

Patent Right	Date	December 1, 2020	Court	Intellectual Property High Court, Third Division
	Case number	2020 (Ne) 10039		
<p>- A case in which, regarding the invention titled "ANTENNA DEVICE", since the invention described in claims is not found to be the invention described in the detailed description of the invention in the description, and the invention is not found to be within a scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing and thus, the support requirement is not fulfilled, it is found that the patent according to the claim should be invalidated through a trial for patent invalidation, and the Appellant may not exercise the patent right against the Appellee, the judgment in prior instance that dismissed the claims shall be maintained, and the appeal was dismissed.</p>				

Case type: Injunction, etc.

Result: Appeal dismissed

References: Article 36, paragraph (6), item (i), Article 123, paragraph (1), item (iv), and Article 104-3, paragraph (1) of the Patent Act

Related rights, etc.: Patent No. 5237617, Correction No. 2014-390078, Invalidation Trial No. 2015-800040

Judgment of the prior instance: Tokyo District Court, 2018 (Wa) 5506

### Summary of the Judgment

1. The present case is a case in which the Appellant who is a patentee of the patent (the Present Patent) of the invention titled the "ANTENNA DEVICE" asserts that the product (the Appellee's Product) manufactured or imported, sold or offered to be sold by the Appellee belongs to the technical scope of the invention described in Claim 1 of the Present Patent and the production, transfer, or offer for transfer of the Appellee's Product infringe the patent right of the patent according to Claim 1, and claims injunction of the production, transfer, or offer for transfer of the Appellee's Product (Article 100, paragraph (1) of the Patent Act), disposal of the Appellee's Product (Article 100, paragraph (2) of the Patent Act), compensation for damage of 40,000,000 yen (Article 709 of the Civil Code, Article 102, paragraph (3) of the Patent Act), and payment of delay damages at the rate of 5% per annum prescribed in the Civil Code from March 2, 2018 (the day following the date of service of the complaint) after the tort thereto until completion of the payment.

2. The judgment substantially held as follows, maintained the judgment in prior instance which dismissed the claims, and dismissed the appeal.

(1) Claim 1 of the Present Patent is "An antenna device, comprising: an antenna case protruding to a height of approximately 70 mm or less from a vehicle when mounted on the vehicle; and an antenna unit accommodated in the antenna case, wherein the antenna unit comprises an antenna element having a planar shape with an upper edge following a shape of an internal space of the antenna case and an amplifier substrate having an amplifier for amplifying signals of FM broadcasting and AM broadcasting received by the antenna element; a power supply point of the antenna element is connected to an input of the amplifier through an antenna coil located between the antenna element and the amplifier substrate in a height direction; the antenna element and the antenna coil are connected, whereby they resonate in an FM wave band; an AM wave band is received by using the antenna element; and the signals of the FM broadcasting and the AM broadcasting are amplified by the amplifier connected through the antenna coil."

(2) Whether or not the recitation in the scope of claims conforms to the support requirement of the description should be determined by comparing the recitation in the scope of claims with the recitation in the detailed description of the invention and by examining whether or not the invention described in the scope of claims is the invention described in the detailed description of the invention and is within a scope that a person ordinarily skilled in the art can recognize that the problem of the invention can be solved by the recitation of the detailed description of the invention or suggestion thereof or whether or not it is within a scope that a person ordinarily skilled in the art can recognize that the problem of the invention can be solved in view of the common general technical knowledge at the time of filing even without the recitation or suggestion.

In order to fulfill the support requirement, it is only necessary that a person ordinarily skilled in the art who contacted the description can rationally recognize that the claimed invention is described in the description and that the solution to the problem has recitation to such a degree that a person ordinarily skilled in the art can obtain rational expectation that the problem can be solved also on the basis of the common general technical knowledge, and it is understood that description to such a degree that reaches strict scientific verification is not needed. That is because, first, the support requirement comes from the essence of the patent system that grants an exclusive right in return for disclosure of the invention and thus, the object that the support requirement was imposed is achieved more or less when a person ordinarily skilled in the art who contacted the description can contribute to further development of the art by replication or analysis of the invention. Moreover, by considering that the description is prepared within a time limit under the first-to-file principle, it is not reasonable to require that the described contents should be demonstrated with the level of strictness required in

scientific theses.

(3) The invention described in the detailed description of the invention in the description of the Present Patent is one such that, in an antenna including an antenna element and a planar antenna unit immediately below the antenna element and disposed so as to be substantially orthogonal to the surface of the antenna element, an interval between the upper surface of the planar antenna unit and the lower end of the antenna element is approximately  $0.25 \lambda$  (the wavelength of a center frequency of an operation frequency band of the planar antenna unit is  $\lambda$ ) or more, while the invention described in Claim 1 includes, other than the above, [i] invention of the antenna device not incorporating the planar antenna unit other than the antenna element; and [ii] invention of the antenna device in which, although the planar antenna unit is incorporated in addition to the antenna element, the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit is less than approximately  $0.25 \lambda$ , and since they are not the invention described in the detailed description of the invention, the invention described in Claim 1 includes an invention other than the invention described in the detailed description of the invention and it is not found to be the invention described in the detailed description of the invention.

(4) The problem of the invention described in the detailed description of the invention is a problem that if a planar antenna unit is further incorporated in addition to an existing antenna element stood upright in an antenna device including an antenna case having only a limited space, favorable electric characteristics cannot be obtained by mutual influences by the other antennas, and in order for a person ordinarily skilled in the art to recognize such problem, the premise is new incorporation of the planar antenna unit in addition to the existing antenna element stood upright in the antenna device having only a limited space. However, the invention described in Claim 1 includes the invention of the antenna device in which the planar antenna unit is not incorporated other than the antenna element in the first place, and the problem of the invention with such a structure is not described in the detailed description of the invention. Thus, the invention described in Claim 1 includes an invention such that a person ordinarily skilled in the art cannot recognize the problem by the recitation in the detailed description of the invention and exceeds the scope that a person ordinarily skilled in the art can recognize that the problem can be solved.

