

G1000[™]

audio panel pilot's guide

Record of Revisions

Revision	Date of Revision	Revision Page Range	Description
A	08/20/04	6A-1 – 6A-18	Initial release.

6A.1 INTRODUCTION

The G1000 audio panel, the GMA 1347, is a fully integrated audio panel with digital capability that is designed to enhance cockpit management by helping to reduce cockpit workload via a number of integrated navigation and communication channels.



NOTE: *This audio panel is intended to be used only as part of the G1000 Integrated Cockpit System.*

- The unit features annunciated keys that control the selection of both COM and NAV audio. The COM interface can support up to three (3) transceivers and is designed to work in split COM mode (in certain aircraft) whereby both the pilot and copilot can transmit and receive on separate COM radios.
 - A telephone interface is built-in as an added communication option. Moreover, speaker mode is available and allows the crew to both monitor the aircraft radios and make PA announcements.
 - The GMA 1347 includes a six-place VOX intercom system (ICS) with four (4) selectable isolation modes, dual stereo music inputs, and independent pilot and copilot/passenger volume control.
 - Each microphone input has an automatic squelch threshold. Manual squelch override as well as keyed ICS operation is also available. Each microphone has a dedicated VOX circuit to ensure that only the active microphone is heard when squelch is broken.
- The unit controls marker beacon receiver audio and features marker beacon audio muting. In addition, MASQ™ (Master Avionics Squelch) processing helps to de-emphasize ambient noise from the avionics inputs, thereby improving cockpit communications.
 - The GMA 1347 is equipped with a digital clearance recorder with playback capability and up to 2.5 minutes of recording. Additionally, to enhance safety of flight, the unit provides the pilot with a fail-safe mode to COM1.
 - As part of the G1000 Integrated Cockpit System, the GMA 1347 also controls display backup in the event of display failure.
 - The GMA 1347 supports dual audio panel installations. In dual panel installations, two (2) units can be connected to the same radios using either the digital or analog interface.

This manual is intended to provide the user with both a description of the GMA 1347 and directions as to its operation. Upon installation, the unit may be configured in various ways depending on the aircraft type and the needs of the user. A Garmin-authorized service center should be contacted for details on and/or assistance in altering the configuration settings of the GMA 1347.



NOTE: *Please see applicable G1000 Audio Panel Pilot's Guide Supplement for aircraft-specific information.*

6A.2 UNIT DESCRIPTION

The GMA 1347 front panel measures 7.79 inches in depth, 1.3 inches in width and 7.70 inches in height and features the following three (3) major groups of keys in descending order, as shown in Figure 6A.2.1:

- Communication keys
- Navigation keys
- Intercom system (ICS) keys

Each key is labeled with a white inscription in its center, indicating the name of the associated channel. The triangular key annunciator lights are white when illuminated and point to the corresponding keys.

The dual knob located at the bottom of the unit controls volume as well as squelch threshold levels. The small knob adjusts the volume/squelch level associated with the pilot channel, while the large knob adjusts the volume/squelch level associated with the copilot/passenger channels. The red button situated below the dual volume/squelch knob controls reversionary (backup) mode selection.

FRONT PANEL CONTROLS

- Transceiver audio selector keys
(**COM1, COM2, COM3**)
- Transmitter (audio/mic) selection keys
(**COM1 MIC, COM2 MIC, COM3 MIC**)
- Split COM key
(**COM 1/2**)
- Dedicated telephone interface key
(**TEL**)
- Passenger address key
(**PA**)
- Speaker key
(**SPKR**)
- Marker beacon receiver audio select/mute key
(**MKR/MUTE**)
- Marker beacon receiver high sensitivity key
(**HI SENS**)
- Aircraft radio audio selector keys
(**NAVI, NAV2, ADF, DME, AUX**)
- Intercom manual squelch mode key
(**MAN SQ**)
- Digital recording playback key
(**PLAY**)
- Intercom system (ICS) isolation mode keys
(**PILOT, COPLT**)
- Volume/squelch knob
(**VOL/SQ**)
- Reversionary mode button
(**DISPLAY BACKUP**)

