

2012 - Mazda6 - Body and Accessories

NO.4 NOISE FROM RADIO (FM ONLY) [RADIO]

4	Noise from radio (FM only)	
Possible DTC	Audio unit	—
	Car-navigation unit	Device code 09/error code 22
POSSIBLE CAUSE	• Antenna rod not installed • Jamming from aftermarket electronic equipment (two-way radio, navigation system, mobile phone, external FM transmitter, etc.) • Battery malfunction • Noise from electrical system on vehicle (e.g. fuel pump) • Charging system malfunction • Electronic jamming from outside, or inferior condition of broadcasting station radio wave • Antenna plug poor connection • Antenna feeder malfunction • Antenna installation loosened • Audio unit malfunction • Car-navigation unit malfunction NOTE: • FM broadcast has feature “sound quality is good” and “resistant to noise”, but FM broadcast has particular noises. Though audio unit/car-navigation unit is designed to reduce noise, there are times noise occurs due to conditions.	

Diagnostic procedure

STEP	INSPECTION	ACTION
1	• Can the location where the noise occurs be specified?	Yes The system is normal. (Explain to the customer that the noise is caused by radio wave disturbances or broadcast wave conditions from

			the outside.)
		No	Go to the next step.
2	• Tune to local broadcasting station and check reception condition. • Is reception okay?	Yes	Tune to correct frequency of broadcasting station. If not preset, preset it.
		No	Go to the next step.
3	• Is aftermarket electronic equipment (two-way radio, navigation system, mobile phone, external FM transmitter, etc.) installed?	Yes	Go to the next step.
		No	Go to Step 5.
4	• Remove aftermarket electronic equipment. • Turn audio unit/car-navigation unit ON and check reception condition. • Is reception improved?	Yes	The system is normal. (Explain to customers that aftermarket electronic equipment is cause of noise)
		No	Go to the next step.
5	• Measure battery voltage. • Is battery voltage okay? Specification: • With ignition switch ON: 11.5 V or more • At idling: 12.5 V or more NOTE: • Inspect that battery cables are connected to terminals securely.	Yes	Go to the next step.
		No	Charge battery. Inspect charging system, and repair or replace if necessary.
6	• Is noise occurring only when vehicle electrical system (e.g. fuel pump) operates? NOTE: • Identify subject electrical component by disconnecting fuse, turning switch ON & OFF, or disconnecting & connecting connector. • It will be easy when simulation	Yes	Go to the next step.
		No	Go to Step 8.

	function on M-MDS is used.		
7	- Inspect power supply, ground condition, and noise prevention capacitor for electrical component. - Is noise present after inspection? NOTE: - Inspect following: - Power supply to electrical component for voltage drop (compare with battery voltage) - Resistance between ground of electrical component and body. (Should be close to 0 ohm) - Installation condition of noise prevention capacitor for fuel pump etc.	Yes	Go to the next step.
		No	Troubleshooting completed.
8	- Inspect antenna plug connection condition. - Is connection okay?	Yes	Go to the next step.
		No	Insert antenna plug securely.
9	- Switch the ignition to off. - Measure continuity between antenna feeder axis and ground. - Is there any continuity?	Yes	Replace antenna feeder.
		No	Go to the next step.
10	- Compare reception with other audio unit/car-navigation unit on same model (model/unit) under same problem conditions. - Is reception equivalent between customer's unit and compared unit?	Yes	The system is normal (It is caused by electronic jamming from outside, or inferior broadcasting station signal condition).
		No	Go to the next step.

11	• Retighten ground fixation for antenna installation part and antenna amplifier. • Is noise present, after retightening? NOTE: • When antenna is not grounded perfectly, FM particular noise is likely to be conspicuous.	Yes	With audio unit (with display) • Go to the next step. With car-navigation unit or audio unit (without display) • Replace audio unit/car-navigation unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.) (See CAR-NAVIGATION UNIT REMOVAL/ INSTALLATION.)
		No	Troubleshooting completed.
12	• Verify that all of the audio unit reset conditions for the customer's audio unit are met. (See AUDIO UNIT RESET PROCEDURE [ENTIRE AUDIO SYSTEM].) • Are all of the audio unit reset conditions for the customer's audio unit met?	Yes	Perform the audio unit reset. (See AUDIO UNIT RESET PROCEDURE [ENTIRE AUDIO SYSTEM].)
		No	Replace audio unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.)

