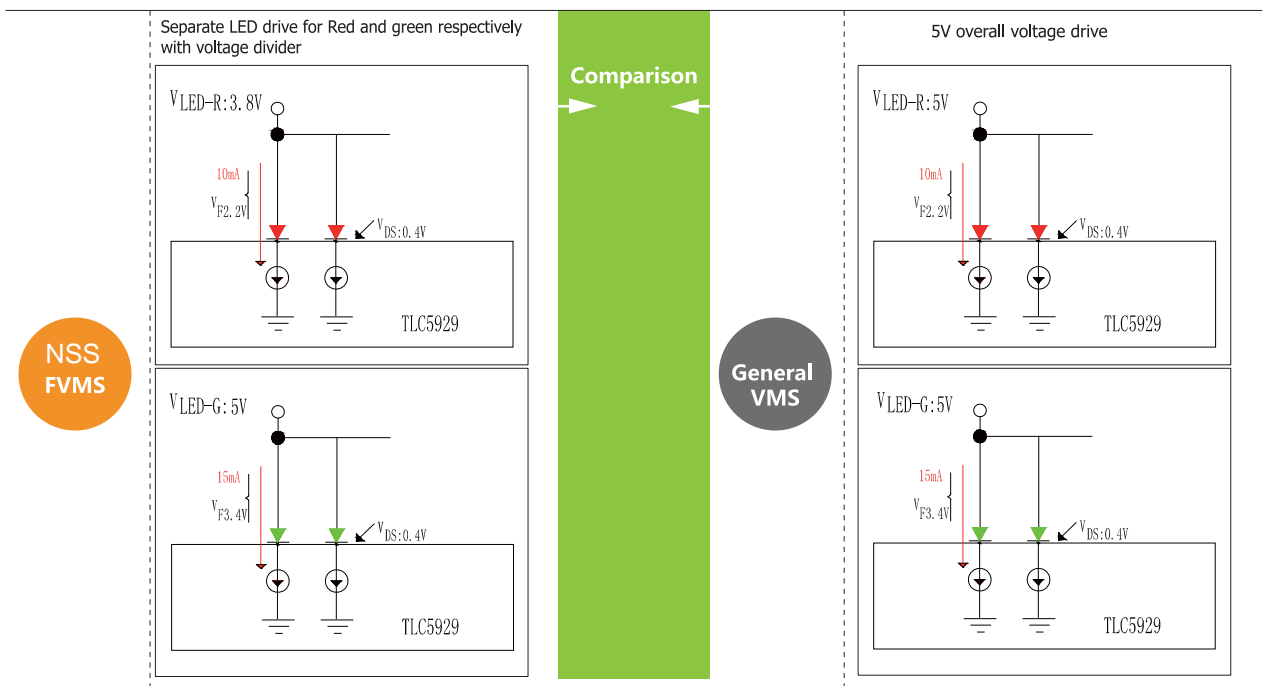


Comparison between NSSC-VMS and general VMS

### ■ SD Voltage Divider

- Using separate voltage driving board to achieve energy-saving purpose: specific voltages are applied to different lamps.

For example: for red and yellow lamps, we supplied a total voltage of 3.8V with 1.8-2.2V as break-over voltage; For green and blue lamps, Instead, we used another separate driver to provide 5v with 2.8-3.6V as break-over voltage for lamp.



Comparison between NSSC-VMS and general VMS

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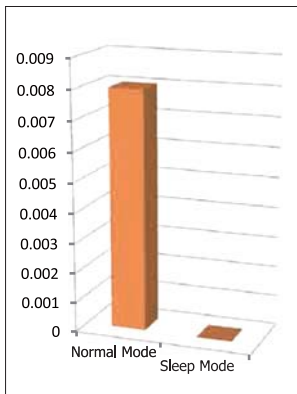
## FVMS Full Variable Message Sign

### ■ SS Sleep Mode

- It is known that in the application of VMS product, only less than 40 percent area of entire screen is actually operating in working mode. A large number of unused integrated circuit chips are consuming energy. For general VMS product, in black area, an 8mA current will always flow in each IC output channel without sleep mode. For our NSS-VMS product, in the same blank area, only a 10uA current will flow in each channel under sleep mode.

A sample calculation for energy saving is showing as follows: For general VMS product, power consumption by each IC driver of 16 output channels will be:  $16\text{pin} \times 0.008\text{A} \times 5\text{V} = 0.64\text{W}$ . For our NSS-VMS product, power consumption by IC driver is reduced to  $16\text{pin} \times 0.000010\text{A} \times 5\text{V} = 0.0008\text{W}$ .