Moreover, the invention described in Claim 1 includes the invention of the antenna device in which, although the planar antenna unit is incorporated in addition to the antenna element, the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit is less than approximately  $0.25 \lambda$ , but the

detailed description of the invention describes as the method for solving the problem that the interval between upper surface of the planar antenna unit and the lower end of the antenna element is set to approximately  $0.25 \lambda$  or more, and if the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit is less than approximately  $0.25 \lambda$ , the problem described in the detailed description of the invention cannot be solved. Thus, the invention described in Claim 1 includes an invention such that a person ordinarily skilled in the art cannot recognize that the problem can be solved by the solution described in the detailed description of the invention in this point, too, and exceeds the scope that a person ordinarily skilled in the art can recognize that the problem can be solved.

Other than the above, there is not sufficient evidence to find that the invention described in Claim 1 is within a scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing.

Therefore, the invention described in Claim 1 is not found to be within a scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing.

(5) According to the above, the invention described in Claim 1 is not found to be the invention described in the detailed description of the invention and is not found to be within a scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing and thus, it is found that the patent according to Claim 1 does not fulfill the support requirement and should be invalidated through a trial for patent invalidation, and the Appellant cannot exercise the patent right of the patent according to Claim 1 against the Appellee. Therefore, none of the claims by the Appellant are grounded, the judgment in prior instance which dismissed them is reasonable, and the present appeal shall be dismissed.

Judgment rendered on December 1, 2020

2020 (Ne) 10039 Appeal case of seeking injunction against patent infringement

(Court of prior instance: Tokyo District Court 2018 (Wa) 5506)

Date of conclusion of oral argument: September 24, 2020

## Judgment

Appellant: HARADA INDUSTRY CO., LTD.

Appellee: Yokowo Co., ltd.

## Main text

1. The present appeal shall be dismissed.
2. The Appellant shall bear the cost of the appeal.

## Facts and reason

### No. 1 Object of the appeal

1. The judgment in prior instance shall be rescinded.
2. The Appellee shall not produce, transfer, or offer to transfer the product described in the list of Defendant's Products attached to the judgment in prior instance.
3. The Appellee must dispose of the products described in the list of Defendant's Products attached to the judgment in prior instance.
4. The Appellee shall pay to the Appellant 40,000,000 yen and the money at the rate of 5% per annum from March 2, 2018 until completion of the payment with respect to that.

### No. 2 Outline of the case

1. The present case is a case in which the Appellant, who is a patentee of the patent (Patent No. 5237617, the number of claims: 11, hereinafter, referred to as the "Present Patent") of the invention titled the "ANTENNA DEVICE," asserts that the product

described in the list of Defendant's Products attached to the judgment in prior instance (hereinafter, referred to as the "Appellee's Product"), manufactured or imported, sold or offered to be sold by the Appellee belongs to the technical scope of the invention described in Claim 1 of the Present Patent after the correction was approved by the decision of the JPO which approved the correction in 3(1) which will be described later and the decision of the JPO dismissing the request for a trial for invalidation of the patent (hereinafter, Claim 1 of the Present Patent after the correction approved by the decision of the JPO which approved the correction in 3(1) which will be described later and the decision of the JPO dismissing the request for a trial for invalidation of the patent shall be referred simply as "Claim 1") and the production, transfer, or offer for transfer thereof infringe the patent right of the patent according to Claim 1 and claims injunction of the production, transfer, or offer for transfer of Appellee's Product (Article 100, paragraph (1) of the Patent Act), disposal of Appellee's Product (Article 100, paragraph (2) of the Patent Act), compensation for damage of 40,000,000 yen (Article 709 of the Civil Code, Article 102, paragraph (3) of the Patent Act), and payment of delay damages at the rate of 5% per annum prescribed in the Civil Code (before revision by the 2017 Law No. 44, the same applies to the following) from March 2, 2018 (the day following the date of service of the complaint) after the tort thereto until completion of the payment.

2. The judgment in prior instance dismissed the Appellant's claims by holding that it is found that the patent according to Claim 1 does not fulfill Article 36, paragraph (6), item (i) of the Patent Act (support requirement) and should be invalidated through a trial for patent invalidation (Article 123, paragraph (1), item (iv) of the Patent Act) and thus, the Appellant may not exercise the patent right of the patent according to Claim 1 against the Appellee (Article 104-3, paragraph (i) of the Patent Act), and the Appellant made an appeal against it.

3. Basic facts (there are no disputes between the parties over those other than the facts listing evidence and the like, those without description of the branch numbers include branch numbers (the same applies to the following).)

(1) Present Patent

The Appellant filed a patent application of the Present Patent on November 30, 2007 and had the registration established on April 5, 2013.

Regarding the recitation in the scope of claims according to the Present Patent, the correction was approved by the JPO decision approving the correction (Correction No. 2014-390078) and moreover, the correction was approved by the JPO decision dismissing the request for a trial for invalidation of the patent which dismissed the

request for a trial after the correction was approved (Invalidation Trial No. 2015-800040) (The corrections approved by the correction approving JPO decision and the JPO decision dismissing the request for a trial of invalidation of the patent were all corrections of claims in the scope of claims.).

