FOR ENERGY EFFICIENT INNOVATIONS

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IMP Review

January 2020

Internal Use Only

Automotive Campaign Update

Veronika Holscher

Automotive – Q1 Major Products RTM & Campaign Status

Vehicle Electrification

- **On-Board Charging** ➔ launched Dec. 2019
- **Traction Inverters:** VE-Trac™ Dual, VE-Trac™ Direct ➔ launched Dec. 16, 2019
  IGBT Gate Drivers and Power Modules ➔ to launch 2020 TBD
- **SiC MOSFETS** - ➔ to launch 2020 TBD

Campaign started Dec. 2019, ongoing through 2020

Campaign will start Q2 or later (TBD) through 2020

Comfort and Convenience

- **LED Lighting** (NCV7685, NCV7692, NCV7683, NCV7691) ➔ launched Feb. 4, 2020
- **NCV7685 RGB LIGHTING EVB** ➔ to launch May 2020

Campaign started Feb 2020 Phase 2 with EVB will start in May and through 2020

Autonomous Vehicle/ADAS

- **Hayabusa Product Family** (AR0233AT, AR0323AT, AR0147AT) ➔ to launch July 2020
- **Relaunch AR0820AT & Ecosystem partners** ➔ to launch Sept. 2020
- **In-cabin Portfolio** (AR0239AT, AR0234AT, GazeT, IVEC) ➔ to launch Oct. 2020
- **LiDAR Automotive** (Ruby, Pandion) ➔ to launch Q2 2020 TBD
- **Cybersecurity, Robotaxi** (AR1212AT, AP0300, AS0149) ➔ to launch Oct/Nov. 2020

Campaigns will start March 2020, ongoing through 2020

Campaigns will Q2 and later, ongoing through 2020 and 2021

SEC

RTM	Platform	Subsegment
2/14/2020	JP006 - Pixel Light Assembly	Comfort & Convienence
2/25/2020	C004 - NCV7685 Low Cost RGB Solution Demo	Comfort & Convienence
3/1/2020	C005 - HVAC Throttle Body Driver	Comfort & Convienence
3/31/2020	JP002 - Power Seat Demo	Comfort & Convienence
4/24/2020	A017 - LED Car Tail Lights	Comfort & Convienence
5/4/2020	C009 - 2kW EV DC-DC by Boost+LLC	Vehicle Electrification
5/15/2020	C006 - 2kW DC-DC by Buck+LLC	Vehicle Electrification
5/31/2020	C008- 6.6kW Totem-Pole Power Stage and FPGA	Vehicle Electrification
6/1/2020	C011-Rear Lighting Platform for Strata	Comfort & Convienence
7/14/2020	E048 - Auxiliary Power Supply for EV	Vehicle Electrification
7/31/2020	C007 - On Board Charger 6.6kW - SiC Model	Vehicle Electrification
9/1/2020	R020 - 48V, 25kW B(i)SG RD with integrated thermal coolant system	Vehicle Electrification
10/1/2020	R023 - 48V BLDC, Automotive Version	Comfort & Convienence
10/1/2020	R044 - SiC SSC base inverter (up to 200kw)	Vehicle Electrification
12/31/2020	R054 - Strata Cloud Interface between DevWareX and CRD Server (Radar HW?)	Autonomous Vehicle
TBD	R045 - HV main traction inverter(up to 200kw) Joint Lab using Silicon Mobility.	Vehicle Electrification

On-Board Charging for EV Reference Design

Segment/Sub-segment

Automotive/Vehicle Electrification

Planned Launch Date

Oct. 22, 2019 – 11kW launched
August/Sept. – 6.6kW SiG

BU Owner(s)

Oriol Fillo, Munich SEC
Kane Jia, APAC SEC

Regional Focus

AMR, EMEA, APAC

Featured Product(s)

- 11kW 3-Ph PFC-LLC OBC Modular Development Kit
- **6.6kW OBC SiG Development Kit**

CTA

- Learn More
- Download Reference Design

Positioning

Drive awareness of the new platform that provides state-of-the art efficiency featuring AEC-Q101 SiC power devices and drivers for Level 2 AC charging. The kit facilitates testing and evaluation of the SiC devices and passive components for OBC applications.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release		Blog (Internal)	●●	Demand Generation	●	Video	●●
Blog (External)		Landing Page	●●	Paid Search/Dynamic Ads		Tutorial	●●
Contributed Article	●	Home Page Banner		Paid Social		Application Note	●
Speaking Engagements		Social Media	●●	Native Ads		Reference Design	●
Press Interviews		Newsletter	●●	Print Ads		Webinar/Webcast	●
Analyst Interviews		Email				Infographic	
Award Nominations						PR Photo	

Traction Inverters, VE-Trac™ Family

Segment/Sub-segment

Automotive/Vehicle Electrification

Planned Launch Date

December 16 - launched

Featured Product(s)

- EV PIMs VE-Trac™ Dual:
- 750V 800A (NVS800A75L4DSC), 600A, 500A
- 1200V 400A (NVH950S75L4SPx)
- VE-Trac Direct (SSDC):
- 750V 820A (NVH820S75L4SPx), 660A, 770A
- 750V 820A (NVH820S75L4SPx) Higher Current Plus

CTA

- Contact Sales Office
- Order Samples

BU Owner(s)

Jonathan Liao, PSG; Oriol Fillo, SEC

Regional Focus

AMR, EMEA, APAC, JP

Positioning

The innovative Dual Power modules offers scalability in power at low incremental costs. The unique system forms a high power density package for the next generation of EV/HEV main traction drives. New SiG IGBT Drivers and Power Modules will be introduced later in 2020 under this campaign.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release	🔴🟢	Blog (Internal)	🔴🟢	Demand Generation	🔴	Videos	🟢
Blog (External)		Landing Page	🟢	Paid Search/Dynamic Ads	🔴	Tutorial/Motion Graphic	🟢
Contributed Article	🔴	Home Page Banner	🟢	Paid Social		Application Note	🟢
Speaking Engagements	🟢	Social Media	🔴🟢	Native Ads		White Paper/Reference Design	🟢
Press Interviews	🟢	Newsletter	🔴🟢			Webinar/Webcast	🟢
Analyst Interviews	🟢	Email	🔴			Infographic	
Award Nominations	🔴					PR Photo	🟢

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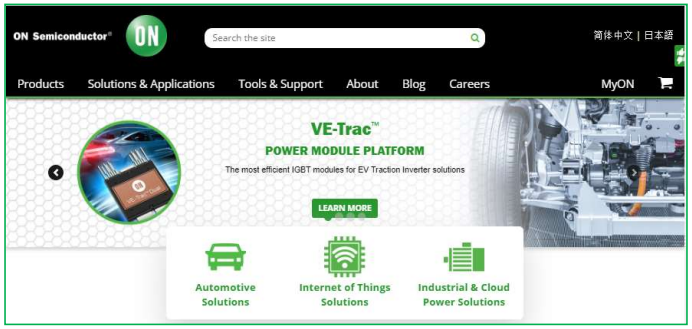
VE- Trac Campaign report