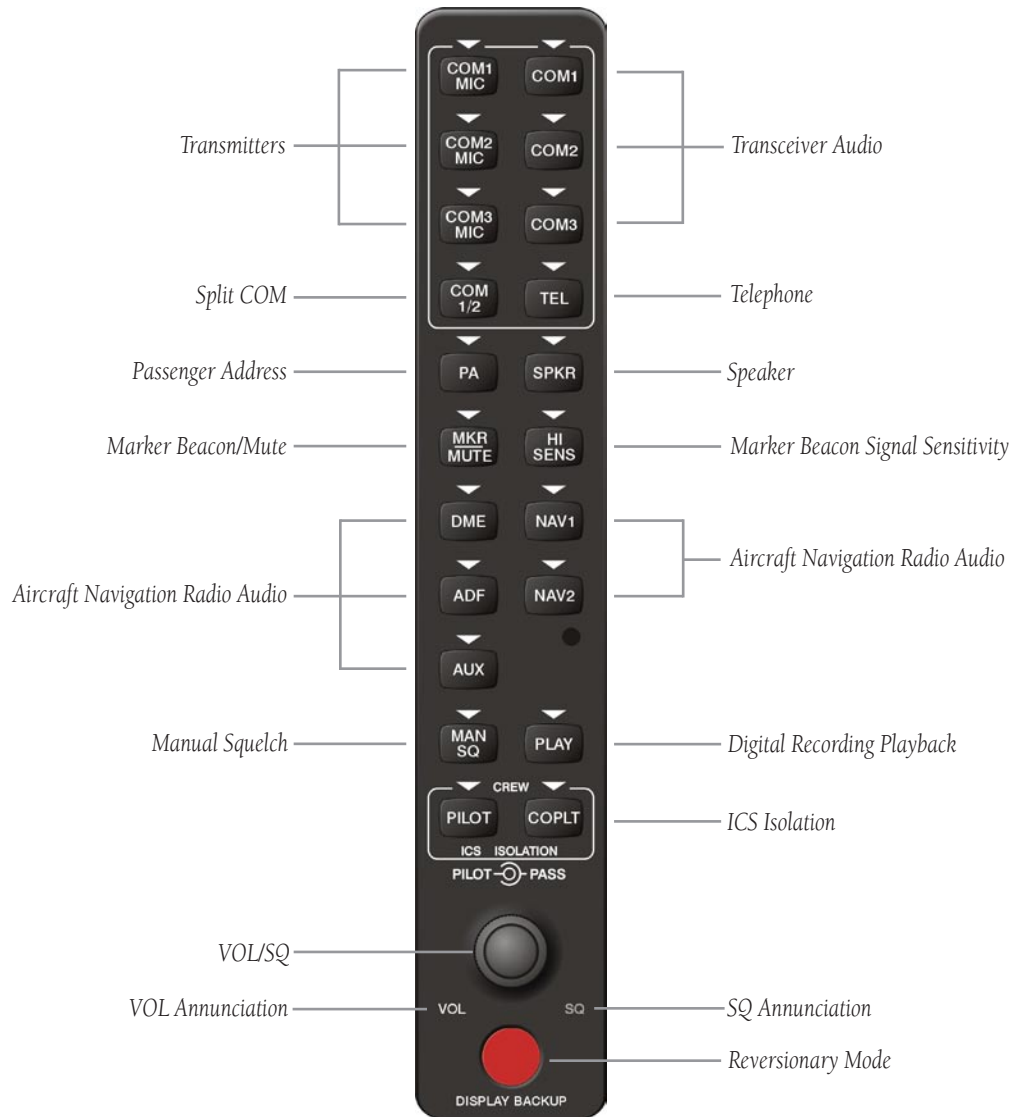


Figure 6A.2.1 Front Panel Controls

MICROPHONES

The GMA 1347 features six (6) different microphone channeling modes:

- COM1 MIC
- COM2 MIC
- COM3 MIC
- COM 1/2 (Split COM)
- PA
- COM 1/2 and PA (Split COM and PA)



NOTE: *A push-to-talk (PTT) switch must be pressed to open the selected output channel.*

Each audio panel can accept up to six (6) microphone inputs, thus allowing for a two-person crew and up to four (4) passenger intercom stations in the aircraft.

MONO/STEREO HEADSETS

The GMA 1347 can accommodate up to six (6) headsets (pilot, copilot and up to four (4) passengers).



NOTE: *The use of stereo headsets is highly recommended. However, if monaural headsets are plugged into stereo jacks that do not each have a switch installed, the unit will not be damaged.*

Use of a monaural headset in a stereo jack shorts the right headset channel output to ground. Thus, a person listening on a monaural headset only hears the left channel in both ears. If a monaural headset is used at one of the passenger positions, any other passenger listening on a stereo headset hears audio in the left ear only, unless the headset has a mono/stereo switch and the latter is set to mono.

In Configuration mode, headset audio level can be adjusted above or below a nominal value for MUSIC 1, MUSIC 2, UNSWITCHED 1, UNSWITCHED 2, UNSWITCHED 3 and ALTITUDE WARNING. Please consult a Garmin-authorized service center for additional information.