The description and the drawings attached to the application of the Present Patent (hereinafter, the description and the drawings are collectively called the "present description") are as described in the attached Patent Gazette.

(2) Invention described in Claim 1

Claim 1 is separately described by constituent features as follows.

I. An antenna device,

C. comprising,

A. an antenna case protruding to a height of approximately 70 mm or less from a vehicle when mounted on the vehicle; and

B. an antenna unit accommodated in the antenna case, wherein

D. the antenna unit comprises an antenna element having a planar shape with an upper edge following a shape of an internal space of the antenna case and an amplifier substrate having an amplifier for amplifying signals of FM broadcasting and AM broadcasting received by the antenna element;

E. a power supply point of the antenna element is connected to an input of the amplifier through an antenna coil located between the antenna element and the amplifier substrate in a height direction;

F. the antenna element and the antenna coil are connected, whereby they resonate in an FM wave band;

G. an AM wave band is received by using the antenna element; and

H. the signals of the FM broadcasting and the AM broadcasting are amplified by the amplifier connected through the antenna coil.

(3) Act of the Appellee

The Appellee manufactures or imports the Appellee's Product (Ken Otsu 1) and sells or offers to sell this in Japan.

(omitted)

No. 3 Judgment of this court

1. In view of the case, first, the dispute 5-1 (presence/absence of Invalidation Reason 1 (violation of the support requirement in relation to non-specification of the invention described in Claim 1 on incorporation of another antenna in addition to the

antenna element and how far an interval between them is)) will be determined.

(1) Judging method of the support requirement

Whether or not the recitation in the scope of claims conforms to the support requirement of the description should be determined by comparing the recitation in the scope of claims with the recitation in the detailed description of the invention and by examining whether or not the invention described in the scope of claims is the invention described in the detailed description of the invention and is within a scope that a person ordinarily skilled in the art can recognize that the problem of the invention can be solved by the recitation of the detailed description of the invention or suggestion thereof or whether or not it is within a scope that a person ordinarily skilled in the art can recognize that the problem of the invention can be solved in view of the common general technical knowledge at the time of filing even without the recitation or suggestion.

In order to fulfill the support requirement, it is only necessary that a person ordinarily skilled in the art who contacted the description can rationally recognize that the claimed invention is described in the description and that the solution to the problem has recitation to such a degree that a person ordinarily skilled in the art can obtain rational expectation that the problem can be solved also on the basis of the common general technical knowledge, and it is understood that description to such a degree that reaches strict scientific verification is not needed. That is because, first, the support requirement comes from the essence of the patent system that grants an exclusive right in return for disclosure of the invention and thus, the object that the support requirement was imposed is achieved more or less when a person ordinarily skilled in the art who contacted the description can contribute to further development of the art by replication or analysis of the invention. Moreover, by considering that the description is prepared within a time limit under the first-to-file principle, it is not reasonable to require the described contents should be demonstrated with the level of strictness required in scientific theses.

(2) Invention described in the detailed description of the invention

A. Problem

(A) Recitation in the detailed description of the invention

The detailed description of the invention in the present description has the following recitation on the background art and the problems to be solved by the invention.

"[Background Art]

[0002]



A conventional antenna device mounted on a vehicle is an antenna device capable of receiving an AM broadcasting and an FM broadcasting in general. In the conventional antenna device, a rod antenna having a length of approximately 1 m has been used for receiving the AM broadcasting and the FM broadcasting. The length of this rod antenna is approximately 1/4 wavelength of the FM wave band, but it is an extremely short length for the AM wave band and thus, its sensitivity is remarkably lowered. Therefore, conventionally, the impedance of the rod antenna is made higher for the AM wave band by using a high-impedance cable, or amplification has been made by using an amplifier for the AM wave band so as to ensure sensitivity. Moreover, an onboard antenna device in which the length of the antenna was shortened to approximately 180 mm to 400 mm is also used by making a helical antenna in which a rod part of the antenna is wound in a helical state. However, in order to make up for the performance deterioration caused by size reduction in the rod part, an amplifier is provided immediately below the antenna.

[0003]

A structure in which a conventional antenna device 101 with a shortened rod part is mounted on a vehicle 102 is illustrated in FIG. 23. As illustrated in FIG. 23, the conventional antenna device 101 is mounted on a roof of the vehicle 102, and a height  $h_{10}$  of the antenna device 101 protruding from the vehicle 102 is approximately 200 mm. The rod part of the antenna device 101 is a helical antenna wound in a helical state. Since the antenna device 101 protrudes from the vehicle 102 as above, there is a concern that the rod part would collide and be broken when the vehicle enters a garage or is being washed. Thus, such an antenna device is known that the rod part of the antenna device 101 can be tilted down so as to follow the roof of the vehicle 102.

[Patent Document 1] Unexamined Patent Application Publication No. 2005-223957

[Patent Document 2] Unexamined Patent Application Publication No. 2003-188619

[Disclosure of the Invention]

[Technical Problem]

[0004]

In the conventional antenna device 101 as above, since the rod part protrudes far from a car body, beauty/design of the vehicle is impaired, and if the rod part which was tilted down when entering the garage, during washing, or the like is not raised upright as a result of forgetting, there was a problem that the antenna performances were left to be lost. Moreover, since the antenna device 101 is exposed to an outside of the vehicle, there is a concern that the rod part could be stolen. Thus, an onboard

antenna device with the antenna accommodated in an antenna case can be considered. In this case, a height of the antenna device protruding from the vehicle is limited to a predetermined height by a regulation on projection outside the vehicle, and a length in a longitudinal direction is suitably approximately 160 to 220 mm in order not to impair the beauty of the vehicle. Then, radiation resistance  $R_{rad}$  of such a small-sized antenna is substantially determined in proportion to the square of the height as expressed by  $600 \text{ to } 800 \times (\text{height} / \text{wavelength})^2$ . For example, if the antenna height is reduced from 180 mm to 60 mm, the sensitivity is deteriorated by approximately 10 dB. As described above, when the existing rod antenna is simply shortened, the performance is greatly deteriorated, and application becomes difficult. Moreover, if the antenna is set to a low attitude of 70 mm or less, the radiation resistance  $R_{rad}$  becomes small and thus, radiation efficiency easily becomes lower by an influence of conductor loss of the antenna itself, which causes further deterioration in sensitivity.

