

KMA 24 and KMA 24H Bendix/King Audio Control Systems

PILOT'S GUIDE



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EQUIPMENT DESCRIPTION.

Audio Control With the KMA 24

Two rows of alternate-action push buttons on the KMA 24 console control all receiver audio distribution functions.

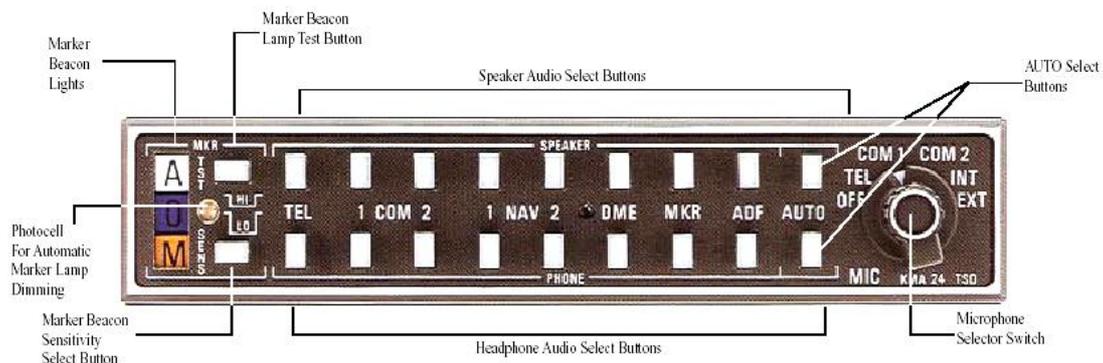
The top row of push buttons selects receivers for the cockpit speaker, the bottom row for headphones. Both rows are completely independent of each other, allowing selection of speaker or headphones, or both, for all combinations of receivers.

The rotary selector switch on the right side of the console connects the microphone to either COMM 1 or COMM 2. An additional switch position allows selection of radiotelephone on some KMA 24 models, or of HF on other models of the KMA 24. Other switch positions are for cabin address and ramp hailer.

Turning the microphone selector switch to OFF cuts power to the speaker amplifier and the marker beacon receiver. The headphone amplifier remains in operation.

The AUTO feature, when engaged, automatically matches the corresponding receiver audio with the selected transmitter, such as COMM 1, COMM 2, TEL or HF transmitter.

An option allows the AUTO feature to be replaced by a second ADF receiver position.

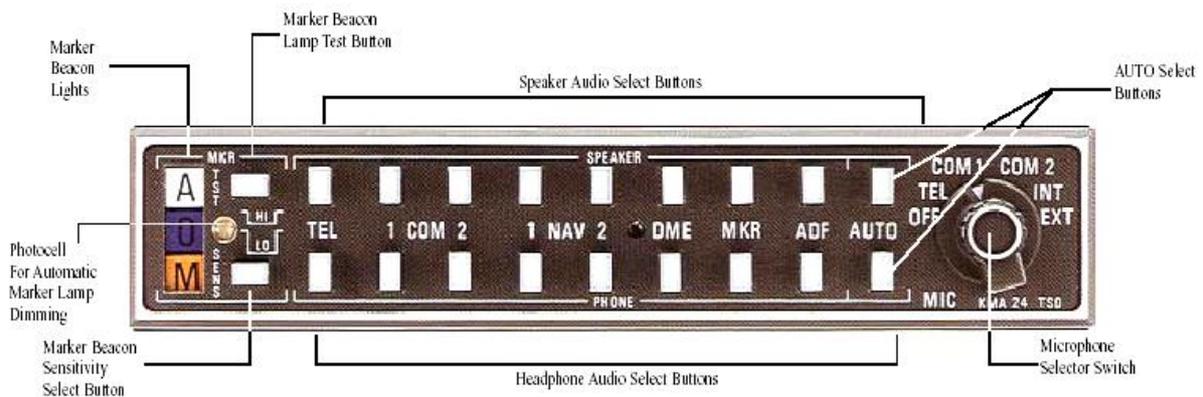


Built-In Marker Beacon

The KMA 24 has a built-in, crystal controlled, superheterodyne marker beacon receiver with a three-light display. Its excellent selectivity eliminates interference from FM radio and TV stations. Dimming circuitry automatically adjusts the brightness of the lamps to a level appropriate for ambient cockpit light.

