

BMW ANTI-THEFT RADIO OWNER'S MANUAL



 DOLBY NR

FM

10.5

2

1

BAND

SB

5



■ PRESET STATION FREQUENCIES

Record the frequencies of your favorite stations below. In the event you lose push-button station

AM

1. _____

2. _____

3. _____

4. _____

5. _____

NOTE: Interruption of power to your radio will disrupt the operation of its electronic functions. If the battery is disconnected, push-button station memory will be lost. Enter your anti-theft code, and

memory, you'll have the frequencies you want at your fingertips for easy reprogramming.

FM

1. _____

2. _____

3. _____

4. _____

5. _____

reprogram the memory when power is restored. Low battery voltage will cause failure in the seek tuning operation. It will operate properly again when power is restored.



Dear BMW Owner:

The sound system in your BMW is one of the finest available for automobiles today. Its advanced technology delivers unsurpassed sound and includes many features not found in most car audio systems.

One of these is an electronic anti-theft feature, which is easy to use and will help protect your radio from falling prey to thieves.

We encourage you to take the time to read this manual—preferably in your car when it's in a stationary position—so that you can enjoy your sound system to the fullest.

BMW OF NORTH AMERICA, INC.

■ PROTECT YOUR RADIO FROM THEFT

Your BMW radio will not operate once it is removed from the console, making it virtually useless to a thief. The only way to restore power to the radio once it is removed is to enter a five-digit security code unique to your radio. The anti-theft features of your radio operate as follows:

1. When the ignition key is removed, the red anti-theft LED indicator will flash continuously.
2. If any buttons on the radio are touched after the key is removed, a warning tone will sound for five minutes or until the ignition is turned on. The anti-theft indicator will also flash.
3. A dead battery, electrical repairs, radio removal or reduction of voltage supply to less than five volts will render the radio inoperable until voltage is restored and the security code is entered. The radio must be turned on before the code is entered. The word "code" will show in the display.
4. To enter your security code, which can be found on the two cards supplied to you by BMW, turn the radio on and use the appropriately numbered radio push-button selectors.

If the correct code is not entered in three successive tries, the radio will not accept another entry until it has been left on for one hour.

Important: If you make a mistake in entering your code, complete the entire sequence before entering the correct code. For example,

if your code is 12345, and you mistakenly enter 125, finish the five-digit sequence (45) to complete that entry. The radio will not operate, and the word "code" will again appear on the display. Enter the correct code at this time.

Exception: If you hear a beep when entering your code, stop immediately! Begin entering the code again, starting with the first digit.

5. Do not leave the code cards in your car. Place them in your wallet or with your vehicle title papers for security. If you lose the code cards, contact the nearest BMW dealer. He will get your code from BMW. There may be a charge for removing the radio to ascertain its chassis number.
6. If radio or electrical repairs become necessary, please give the repair facility your radio code number. If you do not, only authorized BMW personnel can obtain the code from BMW.

