# GARMIN GMA 1347/1360D AUDIO SYSTEM - DESCRIPTION AND OPERATION

## 1. General

A. The Model 208 airplane uses an integrated audio system that gives audio amplification, intercom control, and marker beacon control. Many of the operations done on the audio panels are indicated on the pilots (left) and copilots (right) primary flight displays (PFD's) and on the multifunction display (MFD). This section gives a general description and operation of the Garmin Marker Beacon and Audio Adapter (GMA) 1347/1360D Audio Panels.

B. For a general description and operation of the Garmin PFD's and MFD, refer to Chapter 34, Garmin G1000 Integrated Avionics System - Description and Operation.

C. The Garmin GMA 1347 Audio Panel (GMA 1) is installed immediately inboard of the pilots Primary Flight Display (PFD) flush with the instrument panel. It has an audio function, an intercom function, and a marker beacon function in one unit. An optional GMA 1347 Audio Panel (GMA 2) can be installed immediately inboard of the copilot's PFD flush with the instrument panel for G1000 System Software versions up to (v.2499.03).

D. The Garmin G1000 NX software (v.2499.08) is equipped with the GMA 1360D. The dual GMA 1360D installation can provide redundancy and add additional support for COMs, radios, or additional headsets.

## 2. Description

A. Garmin GMA Audio Panel (Refer to Figure 1) and the Garmin GMA 1347/1360D Audio Panel (Refer to Figure 2)

(1) The GMA 1347/1360D audio panel supplies all audio functions to the pilot, controlling the input and output of audio signals to headphones and the overhead speakers. It is capable of interfacing with two transceivers as follows:

(a) The GIA 63W/64W generates Digital Warnings and Tones that are processed by the GMA 1347/1360D Audio Panel.

(b) The NAV audio is transmitted digitally from each of the two the GIA 63W/64W integrated avionics units, No. 1 and No. 2.

(c) COM audio is transmitted digitally to and from each of the two the GIA 63W/64W integrated avionics units No. 1 and No. 2.

(2) The "reversionary mode" switch is included on the audio panel to manually control this mode. This is done through an RS-232 data bus that connects the audio panel to each Garmin Display Unit (GDU). Some system information is transmitted through RS-232 to both GIAs.

**NOTE: If only one GMA is installed, the reversionary mode button controls the reversionary mode for all displays.**

**NOTE: For dual GMA installations, the red button on the pilot GMA will trigger PFD1 and the MFD. Similarly, the red button on the Copilot GMA will trigger reversion on PFD2 and the MFD (if the MFD was not already in reversionary mode)**

(a) In the event of PFD1 or MFD failure, reversionary (or backup) mode is automatically engaged by the other displays. Reversionary mode is a mode of operation in which all important flight information is presented on at least one of the remaining displays. Transition to reversionary mode should be straightforward, for flight parameters are presented in the same format as in normal mode.

(3) The marker beacon receiver system functions are integrated in the GMA 1347/1360D audio panel. For a general over view of the marker beacon system refer to Chapter 34, Landing Aids - Description and Operation.

## 3. Operation

A. Garmin GMA 1347 Audio Panel, refer to Figure 1 and Garmin GMA 1360D refer to Figure 2).

(1) The pilots and copilot's Garmin GMA Audio Panels are supplied power through the AUDIO 1 (pilot's) and AUDIO 2 (copilot's) circuit breakers found on the AVIONICS circuit breaker panel. When supplied power, the audio panels complete a self-test immediately. The audio panel annunciator lights come on for approximately two seconds, then go off to indicate the self-test start and stop.

(2) Refer to Table 1 for the GMA 1347. and Table 2 for the GMA 1360D operation of the buttons and knobs on the audio panel.