UNMUTED/UNSWITCHED INPUTS

The unit provides four (4) unmuted/unswitched inputs that are always presented to the headsets or speakers connected to the panel. These inputs are the following aural warnings:

- ALT warning
- UNSWITCHED 1
- UNSWITCHED 2
- UNSWITCHED 3

6A.3 UNIT OPERATION

ON/OFF, POWER-UP SETTINGS AND FAIL-SAFE OPERATION

ON/OFF Operation

The GMA 1347 is powered on when the avionics master switch is turned on and it is powered off when the avionics master switch is turned off.

Power-up Settings

Upon power-up, the unit undergoes a self-test during which all panel annunciator lights illuminate for approximately two (2) seconds. Once the self-test is completed, the settings are restored to the settings that were current before the unit was last powered off. For example, if the **COM1 MIC**, **COM1**, **COM2**, **SPKR**, **NAVI**, **NAV2**, **MKR/MUTE**, **HI SENS**, and **MAN SQ** keys were selected when the unit was last powered off, these keys will be automatically re-selected when the unit is powered back on.

Fail-safe Mode

In the event of an audio panel failure, the unit switches to fail-safe mode. In fail-safe mode, fail-safe audio is directed to the pilot's headset (left channel only). Fail-safe mode bypasses the GMA 1347 circuits, with the exception of the relay that switches the pilot's MIC and the pilot's headset directly to COM1.

SELECTING AND DESELECTING KEYS

Selecting Keys

For all keys with the exception of the **MKR/MUTE** and **PLAY** keys, pressing a key activates the corresponding channel and illuminates the associated triangular annunciator light.

Deselecting Keys

For all keys with the exception of the **COM MIC**, **MKR/MUTE** and **PLAY** keys, pressing the key again deactivates the corresponding channel and turns off the associated annunciator light.



NOTE: Operational details on the **COM MIC**, **MKR/MUTE** and **PLAY** keys as well as the **DISPLAY BACKUP** button are provided later in this manual.

LIGHTING

LED key annunciators and backlighting are controlled automatically by the G1000 Control Display Unit (CDU).



NOTE: When a key is active during normal operations, its corresponding annunciator LED is lit.

TRANSCEIVER KEYS

As illustrated below, the following eight (8) transceiver keys appear at the top of the GMA 1347 front panel: **COM1 MIC**, **COM2 MIC**, **COM3 MIC**, **COM 1/2**, **COM1**, **COM2**, **COM3**, and **TEL**. COM audio can be selected by either pressing the desired COM key or by pressing the corresponding COM MIC key.



NOTE: A PTT switch must be pressed to allow all microphone transmissions.



Figure 6A.3.1 Transceivers

Pressing a COM MIC Key

Pressing **COM1 MIC**, **COM2 MIC**, or **COM3 MIC** selects the corresponding radio as the active microphone source (i.e., as the primary COM radio) and highlights the corresponding COM frequency in green in the active frequency field of the PFD and MFD.

Only one microphone source can be selected at a time. Thus, if **COM1 MIC** is pressed when **COM2 MIC** is already selected, **COM2 MIC** is automatically deactivated and the **COM2 MIC** annunciator light is turned off. The corresponding audio selection key (in this case, **COM1**) becomes automatically selected if it is not already selected at the time.

Pressing a COM Key

Pressing **COM1**, **COM2**, or **COM3** selects the corresponding radio as the active audio source. Each audio source can be selected independently by pressing **COM1**, **COM2**, or **COM3**. If selected in this manner, the audio source remains selected independently of the active microphone source selection. The active COM audio is always heard through the headsets, and any combination of audio sources can be selected simultaneously.

During COM signal reception, a white **RX indication** appears next to the corresponding COM frequency on both the PFD and the MFD for the duration of the reception (this feature is not supported in all aircraft; please refer to the G1000 aircraft-specific VHF NAV/COM Pilot's Guide for details).

Keying a Microphone

When a microphone is keyed, the active transceiver MIC key annunciator blinks approximately once per second to indicate that the transmission is active, and a white **TX indication** appears next to the corresponding COM frequency on both the PFD and the MFD for the duration of the transmission.

When no further aircraft radio activity is detected by the unit, the amount of ambient background noise from the radios is further reduced by the MASQ™ (Master Avionics Squelch) circuit (information on MASQ™ is presented later in this manual).



NOTE: Audio level of the selected COM radio(s) is controlled by the COM radio volume control located on both the PFD and MFD (see G1000 VHF NAV/COM Pilot's Guide for more information).