Dec 16, 2019 to March 16, 2020

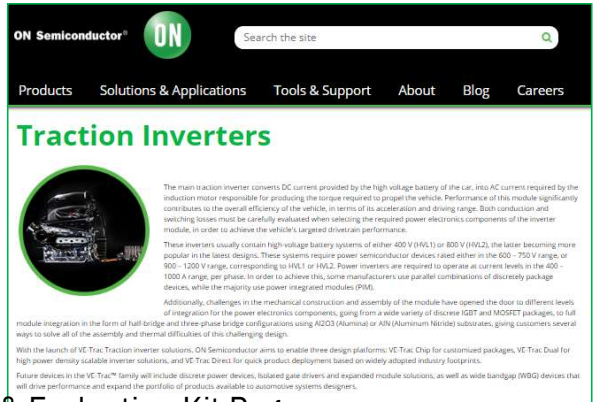
Internal Use Only

VE-Trac™ Campaign Assets

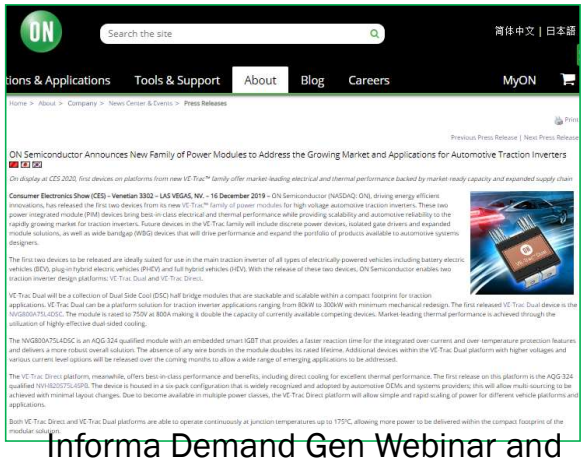
Home Page Banner



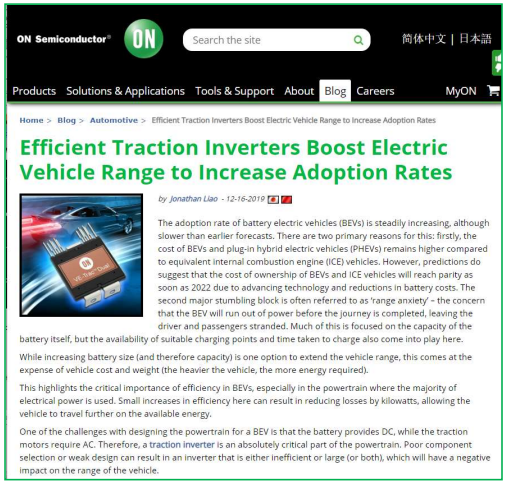
Landing Page



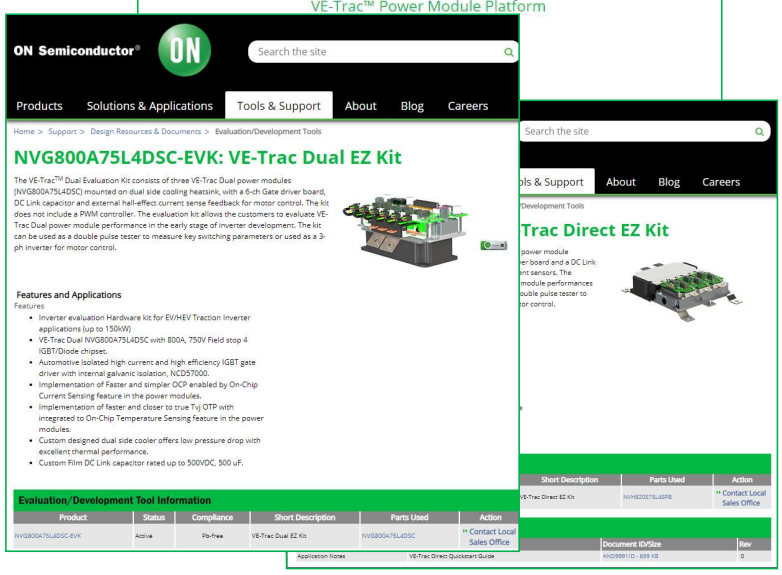
Press Release



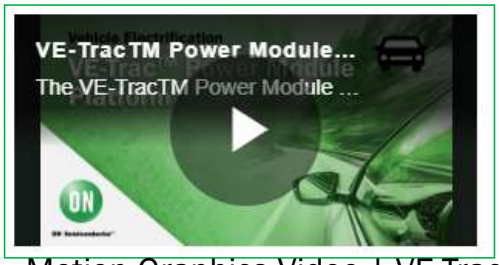
Blog



Product & Evaluation Kit Pages



Informa Demand Gen Webinar and VE-Trac Promotional Video



Motion Graphics Video | VE-Trac

Business Wire PR Report

Release Views

ON Semiconductor Announces New Family of Power Modules to Address the Growing Market and Applications for Automotive Traction Inverters	12/16/2019 09:00 AM PST	
	4,969 TOTAL VIEWS	872 LINK CLICKS

Earned and Social Media

This report analyzes 35 social mentions & 92 articles.
The peak of conversation happened on Dec 16, 2019.
The most influential profile during the selected time period was Techristic, who has 50,85
mentions were not re-shared.

Highlights

89 Syndicated Articles

3 Earned Media

35 Social Mentions

127 Total Mentions

Peak: 96 mentions on December 16

72.4% Articles

92 Mentions

27.6% Social

35 Mentions

ONLINE POSTINGS

yahoo! finance · The New York Times · MarketWatch · CNN Money · MORNINGSTAR · Fidelity.com · Seeking Alpha · AMERITRADE · benzinga

EVs are here. Try to keep up.
CHARGED
ELECTRIC VEHICLES MAGAZINE

HOME MAGAZINE NEWSWIRE FEATURES EVENTS ADVERTISE CONTACT

ON Semiconductor introduces new power modules for high-voltage EV inverters

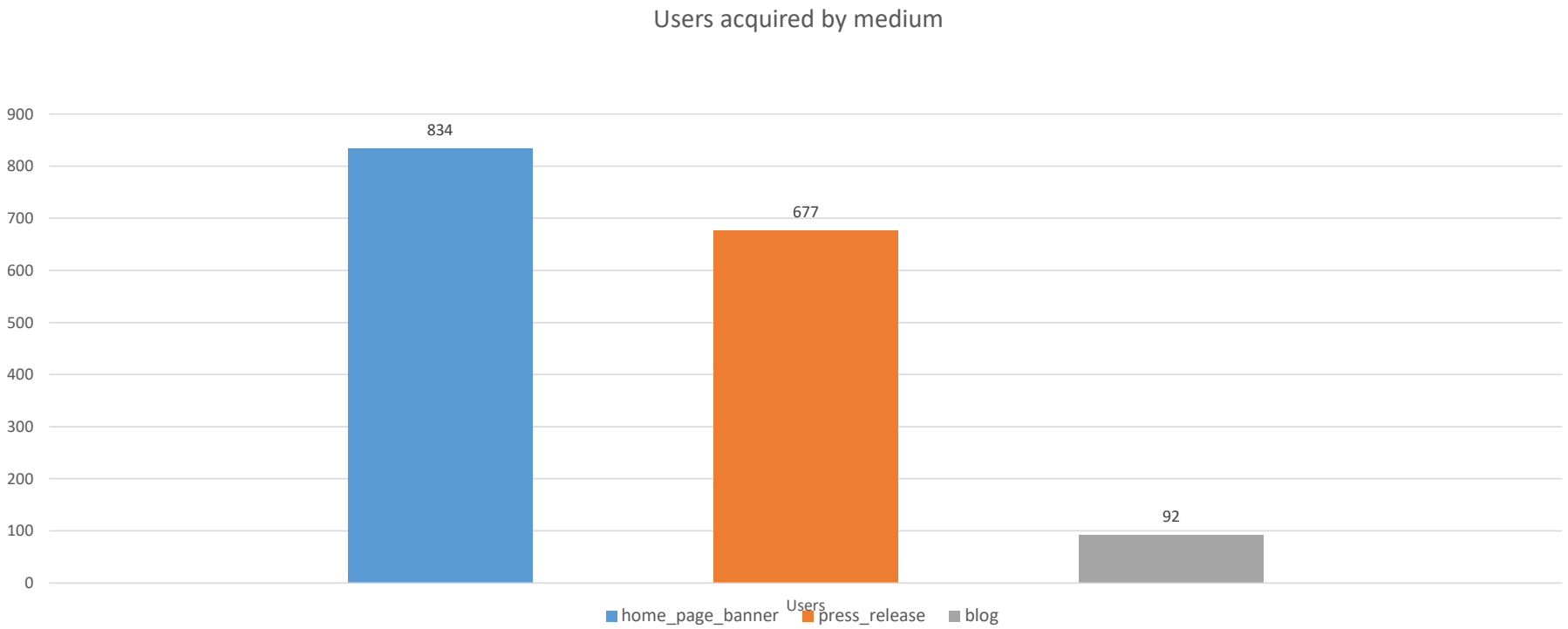
Posted January 6, 2020 by Ryan Austin & filed under Newswire, The Tech.