***Table 1. Audio Panel Controls GMA 1347***

| Button or Knob | Function | Use |
|---|---|---|

| | | |
|---|---|---|
| **COM1,COM2** Buttons | Transceiver Audio Selection Keys | The **COM1** receiver key selects the COMM 1 radio as the active receiver. The **COM2** receiver key selects the COMM 2 radio as the active receiver. Any combination of radios can be selected separately or at the same time. The active COMM radio will be heard through the headsets or on the speaker, if selected. |
| **COM1 MIC, COM2 MIC** Buttons | Transmitter (Audio/Mic) Selection Keys | The **COM1 MIC** key selects the COMM 1 radio as the active transceiver. The **COM2 MIC** receiver key selects the COMM 2 radio as the active transceiver. The receiver audio key is also selected (**COM1** or **COM2**). The COMM frequency is highlighted in green in the active frequency field of the PFD. |
| **COM 1/2** Button | Disabled | No use |
| **PA** Button | Passenger Address Key | Selected to give announcements to passengers in the cabin area of the airplane if the XM Radio subscription is current and the passengers have headsets on. The message will be heard by the other pilot only if the ICS is enabled. The push-to-talk (PTT) must be used to give PA announcements. |
| **SPKR** Button | Speaker Key | Selected to make all radios heard through the cockpit speakers. Push the **SPKR** key to make the speaker active and not active. Each audio panel is connected to a different speaker if the aircraft is equipped with dual GMA's. Otherwise both speakers are tied to the single GMA. The speaker audio is muted when the PTT switch is pushed. |
| **MKR/MUTE** Button | Marker Beacon Receiver Audio Select/Mute Key | Mutes the marker beacon audio, but does not change the annunciators. The marker beacon audio will come back on automatically when a new marker beacon signal is received. |
| **HI SENS** Button | Marker Beacon Receiver High Sensitivity Key | Increases marker beacon signal sensitivity. Push this button to receive an earlier indication of the marker beacon during an approach. |
| **NAV1, NAV2, ADF, DME** Buttons | Airplane Radio Audio Selection Keys | Selects the radio source and the annunciator. Selected audio can be heard through the headset and the speakers. All radio keys can be selected individually or together. |
| **MAN SQ** | Intercom Manual Squelch Key | Sets the squelch function to manual or automatic. |
| **PLAY** Buttons | Digital Record and Playback Keys | The **PLAY** key starts and stops audio playback. The playback function has a limit of 2.5 minutes of audio. Push the **PLAY** key twice during playback to go to the previous recording. |
| **DISPLAY BACKUP** Button | Reversionary Mode Button | Selects the reversionary mode for all three displays. Moves important flight and engine data from the MFD to the PFD's during an MFD failure. The pilot's audio panel **DISPLAY BACKUP** key operates the pilot's PFD and the MFD. The copilot's audio panel **DISPLAY BACKUP** key operates the copilot's PFD and the MFD. |
| **COM3** Button | Transceiver Audio Selection Key | When selected, audio from the optional #3 COM receiver (HF) can be heard. |
| **COM3 MIC** Button | Transmitter (Audio/Mic) Selection Key | The **COM3 MIC** key selects the optional #3 transmitter (HF) for transmitting. The COM3 receiver is simultaneously selected when the **COM3 MIC** key is pressed allowing received audio from the #3 COM receiver to be heard. |
| **TEL, AUX, MUSIC** Buttons | Disabled | No use. |

| | | |
|---|---|---|
| **PILOT** Buttons | Intercom system key | Pressing selects the pilot intercom isolation. Press again to deselect pilot isolation. |
| **COPLT** Buttons | Intercom system key | Pressing selects the copilot intercom isolation. Press again to deselect copilot isolation. |