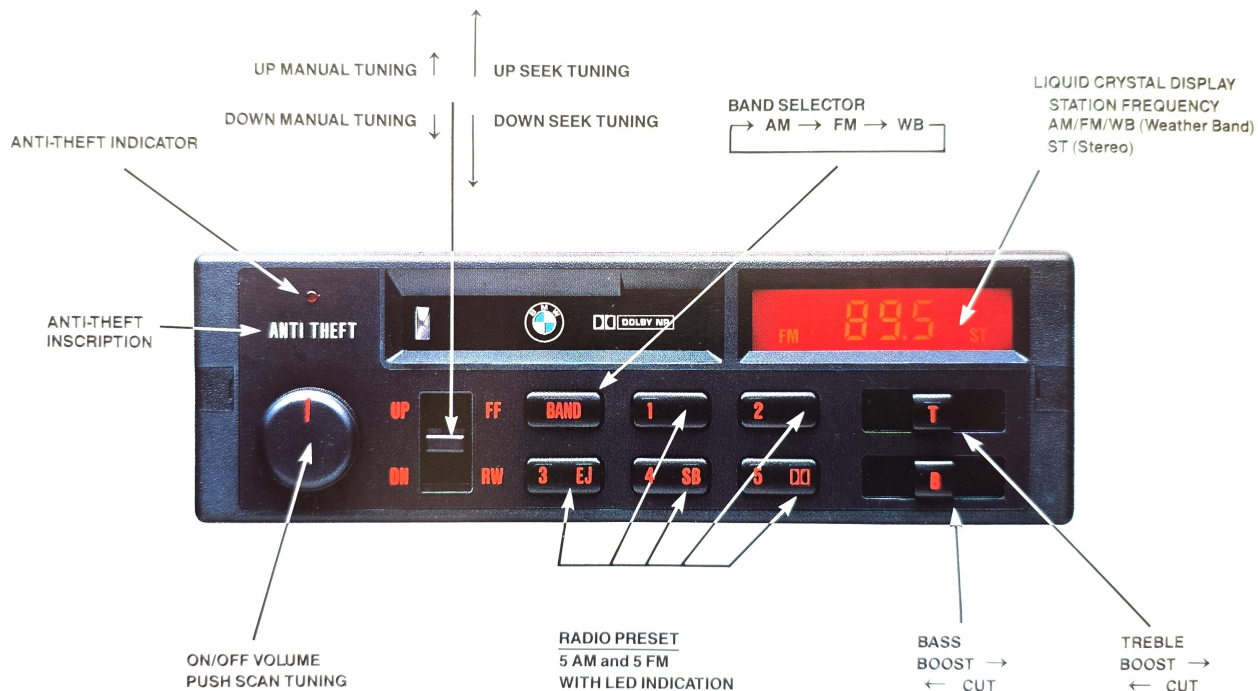
WARNING: FOR YOUR PROTECTION, CODES WILL **NOT** BE GIVEN OUT TO ANYONE—UNDER ANY CIRCUMSTANCES—EXCEPT AUTHORIZED BMW DEALER PERSONNEL AFTER PROOF OF VEHICLE OWNERSHIP AND PROPER IDENTIFICATION IS ESTABLISHED.

■ FEATURE DESCRIPTIONS

- Anti-theft microprocessor system.
- Digital phase-locked loop frequency synthesizer automatically tunes and locks onto the same frequency that is being broadcast and is indicated on the frequency display.
- Automatic tape equalization (70 μ sec. or 120 μ sec.).
- Liquid crystal display.
- Separate bass and treble functions.
- Seek tuning for radio.
- Up-scan tuning for radio.
- Programmable memory for 5 FM and 5 AM stations.
- Weather band with seek tuning capability.
- Ignition-key-off pause mode for tapes.
- Maintenance indication for tape deck (every 15 hours of use).
- Dual function buttons for radio preset and tape operation.
- Electronic tuning.
- Power loading/soft eject.
- Automatic local/distance attenuation.
- Dolby®* noise reduction for tape.
- Auto reverse at end of tape.
- Tape skip blank.
- Built-in automatic tape slack canceller (ATSC).
- Rotating tape head.

*Dolby® is a registered trademark of Dolby Laboratories, Inc.

■ RADIO MODE CONTROL LOCATION AND OPERATION



■ OPERATING THE RADIO

AM/FM/WB

Press the BAND button and AM, FM or WB will appear on the display indicating which band is being received. When AM or FM is chosen, the currently tuned frequency is also displayed. Press the button to change from band to band.

WEATHER BAND (WB) AUTOMATIC FREQUENCY SELECTION

When the weather band is activated, the radio automatically enters a seek mode that selects the strongest broadcast frequency. If the broadcast frequency in your area is too weak or nonexistent, a beep will sound after the WB frequencies are run through three times.

MANUAL/SEEK TUNING

The TUNING LEVER is used for both manual and seek tuning. For manual tuning, raise or lower the lever one step—up for higher frequencies, down for lower frequencies. For seek tuning, raise or lower the lever as far as it will go. The unit will automatically tune and lock onto the next higher or lower receivable broadcast frequency.