Our NSS-VMS product will save  $0.64\text{W} / 0.0008\text{W} = 800$  times for every single IC driver!



More than 60% area of the VMS is blank area.



<b>NSS - FVMS</b>	Zero power consumption in all black area
<b>Comparison</b>	
<b>General VMS</b>	Black display signal is continuously refreshed in black area

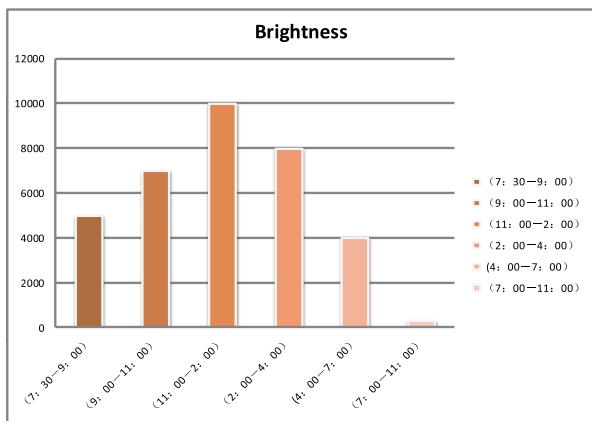
Comparison between NSS-VMS and general VMS

### ■ ST Light Sensor

- Introducing our new light sensing design. We applied dual light sensing system for our LED display. Each side of front and back of the display has one digital photosensitive probe to ensure brightness wherever side sunlight will be from.

Compared to traditional analog photosensitive probe, our new digital probe has wider sensitivity range. Improved features are showed below:

- A wide input light range from 1lx to 65535lx ;
- Directly outputs value for digital brightness ;
- A high light sensitivity close to visual acuity.



<b>NSS - FVMS</b>	Digitalized light sensor with time table
<b>Comparison</b>	
<b>General VMS</b>	Resistor type light sensor

Comparison between NSS-FVMS and general VMS

### ■ Extra features :

- Our display uses aluminium housing with special coating process, ensuring high contrast under less than 0.4 reflectance and strong-sunlight exposition;
- Our VMS has thermal pressure ventilation design with totally-enclosed. When temperature and pressure rises inside box, the thermal pressure radiator ensures ventilation and guarantees IP65 protection.



Aluminum mask

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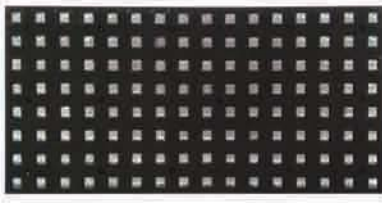
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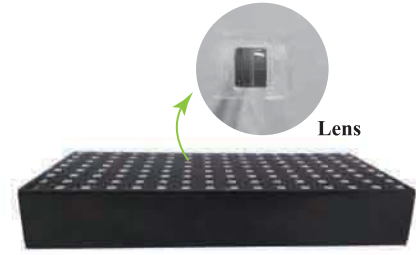
## FVMS Full Variable Message Sign



Module (Front)



Module (Rear)



Module (Side)

### ■ Specification

Type :	NSS-VMS-DT16-1R1G1B	NSS-VMS-DT20-1R1G1B
Color configuration :	Red, green and blue	Red, green and blue
Display Area :	256(W) mm ×128 (H) mm	320 (W) mm ×160 (H) mm
Cabinet Size :	1200 (W) mm ×1200 (H) mm	1080 (W) mm ×1080 (H) mm
Display Area :	1024 (W) mm ×1024 (H) mm	960 (W) mm ×960 (H) mm
Cabinet Material :	Aluminum alloy	Aluminum alloy
Weight :	108kg	76kg
Viewing Angle :	10°(H)/30°(V)	10°(H)/30°(V)
Dimming Level :	32	32
Communication :	RS485/ RS232/ serial port/ GPRS/internet options available via National controller	
Electric Protection :	Overload protection and Short circuit Protection	Overload protection and Short circuit Protection
Maintenance :	Back access	Back access
Operating Temperature :	-15°C~+65°C	-15°C~+65°C
Operating Relative Humidity :	95%RH(Max.)	95%RH(Max.)
Ingress Protection :	IP65	IP65
Power Consumption (Max) :	218W	180W

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