

# News Release

May 10, 2016

## Pioneer Introduces Multi-Drive Assist Unit with Advanced Driving Assistance Functions

Works with *CYBER NAVI* to Support the Overall Car Life from Driving to Parking

Product	Model	Recommended Retail Price	Release Date
Multi-Drive Assist Unit	ND-MA1	Open price	September



[Multi-Drive Assist Unit]



[Employs sophisticated image recognition technologies]

Pioneer introduces the Multi-Drive Assist Unit (hereafter, “MA Unit”)\*1, that works with its *CYBER NAVI* car navigation systems and uses sophisticated image recognition technologies to support advanced driving assistance functions.

The MA Unit is equipped with advanced driving assistance functions that alert and warn a driver of not enough inter-car distance with the use of sound and images, making use of a front-mounted camera and unique image recognition technologies to estimate the arrival time to the cars in front of the car. In addition to the “Front Car Proximity Warning” while driving and “Accidental Start Warning” while stopped, the system works with data on near-miss spots with frequent incidents such as sudden braking recorded in *CYBER NAVI*. For example, the system warns the driver who has stopped at a right-turn intersection when starting off after the car in front.

Pioneer has also integrated network functions with the highly-demanded drive recorder feature. When abnormalities of the car are detected on driving or parking, the system will send a notification containing information such as still images and positional data to designated email addresses.

With the wide range of advanced features achieved by working together with *CYBER NAVI*, the MA Unit supports the overall car-driving experience from driving to parking.

### <Compatible Models>

- Models that come packaged with the MA Unit: AVIC-CL900-M/CW900-M/CZ900-M
- Models compatible with the MA Unit sold separately: AVIC-CL900/CW900/CZ900

## [Main Features]

### Driving Support Features

#### ■ Front Car Proximity Alert

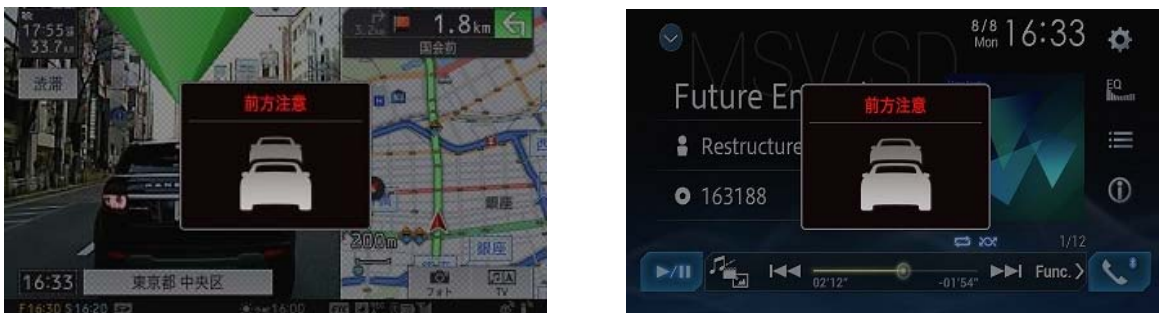
Based on the estimated arrival time to the car in front, the color and size of the target scope changes in real-time. When the car gets too close to the car in front, a warning tone sounds and “CAUTION IN FRONT” is displayed at the top of the screen.



[The driver's attention is paid by changing the color of the target scope, sounding a warning tone and displaying a warning message.]

#### ■ Accidental Start Warning

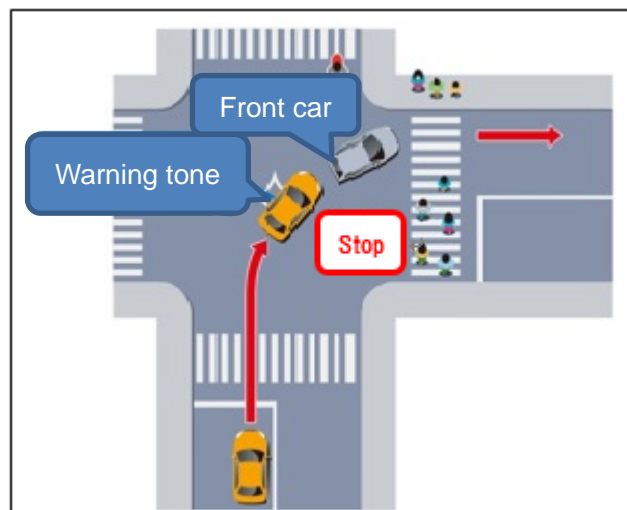
When the driver is waiting for change of traffic lights and advances before the car in front starts moving, a warning tone sounds and “CAUTION IN FRONT” is displayed on the screen to prevent a rear-end collision.