ON Semiconductor has released the first two devices within its new VE-Trac family of power modules for high-voltage automotive traction inverters. Future devices in the VE-Trac family will include discrete power devices, isolated gate drivers, and wide bandgap (WBG) devices. The company says its first two devices are ideally suited for use in the main traction inverters of EVs, PHEVs and hybrids.

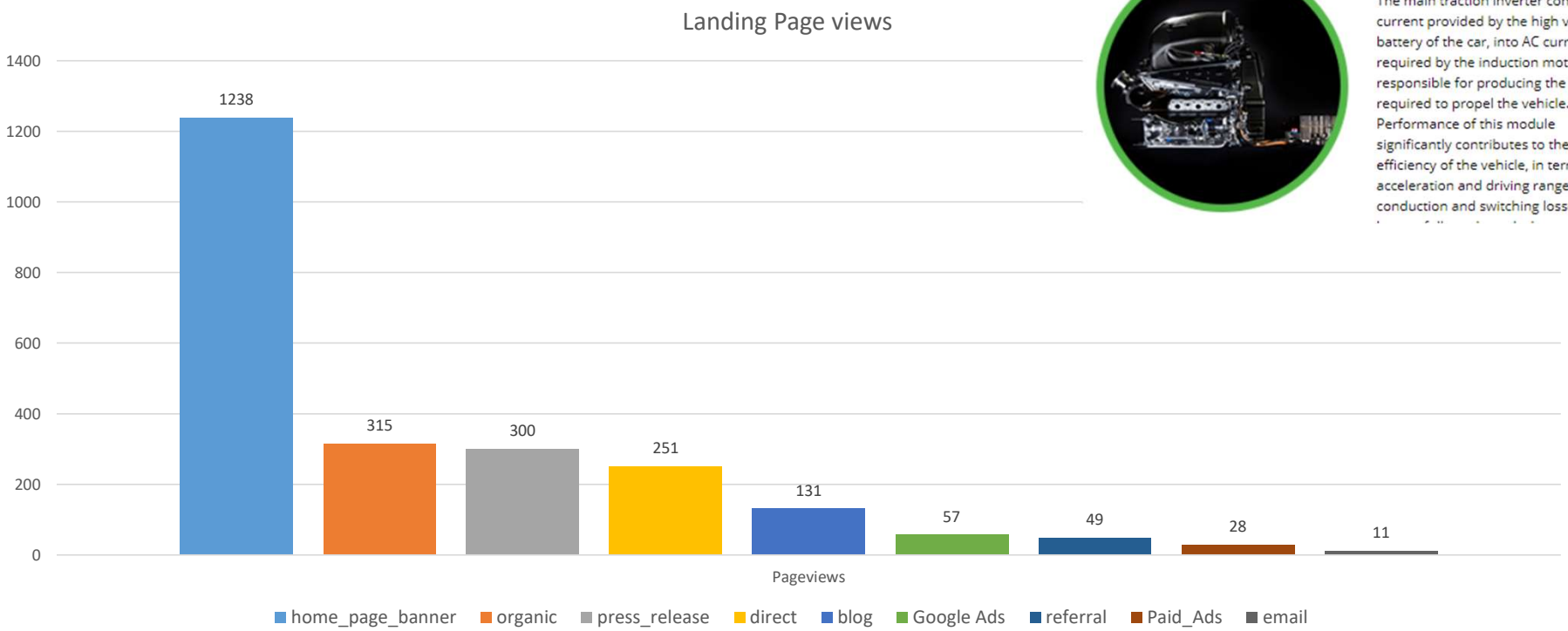
ON Semiconductor is introducing two different inverter platforms within the VE-Trac family: VE-Trac Dual and VE-Trac Direct.

VE-Trac Dual will be a collection of Dual Side Cool (DSC) half-bridge modules that are stackable and scalable. VE-Trac Dual can work in applications ranging from 80 kW to 300 kW. The first VE-Trac Dual device to be released is rated to 750 V at 800 A, which ON Semiconductor says is double the capacity of competing devices. The device is qualified under AQG-324 (European standard for power electronics) and features an embedded smart IGBT. Over the next few months, ON will release additional devices within the VE-Trac Dual platform that feature higher voltages and various current level options.

