

B-DAB-780

DAB+ / FM Tuner Module

Conversion for

Revox B780 / B739

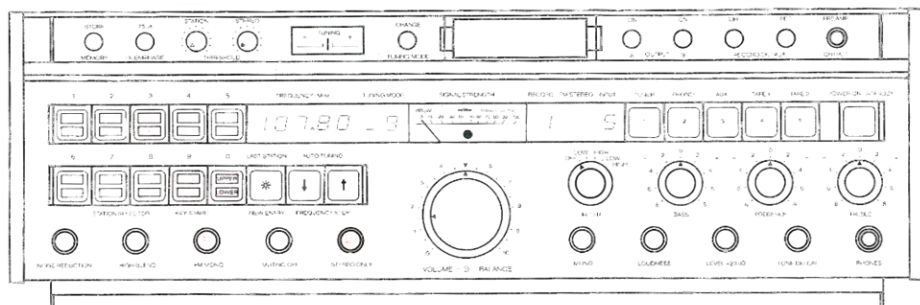


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1 DAB+/FM Tuner

DAB and DAB+ are the new generation of radio broadcasting technologies, in which the radio signal is transmitted entirely digitally. Even under difficult reception conditions, you can listen to your favorite stations without any noise.

The B-DAB-780 has been designed using sophisticated filter technology to be highly resistant to the types of interference commonly encountered in everyday environments. This allows you to enjoy interference-free radio reception even under difficult conditions.

The tuner receives DAB and DAB+ in Band III from 174–240 MHz and FM in Band II from 87.5–108 MHz. (Special versions for countries such as Japan or Brazil also support the 76–108 MHz frequency range, these are available on request only (B-DAB-780-JB).) Programming is fully automatic, stations are detected and stored automatically, and DAB+ stations are stored with their correct names. For FM, no station names are assigned manually, the RDS station name or RDS RadioText can be displayed. Up to 250 DAB/DAB+ stations and 250 FM stations can be stored.

As usual, the tuner outputs its analog audio signal through the TUNER source to the power amplifier or through the Record Out RCA or DIN connector. No digital S/PDIF signal is available.

Enjoy a new way of listening to radio.

2 General Information

2.1 Arrow Buttons

The arrow buttons are used for navigation in various functions. In the menu, for example, they let you move forward and backward through the menu items. When selecting stations, you can browse through all stored stations using the arrow buttons.

2.2 Alphanumeric Display

The new display can show letters, numbers, and several special characters. However, to retain the appearance and style of the original display, it is limited to 8 characters on the left and 4 characters on the right. As a result, some information is displayed in abbreviated form. In this case, preserving the original design takes priority over functionality.

The arrangement of the red dual-display units was also only possible with 2×4 characters to the left of the signal meter and 2×2 characters to the right. As a result, the signal meter is shifted approximately 3 millimeters to the right of center. This is only noticeable on close inspection and is normal.

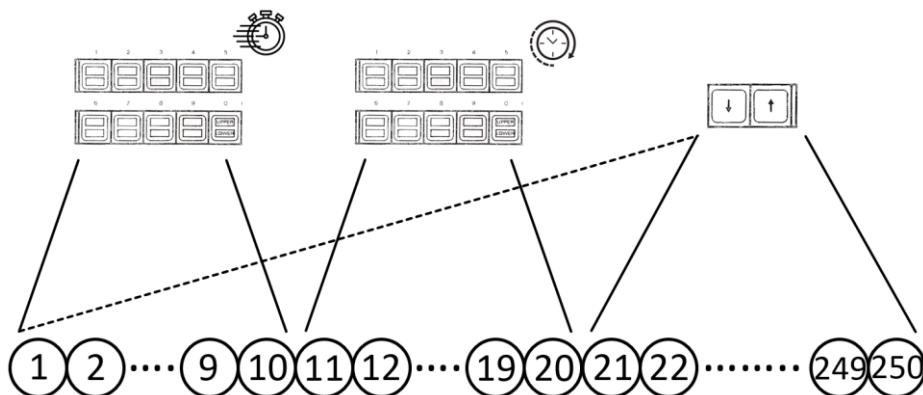
Thank you for your understanding.