STEREO

The ST indicator will light up on the display whenever a stereo station is received. The indicator will flash when signal strength diminishes.

AUTOMATIC LOCAL/DISTANCE SWITCHING

New electronic circuitry automatically selects the local/distance mode for best reception, eliminating the need for manual switching.

SCAN TUNING

Signal scan tuning allows you to tune into each medium-to-strong frequency pausing seven seconds at each. Push the ON/OFF button once to begin tuning up scale, and press it again during a pause to stop the scanning.

FM RECEPTION

Signal reflections or blockages caused by hills or tall buildings may cause hissing and fluttering noises in FM reception. FM signal strength diminishes beyond 25 miles from the transmitter.

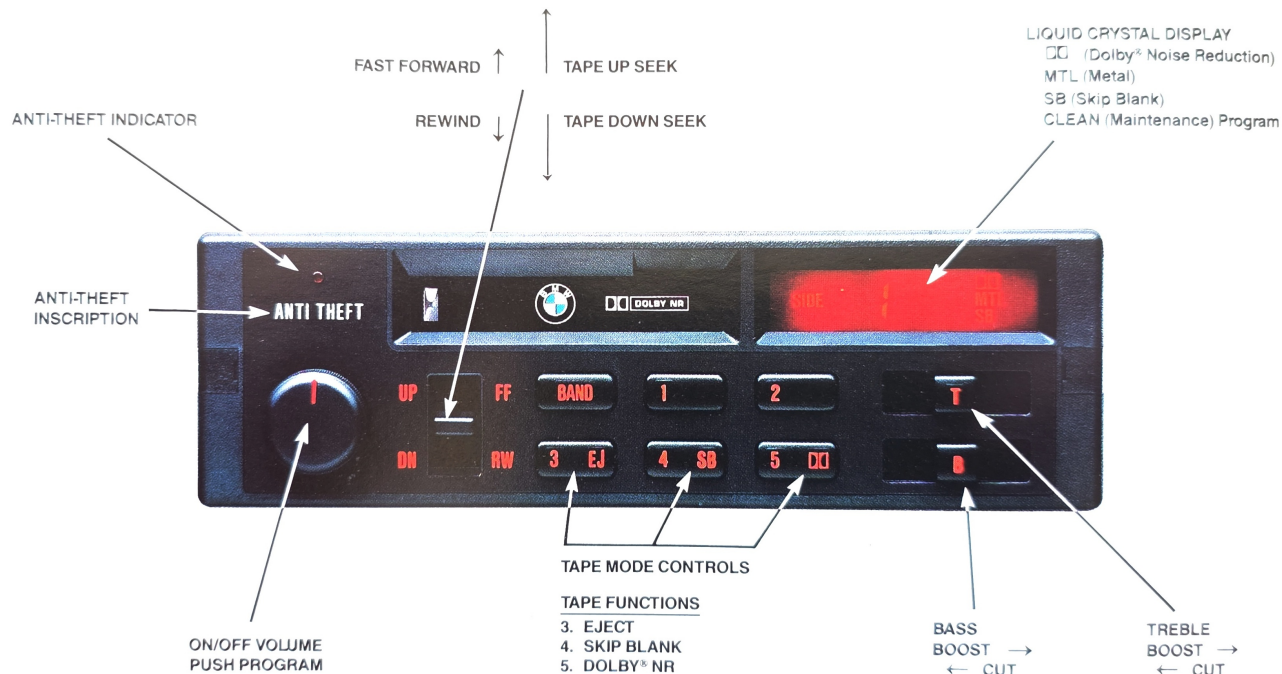
PRESET STATION INDICATORS WITH LED

Each PRESET button has a built-in LED. When a PRESET button is pushed, the LED will change from orange to green, indicating selection of that preset frequency.

PROGRAMMING/REPROGRAMMING PRESET STATIONS

Tune in the desired radio station. Then push a PRESET selection button for 1.5 seconds. When you hear a beep, the frequency has been memorized. Repeat this procedure for the remaining preset station selectors on the AM and FM bands. NOTE: The radio programming controls have dual functions. Each button can be set to one AM and one FM station.