COM SWAP

The GMA 1347 allows for the use of a remotely mounted switch to alternately transfer the active microphone between COM1 MIC and COM2 MIC. The COM swap switch is typically mounted on the yoke or control stick. If COM1 MIC is the active microphone (i.e., both **COM1 MIC** and **COM1** keys are annunciated), pressing the COM swap switch transfers the active microphone from COM1 MIC to COM2 MIC (i.e., both **COM1 MIC** and **COM1** keys become deselected, and **COM2 MIC** and **COM2** keys become annunciated). Pressing the switch has no effect if COM3 is the active transceiver or if COM 1/2 (split COM) is activated.

Please consult a Garmin-authorized service center for details on the remote COM swap option.

SPLIT COM

Pressing the **COM 1/2** key toggles the state of the split COM function. During split COM operation, the **COM1**, **COM1 MIC**, **COM2** and **COM2 MIC** keys are annunciated and thus active.

When the **COM 1/2** key is selected, COM1 becomes dedicated solely to the pilot for MIC/audio, while COM2 becomes dedicated to the copilot for MIC/audio. The **COM1 MIC** annunciator blinks when the pilot's microphone is keyed. The **COM2 MIC** annunciator blinks when the copilot's microphone is keyed.

In this mode, both the pilot and the copilot can simultaneously transmit over separate radios. Note that, while the pilot can still monitor COM3, NAV1, NAV2, DME, ADF, AUX and MKR audio as selected, the copilot is only able to monitor/hear COM2.

Split COM mode is cancelled by pressing the **COM 1/2** key.



NOTE: Split COM performance varies significantly across installations and is affected by both the distance between the antennas and the separation of the tuned frequencies. In small aircraft particularly, receiver sensitivity is typically reduced and squelch breaks are affected. Each installation should be individually examined to determine the expected performance of split COM.



NOTE: Split COM can be disabled in Configuration mode.

OPTIONAL COM MUTING

The COM muting on receive and COM muting on transmit options can each be disabled in Configuration mode.

COM Muting on Receive

When this option is enabled, all secondary COM audio is muted upon detection of a received primary COM signal.



NOTE: If the COM muting on receive option is enabled, only the primary COM radio signal receptions are recorded by the digital clearance recorder.

COM Muting on Transmit

When this option is enabled, all secondary COM audio is muted during transmission over the primary COM radio.

TELEPHONE INTERFACE

The unit contains a dedicated telephone interface that is closely linked to the ICS operation and that is controlled by the **TEL** key. Please see Table 6A.3.4 for a summary of both the cellular telephone distribution and the various ICS isolation modes.



NOTE: The ringer to the TEL channel is muted during COM radio reception.



NOTE: The TEL channel may be disabled in Configuration mode. Please consult a Garmin-authorized service center for details.

PA FUNCTION

The passenger address function is provided via the **PA** key. Push-to-talk (PTT) must be used to deliver PA announcements.



NOTE: PA volume is adjustable in Configuration mode.

SPLIT COM AND PA

When in split COM mode (**COM 1/2** activated), the copilot can make PA announcements while the pilot continues to use COM1 independently. When the **PA** key is pressed after the split COM mode is activated, the copilot's microphone is output over the cabin speaker when keyed. Pressing the **PA** key again returns the copilot to normal split COM operation.



NOTE: Only the copilot can make PA announcements when in split COM and PA mode.



Figure 6A.3.2 Split COM, PA and Speaker

SPEAKER OUTPUT

Pressing the **SPKR** key selects the aircraft radios to be output to the cabin speaker. Pressing the **SPKR** key again deselects the speaker mode. When **SPKR** is selected, any and all of the following radios can be heard over the cabin speaker: COM1, COM2, COM3, NAV1, NAV2, DME, ADF, and AUX.

Speaker output is muted when the PTT switch is keyed. All of the unswitched/unmuted radio inputs can be heard over the speaker. In Configuration mode, speaker audio level is adjustable above and below a nominal value. Please consult a Garmin-authorized service center for details.

MARKER BEACON RECEIVER

Description and Operation

The GMA 1347 provides a marker beacon receiver to be used as part of an ILS approach. In addition to the normal marker beacon receiver functions, the GMA 1347 provides an **audio muting capability**. The marker beacon receiver is always ON and receives at 75 MHz.

The receiver detects three (3) tones associated with the **outer**, **middle** and **inner** approach markers, respectively, and illuminates the appropriate marker beacon indicator lights located to the left of the Altimeter on the PFD (Figure 6A.3.4). The outer marker signal frequency is 400 Hz, and a blue light indicates its reception. The middle marker signal frequency is 1,300 Hz, and an amber light indicates its reception. The inner marker signal frequency is 3,000 Hz, and a white light indicates its reception. Please refer to Table 6A.3.1 for a summary of the marker beacon signal characteristics.