2.3 Station Memory System – String of Pearls

For both DAB+ and FM, all stations are stored in the system like a string of pearls, one chain for DAB+ and one chain for FM. This means there can never be a gap in either chain. The 10 preset buttons automatically point to the first 10 stations (short press) or the second 10 stations (long press) in the chain. For example, button 3 automatically selects the third station in the DAB+ chain or the third station in the FM chain. The preset buttons cannot be assigned individually. To change which stations are accessed by the preset buttons, you must change the order of the stations in the station-memory chain.

When stations are moved, gaps are created automatically for insertion or closed automatically when a station is moved away.

The preset buttons allow you to select stations 1 through 20. You can then continue through the station chain using the arrow buttons. The arrow buttons also work for stations 1 through 20. For example, a short press on button 5 selects station 5, while a long press on button 5 selects station 15.



2.4 Last Used Source/Radio Station

The most recently used source and the most recently played DAB+ or FM station are always stored so that the same selection is restored when the unit is switched on again. This information is saved immediately when the unit is switched off, when "BYE" is briefly shown on the display. This allows the unit to be controlled using a timer or time switch. The unit no longer uses ANY batteries.

2.5 Stereo Indication and Signal Quality / Signal Strength

For each station, the DAB+ and FM tuner indicates whether the broadcast is mono or stereo. DAB+ can also use mono transmission, but this is not caused by poor signal strength, it is used to reduce the required data rate and is relatively uncommon. With FM, mono reception is usually caused by insufficient signal strength. The mono/stereo indication is intentionally slow and is updated only every few seconds. The signal-quality indication on the analog meter is also updated only every few seconds. If a station is in stereo, the red LED in the center of the analog meter (formerly the Dolby indicator) lights up.

Please note that with DAB+, the display indicates signal quality, not signal strength. Even a very weak DAB+ signal can provide error-free reception, while reflections can impair reception even when the signal itself is strong. With FM, signal quality cannot be measured in this way, so the display shows signal strength instead.

2.6 Source Display

Originally, the B780 displays its sources as numbers from 1 to 5. This also applies to the source routed to the Record Out connectors. The new display supports alphanumeric characters, making the source indication easier to read. The four characters on the right side of the display show the sources as follows:

DAB, FM, PHON, AUX, TAP1, TAP2

If a Record Out source has been selected, the display is limited to showing the source using two characters:

DB, FM, PH, AU, T1, T2

If you do not like this display format, you can change it in the Amplifier menu under Section 8.1 and return to the original numeric display. The numbers are the same as before, with the addition of DAB+ as number 11.

2.7 Alarms

The B780 power amplifier is continuously monitored by a protection circuit. The system checks whether DC voltage may be present at the loudspeaker outputs or whether the power amplifier is overheating. In either case, the loudspeakers are immediately disconnected from the power amplifiers and an alarm is shown on the display. The display illumination changes to RED. Only after the power amplifier has cooled down or the DC voltage is no longer present are the loudspeakers enabled again and reconnected by the power-amplifier relay. The alarm is then cleared and the normal display color returns.

During an alarm, no functions can be operated except source selection!

2.8 Remote Power-on

The optional Remote Power-On function of the B780/B739 continues to operate with the DAB+ conversion.

2.9 Antenna Control / Antenna Rotor

The optional antenna-control function is no longer supported with the new DAB+ conversion.

3 Connecting the Antenna

Determine whether you are using an active or passive antenna for DAB+/FM reception. If you use an active antenna that requires a 5 V supply, the B-DAB-780 module can supply up to approximately 30 mA. This supply voltage can be switched on or off using the latching "DEEMPHASIS" pushbutton under the flap at the upper left. This is required only for an active antenna and must only be enabled in that case. For an active antenna, the 5 V antenna supply **MUST** be switched on before starting a station scan (DAB+ or FM), otherwise no stations will be found.

Connect the antenna to the standard antenna connector at the rear left of the B780, which is designed for 50- or 75-ohm antennas. Always place the antenna on a metallic surface, for example on the B780 cabinet or on a piece of sheet metal. A metallic surface improves reception strength. The antenna only needs to be positioned close to the metal surface, electrical contact with the metal is not required.

If your cable network provides DAB+ Cable, you can convert this signal to standard DAB+ using the sumaDAB DAB+ Cable adapter and then receive it with the DAB module. In this case, an antenna is not required. Cable reception is generally simple and reliable.