■ TAPE MODE CONTROL LOCATION AND OPERATION



OPERATING THE CASSETTE PLAYER

CASSETTE OPERATION

To use the cassette player, turn the radio on. When a cassette is inserted, the unit will switch automatically from radio to tape mode.



FAST FORWARD/REWIND

The FF/RW lever has a two-step operation. Raise the lever one step to fast forward; lower it one step to rewind. Repeat the same action to stop the appropriate function. The logic circuitry in your radio will automatically determine the right direction for fast forward or rewind.

A standard cassette has two sides and can be played in either direction. When in play, the top side of a cassette will be indicated as Program 1 on the display. The bottom side will appear as Program 2.



TAPE SEEK

Raising or lowering the fast forward/rewind (FF/RW) lever two steps (as far as it can go) activates the seek mode. SEEK will appear in the liquid crystal display. To move to the next selection on your tape, raise the lever as far as it can go. The tape will move rapidly to the next selection. To restart the current selection, lower the lever in the same fashion.

Tape Seek will only function correctly if there are four seconds of silence between the selections on your tape. Excessive noise between selections on home-recorded tapes may interfere with these functions.

The cassette automatically ejects from the unit if tape setting operations cannot be completed within a few seconds. This may be caused by a faulty or damaged cassette. Determine the cause of the problem or use a different cassette.

REVERSING TAPE DIRECTION

To reverse tape direction, push the ON/OFF button. The tape will reverse automatically when a side is complete.



DOLBY® NOISE REDUCTION (5)

Use the Dolby®* Noise Reduction function—button 5 —to reduce the level of hiss inherent in cassettes. If you do not use the Dolby® noise-reduction function with Dolby® encoded tapes, the high-frequency response will be intensified. If you do use this function with non-Dolby® tapes, high-frequency response will be diminished.



TAPE EJECT (3 EJ)

Press the EJECT button—3 EJ. If the cassette does not fully eject, depress the EJ button for three seconds. Once the EJECT button is pushed, the unit returns to radio mode.



AUTOMATIC EQUALIZATION

The playback equalization of normal tapes differs from that of chrome and metal tapes. When a high-bias tape, including metal, is inserted, the unit will automatically change to the correct equalization level, and MTL will be indicated on the liquid crystal display.



IGNITION-KEY-OFF PAUSE MODE

If the ignition is turned off while a tape is playing, the cartridge automatically enters the pause mode. The unit will return to normal play mode when the ignition is turned on. The unit will not accept another cassette when it is in the pause mode.

**The word "Dolby" and the double-D symbol are registered trademarks of Dolby Laboratories, Inc.*

SKIP BLANK (4 SB)

The SKIP BLANK button—4 SB—automatically advances the tape to the next recorded portion when a blank section of tape exceeds approximately 12 seconds. When there is a long, unrecorded portion at the end of the tape, the unit advances the tape to the end and then starts to play the other side. When the SKIP BLANK button is pushed, SB will appear on the display. Additionally, SEEK will be displayed while the tape is advancing.

AUTOMATIC TAPE SLACK CANCELLER (ATSC)

The automatic tape slack canceller removes any slack in the tape before play to protect and extend tape life.

ROTATING TAPE HEAD

The rotating tape head in your tape cassette player ensures accurate horizontal tape alignment in both directions for optimum sound level reproduction and frequency response.

NOTE: The BMW Anti-Theft Radio contains a full-logic computer-controlled 3-motor drive which controls the automatic tape slack canceller (ATSC) and rotating tape head mechanism. During cassette tape loading/unloading or tape transport directional changes, the operation of the motor drive emits a precision mechanical sound which indicates normal tape cassette player operation.

PRECAUTIONS

1. Always remove cassette from unit when it is not in use.
2. Protect your tapes by keeping them in a cassette holder. Do not expose them to heat, dust, dirt or strong magnetic sources such as electric motors or television sets.
3. Make sure there is no slack in your tape before you insert it into the unit. A loose tape can damage the unit and/or the tape itself. Loose tape can be tightened by inserting a pencil or similar instrument into the spindle hole and turning it until the tape is no longer slack.