When the **MKR/MUTE** key is selected, the corresponding annunciator light becomes illuminated and the audio signal can be heard over the headsets.

When the **MKR/MUTE** key is annunciated and a marker beacon tone is received, pressing the **MKR/MUTE** key mutes the audio but does not affect the corresponding annunciator light. The audio returns when the next (different) marker signal is received. If the **MKR/MUTE** key is pressed while the marker beacon audio is muted, the marker audio becomes deactivated and the **MKR/MUTE** annunciator light is turned off.



NOTE: The marker beacon receiver lights operate independently of the marker beacon audio and cannot be turned off.



NOTE: The unit provides output for driving external marker beacon lamps and it provides a middle marker sense output for use with an autopilot.

Marker Beacon Signal Augmentation

The **HI SENS** key can be pressed to augment marker beacon signal reception sensitivity. The HI SENS function is typically used either over airway markers or to receive an earlier indication of a nearing outer marker during an approach.

The middle marker sense indicator provides input to the autopilot.

The lamp and audio keying of the marker beacon receiver are summarized in Table 6A.3.1.



Figure 6A.3.3 Marker Beacon



NOTE: The marker beacon signal sensitivity threshold can be set in Configuration mode. Please consult a Garmin-authorized service center for details.

Beacon	Audio Frequency	Audio Keying	Rate	Lamp Color
Outer Marker	400 Hz	— — —	2 dashes per second	Blue
Middle Marker	1,300 Hz	• — • —	95 dot-dash combinations per minute	Amber
Airway/Inner Marker	3,000 Hz	• • • •	6 dots per second	White

Table 6A.3.1 Marker Beacon Signal Characteristics

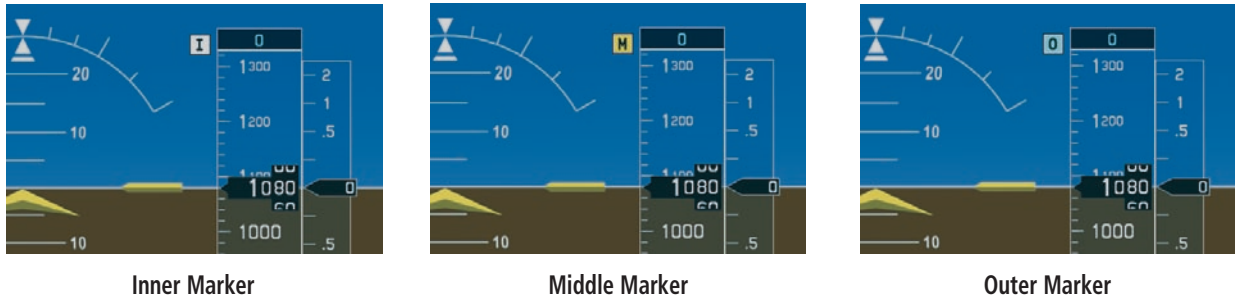


Figure 6A.3.4 Marker Beacon Signal Indicator Lights on the PFD

AIRCRAFT RADIO INPUTS

Pressing **DME**, **ADF**, **AUX**, **NAV1**, or **NAV2** selects the corresponding audio source and activates the annunciator. Pressing the selected audio source key again deselects this audio source. Selected aircraft audio can be heard over the appropriate headset and over the speakers if **SPKR** is selected. Note that all aircraft radio keys can be selected concurrently.

In Configuration mode, the DME, ADF and AUX radios may be disabled. Please consult a Garmin-authorized service center for details.



Figure 6A.3.5 Aircraft Radios

When no further aircraft radio activity is detected by the unit, the amount of ambient background noise from the radios is further reduced by the Master Avionics Squelch (MASQ™) circuit.

AUXILIARY ENTERTAINMENT INPUTS

The current ICS isolation mode affects the distribution of the entertainment inputs MUSIC 1 and MUSIC 2.



NOTE: *MUSIC 1 and MUSIC 2 cannot be completely turned off. Audio level for these inputs can be set above and below a nominal value. Please consult a Garmin-authorized service center for details.*

MUSIC 1

As summarized in Table 6A.3.3, MUSIC 1 can be heard by the pilot in COPILOT mode and in ALL mode, and it can be heard by the copilot in PILOT mode and in ALL mode.

MUSIC 1 Muting

MUSIC 1 muting occurs upon aircraft radio activity, marker beacon activity, or ICS activity generated by the parties able to hear MUSIC 1.