Campaign Performance



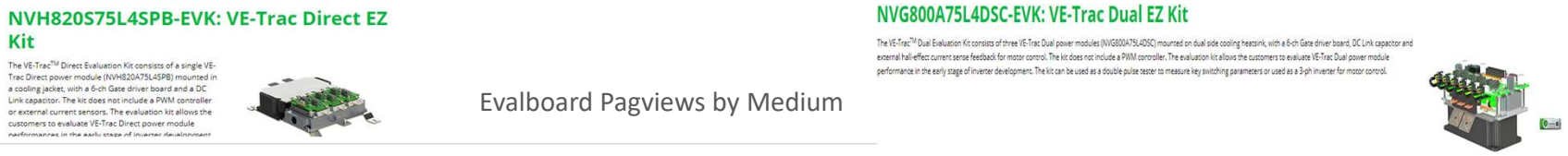
Landing Page views

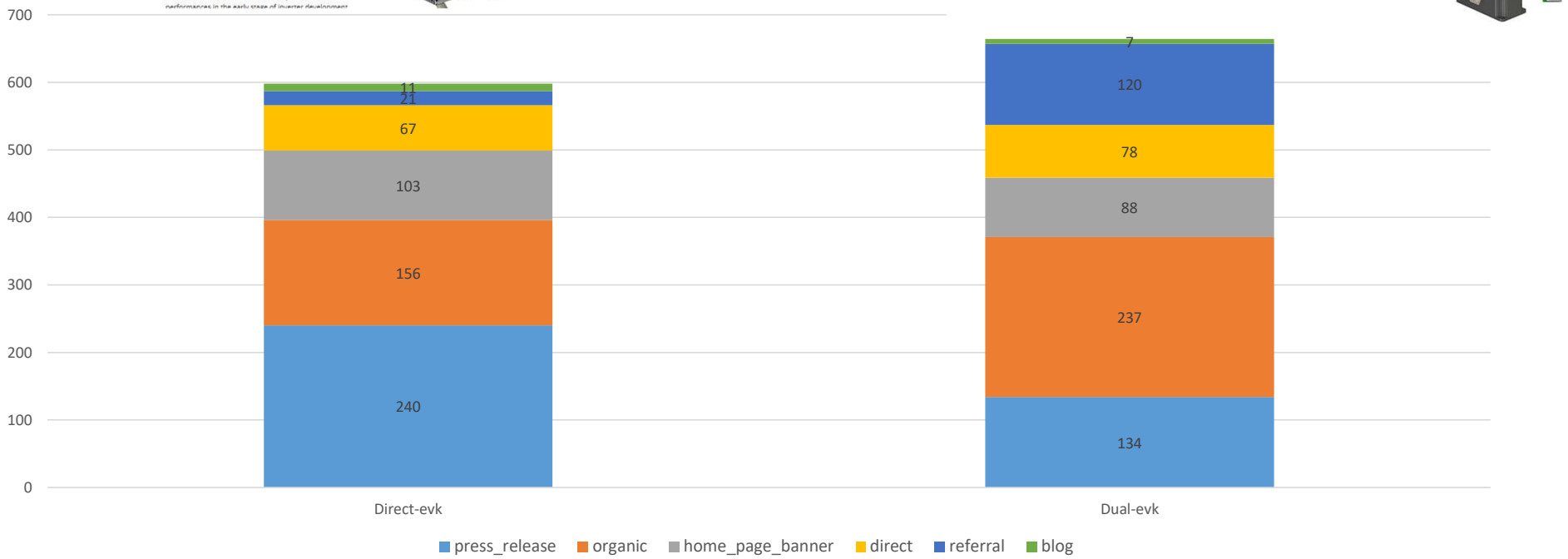


Traction Inverters

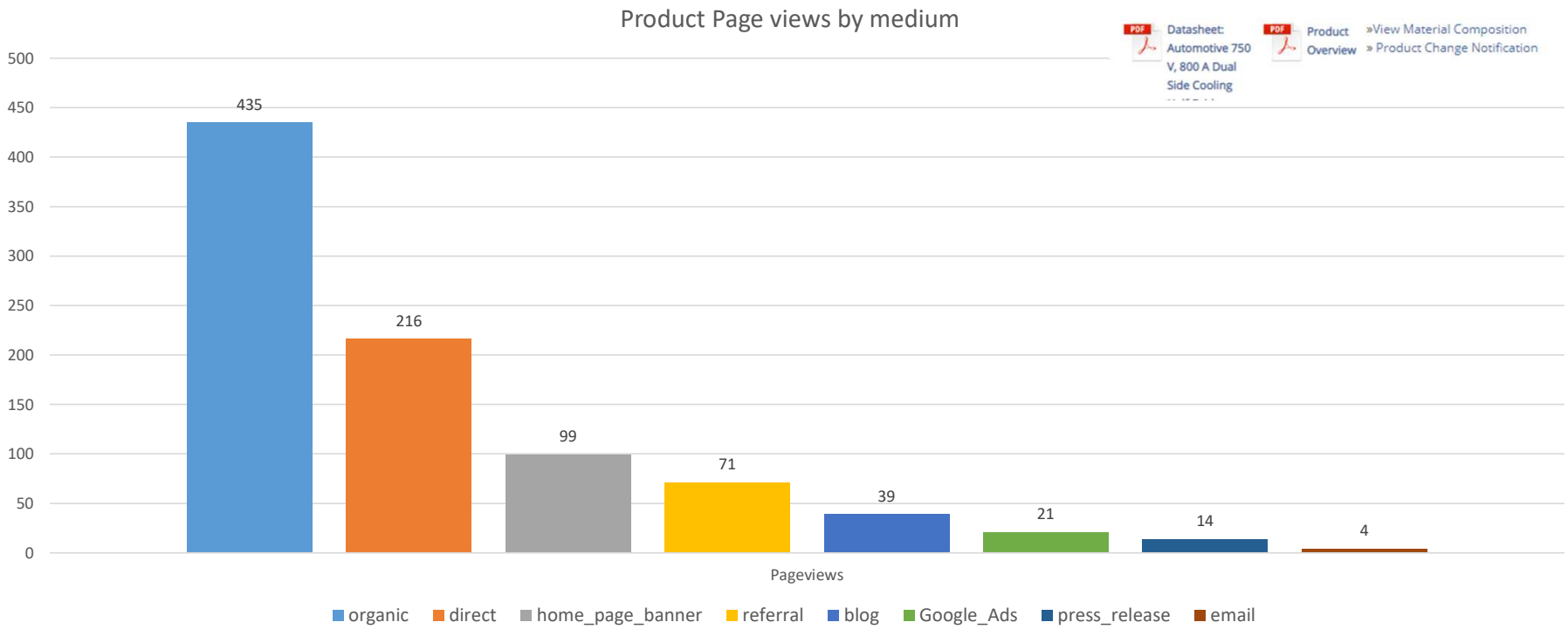
The main traction inverter converts DC current provided by the high voltage battery of the car, into AC current required by the induction motor responsible for producing the torque required to propel the vehicle. Performance of this module significantly contributes to the overall efficiency of the vehicle, in terms of its acceleration and driving range. Both conduction and switching losses must

Eval board page views

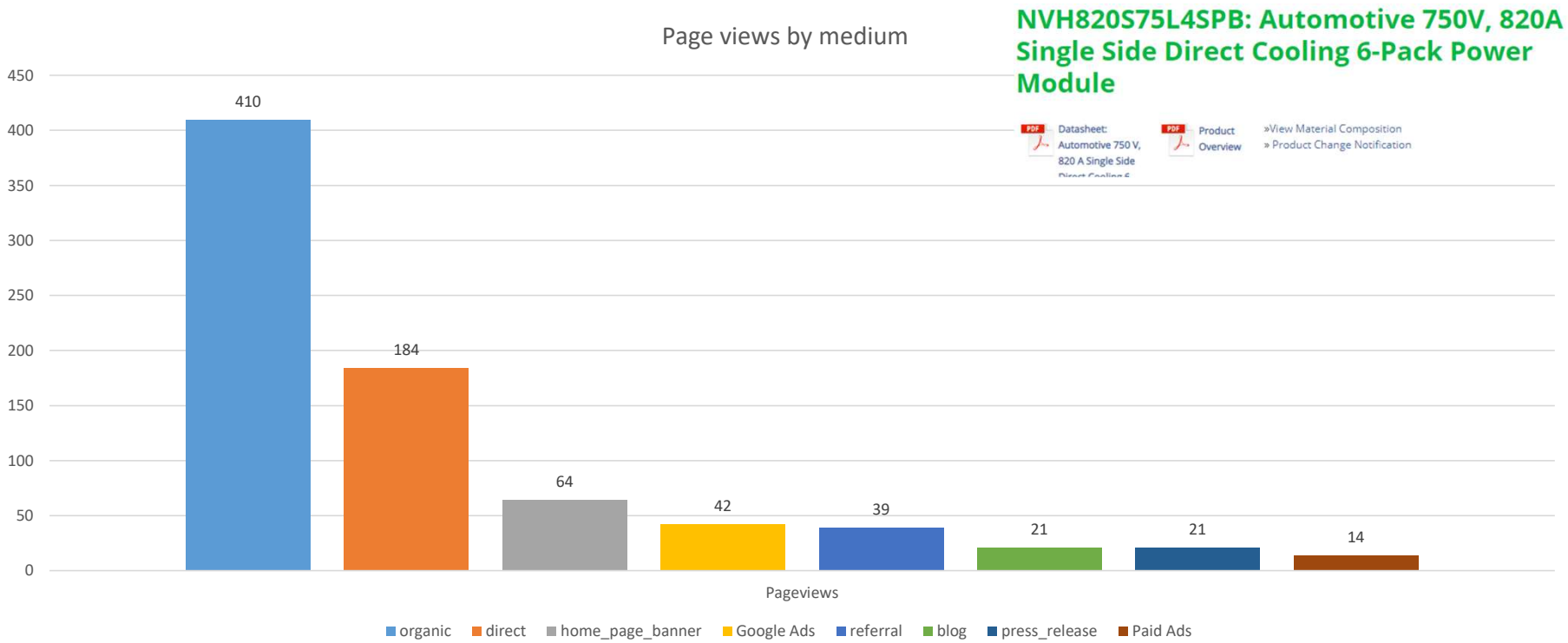




Product Page views



Product Page views - 2



NVH820S75L4SPB: Automotive 750V, 820A Single Side Direct Cooling 6-Pack Power Module