The lower push button next to the marker lamps selects high and low sensitivity; the upper push button tests the lights.

OPERATING INSTRUCTIONS



Operating the KMA 24 Audio Control Systems

“Auto” Receiver Audio Select

For KMA 24 models equipped with the “AUTO” receiver Audio select feature, the transmitter selected with the microphone selector switch will be matched automatically with the appropriate COMM receiver audio on either headphone or speaker, or both, by simply pressing the desired headphone and/or speaker [“AUTO” push button](#). (COMM 1 and COMM 2 push buttons should be disengaged unless it is desired to additionally listen to a COMM receiver other than the one selected with the microphone selector switch.)

Thus, on “AUTO” you may change the rotary microphone switch back and forth, as needed, without having to reselect the corresponding [COMM](#), [TEL](#), or [HF](#) receiver buttons in order to hear the receiver. Both models of the KMA 24H have “AUTO COMM” capability and always provide automatic headphone audio selection to match the transceiver in use. The selection of speaker audio can either be made automatically by pulling out the speaker [“AUTO” switch](#) or manually with the row of speaker audio select push buttons.

Marker Beacon Receiver (KMA 24)

The complete TSO’d 3-light marker beacon receiver built into the KMA 24 gives you an accurate visual and aural signal when you pass over a 75 MHz beacon. The blue, amber, and white lights on the faceplate—as well as the audio tone—identify the beacon type (outer, middle or airway/inner marker).

Either the speaker or headphone MKR buttons or both must be “in” for the marker beacon receiver to provide an audio signal at beacon passage.

The horizontal push button labeled [SENS](#) on the lower left side of the console gives you the choice of two receiver sensitivities. When the button is “in,” the sensitivity is on [HI](#). During an approach, this setting should permit you to hear the outer marker tone about one mile out. At this point you may select [LO](#) to dampen the tone. It will start to sound again when you are closer to the marker, giving you a more precise indication of its location.

Pressing the top horizontal button marked [“TST”](#) simply applies voltage to all three lamps to show that they are functioning.

Note: The TST button should not be pressed to test the lamps when autopilot coupled on an ILS approach inside the outer marker. This is due to the fact that some autopilots (including Bendix/King autopilots) use the marker annunciation to change the sensitivity of the autopilot.

A photocell in the console automatically dims the lamps for night operation.

Receiver Selection

The top row of push buttons on the console controls the audio selection for the speaker, and the bottom row selects audio for headphones. The selections are independent, and any audio input can be selected for speaker or headphones or both. These push buttons allow audio selection independent of the AUTO feature described earlier.

The KMA 24 and KMA 24H can control as many as six receivers. Both units also have two unswitched inputs for uses such as the radar altimeter audio alert or the ring signal from a radiotelephone. To listen to a specific receiver, simply press the corresponding headphone or speaker button “in.” To disconnect that receiver, press the button again. It will return to the “out” position.

For both the KMA 24 and KMA 24H, volume of audio input from transceivers and receivers is set with the volume controls of each individual radio.

Transmitter Selection

The rotary switch on the right side of the KMA 24 and KMA 24H consoles selects the desired transmitter for the cockpit microphones. In the KMA 24, the off position shuts off power to the speaker amplifier and marker beacon receiver. (The headphone amplifier operates whenever the aircraft electric power is on.)

With the KMA 24, the next position of the rotary switch may be either [“TEL”](#) (radiotelephone) or [“HF”](#) (high frequency transceiver.) The former is more likely to be found in aircraft used mostly for domestic operations, the latter for international operations. The [COMM 1 and 2](#) positions (COMM 1-4 or 1-5 for KMA 24H) are for transmitting on the frequencies set up on those respective communication transceivers.