NOTE: *MUSIC 1 muting during ICS activity can be disabled; please consult a Garmin-authorized service center for details.*

Muting of this input is also triggered by marker beacon activity when in ALL, CREW, or COPILOT mode. After the activity that initiated the muting ceases, MUSIC 1 gradually returns to its original volume level at the headset outputs; this characteristic is known as “soft mute.” The time required for MUSIC 1 to return to its original volume level at the headset outputs is between 0.5 and 4 seconds.



NOTE: *If the MKR/MUTE key is pressed and held for approximately three (3) seconds, the GMA 1347 toggles music muting during radio signal receptions ON and OFF. Upon toggling of this option, either one (1) beep or two (2) beeps can be heard; one (1) beep indicates that music muting is enabled and two (2) beeps indicate that music muting is disabled.*

MUSIC 2

As summarized in Table 6A.3.3, MUSIC 2 can only be heard by the passengers and it is never muted.

INTERCOM SYSTEM (ICS) ISOLATION

The intercom system (ICS) provides four (4) isolation modes: **ALL**, **PILOT**, **COPILOT**, and **CREW**. The desired mode can be selected or deselected using the **PILOT** and **COPLT** keys.

PILOT Mode

PILOT mode is selected when only the **PILOT** key is annunciated. In PILOT mode, the pilot can hear the selected radios, the copilot can hear MUSIC 1, the passengers can hear MUSIC 2, and the copilot and passengers can communicate with each other.

COPILOT Mode

COPILOT mode is selected when only the **COPLT** key is annunciated. In COPILOT mode, the copilot is isolated from everyone, whereas the pilot and passengers can hear the selected radios and communicate with each other. In this mode, the pilot can hear MUSIC 1, while the passengers can hear MUSIC 2.

The transitions between the possible ICS isolation states are summarized in the table below.

Input	Current ICS Isolation State			
	PILOT	COPILOT	CREW	ALL
PILOT Key Press	ALL	CREW	COPILOT	PILOT
COPLT Key Press	CREW	ALL	PILOT	COPILOT

Table 6A.3.2 ICS Isolation Mode Transitions

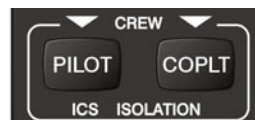


Figure 6A.3.6 ICS Isolation

CREW Mode

CREW mode is selected when both the **PILOT** and **COPLT** keys are annunciated. In CREW mode, both the pilot and copilot can hear the selected radios and communicate with each other, while the passengers can only hear MUSIC 2.

ALL Mode

ALL mode is selected when neither the **PILOT** nor the **COPLT** key is annunciated. In ALL mode, everyone hears the selected radios and is able to communicate with everyone else. In this mode, both the pilot and copilot can hear MUSIC 1, whereas the passengers can hear MUSIC 2.

The following table summarizes the ICS operation for the four (4) ICS isolation modes supported by the unit.

ICS Isolation Mode	Pilot Hears	Copilot Hears	Passenger Hears
PILOT (PILOT LED Lit)	Selected radios; pilot	Copilot; passengers; MUSIC 1	Copilot; passengers; MUSIC 2
COPILOT (COPLT LED Lit)	Selected radios; pilot; passengers; MUSIC 1	Copilot	Selected radios; pilot; passengers; MUSIC 2
CREW (Both LEDs Lit)	Selected radios; pilot; copilot	Selected radios; pilot; copilot	Passengers; MUSIC 2
ALL (Both LEDs OFF)	Selected radios; pilot; copilot; passengers; MUSIC 1	Selected radios; pilot; copilot; passengers; MUSIC 1	Selected radios; pilot; copilot; passengers; MUSIC 2

Table 6A.3.3 ICS Operation Modes

Mode	PILOT LED	COPLT LED	TEL LED	Pilot Hears	Copilot Hears	Passenger Hears	Input to Phone
ALL	OFF	OFF	OFF	Selected radios; pilot; copilot; passengers; MUSIC 1	Selected radios; pilot; copilot; passengers; MUSIC 1	Selected radios; pilot; copilot; passengers; MUSIC 2	None
	OFF	OFF	ON	Selected radios; pilot; copilot; passengers; MUSIC 1; TEL audio	Selected radios; pilot; copilot; passengers; MUSIC 1; TEL audio	Selected radios; pilot; copilot; passengers; MUSIC 2; TEL audio	Pilot; copilot; passengers
PILOT	ON	OFF	OFF	Selected radios; pilot	Copilot; passengers; MUSIC 1; TEL audio	Copilot; passengers; MUSIC 2; TEL audio	Copilot; passengers
	ON	OFF	ON	Selected radios; pilot; TEL audio	Copilot; passengers; MUSIC 1	Copilot; passengers; MUSIC 2	Pilot
COPILOT	OFF	ON	OFF	Selected radios; pilot; passengers; MUSIC 1	Copilot; TEL audio	Selected radios; pilot; passengers; MUSIC 2	Copilot
	OFF	ON	ON	Selected radios; pilot; passengers; MUSIC 1; TEL audio	Copilot	Selected radios; pilot; passengers; MUSIC 2; TEL audio	Pilot; passengers
CREW	ON	ON	OFF	Selected radios; pilot; copilot	Selected radios; pilot; copilot	Passengers; MUSIC 2; TEL audio	Passengers
	ON	ON	ON	Selected radios; pilot; copilot; TEL audio	Selected radios; pilot; copilot; TEL audio	Passengers; MUSIC 2	Pilot; copilot

