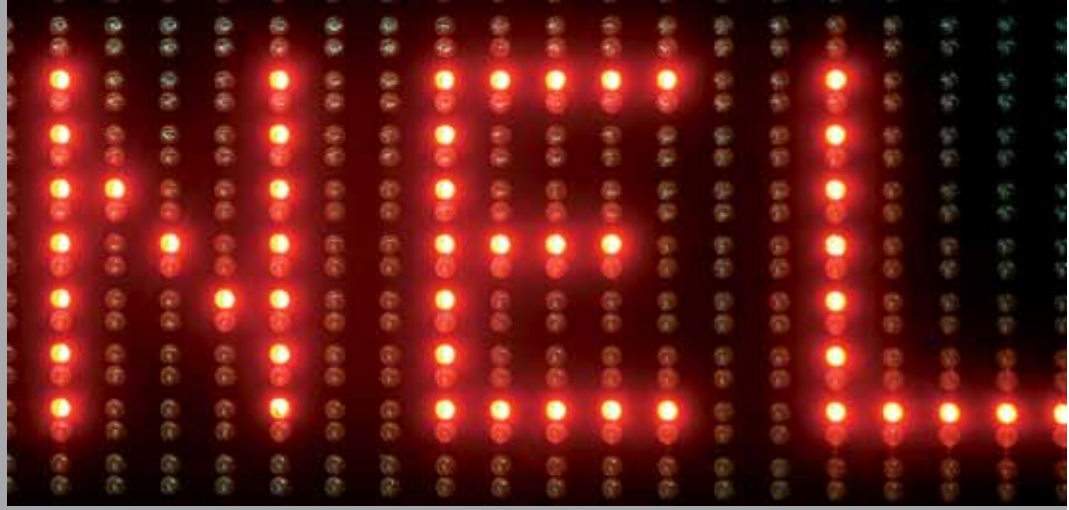




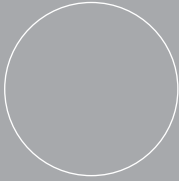
TELEGRA

SMART TRAFFIC MANAGEMENT



COMPLETE INTEGRATION OF ADVANCED TRAFFIC MANAGEMENT SYSTEM

TELEGRA'S CORE SUBSYSTEMS AND PRODUCTS



LED MATRIX SPEED DISPLAY

- Conforms to most stringent European and US standards (EN12966 certified and NEMA-TS4 compliant)
- Vehicle classification in 5 classes
- Communication with Control Centre
- Simple to operate and maintain

GENERAL



01

Speed awareness has proven to be effective in reducing driver speed in many areas where these systems have been placed including school zones, residential neighborhoods, as well as random police selected locations. Telegra has developed speed awareness systems that can be manufactured to your specifications, which are reliable and combine most advanced technology of Telegra's LED Displays, speed measurement and vehicle classification technology.

Speed Displays are radar or other speed measurement device-activated signs, that dynamically display approaching vehicle speeds while at the same time they can count and classify passed vehicles in 5 classes.

Standard Telegra's Speed Display comprises two CE marked radar detectors:

- one, firing frontally, used for speed measurement of incoming vehicles at a distance of up to 250m
- other, firing laterally, used for counting, speed measurement and classification of each passed vehicle

Gathered information is continuously stored in non-volatile memory inside Speed Display.

Memory is sufficient for storing more than 100 000 measurements.

Information (both current and historical) can be obtained through two interfaces, using common web browser:

- GSM/GPRS modem
- Bluetooth interface

Incoming vehicle speed can be displayed in user defined color, both steady and blinking. Multiple thresholds for blinking and change of color are adjustable. Blinking frequency is also adjustable. Refresh rate of the displayed speed can be adjusted in intervals ranging from 200ms to 5s.

Traffic safety and measurement is now available through Telegra's LED Matrix Speed Display!

BASIC FEATURES



- Multiple Communication Interfaces
- Battery, solar or network power feeding
- Web based graphical user interface
- FTP downloadable counting & classification data
- Ethernet service port
- Vehicle Detection & Classification
- Speed measurement range within 5–255 km/h with 3% accuracy
- Vehicle Speed Detection distance > 250 m
- 5 Class Vehicle Classification
- up to 100 000 measurements in non-volatile memory (Speed, Class, Time & Date)
- Display
- Detected speed is displayed with user configurable True Type fonts
- Text is displayed with smoothing (anti-aliasing)
- Four user configurable speed thresholds, different color and blinking options
- Light intensity automatically adjustable continuously from 0 ... 100% in 1% steps
- Highly recognizable text of outstanding uniformity
- Modular design, ability to combine various dimensions, color combinations and pixel pitch as per specific requirement
- EMC immunity and high mechanical protection