The [“INT”](#) position on the KMA 24 and the [“PA”](#) position on the KMA 24H permit the flight crew to address cabin occupants over the cabin speaker. To do this, select [“INT”](#) or [“PA”](#) with the microphone switch. When the mike is keyed, the receiver audio is muted and you may talk normally into the microphone to broadcast over the speaker.

The KMA 24 and KMA 24H also have an [“EXT”](#) position on the microphone selector switch which connects the microphone to an external ramp hailer speaker, if installed.

SPECIFICATIONS

TSO Compliance:

Marker Beacon Receiver: TSO C35d,
Class A
KMA24—Env. Cat.
A1D1/A/PKS/
XXXXXXXXZBAAA
Audio Amplifier: TSO C50b
KMA 24H—Env. Cat.
A2D1/A/KPS/
XXXXXXB/AB/BZ/A

Weight: 1.7 lb. (0.77kg)

Physical Dimensions:

Length behind panel: 6.8 in.
(17.30 cm)
Width: 6.25 in. (15.88 cm)
Height: 1.3 in. (3.30 cm)

Duty Cycle: Continuous

Power Requirements (not including instruments lights):

	KMA 24	13.75v	27.5v
Idle current, mike switch on	110 ma	170 ma	
Idle current, mike switch off	Less than 8 ma	Less than 16 ma	
Max. operating current	1.9 a	1.9 a	
KMA 24H Idle current	350 ma	500 ma	
Max. operating current	1.8 a	1.8 a	

Temperature Range:

-20°C to +55° with brief operation at +70°C (KMA 24),

-20°C to +70°C continuous (KMA 24H)

Marker Beacon Receiver (KMA 24 only)

Frequency:

Crystal-controlled at 75 MHz

Sensitivity:

LO 1,000 μ v Hard
HI 200 μ v Hard

Selectivity:

6 db at \pm 10 kHz Min.
40 db at \pm 200 kHz Max.

Input Impedance:

50 ohms

Output:

Capable of 4 mw into isolation amplifier impedance of 500 ohms.

Isolation Amplifiers:

KMA 24 Inputs: KMA 24 models without AUTO accommodate three transceivers and six external receivers. Models with the AUTO function accommodate three transceivers and five external receivers. All models also have two unswitched inputs. (Typical use: radar altimeter aural warning and radiotelephone ringer.)

KMA 24H Inputs: KMA 24H models accommodate five transceivers and five external receivers or four transceivers and six receivers. All models also have two unswitched inputs. (Typical use: radar altimeter aural warning and radiotelephone ringer.)

KMA 24 Input Impedance:

500 ohms

KMA 24H Input Impedance:

320 ohms for all ICS inputs, 500 ohms for all audio inputs

Input Isolation:

KMA 24: 40 db between inputs
KMA 24H: 60 db between inputs

Input Muting

(when mike is keyed):
At least 55 db

Speaker Output:

With 13.75v Supply:

Into 4 Ω load: 7 w (KMA 24)
6 w (KMA 24H)

Into 8 Ω load: 4 w

Into 8 Ω load from

8 Ω tap: 6 w (KMA 24H)

With 27.5v Supply:

Into 4 Ω load: 12 w (KMA 24)
10 w (KMA 24H)

Into 8 Ω load: 6.5 w

Into 8 Ω load from

8 Ω tap: 10w (KMA 24H)

Headphone Output:

KMA 24:

50 mw into 500 ohm load

KMA 24H:

With 27.5v supply:

120 mw into each 500 ohm load

With 13.75v supply:

20 mw into each 500 ohm load

Output Characteristics:

Distortion: Less than 5 percent at rated output

Frequency response:

KMA 24:

Within 6 db from 350 hz to 6,000 hz

KMA 24H:

Within 3 db from 350 hz to 6,000 hz

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