2012 - Mazda6 - Body and Accessories

NO.4 NOISE FROM RADIO (FM ONLY) [RADIO]

4	Noise from radio (FM only)	
Possible DTC	Audio unit	—
	Car-navigation unit	Device code 09/error code 22
POSSIBLE CAUSE	• Antenna rod not installed • Jamming from aftermarket electronic equipment (two-way radio, navigation system, mobile phone, external FM transmitter, etc.) • Battery malfunction • Noise from electrical system on vehicle (e.g. fuel pump) • Charging system malfunction • Electronic jamming from outside, or inferior condition of broadcasting station radio wave • Antenna plug poor connection • Antenna feeder malfunction • Antenna installation loosened • Audio unit malfunction • Car-navigation unit malfunction NOTE: • FM broadcast has feature “sound quality is good” and “resistant to noise”, but FM broadcast has particular noises. Though audio unit/car-navigation unit is designed to reduce noise, there are times noise occurs due to conditions.	

Diagnostic procedure

STEP	INSPECTION	ACTION
1	• Can the location where the noise occurs be specified?	Yes The system is normal. (Explain to the customer that the noise is caused by radio wave disturbances or broadcast wave conditions from

			the outside.)
		No	Go to the next step.
2	• Tune to local broadcasting station and check reception condition. • Is reception okay?	Yes	Tune to correct frequency of broadcasting station. If not preset, preset it.
		No	Go to the next step.
3	• Is aftermarket electronic equipment (two-way radio, navigation system, mobile phone, external FM transmitter, etc.) installed?	Yes	Go to the next step.
		No	Go to Step 5.
4	• Remove aftermarket electronic equipment. • Turn audio unit/car-navigation unit ON and check reception condition. • Is reception improved?	Yes	The system is normal. (Explain to customers that aftermarket electronic equipment is cause of noise)
		No	Go to the next step.
5	• Measure battery voltage. • Is battery voltage okay? Specification: • With ignition switch ON: 11.5 V or more • At idling: 12.5 V or more NOTE: • Inspect that battery cables are connected to terminals securely.	Yes	Go to the next step.
		No	Charge battery. Inspect charging system, and repair or replace if necessary.
6	• Is noise occurring only when vehicle electrical system (e.g. fuel pump) operates? NOTE: • Identify subject electrical component by disconnecting fuse, turning switch ON & OFF, or disconnecting & connecting connector. • It will be easy when simulation	Yes	Go to the next step.
		No	Go to Step 8.

	function on M-MDS is used.		
7	- Inspect power supply, ground condition, and noise prevention capacitor for electrical component. - Is noise present after inspection? NOTE: - Inspect following: - Power supply to electrical component for voltage drop (compare with battery voltage) - Resistance between ground of electrical component and body. (Should be close to 0 ohm) - Installation condition of noise prevention capacitor for fuel pump etc.	Yes	Go to the next step.
		No	Troubleshooting completed.
8	- Inspect antenna plug connection condition. - Is connection okay?	Yes	Go to the next step.
		No	Insert antenna plug securely.
9	- Switch the ignition to off. - Measure continuity between antenna feeder axis and ground. - Is there any continuity?	Yes	Replace antenna feeder.
		No	Go to the next step.
10	- Compare reception with other audio unit/car-navigation unit on same model (model/unit) under same problem conditions. - Is reception equivalent between customer's unit and compared unit?	Yes	The system is normal (It is caused by electronic jamming from outside, or inferior broadcasting station signal condition).
		No	Go to the next step.

11	• Retighten ground fixation for antenna installation part and antenna amplifier. • Is noise present, after retightening? NOTE: • When antenna is not grounded perfectly, FM particular noise is likely to be conspicuous.	Yes	With audio unit (with display) • Go to the next step. With car-navigation unit or audio unit (without display) • Replace audio unit/car-navigation unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.) (See CAR-NAVIGATION UNIT REMOVAL/ INSTALLATION.)
		No	Troubleshooting completed.
12	• Verify that all of the audio unit reset conditions for the customer's audio unit are met. (See AUDIO UNIT RESET PROCEDURE [ENTIRE AUDIO SYSTEM].) • Are all of the audio unit reset conditions for the customer's audio unit met?	Yes	Perform the audio unit reset. (See AUDIO UNIT RESET PROCEDURE [ENTIRE AUDIO SYSTEM].)
		No	Replace audio unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.)