[0005]

Thus, in Patent Application No. 2006-315297, the applicant proposed an antenna device which can be mounted on a vehicle and is capable of suppressing sensitivity deterioration as much as possible even at a low attitude of 70 mm or less. It is to be noted that antennas for many types of various applications such as terrestrial radio broadcasting, satellite radio broadcasting, GPS, and the like are mounted on a vehicle in some cases. However, with an increase of each antenna for various types of media, the number of antennas mounted on the vehicle increases, which impairs beauty of the vehicle, and work time for mounting also increases. Thus, incorporation of a plurality of antennas in the antenna device can be considered. As an example, a plan view illustrating a structure example of an antenna device in which an antenna for receiving SDARS (Satellite Digital Audio Radio Service), for example, is incorporated in the above proposed antenna device is illustrated in FIG. 24, and a side view illustrating the structure example of the antenna device is illustrated in FIG. 25.

[0006]

The antenna device 200 illustrated in FIG. 24 and FIG. 25 includes an antenna case 210, an antenna base 220 accommodated in the antenna case 210, and an antenna substrate 230 and an amplifier substrate 234 mounted on the antenna base 220. The antenna case 210 has a streamlined outline shape which becomes thinner as it comes closer to a distal end. The antenna base 220 made of metal is mounted on a lower surface of the antenna case 210. On the antenna substrate 230 with a size that can be accommodated by being stood upright in the antenna case 210, a pattern of the

antenna element 231 is formed. An interval between a lower edge of this antenna element 231 and the antenna base 220 is approximately 10 mm or more. This antenna substrate 230 is fixed upright to the antenna base 220, and the amplifier substrate 234 is fixed on the front of the antenna substrate 230. A planar antenna unit 235 is fixed onto the amplifier substrate 234. The planar antenna unit 235 has a patch element including a perturbation element and is capable of receiving a circular polarized wave. The planar antenna unit 235 is fixed onto the amplifier substrate 234, because the high planar antenna unit 235 cannot be disposed below the antenna element 231 and it is only above the amplifier substrate 234 where the planar antenna unit 235 can be disposed in the antenna case 210 having only a limited space.

[0007]

... It is to be noted that the length of the antenna case 210 in the longitudinal direction is approximately 200 mm, and a lateral width is approximately 75 mm. Moreover, a height protruding from the vehicle is approximately 70 mm, which is a low attitude.

[0008]

Radiation directional characteristics of the antenna device 200 in a horizontal plane are illustrated in FIG. 26. However, an elevation angle is supposed to be 20°. By referring to the radiation directional characteristics illustrated in FIG. 26, it is not non-directional, but it is known that the radiation directional characteristics are lowered particularly in a direction where the antenna element 231 is present (180°). That is because an installation height of the planar antenna unit 235 installed on the amplifier substrate 234 becomes higher, and an interval between the ground surface and the patch element of the planar antenna unit 235 becomes larger, which influences electric characteristics of the planar antenna unit, or particularly the radiation directional characteristics. Moreover, in a radiation field of the planar antenna unit 235, the antenna element 231, which is a large metal body of approximately 1/2 wavelength of an operation frequency of the planar antenna unit 235, is present in a low elevation angle radiation range, and the radiation directional characteristics of the planar antenna unit 235 tend to be largely deteriorated by an influence of reflection/diffraction and the like by this antenna element 231. As described above, there has been a problem that favorable electric characteristics cannot be obtained by the influence of the existing antenna when an antenna is further incorporated in the antenna device including the antenna case having only a limited space.

Thus, the present invention has an object to provide an antenna device which can obtain favorable electric characteristics even if an antenna is further incorporated in

an antenna device including an antenna case having only a limited space."

(B) Problem of the invention described in the detailed description of the invention

According to the recitation in the detailed description of the invention in the aforementioned (A), the problem of the background art is found to be described that, if the existing rod antenna is simply shortened in order to make the antenna smaller, the performances are largely deteriorated and the application becomes difficult and moreover, if the antenna is set to a low attitude at 70 mm or less, the radiation resistance  $R_{rad}$  becomes smaller and thus, the radiation efficiency is easily lowered by the influence of the conductor loss of the antenna itself, which causes further sensitivity deterioration ([0004]), but the applicant solved the problem by proposing, in Patent Application No. 2006-315297, an antenna device that can be mounted on the vehicle and can suppress sensitivity deterioration as much as possible even at the low attitude at 70 mm or less. Even if such problem of the background art is solved, antennas for many types of various applications are mounted on the vehicle in some cases, and when the number of antennas mounted on the vehicle increases, the beauty of the vehicle is impaired and work time for mounting also increases and thus, incorporation of a plurality of antennas in the antenna device can be considered ([0005]), but if the planar antenna unit is further incorporated in addition to the existing antenna element stood upright in the antenna device including the antenna case having only a limited space, they are mutually influenced by the other antennas, and favorable electric characteristics cannot be obtained, which is described as the problem ([0008]). Thus, it is found that the object of the invention corresponding to the aforementioned problem described in the detailed description of the invention is described such that there is provided an antenna device from which the favorable electric characteristics can be obtained even if the planar antenna unit is further incorporated in addition to the existing antenna element stood upright in the antenna device including the antenna case having only a limited space.