Table 6A.3.4 ICS Isolation Modes & Telephone Distribution

VOLUME/SQUELCH CONTROL

When the GMA 1347 **MAN SQ** key is selected, pressing the **VOL/SQ** knob toggles between volume and squelch adjustment modes. When the unit is in volume adjustment mode, the **VOL** annunciation on the lower left of the **VOL/SQ** knob is lit and volume can thus be adjusted. Similarly, when the unit is in squelch mode, the **SQ** annunciation on the lower right of the **VOL/SQ** knob is lit and squelch threshold level can thus be adjusted.



Figure 6A.3.7 Volume/Squelch Control



NOTE: When the **MAN SQ** key is deselected (i.e., auto-squelch is active), pressing the **VOL/SQ** knob has no effect on the **VOL/SQ** selection state of the unit and **VOL** is automatically annunciated.

When transitioning from auto to manual squelch, the unit “recalls” the previous **VOL/SQ** selection and sets the state of the unit accordingly (see table below).



NOTE: The volume and squelch controls for the **COM** and **NAV** radios are located on the **PFD** and **MFD** bezels (please refer to the **G1000 VHF NAV/COM Pilot’s Guide** for details).

Intercom VOL/SQ State

Intercom Volume Control

Intercom volume can be controlled via the **VOL/SQ** knob. The **small knob** controls the pilot ICS volume, while the **large knob** controls the copilot/passenger ICS volume. Turning either knob clockwise increases audio level. Conversely, turning either knob counterclockwise decreases audio level. When the **MAN SQ** key is not annunciated, volume adjustment mode is automatically selected and the **VOL** annunciation is lit.

Input		Current VOL/SQ State		
		Auto, VOL selected	Manual, VOL selected	Manual, SQ selected
MAN SQ Key Press	Previous State: Manual, VOL selected	Manual, VOL selected	Auto, VOL selected	Auto, VOL selected
	Previous State: Manual, SQ selected	Manual, SQ selected	Auto, VOL selected	Auto, VOL selected
GMA 1347 VOL/SQ Knob Press		Auto, VOL selected	Manual, SQ selected	Manual, VOL selected

Table 6A.3.5 Transitioning from Auto to Manual Squelch Mode

To adjust ICS volume when the MAN SQ key is not annunciated:

1. Turn the appropriate **VOL/SQ** knob.

To adjust ICS volume when the MAN SQ key is annunciated, perform one of the following steps:

- 1a. If the unit is in manual squelch threshold adjustment mode (i.e., if the **SQ** annunciation at the lower right of the **VOL/SQ** knob is lit), press the **VOL/SQ** knob to toggle to ICS volume adjustment mode, and turn the appropriate **VOL/SQ** knob.
- 1b. If the unit is already in ICS volume adjustment mode (i.e., if the **VOL** annunciation at the lower left of the **VOL/SQ** knob is lit), turn the appropriate **VOL/SQ** knob.

Intercom Squelch Threshold Control

Each microphone input has an automatic squelch threshold. Manual squelch override as well as keyed ICS operation (the latter to be used in noisier cockpit environments) is also available.

Manual squelch threshold adjustments can be performed via the **VOL/SQ** knob when the **MAN SQ** key is annunciated and the **SQ** annunciation is lit. The small **VOL/SQ** knob controls pilot squelch threshold adjustments, while the large **VOL/SQ** knob controls copilot/passenger squelch threshold adjustments. Turning either knob clockwise increases the squelch threshold level. Conversely, turning either knob counterclockwise decreases the squelch threshold level.



NOTE: In manual squelch mode, all crew audio inputs can break squelch when the **VOL/SQ** knob is adjusted to minimum. When the **VOL/SQ** knob is adjusted to maximum, the ICS only produces audio when the ICS PTT is pressed.