Datasheet: Automotive 750 V, 820 A Single Side

Product Overview

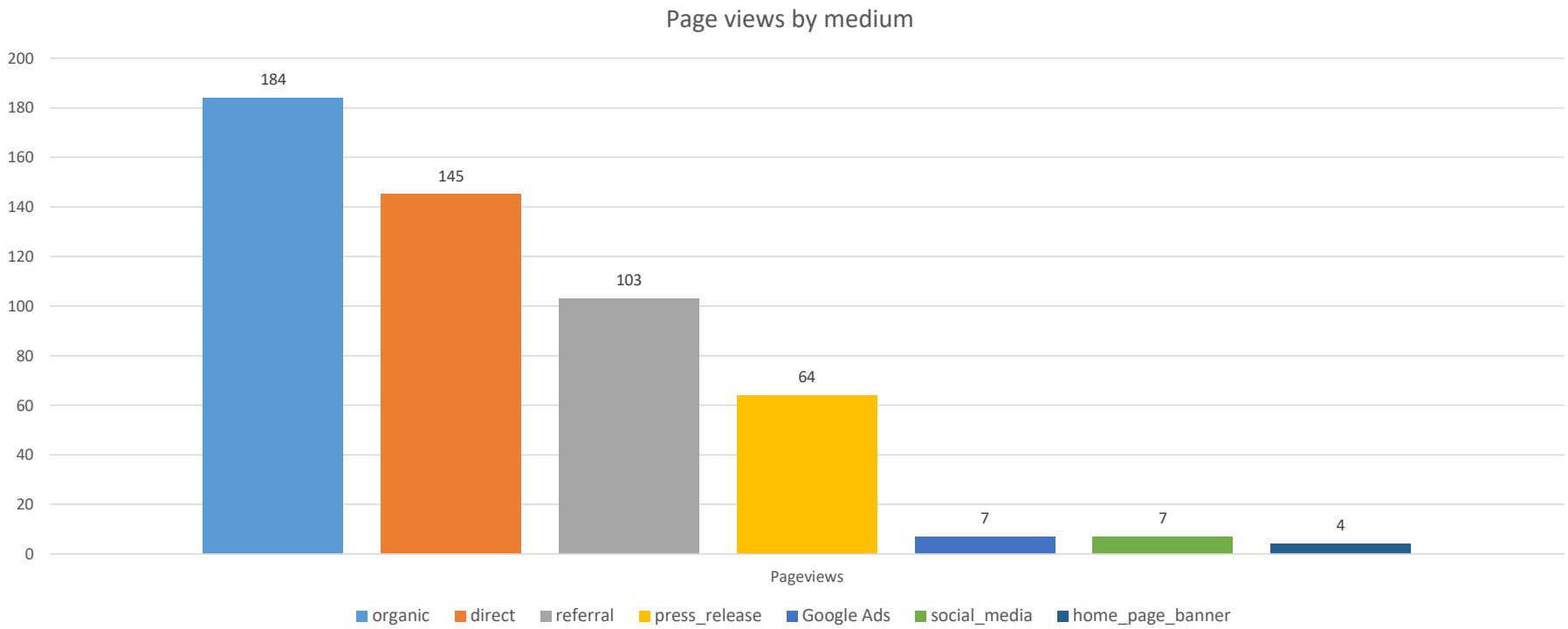
»View Material Composition

» Product Change Notification

Press Release page views

ON Semiconductor Announces New Family of Power Modules to Address the Growing Market and Applications for Automotive Traction Inverters

On display at CES 2020, first devices on platforms from new VE-Trac™ family offer market-leading electrical and thermal performance backed by market-ready capacity and expanded supply chain



Video Performance

VE-Trac Video was posted on the Traction Inverter landing page on January 8, 2020.
The data presented is from Jan. 8 – March 16

Attribute	Metrics
Video impressions	1175
Video views	79
Views > 50%	55
Views 100%	35

VE-Trac™ Power Module Platform Overview

Conversions

Attribute	Metrics
Users acquired	1602
Total conversions	2188
Conversion Rate	136%

***Users acquired via this campaign downloaded multiple assets*

LED Lighting Solutions

Segment/Sub-segment

Automotive/Comfort, Safety and Convenience

Planned Launch Date

December 2019 - TBD

Featured Product(s)

- LED Driver NCV7683, NCV7685
- Current Controllers NCV7691 and NCV7692

CTA

- Contact Sales Office
- Order Samples

BU Owner(s)

Paul Decloedt, ASG

Regional Focus

AMR, EMEA, APAC, JP

Positioning

New LED lighting devices that enable state-of-the-art Rear and Front lighting solutions to satisfy growing global industry demand for LED lighting.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release	🟢	Blog (Internal)	🟢	Demand Generation	🔴🟢	Video	🟢🔴
Blog (External)		Landing Page	🟢	Paid Search/Dynamic Ads	🔴	Tutorial	
Contributed Article	🟢	Home Page Banner		Paid Social		Application Note	🟢
Speaking Engagements		Social Media	🟢	Native Ads		White Paper	
Press Interviews	🟢	Newsletter	🟢	Print Ads		Webinar/Webcast	
Analyst Interviews		Email	🔴			Infographic	
Award Nominations						PR Photo	🟢

Internal Use Only

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LED Lighting

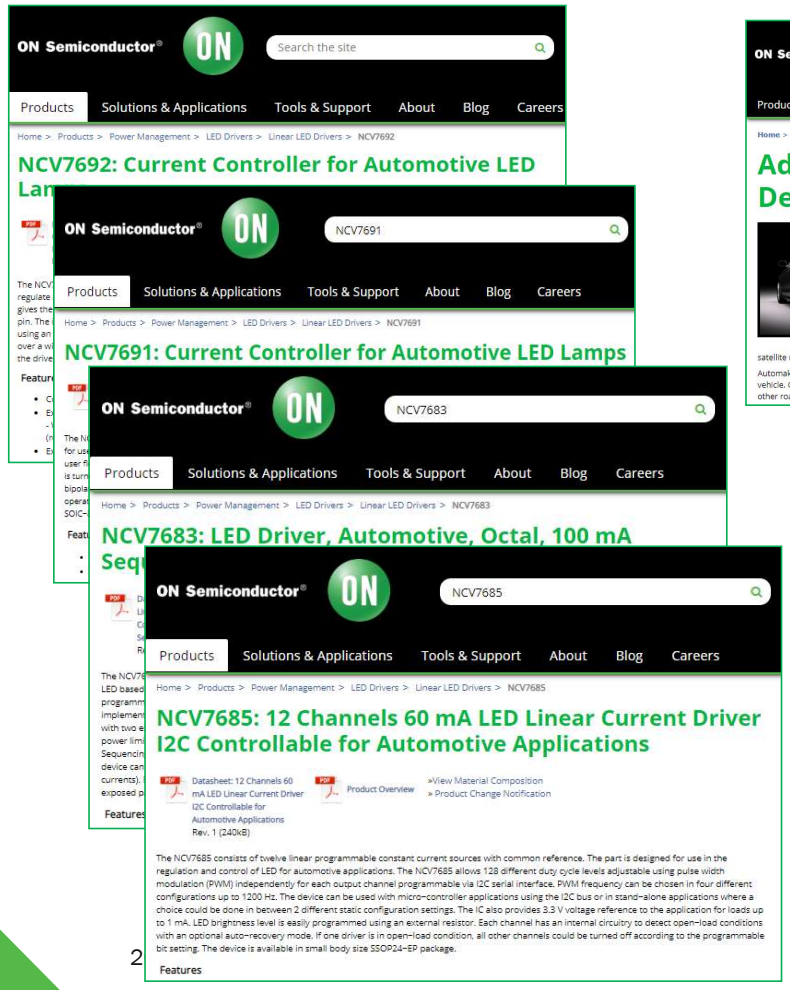
60-Day Campaign Report

(Feb 4 – April 2, 2020)

Internal Use Only

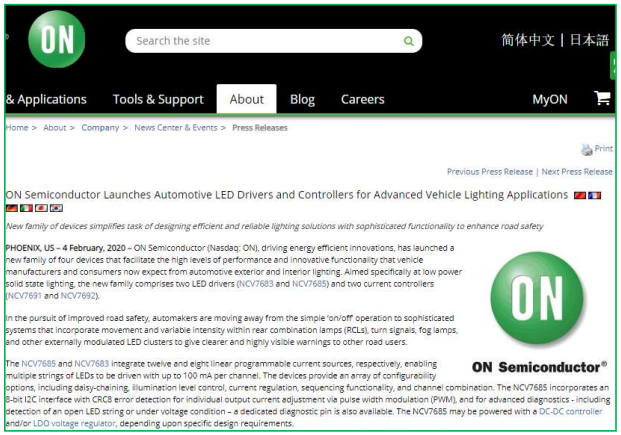
LED Lighting Campaign Assets

Product Pages



Blog

Press Release



LED Rear Lighting Demo Video

Business Wire PR Report

ON Semiconductor Launches Automotive LED Drivers and Controllers for Advanced Vehicle Lighting Applications

02/04/2020
09:00 AM PST

3,771	323
TOTAL VIEWS	LINK CLICKS

EARNED AND SOCIAL MEDIA ANALYTICS

Overview

This report analyzes 22 social mentions & 62 articles.
The peak of conversation happened on Feb 04, 2020.
The most influential profile during the selected time period was Techristic, who has 49,475 followers.However, Techristic's mentions were not re-shared.