At present, UPC (Switzerland) and its partners provide DAB+ Cable with approximately 90 radio programs on their cable networks.

3.1 Antenna Power Supply

If you use an active antenna that requires a 5 V supply, the B780 can directly provide the required 5 V at up to approximately 30 mA. This is controlled with the “DEEMPHASIS” pushbutton under the flap on the left.

- Power supply ON: “DEEMPHASIS” button pressed/latched
- Power supply OFF: “DEEMPHASIS” button released

Switching the supply on or off is also briefly indicated on the display.

CAUTION: If the antenna draws too much current or if there is a short circuit, “+5V FAIL” is shown on the display and the power supply to the antenna is switched off automatically. The power supply is enabled again only when it is switched on again using the “DEEMPHASIS” pushbutton or when the unit is switched on using the main power switch.

4 Storing, Listening and Organizing DAB+ Stations

When the DAB+/FM tuner is delivered, no stations are stored. To store DAB+ stations, first switch on the unit by briefly pressing the power switch at the far right. Make sure the unit is in DAB+ mode. Briefly press the “TUNER” source-selection button. A long press selects FM instead.

When the unit is switched on, “BDAB 780” is shown on the display for approximately 2 seconds, after which the most recently played station is selected. If no stations have been programmed, the display goes completely blank and the unit remains silent.

4.1 Automatically Storing DAB+ Stations “SCAN”

You can now start the automatic station scan. The tuner does not provide a manual tuning function because manual tuning is not required for DAB+. DAB+ works differently from FM, where one radio station is transmitted on each frequency. With DAB+, several radio stations are grouped into one package (called an ensemble) and transmitted on a single frequency. Therefore, direct tuning and manual entry of an individual station are not possible. Because each radio station transmits a predefined name, there is no need to assign station names manually.

Press and hold the “STORE MEMORY” button under the flap on the left for approximately 5 seconds until the automatic station scan starts. “AutoMEM” appears on the display to indicate that the scan has started. Release the button immediately. The tuner now scans all 40 channels in Band III and finds all available radio stations. It may also find stations that cannot be played because reception is too weak. These can be deleted later. Manual fine-tuning is therefore not necessary.

The channels are counted automatically from 0 to 40. The display is updated at fixed intervals, so not every individual channel may be shown. However, all channels are always scanned, even if some channel numbers do not appear on the display.

At the end of the scan, all stations found are stored. The tuner also checks whether a detected service is only a data service. Data services are not radio stations and do not transmit music, so they are automatically removed during the storing process. For this reason, the number of stations shown during the scan may be higher than the number ultimately stored. Storing can take several minutes because stations with signals that are too weak are also filtered out if they are definitely not playable. This takes some time because the tuner must settle on each frequency and filter out reflections.

4.2 Listening to and Changing DAB+ Stations

As with the original B780, the first 20 stations can be selected directly using the 10 buttons on the right. A short press on button 1 plays station 1 in the station chain. A long press on button 1 plays station 11.

The preset buttons do not need to be assigned separately. They automatically point to the corresponding station in the internal chain of stored stations. For example, button 2 automatically selects the station that was stored in the second position of the station chain during the scan.

If you know the station number, you can enter it directly using the star button. Briefly press the star button, placeholders for the digits then appear on the display. Enter the desired station number using the numeric buttons. Only as many placeholders are shown as are required for the actual number of stored stations. If the desired station number has fewer digits than the number of placeholders shown, enter leading zeros.

You can also navigate up and down through the entire station chain using the arrow buttons. The station name is shown immediately, but the station itself is selected only after approximately 1 second. A dot on the right side of the display indicates this delay. The dot means that the tuning process is waiting until you have stopped navigating for approximately 1 second. The station is then selected and the dot disappears.

If you are listening to a station and want to know its position in the station chain, press and hold the star button. The current station position is briefly displayed.

These three methods allow you to select any stored station.

4.3 Changing the DAB+ Station Order

During the automatic storing process, stations are generally stored in alphabetical order. (Exceptions may occur for stations whose short name is, for example, "32". Such stations are sorted using "32" even though they may be displayed as "Radio 32".) You can change this order as desired. Use the blank list on the second-to-last page to write down your preferred station order. This is very helpful because station numbers cannot be displayed while stations are being sorted.