4. Use high-quality cassettes; 90- or 120-minute tapes are not recommended because their thickness cannot accommodate the variations in vehicle interior temperatures.
5. Prevent foreign objects from entering the cassette loading slot as they can damage the precision mechanism and tape heads.
6. Do not insert a tape when the unit is off. This may result in damage to the cassette player or tape.

NOTE: The electric antenna will automatically fully extend whenever radio or cassette player is on.

MAINTENANCE

When the cassette player has been used for 15 hours, the CLEAN indicator will appear on the display for 30 seconds, and an audible 10-second signal will be heard. This indicates that the playback heads and capstans should be cleaned. The deterioration of playback sound is another indication that cleaning is necessary.

Clean heads and capstans by inserting a head-cleaning cassette into the tape-loading slot, and allowing it to run for approximately 40 seconds. Push the program selector—5/PROG—to engage the second capstan and pinch roller for an additional 40 seconds.

NOTE: Make sure SKIP BLANK function is disengaged before inserting head-cleaning cassette. Head-cleaning cassette will be ejected in 12 seconds if SKIP BLANK is not disengaged. This will result in insufficient cleaning.

MODIFICATIONS

This unit is designed for use with two 4-ohm speakers or four 8-ohm speakers only. It is not designed for use with additional power boosters. The installation of a power booster may damage the radio, and such damage will not be covered by your warranty.

■ PERFORMANCE SPECIFICATIONS

TUNER

FM Receiver

Usable Sensitivity (Load)	[30 dB (N + D)/(S + N + D)]	1 μ V
Signal/Noise Ratio (1 mV)		65 dB
Overload Signal		1 V
AM Rejection		40 dB
IF Rejection		100 dB
Image Rejection		50 dB
Spurious Rejection		70 dB
Alternate Channel Selectivity		60 dB
Capture Ratio		2 dB
Stereo Separation (1 kHz)		40 dB
Stereo Distortion (1 mV)		0.5%
Frequency Range	87.9 to 107.9 MHz	
Intermediate Frequency		10.7 MHz

AM Receiver

Usable Sensitivity	[20 dB N/(S + N)]	10 μ V
Signal/Noise Ratio (5 mV)		50 dB
Selectivity ($\pm$ 10 kHz)		100 dB
IF Rejection		100 dB
Image Rejection		60 dB
Distortion (5 mV RF)		0.5%
Frequency Range	530 to 1620 kHz	
Intermediate Frequency		450 kHz

WB Receiver

Usable Sensitivity (Load)	[20 dB (S + N)/(S + N + D)]	0.3 μ V
Signal/Noise Ratio (1 mV)		55 dB
Distortion		1.5%

Frequency Range	162.400 to 162.550 MHz (25 kHz Step)
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Intermediate Frequency	
1st I.F	10.7 MHz
2nd I.F	450 kHz

Cassette Deck

Wow and Flutter WRMS-JIS	0.07%
Signal/Noise Ratio	50 dB
Dolby® NR Effect	10 dB
Separation	50 dB
Cross Talk	55 dB
Distortion	1%
Frequency Response (– 3 dB)	
Normal	40 Hz to 15 kHz
Metal	40 Hz to 18 kHz

Audio Control

Tone Control Response	
Treble Boost/Cut	10 kHz $\pm$ 10 dB
Bass Boost/Cut	100 Hz $\pm$ 10 dB

Power Amplifier

Power Output (R _L = 4 Ω , V _{cc} = 14.4V)	
10% THD	16W/Ch
1% THD	13W/Ch
THD (R _L = 4 Ω , V _{cc} = 14.4V)	
P _o = 1W	0.7%
Frequency Response	
($\pm$ 3 dB)	20 Hz to 40 kHz
Signal/Noise Ratio	65 dB

NOTE: Specifications are subject to change without notice.

88 88 1 600 155 (Radio)
88 88 1 600 160 (Manual)