***Table 2. Audio Panel Controls GMA 1360D***

| Button or Knob | Function | Use |
|---|---|---|
| **COM1,COM2** Buttons | Transceiver Audio Selection Keys | The **COM1** receiver key selects the COMM 1 radio as the active receiver. The **COM2** receiver key selects the COMM 2 radio as the active receiver. Any combination of radios can be selected separately or at the same time. The active COMM radio will be heard through the headsets or on the speaker, if selected. |
| **COM1 MIC, COM2 MIC** Buttons | Transmitter (Audio/Mic) Selection Keys | The **COM1 MIC** key selects the COMM 1 radio as the active transceiver. The **COM2 MIC** receiver key selects the COMM 2 radio as the active transceiver. The receiver audio key is also selected (**COM1** or **COM2**). The COMM frequency is highlighted in green in the active frequency field of the PFD. |
| **AUX MIC** Button | Transmitter (Audio/Mic) Selection Key | The **AUX MIC** key selects the COMM 3 radio as the active transceiver. The receiver audio key is also selected (AUX). |
| **AUX** Button | Transceiver Audio Selection Key | The **AUX** receiver key selects the COMM 3 radio as the active receiver. Any combination of radios can be selected for monitoring separately or at the same time. |
| **NAV1, NAV2, ADF, DME** Buttons | Airplane Radio Audio Selection Keys | Selects the radio source and the annunciator. Selected audio can be heard through the headset and the speakers. All radio keys can be selected individually or together. |
| **PA** Button | Passenger Address Key | Selected to give announcements to passengers in the cabin area of the airplane if the XM Radio subscription is current and the passengers have headsets on. The message will be heard by the other pilot only if the ICS is enabled. The push-to-talk (PTT) must be used to give PA announcements. |
| **TEL** Button | Audio Source Key | Selects/Deselects the **TEL** audio source and assigns the Bluetooth device to the TEL audio. Press the **TEL** key until the annunciator turns blue. The in-key annunciator will cycle from OFF to WHITE to BLUE. WHITE selects the wired audio source and BLUE selects the Bluetooth audio source. |
| **CREW ICS** Button | Transmitter (Audio/Mic) Selection Keys | Controls the crew intercom system. Press and hold to enable/disable onside Bluetooth recording mode. |
| **MUS1** Button | Audio Source Key | Selects/Deselects the MUS1 audio source and assigns the Bluetooth device to the MUS1 audio. Press the **MUS1** key until the annunciator turns blue. The in-key annunciator will cycle from OFF to WHITE to BLUE. WHITE selects the wired audio source and BLUE selects the Bluetooth audio source. |
| **MUS2** Button | Audio Source Key | Selects/Deselects the MUS2 audio source and can assign the Bluetooth device to the MUS2 audio. Press the **MUS2** key until the annunciator turns blue. The in-key annunciator will cycle from OFF to BLUE. BLUE selects the Bluetooth audio source. |
| **PASS ICS** Button | Transmitter (Audio/Mic) Selection Key | Controls the passenger intercom system. |

| | | |
|---|---|---|
| **SPKR** Button | Speaker Key | Selected to make all radios heard through the cockpit speakers. Push the **SPKR** key to make the speaker active and not active. Each audio panel is connected to a different speaker if the aircraft is equipped with dual GMA's. Otherwise both speakers are tied to the single GMA. The speaker audio is muted when the PTT switch is pushed. |
| **MKR/MUTE** Button | Marker Beacon Receiver Audio Select/Mute Key | Mutes the marker beacon audio, but does not change the annunciators. The marker beacon audio will come back on automatically when a new marker beacon signal is received. |
| **HI SENS** Button | Marker Beacon Receiver High Sensitivity Key | Increases marker beacon signal sensitivity. Push this button to receive an earlier indication of the marker beacon during an approach. |
| **MAN SQ** | Intercom Manual Squelch Key | Sets the squelch function to manual or automatic. |
| **PLAY** Buttons | Digital Record and Playback Keys | The **PLAY** key starts and stops audio playback. The playback function has a limit of 2.5 minutes of audio. Push the **PLAY** key twice during playback to go to the previous recording. |
| **DISPLAY BACKUP** Button | Reversionary Mode Button | Selects the reversionary mode for all three displays. Moves important flight and engine data from the MFD to the PFD's during an MFD failure. The pilot's audio panel **DISPLAY BACKUP** key operates the pilot's PFD and the MFD. The copilot's audio panel **DISPLAY BACKUP** key operates the copilot's PFD and the MFD. |

Figure 1 : Sheet 1 : Garmin GMA 1347 Audio System G1000 System Software versions up to (v.2499.03)