Highlights

61	Syndicated Articles
1	Earned Media
22	Social Mentions

ONLINE POSTINGS

yahoo! finance | yahoo! finance | CNN Money | MORNINGSTAR | Fidelity.com
Seeking Alpha | TD AMERITRADE | NBC2 | 6 | benzinga

MORNINGSTAR

BUSINESS WIRE

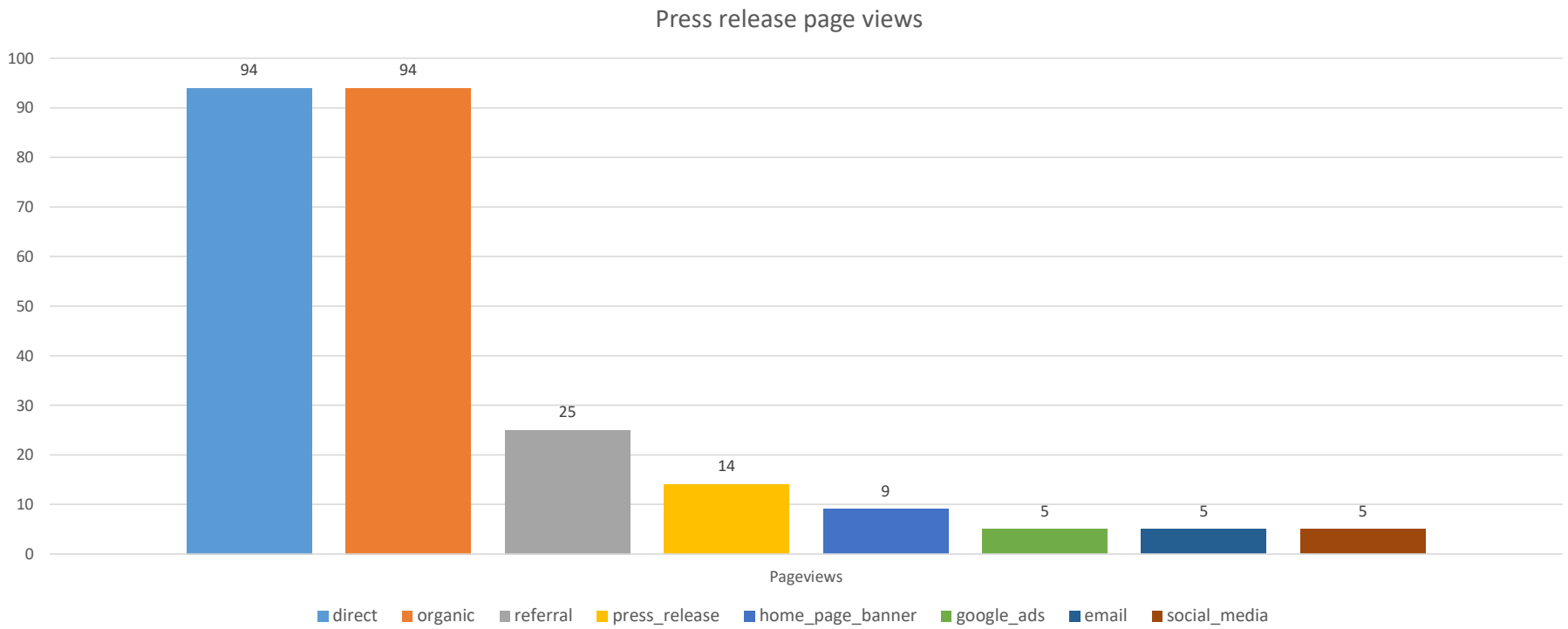
ON Semiconductor Launches Automotive LED Drivers and Controllers for Advanced Vehicle Lighting Applications

Provided by Business Wire
Feb 4, 2020 9:00 AM PST

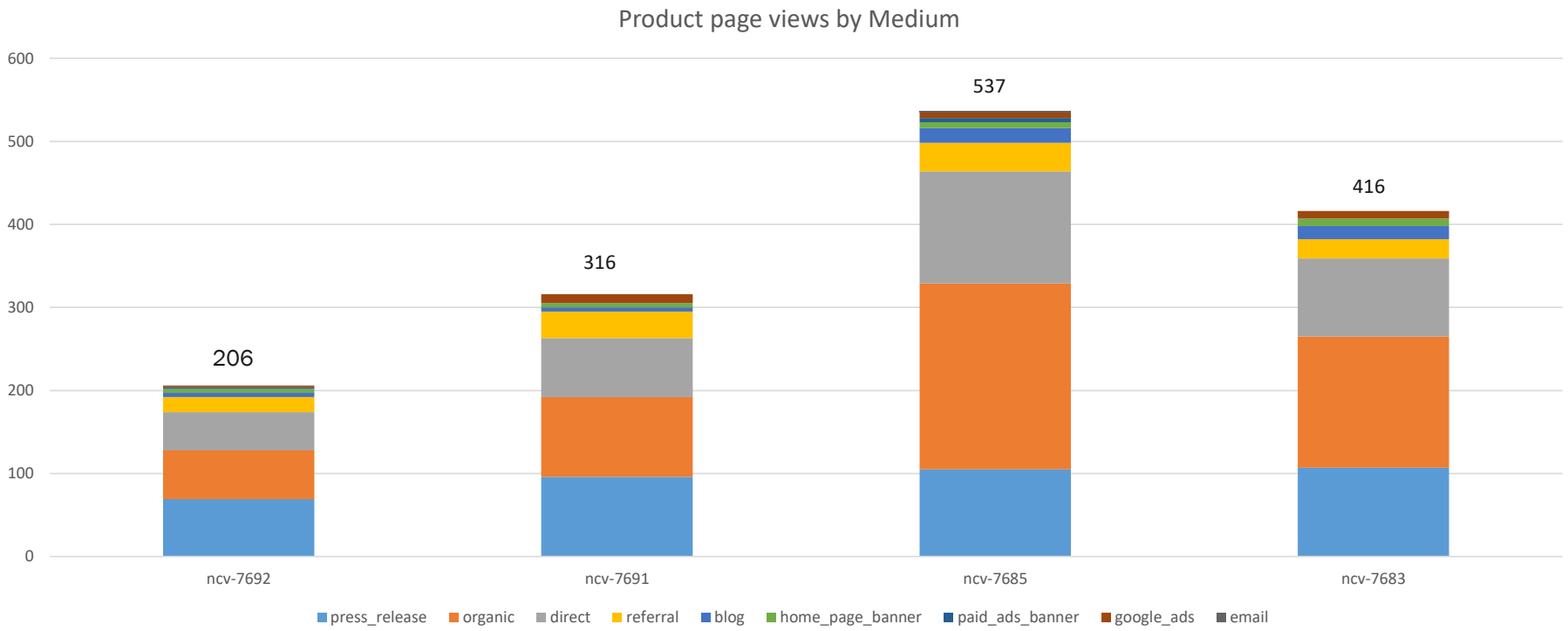
ON Semiconductor Launches Automotive LED Drivers and Controllers for Advanced Vehicle Lighting Applications

New family of devices simplifies task of designing efficient and reliable lighting solutions with sophisticated functionality to enhance road safety