B. Invention described in the detailed description of the invention

(A) Recitation in the detailed description of the invention

The detailed description of the invention in the present description has the following recitation on the means for solving the problem.

"[Solution to Problem]

[0009]

In order to achieve the aforementioned object, the present invention includes an antenna substrate having a planar antenna element formed and disposed by standing upright, an amplifier substrate disposed so as not to overlap with the antenna substrate,

and a planar antenna unit immediately below the antenna element and disposed so as to be substantially orthogonal to the surface of the antenna element, and the main feature is that, assuming that a wavelength of a center frequency of an operation frequency band of the planar antenna unit is  $\lambda$ , an interval between an upper surface of the planar antenna unit and a lower end of the antenna element is approximately  $0.25 \lambda$  or more.

[Advantageous Effect of Invention]

[0010]

According to the present invention, there are provided the antenna substrate with the planar antenna element formed and disposed by standing upright, the amplifier substrate disposed so as not to overlap with the antenna substrate, and the planar antenna unit immediately below the antenna element and disposed so as to be substantially orthogonal to the surface of the antenna element, and supposing that the wavelength of the center frequency of the operation frequency band of the planar antenna unit is  $\lambda$ , the interval between the upper surface of the planar antenna unit and the lower end of the antenna element is approximately  $0.25 \lambda$  or more and thus, the radiation directional characteristics of the planar antenna unit in a horizontal plane can be made non-directional without being influenced by the antenna element, and favorable gain characteristics can be obtained."

(B) Contents of the invention

According to the recitation in the detailed description of the invention in the aforementioned (A), the invention described in the detailed description of the invention is found to be one such that, in order to solve the problem in the aforementioned A(B), in the antenna including the antenna element and the planar antenna unit immediately below the antenna element and disposed so as to be substantially orthogonal to the surface of the antenna element, the interval between the upper surface of the planar antenna unit and the lower end of the antenna element is approximately  $0.25 \lambda$  or more. According to such invention, it is found to be described that such effect is generated that the favorable electric characteristics can be obtained even if the planar antenna unit is further incorporated in addition to the existing antenna element.

C. Embodiment

(A) The detailed description of the invention in the present description has the following recitation on the embodiment.

"[Description of the Embodiment]

[0011]

A structure of a vehicle on which an antenna device according to an embodiment of the present invention is mounted is illustrated in FIG. 1. ..."

"[0023]

Here, a design method in the antenna device 1 in a first embodiment according to the present invention will be explained. However, the planar antenna unit 35 is supposed to be an antenna for receiving SDARS (Satellite Digital Audio Radio Service), and its center frequency is 2338.75 MHz. In this case, the wavelength  $\lambda$  of the center frequency of the satellite digital radio is approximately 128 mm, and it is expressed as follows as a design value obtained by conversion to the wavelength  $\lambda$ .

(1) An interval D between the lower edge of the antenna element 31 and the upper surface of the planar antenna unit 35 is assumed to be approximately  $0.25 \lambda$  or more.

...

By setting the dimensional/positional relation of the antenna element 31 as such, mutual influence by the antenna element 31 and the planar antenna unit 35 is reduced, and electric characteristics equivalent to each antenna when they are present singularly can be exhibited."

"[0027]

Subsequently, a structure of an antenna device 3 of a second embodiment according to an onboard one of the present invention is illustrated in FIG. 20 to FIG. 22. ..."

"[0030]

As described above, in the antenna device 3 of the second embodiment of the present invention, as well, the planar antenna unit 35 for receiving the satellite radio broadcasting is disposed immediately below the antenna element 41 for receiving AM/FM. The planar antenna unit 35 has a patch element including a perturbation element and capable of receiving a circular polarized wave. Moreover, in the antenna device 3 of the second embodiment of the present invention, assuming that the wavelength of the center frequency of the satellite digital radio at which the planar antenna unit 35 operates is  $\lambda$ , the interval D between the lower edge of the antenna element 41 and the upper surface of the planar antenna unit 35 is approximately  $0.25 \lambda$  or more. ...

By setting the dimensional/positional relations of the antenna element 41 as such, mutual influences by the antenna element 41 and the planar antenna unit 35 are reduced, and electric characteristics equivalent to each antenna when they are present singularly can be exhibited."

(B) Embodiment described in the detailed description of the invention

According to the recitation in the detailed description of the invention in the aforementioned (A), in both embodiments (first embodiment, second embodiment) described in the detailed description of the invention, the planar antenna unit is disposed below the antenna element, and an interval between the lower edge of the antenna element and the upper surface of the planar antenna unit is approximately  $0.25 \lambda$  or more, whereby it is specifically illustrated that mutual influences by the antenna element and the planar antenna unit are reduced, and the electric characteristics equivalent to each of the antennas when they are present singularly, respectively, are indicated. The detailed description of the invention describes an experiment result using the antenna device in the first embodiment ([0018] to [0026], FIG. 7 to FIG. 12, FIG. 15 to FIG. 19), but it is found that they verify the influence of the mutual interference of the antenna element and the planar antenna unit on the electric characteristics of the antenna, and it is found to confirm that whether the embodiment exerts the effect of solving the problem of the invention described in the detailed description of the invention.

