

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TRW AUTOMOTIVE US LLC  
Petitioner

v.

MAGNA ELECTRONICS INC.  
Patent Owner

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Case IPR2014-00265  
Patent 8,222,588 B2

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Before JUSTIN T. ARBES, BARRY L. GROSSMAN, and  
BEVERLY M. BUNTING, *Administrative Patent Judges*.

GROSSMAN, *Administrative Patent Judge*.

DECISION  
Denying Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

## I. INTRODUCTION

TRW Automotive US LLC (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 28-38 of U.S. Patent No. 8,222,588 B2 (“the ’588 patent”). Paper 1 (“Pet.”). The patent owner, Magna Electronics Inc. (“Patent Owner”), filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a):

**THRESHOLD** – The Director may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

We determine that the information presented does not show that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of any of claims 28-38. Accordingly, we deny the Petition and do not institute an *inter partes* review of the ’588 patent.

### *A. Related Proceedings*

TRW states that the ’588 patent is involved in a pending district court case, titled *Magna Electronics Inc. v. TRW Automotive Holding Corp.*, No. 1:12-cv-00654-PLM (W.D. Mich.). Pet. 4-5.

### *B. The ’588 Patent*

The challenged claims are directed to an image sensing system. Ex. 1002, col. 12, l. 58. The patent relates, in particular, to a system for controlling the headlights of a vehicle. *Id.*, col. 1, ll. 23–25. The disclosed system particularly is adapted to controlling the vehicle’s headlamps in response to sensing the headlights of oncoming vehicles and taillights of leading vehicles. *Id.*, col. 1, 25–28. The image processing system is capable of identifying unique characteristics

of light sources by comparing light source characteristics with spectral signatures of known light sources, such as headlights and taillights. *Id.*, col. 1, l. 67–col. 2, l. 9.

As shown generally in Figure 2 of the '588 patent, reproduced below, the image processing system includes imaging sensor module 14, which senses light from a scene forward of the vehicle; imaging control circuit 13<sup>1</sup>, which receives data from sensor 14; and vehicle lighting control logic module 16, which exchanges data with control circuit 13 and controls headlamps 18 for the purpose of modifying the headlight beam. Ex. 1002, col. 3, ll. 44–51.

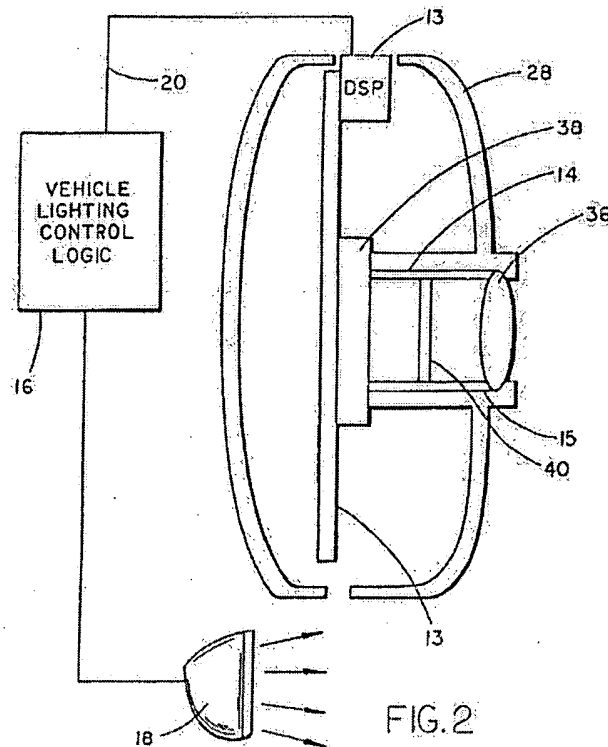


Fig. 2 of the '588 patent.

<sup>1</sup> The Specification also refers to imaging control circuit 13 as a “digital signal processor.” See Ex. 1002, col. 3, l. 47 (“imaging control circuit 13”); col. 4, ll. 53–54 (“digital signal processor 13”). This explains why reference numeral 13 in Figure 2 points to a box labelled “DSP.”

Imaging sensor module 14 includes a lens, an array of photon-accumulating light sensors, and a spectral separation device, such as a filter array, for separating light from the scene forward of the vehicle into a plurality of spectral bands. Ex. 1002, col. 4, ll. 24–29. Digital signal processor 13 includes an analog-to-digital converter, which receives the output of the array of photon-accumulating light sensors and converts the analog pixel values to digital values. *Id.* at col. 4, ll. 56–58. The digital values are supplied to a taillight detection circuit and a headlight detection circuit. *Id.* at col. 4, ll. 58–60.

The taillight detection circuit detects a red light source having intensity above a particular threshold. Ex. 1002, col. 5, ll. 4–5. For each pixel that is “red,” a comparison is made with adjacent “green” pixels and “blue” pixels. *Id.* at col. 5, ll. 6–7. If the intensity of a red pixel is more than a particular number of times the intensity of an adjacent green pixel and an adjacent blue pixel, then it is determined that the light source is red. *Id.* at col. 5, ll. 7–10. The headlight detection circuit carries out a similar process. *Id.* at col. 5, ll. 13–21. The image processing system recognizes the spectral signatures of detected light sources, i.e., headlights and taillights, as well as the spectral signatures of rejected light sources, such as lane markers, signs, and other sources of reflected light, all of which may be readily identified by their spectral signature. *Id.*, col. 10, ll. 38–47.

#### *C. Illustrative Claim*

Challenged claims 28 and 35 are independent claims. Claim 35, reproduced below, is illustrative of the claimed invention:

1. An image sensing system for a vehicle, said image sensing system comprising:
  - an imaging sensor comprising a two-dimensional array of light sensing pixels;

said imaging sensor having a forward field of view through the windshield of a vehicle equipped with said image sensing system to the exterior of the equipped vehicle;

wherein said imaging sensor is operable to capture image data;

a control comprising an image processor;

wherein said image sensing system determines an object of interest present in said forward field of view of said imaging sensor via processing of said captured image data by said image processor;

wherein said image processing comprises spatial filtering; wherein said spatial filtering enhances determination of at least one of a headlamp of an approaching vehicle ahead of the equipped vehicle and a taillight of a leading vehicle ahead of the equipped vehicle; and

wherein said spatial filtering comprises analysis of a spectral signature representative of at least one detected light source present in said forward field of view of said imaging sensor.

#### *D. References Relied Upon*

Petitioner relies upon the following prior art references:

Reference	Date	Exhibit Number
Yanagawa, Japanese Kokai Application, No. S62- 131837, with certified translation.	Published June 15, 1987	Ex. 1004
Kenue, U.S. Pat. No. 4,970,653.	Issued Nov. 13, 1990	Ex. 1005
Tadashi, Japanese Kokai Application No. Hei 4- 127280, with certified translation. <sup>2</sup>	Published April 28, 1992	Ex. 1006

<sup>2</sup> We refer to “Yanagawa” and “Tadashi” as the English translations of the original

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