MAIN COMPONENTS



Main Components of LED Matrix Speed Display:

- Housing designed for outdoor exploitation:
- Front panel service door
- Materials adopted in accordance with EU norms (AlMg3)
- Extremely durable self cleaning front panel lenses
- Intelligent Control and Drive Modules
- Integrated luxmeter
- CE marked radar speed detectors
- Power supply Modules (AC-DC SMPS)
- LED's, mounted on Printed Circuits Board
- Ambient (External) Light Intensity Measuring Module

Circuits and Equipment for Climate Control (thermostat, hydrostat, ventilation system)

TECHNICAL DATA

Radars:	<p>Front firing radar:</p> <ul style="list-style-type: none"> • Detection distance range: min. 250 m • Operating frequency and power: 24.165 GHz / 5mW • Detected speed range: 5 - 250 km/h • CE label <p>Side firing radar:</p> <ul style="list-style-type: none"> • Operating frequency and power: 24.165 GHz / 5mW • Detected speed range: 5 - 250 km/h • Classification based on vehicle length detection • Calibration of classification is possible on-site • CE label 	
GSM module:	<p>GSM/GPRS module: QUAD GSM/GPRS module</p> <ul style="list-style-type: none"> • Quad band EGSM 850/900/1800/1900 MHz • Output power: <ul style="list-style-type: none"> Class 4 (2 W) @ 850/900 MHz Class 1 (1 W) @ 1800/1900 MHz • Integrated SIM card holder • Baud rate: 9600 bps 	
Bluetooth module:	<p>Bluetooth module:</p> <ul style="list-style-type: none"> • Protocol version 2.0 • Operating frequency: 2,400 to 2,4835 GHz • Tx power: 18 dBm (class 1, up to 100 m) 	
Classification according to EN12966:	LED Intensity (Luminance):	L3,L3(*),L3T
	Luminance ratio:	R2-R3
	Beam width:	B1-B7
	Color Class:	C2
	Temperature:	T1, T2,T3 (-40 - +60)
	IP protection:	P2, P3 (IP55 - IP56)
LED monitoring & testing:	Continuous, for each LED separately, testing of both ON and OFF state	

STANDARDS AND CERTIFICATES:

Standards:

Telegra's Programmable LED VMS products meet and often exceed all international standards for the most stringent optical, mechanical and environmental requirements. Our products are UL and CUL listed, and approved for EN12966, TÜV, CE, RoHS, BAST and ISO 9001 standards. Telegra Programmable LED VMS products also comply with:

- NEMA TS4, NTCIP, and ITE requirements
- ANSI, IEEE, AASHTO, and AWS certification criteria
- IAC6008-2-34, IEC60068-2-37, and MIL-810C standards for vibration and shock endurance
- IEC60950-1, HD.384.4 and HD.638 safety standard
- IEC60529 standard for enclosure protection

Certificates and Third Party (Independent Laboratory) Test Results

- Optical performance certified according to EN-12966-1-Variable, vertical road traffic signs Part 1: Variable message signs
- Vibration tests according to IEC 60068-2-34, IEC 60068-2-37
- Temperature requirements
 - Cold in accordance to IEC 60068-2-1
 - Dry Heat in accordance to IEC 60068-2-2
 - Humidity in accordance to IEC 6006-2-30
 - Temperature range in accordance to IEC 60068-2-14)
- Degrees of Protection provided by Enclosure in accordance to IEC 60529
- General Requirements – Information technology equipment – Safety in accordance with IEC 60950-1
- Electrical safety: Requirements for electrical installations in accordance to HD.384.4 and HD.638
- EMC testing in accordance to:
 - LED signs meet electro-magnetic interference immunity levels as defined in EN 50293:2000:
 - EN 55022: Terminal disturbance voltage, Class B
 - EN 55022: Radiated emissions, Class B
 - EN 61000-3-2: Limits for harmonic current emissions, Class A
 - EN 61000-3-3: Limitation and voltage fluctuations and flicker low voltage supply system
 - EN 61000-4-2: Immunity to electrostatic discharge, failure criteria: B
 - EN 61000-4-3: Immunity to radiated electromagnetic fields, failure criteria: A
 - EN 61000-4-4: Immunity to fast transients (Burst), failure criteria: B
 - EN 61000-4-5: Immunity to surges, failure criteria: B
 - EN 61000-4-6: Immunity to conducted high frequency interference, failure criteria: A
 - EN 61000-4-11: Immunity to voltage drops, short interruptions and voltage variations
- Environmental Standards for Shock in accordance to MIL-810C

European
Certificate of
Conformity



Quality System According to
EN ISO 9001:2000
Certificate Registration
No. 04 100 20021575



Member of:



GRAA award:



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