Because the station chain already contains all stations, sorting is performed only by moving positions. Start with the station you want in first position, then the station you want in second position, then third, and so on. Each time, move the desired station to the position you have written down. This way, you build the new station order from the beginning of the chain according to your list.

When a station is moved backward in the chain (to a higher position number), it is inserted **after** the selected target position. When a station is moved forward (to a lower position number), it is inserted **before** the selected target position.

If you want to swap two stations, for example moving the station at position 30 to position 5, first move the station from position 30 to position 5. Then move the station now at position 6 (which was previously at position 5) to position 30. Position numbers are not displayed, so use the existing station names as your reference.

To sort stations, proceed as follows:

1. Briefly press the "STORE MEMORY" button under the flap on the left. "MENU DAB" appears on the display.
2. Use the up arrow button to select the first option, "STA SORT".
3. To start the sorting process, press the star button. A single dot appears on the left side of the display.
4. Using the arrow buttons (or preset buttons 1–10), select the station you want to move. Once a station has been selected, two dots appear on the left in addition to the station name. You can change the station selection as often as necessary until you are sure. (CAUTION: Preset buttons 11–20 do not work in this mode.)
5. Press the star button to confirm this station. The display clears and three dots appear on the left.
6. Now use the arrow buttons or preset buttons 1–10 to select the position to which the station should be moved. The station currently at the target position

is automatically shifted. Stations are never overwritten or deleted. Gaps are always created or closed automatically as required.

7. Press the star button again to complete the operation. You are automatically returned to the main menu at the station-sorting option.
8. You can now repeat steps 3–7 as often as necessary until all stations are arranged in the order you want.
9. When you have finished moving stations, press “STORE MEMORY” to complete the sorting process. The DAB menu is closed and you return to normal listening mode.

If you do not want to save the changes, exit the menu using the “CHANGE TUNING MODE” button. The changes are still present in volatile memory, so the unit must be switched off and on again.

Meaning of the “dots” at a glance

- . Waiting for you to select the station to be moved
- .. A station has been selected and can be moved.
- ... The station to be moved has been confirmed, the system is now waiting for the target position to be entered.
- A target position for the station has been selected.

In rare cases, if the station name itself contains a dot, the dots may be displayed incorrectly. Do not let this confuse you. After a few operations, the sequence will become familiar.

4.4 Deleting Individual DAB+ Stations

You can delete any stored station individually. Proceed as follows:

1. Briefly press the “STORE MEMORY” button below the display. “MENU DAB” appears on the display.
2. Use the up arrow button to select the first option, “STA SORT”.
3. Press the star button. A single dot appears on the left side of the display. A single dot indicates that the unit is ready for you to select the station to be moved or deleted.
4. Use the arrow buttons or the preset buttons to select the station to be deleted. Once a station has been selected, two dots appear on the left in addition to the station name. You can change the station selection as often as necessary until you are sure.

5. Press “RECORD OUTPUT OFF” under the flap on the right to delete the station. “deleted” is briefly shown on the display, after which you are returned to the main menu at the station-sorting option.
6. You can now repeat steps 3–5 as often as necessary until all stations you want to remove have been deleted.
7. When you have finished deleting stations, press “STORE MEMORY” to exit the menu, save all changes, and return to normal listening mode.

If you do not want to save the changes, exit the menu using the “CHANGE TUNING MODE” button. The changes are still present in volatile memory, so the unit must be switched off and on again.

As you have probably noticed, moving and deleting stations are performed in the same menu. You may also combine these operations.

4.5 Deleting All DAB+ Stations

To delete all stored DAB+ stations, press and hold the “RECORD OUTPUT OFF” button in normal DAB listening mode until “Del All?” appears. Release the button, then press and hold it again until “deleted” appears on the display. All stored DAB+ stations are now deleted, the preset buttons are empty, and you can start a new automatic station scan.

4.6 DAB+ Dual Channel

If a station is broadcast as a Dual Channel service, the left and right channels carry different programs, for example different languages. This is shown when you display the technical data, and you will of course hear it immediately as well. Use the “HIGH BLEND” pushbutton to switch between the left and right channel. Only the selected left or right channel is then played. Normally, you would then select the amplifier’s mono function so that the selected channel can be heard through both loudspeakers. To do this, press the “MONO” pushbutton at the lower right next to the volume control. The “HIGH BLEND” pushbutton can only be used to select left or right. Stereo operation is restored automatically when a new station is selected. Afterwards, return both the “HIGH BLEND” and “MONO” pushbuttons to their original positions.