Then, the embodiment described in the detailed description of the invention is found to specifically illustrate embodiments of the invention (the aforementioned B(B)) described in the detailed description of the invention found as above and to illustrate that the effect of solving the problem of the invention (the aforementioned A(B)) is exerted.

(3) Whether the invention described in Claim 1 is the invention described in the detailed description of the invention

A. The invention described in Claim 1 is as described in the aforementioned No. 2, 3(2), and [i] incorporation of the planar antenna unit which is another antenna in addition to the antenna element is not the constituent feature; and [ii] even if the planar antenna unit is incorporated in addition to the antenna element, the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit of approximately  $0.25 \lambda$  or more is not the constituent element, either. Thus, the invention described in Claim 1 includes, other than the antenna device having the planar antenna unit incorporated in addition to the antenna element and the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit of approximately  $0.25 \lambda$  or more, [i] the invention of the antenna device not incorporating the planar antenna unit other than the antenna element in the first place; and [ii] the invention of the antenna device in which, although the planar antenna unit is incorporated in addition to the antenna element, the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit

is less than approximately  $0.25 \lambda$ .

B. On the other hand, the invention described in the detailed description of the invention is as described in the aforementioned (2)B(B) and it is found that, in the antenna including the antenna element and the planar antenna unit immediately below the antenna element and disposed so as to be substantially orthogonal to the surface of the antenna element, the interval between the lower end of the antenna element and the upper surface of planar antenna unit is approximately  $0.25 \lambda$  or more.

C. Then, in the invention described in Claim 1, [i] the invention of the antenna device in which the planar antenna unit is not incorporated other than the antenna element; and [ii] the invention of the antenna device in which, although the planar antenna unit is incorporated in addition to the antenna element, the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit is less than approximately  $0.25 \lambda$  are not the invention described in the detailed description of the invention.

Therefore, the invention described in Claim 1 includes an invention other than the invention described in the detailed description of the invention and is not found to be the invention described in the detailed description of the invention.

(4) Whether the invention described in Claim 1 is within a scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing

The problem of the invention described in the detailed description of the invention is a problem that if a planar antenna unit is further incorporated in addition to an existing antenna element stood upright in an antenna device including an antenna case having only a limited space, favorable electric characteristics cannot be obtained by mutual influences by the other antennas (the aforementioned (2)A(B)), and in order for a person ordinarily skilled in the art to recognize such problem, the premise is new incorporation of the planar antenna unit in addition to the existing antenna element stood upright in the antenna device having only a limited space. However, the invention described in Claim 1 includes the invention of the antenna device in which the planar antenna unit is not incorporated other than the antenna element in the first place (the aforementioned (3)A), and the problem of the invention with such a structure is not described in the detailed description of the invention. Thus, the invention described in Claim 1 includes an invention such that a person ordinarily skilled in the art cannot recognize the problem by the recitation in the detailed description of the invention, and exceeds the scope that a person ordinarily skilled in



the art can recognize that the problem can be solved.

Moreover, the invention described in Claim 1 includes the invention of the antenna device in which, although the planar antenna unit is incorporated in addition to the antenna element, the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit is less than approximately  $0.25 \lambda$  (the aforementioned (3)A), but the detailed description of the invention describes as the method for solving the problem that the interval between the upper surface of the planar antenna unit and the lower end of the antenna element is set to approximately  $0.25 \lambda$  or more, and if the interval between the lower edge of the antenna element and the upper surface of the planar antenna unit is less than approximately  $0.25 \lambda$ , the problem described in the detailed description of the invention cannot be solved. Thus, the invention described in Claim 1 includes an invention such that a person ordinarily skilled in the art cannot recognize that the problem can be solved by the solution described in the detailed description of the invention in this point, too, and exceeds the scope that a person ordinarily skilled in the art can recognize that the problem can be solved.

Other than the above, there is not sufficient evidence to find that the invention described in Claim 1 is within a scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing.

Therefore, the invention described in Claim 1 is not found to be within a scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing.

(5) Examination of assertion by Appellant

A(A)a. The Appellant asserts that the first problem that an antenna both for FM/AM with favorable receiving performances is provided, although it is accommodated in an antenna case with a height of approximately 70 mm or less is described in paragraphs [0002] to [0004] and FIG. 2 in the present description, and that the first problem is generated regardless of the provision or not of the planar antenna unit in the antenna case (the aforementioned No. 2, 5(2)A(A)a).

However, as in the aforementioned (2)A(B), according to the recitation in [0002] to [0008] (the aforementioned (2)A(A)) in the present description, the first problem asserted by the Appellant is the problem of the background art of the Present Patent, and the problem was solved by the patent (Patent Application No. 2006-315297) filed

by the Applicant, and the detailed description of the invention is found to illustrate the problem that if the planar antenna unit is further incorporated in the antenna device including the antenna case having only a limited space in addition to the existing antenna stood upright, favorable electric characteristics cannot be obtained by mutual influences by the other antennas (corresponding to the second problem asserted by the Appellant), as a problem still caused even after the problem of the background art as above is solved. Thus, the first problem cannot be found to be the problem described in the detailed description of the invention as the problem which should be solved by the invention described in the scope of claims. Therefore, the aforementioned assertion by the Appellant cannot be employed.

b. The Appellant asserts that the problem of the invention described in Claim 1 grasped by considering the common general technical knowledge at the time of filing is similar to the first problem described in the detailed description of the invention on the premise that the first problem is described in the detailed description of the invention (the aforementioned No. 2, 5(2)A(A)b), but it is not found that the first problem is described in the detailed description of the invention and thus, the aforementioned assertion by the Appellant cannot be employed.