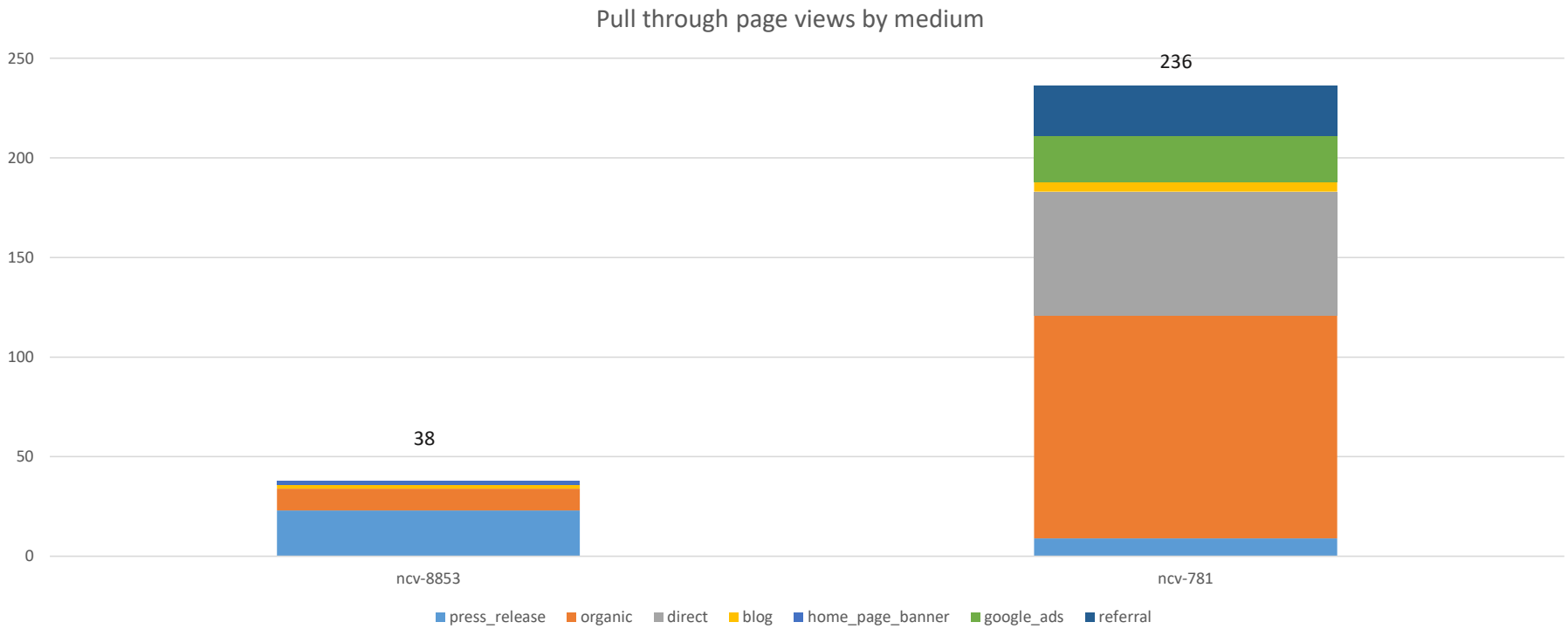
Press release page views by medium



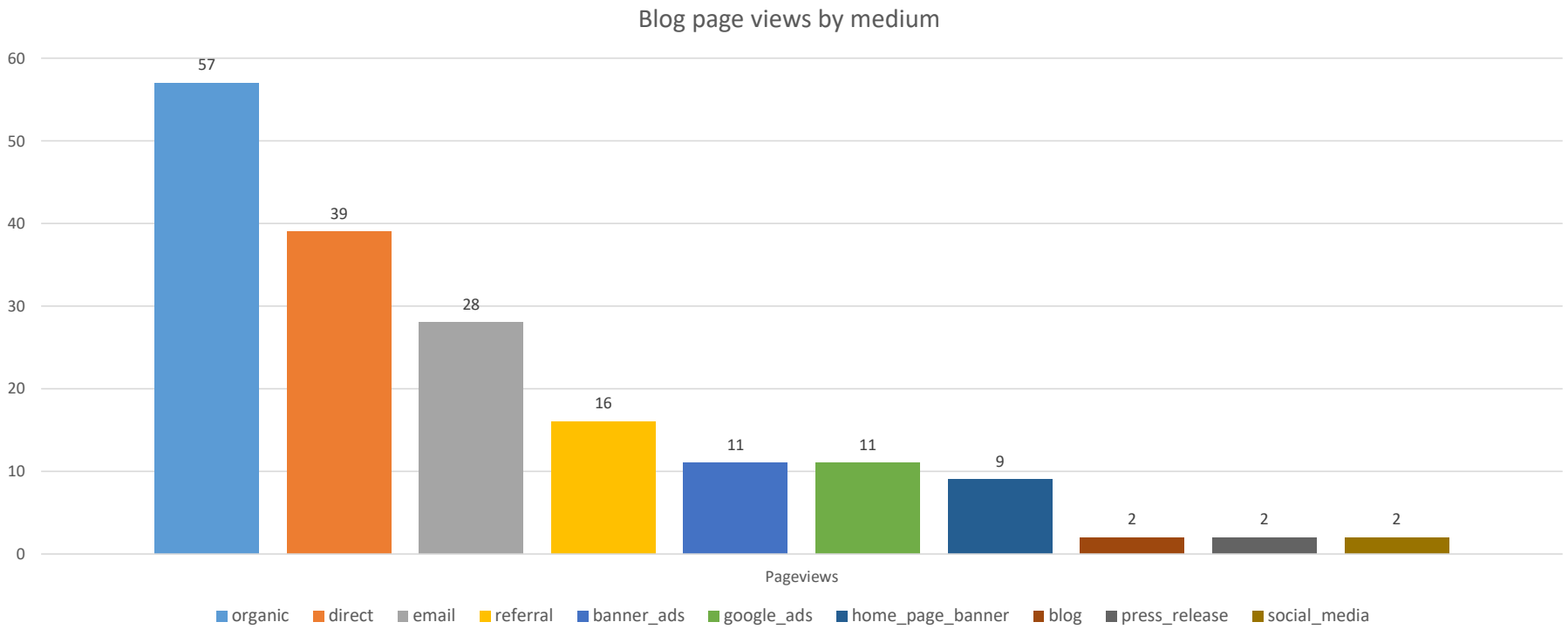
Product page views



Product page views - 2



Blog page views



Campaign Performance

Users acquired	Metrics
Press release	281
Blog	52

Attribute	Metrics
Conversions	265
Conversion Rate *(Conv/Users acquired)*	79.5%

Video posted on March 27
Views as of April 2: 9

LED Lighting EVK

Segment/Sub-segment

Automotive/Comfort, Safety and Convenience

Planned Launch Date

May 2020

Featured Product(s)

SECO-NCV7685RGB-GEVB - RGB LIGHTING EVB
- NCV7685 Linear LED Driver
- RSL10 SoC with BLE
- NCV891330 DCDC Converter
- NCV8170 LDO Regulator
- PCA9655 I/O Port Expander

CTA

- Contact Sales Office
- Order Samples

BU Owner(s)

Kane Jia, SEC,
Paul Decloedt, ASG

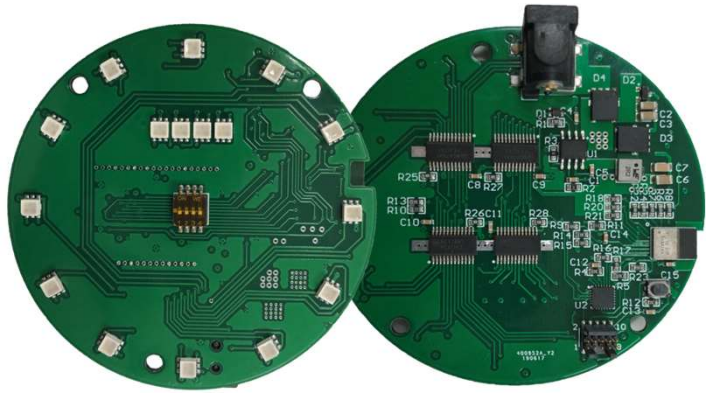
Regional Focus

AMR, EMEA, APAC, JP

Positioning

The new NCV7685 LED RGB EVB provides a smart demonstration on interior or exterior lighting reference design for tail, ambient and ground effects lighting, which is aiming at realizing general sequential or high end pixelated LEDs controlled in in-vehicle networks.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release		Blog (Internal)	●	Demand Generation	●	Video	●
Blog (External)		Landing Page	●	Paid Search/Dynamic Ads	●	Tutorial	●
Contributed Article		Home Page Banner		Paid Social		Application Note	●
Speaking Engagements	●	Social Media	●	Native Ads		White Paper	●
Press Interviews		Newsletter	●	Print Ads		Webinar/Webcast	●
Analyst Interviews		Email	●			Infographic	
Award Nominations						PR Photo	●



Hayabusa™ Family Image Sensors & Ecosystems Partners

Segment/Sub-segment

Automotive/Autonomous Vehicle, ADAS

Planned Launch Date

July - TBD

Featured Product(s)

- AR0147AT
- AR0233AT & AR0323AT – delay due to issues with product. Delayed till **July** 2020.