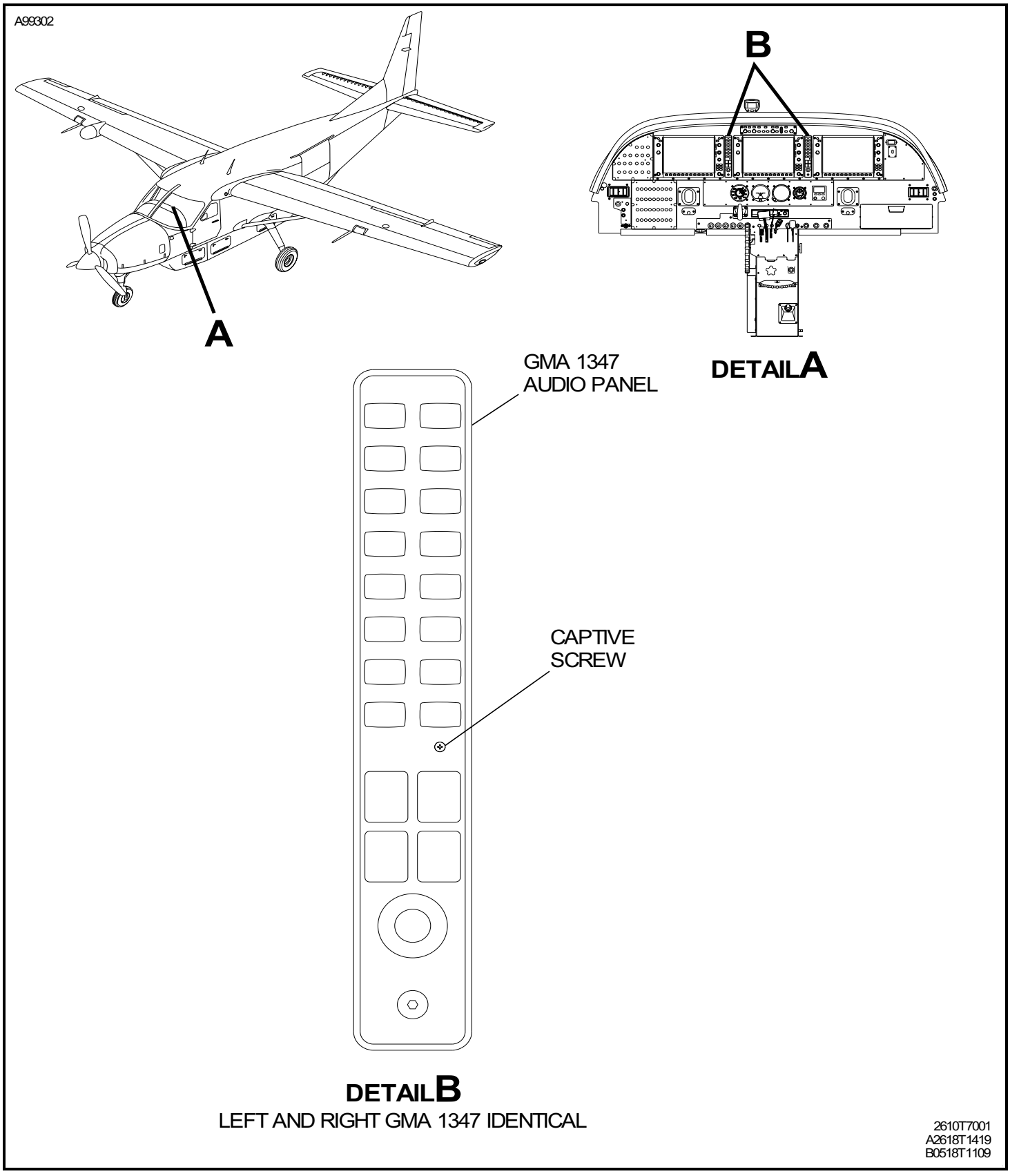

Figure 2 : Sheet 1 : Garmin GMA 1360D Audio G1000 System Software (v.2499.08 and On)