(B) The Appellant asserts that the first problem and the second problem are described in the detailed description of the invention overlappingly (the aforementioned No. 2, 5(2)A(B)). However, as described in the aforementioned (A)a, the second problem is described in the detailed description of the invention, but the first problem is not found to be described in the detailed description of the invention as the problem to be solved by the invention described in the scope of claims. Therefore, the aforementioned assertion by the Appellant cannot be employed.

(C)a. The Appellant asserts that, at a recitation spot on the first embodiment in the detailed description of the invention, (1) the antenna device 1 capable of receiving the AM broadcasting, the FM broadcasting, and the satellite radio broadcasting is described, and it also describes that this antenna device 1 includes the antenna case 10, the antenna element 31 accommodated in this antenna case 10, the amplifier substrate 34, and the antenna coil 32; (2) it is described that the amplifier substrate 34 is configured to have an amplifier for amplifying signals of the FM broadcasting and the AM broadcasting received by the antenna element 31, and the antenna coil 32 is inserted in series between the power supply point of the antenna element 31 and the input of the amplifier in the amplifier substrate 34; and moreover, (3) it is described that the antenna element 31 and the antenna coil 32 are connected, whereby they resonate in an FM wave band, the AM wave band is received by using the antenna

element 31, and the signals of the FM broadcasting and the AM broadcasting are amplified by the amplifier connected through the antenna coil 32 ([0017]), and a recitation similar to this is also present at a recitation spot in the second embodiment and thus, the means for solving the first problem is described in the detailed description of the invention (the aforementioned No. 2, 5(2)A(C)).

b. However, the antenna device according to the first embodiment is made capable of receiving AM broadcasting, FM broadcasting, and satellite radio broadcasting, including the planar antenna unit ([0018]) for receiving satellite radio broadcasting ([0012]), and by setting the interval D between the lower edge of the antenna element 31 and the upper surface of the planar antenna unit 35 at approximately  $0.25 \lambda$  or more, the mutual influences by the antenna element 31 and the planar antenna unit 35 is reduced, whereby the electric characteristics equivalent to each of the antennas when they are singularly present, respectively, can be exhibited ([0023]). Thus, the antenna device according to the first embodiment solves the second problem that if the antenna is further incorporated in the antenna device including the antenna case having only a limited space in addition to the existing antenna, favorable electric characteristics cannot be obtained by influences by the other antennas (the aforementioned (2)C(B)).

Paragraph [0017] describes that "in the case of the super-small sized antenna element 31, an inductor component becomes smaller and thus, it becomes difficult to cause the FM wave band to resonate the antenna element 31", and it also describes that by "inserting the antenna coil 32 with approximately  $1 \mu\text{H}$  to  $3 \mu\text{H}$  in series between the power supply point of the antenna element 31 and the input of the amplifier in the amplifier substrate 34", "the antenna unit including the antenna element 31 and the antenna coil 32 can be resonated in the neighborhood of the FM wave band", "as a result, the antenna unit including the antenna element 31 and the antenna coil 32 can operate favorably in the FM wave band". However, as described in the notice of ex officio trial results (Exhibit Otsu 60) as of October 7, 2015 issued by the administrative judge in the course of process of the invalidation trial (Invalidation Trial No. 2015-800040) of the Present Patent, "the art of loading a coil in order to secure a resonance path length in size reduction of the antenna is found to be merely a matter of common general technical knowledge as described in "Antenna/wireless handbook" ..., and by referring to FIG. 1.75(d) in the document, the coil is constituted on the power supply side.", to add a coil to the antenna element in order to provide a small-sized onboard antenna is found to have been already a matter of common general technical knowledge on the date of filing of the Present Patent

(November 30, 2007) (Exhibits Otsu 50 to Otsu 53, Otsu 64 to Otsu 67, and Otsu 122). Then, the matter asserted by the Appellant that is described in the detailed description of the invention as a solution to the first problem; that is, the matter that the antenna element 31 and the amplifier substrate 34 are constituted so as to be connected through the antenna coil 32, and the antenna element 31 and the antenna coil 32 are connected, whereby the antenna unit including the antenna element 31 and the antenna coil 32 resonates in the FM wave band, and the antenna unit can be operated favorably in the FM wave band is only a matter of common general technical knowledge and is not found to be the solution to the problem described in the detailed description of the invention. Therefore, the assertion in the aforementioned a by the Appellant cannot be employed.

B. The Appellant asserts that the invention described in Claim 1 is the invention described in the detailed description of the invention (the aforementioned No. 2, 5(2)B), but as described in the aforementioned (3), the invention described in Claim 1 is not found to be the invention described in the detailed description of the invention.

C. The Appellant asserts that the invention described in Claim 1 is within the scope that a person ordinarily skilled in the art can recognize that the problem can be solved (the aforementioned No. 2, 5(2)C) in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing, but as described in the aforementioned (4), the invention described in Claim 1 is not found to be within the scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing.

D(A) The Appellant asserts that the non-presence of the invalidation reason (Article 123, paragraph (1), item (iv) of the Patent Act) by violation of the support requirement in the Present Patent was determined in the finalized decision approving the correction (Correction No. 2014-390078, Exhibit Ko 3) (the aforementioned No. 2, 5(2)D(A)).

The JPO decision approving the correction (Correction No. 2014-390078) taught that there was no reason why the invention described in Claim 1 after the correction by the JPO decision cannot be granted a patent independently at the filing of the patent (Exhibit Ko 3, page 10), but the JPO decision did not indicate specific judgment on the support requirement, and even if such JPO decision approving the correction was finalized, it does not prevent determination that the Present Patent is invalidated by violation of the support requirement in the Present Patent Right

infringement lawsuit.