[“CAUTION IN FRONT” is displayed on the navigation screen as well as AV screen]

#### ■ Following Start Detection During Right Turn

Working with data on near-miss spots with frequent incidents such as sudden braking recorded in *CYBER NAVI*, the system warns the driver who has stopped at a right-turn intersection when starting off after the car in front.



[Using a warning tone to pay driver's attention to carefully check the area around the car]

## ■ Keeping Lane Support

The system alerts the driver via sounds and on-screen messages when the car has continuously veered to one side of the lane when driving on both expressways and ordinary roads\*2.



[Changing lane colors and sounding a warning tone to alert the driver]

## ■ AR Scouter View

Analysis is performed on front-facing footage taken with the front-mounted camera and displayed overlaid on the information required for driving on the *CYBER NAVI* screen.

## ■ Other Driving Support Features

Other features include “Front Car Start Detection Indicator”, “Red Light Detection Indicator”, “Pedestrian Crossing Prior Detection Indicator” and “Estimated Inter-Car Distance Indicator”.

## ■ Live Car Security Feature\*3

### ■ Security Video and Still Image Recording

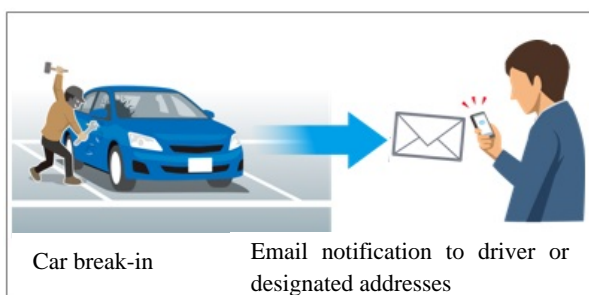
When an impact, noise, door opening or similar development is detected at the car parked, the MA unit automatically activates, simultaneously records video and still images inside and outside the car\*4 and saves the information to an SD memory card (sold separately). Video and still image recording is possible when the car is parked for an extended period.



[Footage of both the inside and outside of the car is recorded when connected to the floor camera unit]

### ■ Security Info\*5

Working in conjunction with “Security Video and Still Image Recording”, recorded still images, date and time, positional information and detection sensor information are sent to a designated email address of the driver or eight designated email addresses. In case the car is parked out of the range of communication and is unable to provide email notification, when the engine is started, information that the car has experienced any abnormalities is sent to designated addresses.



Car break-in

Email notification to driver or designated addresses



[Date and time, still image information, car position information and detection sensor information are notified]

## ■Case based Security Control Feature\*6

The MA Unit supports an “Auto Security Stop Feature” that temporarily suspends security features when getting into or out of the car, as well as “Security Switch-off Feature” automatically works when frequently visited locations are registered as switch-off areas. In addition, in case notification is not required such as when family members located elsewhere have parked the car in a mechanical parking facility, “Security Info Receipt Temporary Stop Feature” is supported to temporarily suspend “Security Info” emails.



[When frequently visited locations are registered as switch-off areas, the “Security Switch-off Feature” works automatically.]

## Driving Recorder Feature

### ■High-performance Driving Recorder

The use of a high-performance car-mounted front camera provides clear images with a wide view angle that can clearly record the number plate of the car in front, even at night. It can also record LED traffic lights without synchronizing with their flicker cycles. SDXC memory cards with capacities up to 256GB are supported to ensure that even long-distance drives are recorded. Moreover, when a floor camera unit is attached, the driver can select from three recording modes, “front camera only,” “front camera + floor camera” and “floor camera only,” which also supports simultaneous recording of the front of the car and its interior\*4. By attaching the floor camera unit to the rear hatch, the system can also record behind the car.



[Front Recording Screen]



[Front & Interior Recording Screen]



[Rear Recording Screen]

### ■Event Video Recording

When an impact to the car is detected, video footage from 20 seconds prior to detection and 10 second after is saved.

### ■Accident Info\*5

When “Event Video Recording” is activated, the risk level is determined according to an original algorithm. Subsequently, a still image taken at the time the impact was detected, detection time and date and positional information are sent to the designated email addresses.