To adjust squelch threshold level manually if the MAN SQ key is not annunciated:

1. Press the **MAN SQ** key and perform one of the following steps:
- 2a. If the **VOL** annunciation is lit, press the **VOL/SQ** knob to illuminate the **SQ** annunciation, and turn the **VOL/SQ** knob.
- 2b. If the **SQ** annunciation is already lit, turn the **VOL/SQ** knob.

To adjust squelch threshold level manually if the MAN SQ key is already annunciated:

- 1a. If the **VOL** annunciation is lit, press the **VOL/SQ** knob to illuminate the **SQ** annunciation, and turn the **VOL/SQ** knob.
- 1b. If the **SQ** annunciation is already lit, turn the **VOL/SQ** knob.

Volume Adjustments in Configuration Mode

The audio level of various signals can be adjusted in Configuration mode (please consult a Garmin-authorized service center for details).



NOTE: None of the signals that can be adjusted for audio level in Configuration mode may be turned completely off. Each one of these signals can be adjusted for audio level only above and below a nominal value.

MASTER AVIONICS SQUELCH (MASQ)

In Configuration mode, the Master Avionics Squelch (MASQ™) threshold level can be adjusted. By adjusting the MASQ™ threshold level, one can control the level of aircraft radio input signal that is required to break master squelch (please see the G1000 PFD Pilot's Guide for details).

In Configuration mode, MASQ™ may also be disabled. Please consult a Garmin-authorized service center for details.

DIGITAL CLEARANCE RECORDER WITH PLAYBACK CAPABILITY

The unit provides a digital clearance recorder with playback capability and up to 2.5 minutes of COM signal recording. Recorded COM signals are stored in separate memory blocks. Signals from all of the selected COM radios are recorded and can be played back. Anyone able to hear the selected COM radios is able to hear the COM signal playback.

Once the 2.5 minutes of recording time have been reached, the recorder begins recording over the stored memory blocks, starting from the oldest block. Powering off the unit automatically clears all recorded blocks.



Figure 6A.3.8 Playback



NOTE: In split COM mode, a configuration input controls whether the pilot's or the copilot's COM audio is recorded; playback is routed to the corresponding headset. Please consult a Garmin-authorized service center for details.

The **PLAY** key controls the playback function.

- Pressing **PLAY** once plays back the latest recorded memory block, then returns to normal operation.
- Pressing **PLAY** during playback of a memory block halts the playback of this block, plays back the preceding recorded block, then returns to normal operation. The **PLAY** key can thus be used to back-track through the recorded memory blocks in order to reach and play back the desired block.



NOTE: Pressing the **MKR/MUTE** key during playback halts playback and returns the recorder/playback circuit to normal operation.

If a COM input signal is detected during playback, playback is halted and the new COM input signal is recorded as the latest block.



NOTE: During playback, the **PLAY** annunciator light blinks approximately once per second.



NOTE: The recorder can be disabled both using an external switch and in Configuration mode. Please consult a Garmin-authorized service center for details.



NOTE: If the COM muting on receive option is enabled, only the primary COM radio signal receptions are recorded by the digital clearance recorder. Please consult a Garmin-authorized service center for details.

REVERSIONARY MODE

Pressing the red **DISPLAY BACKUP** button located at the bottom of the audio panel selects the **reversionary** (or backup) mode for all displays. Reversionary mode is a mode of operation in which both the PFD and MFD are identically configured to display all of the important flight parameters in the event of display failure.



Figure 6A.3.9 Reversionary Mode



NOTE: In three-display configurations, reversionary mode is only applied to two (2) of the displays.

INTERFACE TO COCKPIT VOICE RECORDER

The GMA 1347 provides an interface to the cockpit voice recorder (CVR) equipment. The unsquelched pilot microphone input (i.e., all vocal inputs from the pilot) is combined with all audio presented to the pilot's headset as well as the cabin speaker and is output on the pilot CVR channel. The unsquelched copilot microphone input is combined with all audio presented to the copilot's headset as well as the cabin speaker and is output on the copilot CVR channel.

DUAL PANEL OPERATION

The GMA 1347 can be installed in a dual panel configuration. In dual panel installations, each installed unit can be designated as a pilot or copilot unit for ICS activity. Please consult a Garmin-authorized service center for details.



NOTE: Two (2) audio panels can be connected to the same radios using either the digital or analog interface. If more than two (2) radios are connected to the same audio panel, the analog interface must be used for the additional radios.

In dual digital shared installations, one unit is designated as the master and the other one as the slave. The master unit routes the analog ICS transmission from the slave unit through its digital interface with the radio. The master unit has transmission priority on the radios.



NOTE: In dual panel configurations, the pilot always hears the audio selected on the pilot's audio panel, while the copilot hears the audio selected on the copilot's audio panel.



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