(B) The Appellant asserts that the problem described in the detailed description of the invention is not necessarily based on presence of the planar antenna unit, but the problem that the AM/FM radio is favorably received even by the antenna with the height of the antenna case as an upper limit is described (the aforementioned No. 2, 5(2)D(B)).

However, as described in the aforementioned (2)A(B), according to the recitation in the detailed description of the invention, the problem described in the detailed description of the invention is the problem that if the planar antenna unit is further incorporated in addition to the existing antenna element stood upright in the antenna device including the antenna case having only a limited space, favorable electric characteristics cannot be obtained due to the mutual influences by the other antennas, while the problem (corresponding to the first problem) that the low attitude of the antenna at 70 mm or less causes sensitivity deterioration has been solved by the patent application by the Applicant as the problem of the background art and thus, the aforementioned assertion of the Appellant cannot be employed.

(C) The Appellant asserts that it is an error that the first problem has already been solved by Patent Application No. 2006-315297 (Exhibit Ko 38) and thus, it is not the problem described in the detailed description of the invention (the aforementioned No. 2, 5(2)D(C)).

However, as described in the aforementioned (2)A(B), according to the recitation in the detailed description of the invention, the problem corresponding to the first problem is supposed to have been solved by the Patent Application (Patent Application No., 2006-315297) by the Applicant as the problem of the background art, and as described in the aforementioned A(C)b, the technical matter, which the Appellant asserts is described in the detailed description of the invention as the solution to the first problem, that the antenna element 31 and the amplifier substrate 34 are configured to be connected through the antenna coil 32, and when the antenna element 31 and the antenna coil 32 are connected, they are resonated in the FM wave band is only a matter of common general technical knowledge and thus, the aforementioned assertion by the Appellant cannot be employed.

(D) The Appellant asserts that the Patent Application No. 2006-315297 (Exhibit Ko 38), which is a basic application described in the present description, and PCT/JP2007/072360 (Exhibit Ko 18), which is its international application, include the contents corresponding to Claim 1 and then, since the invention described in the detailed description of the invention in the present description includes the contents of

the basic application (Exhibit Ko 38) and the international application (Exhibit Ko 18), the invention described in the detailed description of the invention also includes the invention described in Claim 1 (the aforementioned No. 2, 5(2)D(D)).

However, conformity of the description requirement is the problem related to the recitation in the scope of claims and the detailed description of the invention and thus, the determination thereof should be made on the basis of these descriptions in principle. This also applies to the finding of the problem in determination on whether the support requirement is fulfilled or not, and the aforementioned assertion by the Appellant that the problem described in the detailed description of the invention is found on the basis of the contents of the basic application (Exhibit Ko 38) and the international application (Exhibit Ko 18) cannot be employed.

(E) The Appellant asserts that, in order to fulfill the support requirement, a person ordinarily skilled in the art who contacted the description only needs to rationally recognize that the invention for which a patent was claimed is described in the description, and regarding the solution to the problem, the recitation only needs to be of such a degree that a person ordinarily skilled in the art can obtain rational expectation that the problem can be solved also on the basis of the common general technical knowledge, and it is understood that the recitation of such a degree that reaches a strictly scientific verification is not needed and then, in view of the recitation in the detailed description of the invention in the present description and the common general technical knowledge, it can be rationally recognized that the invention described in Claim 1 is described in the detailed description of the invention, the detailed description of the invention has recitation of such a degree that rational expectation can be obtained for solution to the problem, and the patent according to Claim 1 fulfills the support requirement (the aforementioned No. 2, 5(2)D(E)).

Of course, as in the aforementioned (1), in order to fulfill the support requirement, a person ordinarily skilled in the art who contacted the description only needs to rationally recognize that the invention for which a patent was claimed is described in the description, and regarding the solution to the problem, too, the recitation only needs to be of such a degree that a person ordinarily skilled in the art can obtain rational expectation that the problem can be solved also on the basis of the common general technical knowledge, and the recitation of such a degree that reaches a strict scientific verification is not needed. However, even on the premise of such interpretation, as described in the aforementioned (1) to (4), the invention described in Claim 1 is not found to be the invention described in the detailed description of the invention, and it is not found to be within a scope that a person ordinarily skilled in

the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing. Therefore, the aforementioned assertion of the Appellant cannot be employed.

E. The Appellant made other assertions but none of the assertions by the Appellant can be employed.

(6) Presence/absence of fulfillment of the support requirement by the patent according to Claim 1

According to the above, the invention described in Claim 1 is not found to be the invention described in the detailed description of the invention and is not found to be within a scope that a person ordinarily skilled in the art can recognize that the problem can be solved in view of the recitation or suggestion in the detailed description of the invention or the common general technical knowledge at the time of filing and thus, Invalidation Reason 1 has grounds, and it is found that the patent according to Claim 1 does not fulfill the support requirement (Article 36, paragraph (6), item (i) of the Patent Act) and should be invalidated through a trial for patent invalidation (Article 123, paragraph (1), item (iv) of the Patent Act). Therefore, the Appellant cannot exercise the patent right of the patent according to Claim 1 against the Appellee (Article 104-3, paragraph (1) of the Patent Act).

## 2. Conclusion

Therefore, even without determining on the remaining points, none of the claims by the Appellant are grounded, the judgment in prior instance which dismissed them is reasonable, and since the present appeal has no grounds, it shall be dismissed, and the judgment shall be rendered as in the main text.

Intellectual Property High Court, Third Division

Presiding Judge: TSURUOKA Toshihiko

Judge: UEDA Takuya

Judge: NAKADAIRA Ken