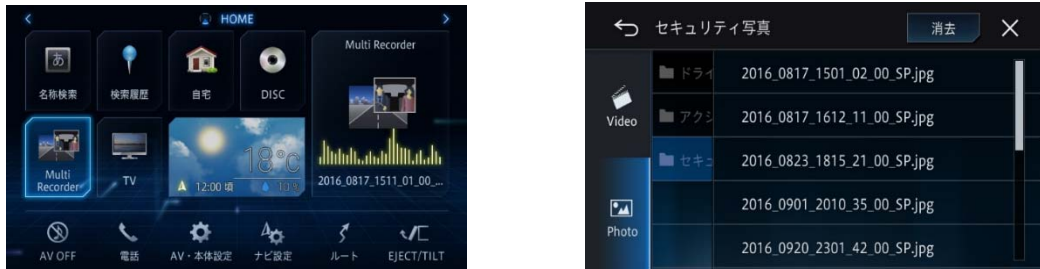


[The unit checks with the driver before sending an email. If the intent of the driver cannot be confirmed, the email is automatically sent]



## ■Support of AV Source Multi-Recorder

At times such as when the car is stopped, “Live Car Security” and video and still images of drive recorder can be played back. The driver can also delete the data while checking it.



[Multi-Recorder Screen]

## Entertainment Features

### ■Driving Photo Taking

Using the MA Unit’s front-mounted camera, the driver can take photos of any scenery in front with a one-touch operation on the *CYBER NAVI* screen. The image can be saved to the SD memory card (sold separately) inside the MA Unit.

### ■Photo Sharing\*7

Using the Bluetooth functionality of *CYBER NAVI*, up to 10 driving photos saved on the MA Unit can be easily sent to a compatible terminal device. As the images are automatically saved to the “Album” or similar location on a supported device, the photos can then be posted to SNS services at a later time, such as when the car is stopped.

- \*1: When MA Unit is connected to the AVIC-CL900, CW900 or CZ900, the main navigation unit requires a version upgrade. Details will be shared on the *Carrozzeria* website when available. To use the various video and still image recording features of MA Unit, a separately sold SD memory card (at least 8GB capacity up to SDXC cards with 256GB capacity) is required. If the mounting position of the front camera is greater than 200 cm above the ground, the image recognition feature cannot be used. To record footage inside the car or facing the rear of the car, the separately sold ND-DLC1 floor camera unit is required. “Live Car Security Feature” when the floor camera unit is connected automatically generates composited recording of the front camera + floor camera unit. The infrared LEDs built in to the floor camera unit cannot be used when recording footage of the rear view of the car.
- \*2: “Keeping Lane Support” does not operate on narrow streets and when driving at low speeds.
- \*3: To protect the battery, “Live Car Security Feature” suspends operation once 14 days have passed since the ACC power supply was switched off, or once a certain level of power consumption has been reached.
- \*4: When the AVIC-CL900-M, CW900-M or CZ900-M is connected, or when MA Unit is connected with the AVIC-CL900, CW900, CZ900, CE900AL, CE900-VE, CE900-VO, CE900-NO, CE900-ES or CE900-ST, the separately sold ND-FLC1 floor camera unit is required. The AVIC-CE900AL-M, CE900VE-M, CE900VO-M, CE900NO-M, CE900ES-M and CE900ST-M come equipped with floor camera units specifically for interior recording as main units specific to certain car models.
- \*5: To use “Accident Info”, the separately sold ND-DC2 dedicated data communications module, or a smartphone that supports Wi-Fi or Bluetooth (PAN profile) connection is required. During use with a smartphone, a tethering contract or tethering settings need to be set up. “Security Info” can only be used when the ND-DC2 dedicated data communications module has been connected to the MA Unit. The number of email messages with attached images that can be sent to email addresses for notification is a maximum of 100 per month as a combined total for “Security Info” and “Accident Info”. When the 100 message limit has been exceeded, only text-based information will be sent, and the attachment of images will not be resumed until the following month.
- \*6: To use “Auto Security Stop Feature”, a compatible terminal device with the dedicated MA Unit app installed or the separately sold CD-SK1 smart key holder for MA Unit is required. To use “Security Info Receipt Temporary Stop Feature”, a compatible terminal device with the dedicated MA Unit app installed is required.
- \*7: A compatible terminal device with the dedicated MA Unit app installed is required. Details on the dedicated app will be shared on the *Carrozzeria* website when available.

\*The companies and product names described herein are the trademarks or registered trademarks of their respective companies.

### [Option]

Product	Model	Recommended Retail Price	Release Date
Floor Camera Unit	ND-FLC1	Open price	September
Smart Key Holder for MA Unit	CD-SK1	Open price	September