CTA

- Contact Sales Office
- Order Samples

BU Owner(s)

Radhika Arora, Steve Kuzy- product
Steve Harris - partners

Regional Focus

AMR, EMEA, APAC

Positioning

Announcing Hayabusa family newest image sensors' line-up from 1MP to 3MP now in mass production, as well as recent winning collaborations with ecosystems partners for ADAS and AV solutions.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release	●	Blog (Internal)	●	Demand Generation	●	Video	●●
Blog (External)		Landing Page	●	Paid Search/Dynamic Ads	●	Tutorial	
Contributed Article	●●	Home Page Banner		Paid Social		Application Note	●
Speaking Engagements	●●	Social Media	●●	Native Ads		White Paper	
Press Interviews	●	Newsletter	●	Print Ads		Webinar/Webcast	●
Analyst Interviews		Email				Infographic	
Award Nominations						PR Photo	●

AR0820AT Relaunch & Ecosystem Partners

Segment/Sub-segment

Automotive/Autonomous Vehicle, ADAS

Planned Launch Date

Sept. - TBD

Featured Product(s)

- AR0820AT

CTA

- Contact Sales Office
- Order Samples

BU Owner(s)

Radhika Arora – product
Steve Harris - partners

Regional Focus

AMR, EMEA, APAC

Positioning

Drive awareness that ADAS Family AR0820AT image sensor now in mass production and recent winning collaborations with Ecosystems Partners for ADAS and AV solutions.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release	●	Blog (Internal)	●	Demand Generation	●	Video	●●
Blog (External)		Landing Page	●●	Paid Search/Dynamic Ads	●	Tutorial	
Contributed Article	●	Home Page Banner		Paid Social		Application Note	●
Speaking Engagements	●●	Social Media	●●	Native Ads		White Paper	
Press Interviews	●●	Newsletter	●	Print Ads		Webinar/Webcast	●
Analyst Interviews		Email	●			Infographic	
Award Nominations						PR Photo	●

Solutions for In-cabin Monitoring Applications

Segment/Sub-segment

Automotive/Autonomous Vehicle, ADAS

BU Owner(s)

Eric Thomas, Steve Harris, Daniel Noguchi - ASD

Planned Launch Date

Phase 1 - September 17, 2019
Phase 2 – for AutoSens Brussels, Sept. 2020 or Detroit Nov. 2020

Regional Focus

AMR, EMEA, APAC

Featured Product(s)

- Phase 1:Ambarella & Eyeris joint solution - completed
- Phase 2: AR0239AT, IVEC, GazeT all configurations and associated pull-through products.

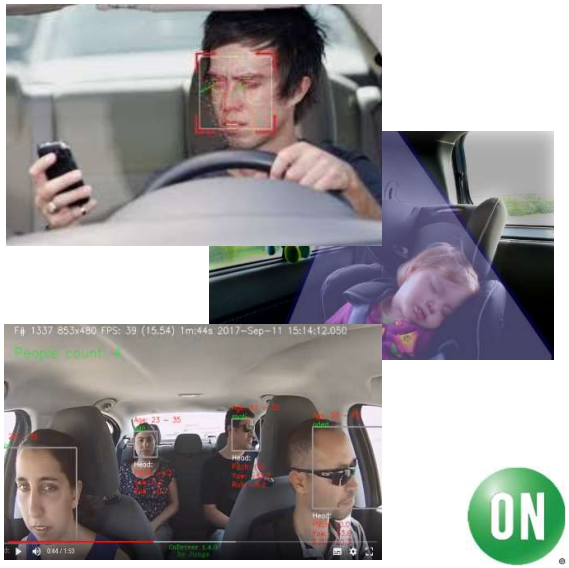
CTA

- Contact Sales Office
- Order Samples

Positioning

In-cabin Monitoring Systems are a key growth segment due to Euro NCAP roadmap for mandatory inclusion of Driver Monitoring and Child Presence Detection by 2025 as part of UN General Safety Regulations. ON Semiconductor offers complete Driver Monitoring, Passenger Monitoring and other in-cabin solutions.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release	●●	Blog (Internal)	●●	Demand Generation	●	Videos, Motion Graphic	●
Blog (External)		Landing Page	●●	Paid Search/Dynamic Ads	●	Tutorial	●
Contributed Article	●	Home Page Banner	●	Paid Social		Application Note	●
Speaking Engagements	●●	Social Media	●	Native Ads		White Paper	
Press Interviews	●●	Newsletter	●	Print Ads		Webinar/Webcast	●
Analyst Interviews		Email				Infographic	
Award Nominations						PR Photo	●●



Cybersecurity, 12MP Image Sensor for Robotaxi

Segment/Sub-segment

Autonomous Driving/ADAS

Planned Launch Date

September or November 2020, TBD for AutoSens Brussels or Electronica

Featured Product(s)

- AR01212
- AP0300
- AS0149

CTA

- Contact Sales Office

BU Owner(s)

Radhika Arora, ASD
Giri Venkat, ASD

Regional Focus

AMR, EMEA, APAC, JP

Positioning

Drive awareness of Image sensors, co-processors and system-on-chip modules with innovative Cybersecurity technology for ADAS and Autonomous Vehicles. Industry first 12MP image sensor for Robotaxi market.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release	●	Blog (Internal)	●	Demand Generation	●	Video	●
Blog (External)	●	Landing Page	●	Paid Search/Dynamic Ads		Tutorial	●
Contributed Article	●	Home Page Banner		Paid Social		Application Note	●
Speaking Engagements	●	Social Media	●	Native Ads		White Paper	
Press Interviews	●	Newsletter	●	Print Ads		Webinar/Webcast	●
Analyst Interviews		Email	●			Infographic	
Award Nominations						PR Photo	●

LiDAR Sensing

Segment/Sub-segment

Autonomous Driving/ADAS

Planned Launch Date

Ruby and Pandion at AutoSens Brussels - TBD

Featured Product(s)

- Ruby Product Family
- Pandion Product Family

CTA

- Contact Sales Office

BU Owner(s)

Bahman Haji, SensL Group
Wade Appelman, SensL Group

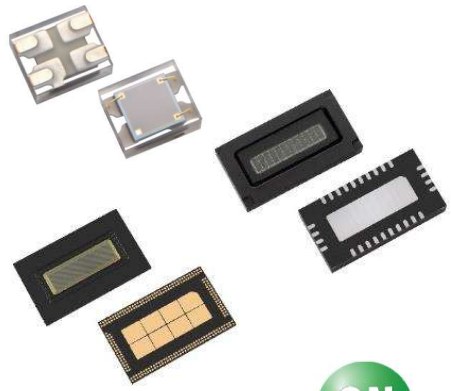
Regional Focus

AMR, EMEA, APAC, JP

Positioning

Drive awareness of ON Semi LiDAR strategy. Influence the market on technology trends that push toward ON Semi advantage. Demonstrate expertise of LiDAR requirements in target markets and prove we have market adoption.

Earned		Owned		Paid		Other Planned Deliverables	
Press Release	●●	Blog (Internal)	●	Demand Generation	●●	Video	●
Blog (External)	●	Landing Page	●●	Paid Search/Dynamic Ads	●	Tutorial	●
Contributed Article	●	Home Page Banner	●	Paid Social	●	Application Note	●
Speaking Engagements	●	Social Media	●	Native Ads		White Paper	●
Press Interviews	●	Newsletter	●	Print Ads		Webinar/Webcast	●
Analyst Interviews		Email	●			Infographic	
Award Nominations						PR Photo	●



Immediate Needs Q2 2020

Web Updates

- Updates to ADAS/Autonomous Landing page
- ADAS/AV Ecosystem Partners Landing page
- LED Lighting EVK Landing page
- Online Demo Room Automotive

Digital Advertising

- VE-Trac campaign
- LED Lighting campaign
- Hayabusa Image Sensors campaign

Blogs

- Autonomous Vehicle Adoption
- LED Lighting RGB EVK
- Hayabusa & Ecosystem Partners
- AR0820 & Ecosystem Partners

Videos

- Motion Graphic: In-Cabin - Driver Monitoring, child detection
- LED Lighting RGB EVB – for ambient and effects lighting
- LiDAR Demo Videos (filmed at Photonics West)
- Motion Graphic: Sensor Modalities for Sensor Fusion
- PSG Webcasts / Webinars

Emails/Newsletter

- April Automotive Segment Newsletter
- VE-Trac Email
- LED Lighting Email

Tradeshows/Graphics

- IS Auto Europe
- AutoSens Brussels Booth Graphic
- AutoSens Detroit Booth Graphic