CAUTION: This option is available only when the selected station is actually broadcast as a Dual Channel service.

4.7 Updating a DAB+ Station Name

With DAB+, station names are assigned automatically because they are transmitted by the station. However, if a station was not received well enough during the storing process, errors may occur in the stored name. A station may also change its DAB+ display name. In either case, while listening to that station, press the “STEREO ONLY” pushbutton below the arrow buttons twice. The display then shows “Update”, followed by “Station”, and then “done”. The station data is now stored again and any changed station name is updated in memory.

4.8 Displaying Technical Data for the Current DAB+ Station

To display technical data for the station currently being played, proceed as follows. Ideally, the station should have been playing for 30–40 seconds so that the tuner has had time to receive all of the technical data. Press and hold the “CHANGE TUNING MODE” button below the flap. The following station information then scrolls across the display in sequence.

CAUTION: The station may change the RadioText while this information is being displayed. This can interrupt the technical-data display and show the RadioText instead. If this happens, simply repeat the procedure.

- Station bitrate – BR in kilobits per second
- Signal quality – QTY 0–100
- Audio channels: Mono, Stereo, Joint Stereo, Dual Channel
- Channel name – e.g. 5D
- Broadcast frequency – e.g. 180.064 MHz

4.9 Displaying DAB+ RadioText

The DAB RadioText setting can be configured so that RadioText is not displayed at all, is displayed once after each change, or is displayed continuously. At any time, you can display the text again, provided RadioText has been received. Briefly press the “CHANGE TUNING MODE” button below the flap. The RadioText then scrolls across the display once.

To change this setting, see Sections 0 and 0.

5 Settings Menu “MENU DAB”

You are already familiar with the first settings item, which is used to sort and delete stations. The remaining settings are explained individually below. While these settings are being adjusted, the signal-quality indication on the analog meter and the stereo indicator are not updated. Depending on the setting, the analog meter may also drop to 0 because the meter indication can be calibrated. This is normal behavior.

To open the Settings menu, briefly press the “STORE MEMORY” button. To edit an individual menu item, use the arrow buttons to navigate to that item.

For all settings except sorting and deleting in the first menu item, the following button functions apply:

- Button 1: decrease the value or move to the left
- Button 5: increase the value or move to the right
- Button 0: display the current value of this setting

“STORE MEMORY” = save settings and exit the menu

“CHANGE TUNING MODE” = exit the menu without saving settings

(The settings remain active only temporarily, until the unit is switched off.)

5.1 Turning RadioText On/Off “RADIOTXT”

If a DAB+ station transmits RadioText, you can select one of the following display modes:

- Do not display RadioText: “DISABLED”
- Each time the text changes, it scrolls across the display once, the station name is then shown again: “ONCE oCH”
- RadioText is displayed continuously and scrolls repeatedly until new RadioText is received, the new text then scrolls continuously: “ENABLED”

5.2 DAB+ Volume “VOLUME”

Here you can adjust the basic output level of the DAB+ tuner so that it matches the other sources as closely as possible. Values from 0 to 16 can be selected.

5.3 DAB+ Equalizer “EQUALIZE”

Here you can select one of the predefined equalizer settings to be used for all DAB+ radio stations, according to your preference.

- Disabled “DISABLED”
- Bass boost “BASS BST”
- Jazz “JAZZ”
- Live “LIVE”
- Vocal “VOCAL”
- Acoustic “ACOUSTIC”

5.4 Cut + “CUT PLUS”

Many stations add a + sign to the end of their station name, for example SRF3+. This makes it possible to distinguish stations encoded using DAB+ from those using DAB.

Because almost all stations now use the newer standard and therefore have a + at the end of the name, this information is generally more distracting than useful. This option lets you suppress the + sign at the end of the station name.

- Keep the + sign: “NO CUT +”
- Remove the + sign: “CUT +”

5.5 Headroom „HEADROOM“

The Headroom setting allows experienced users to adjust the tuner’s output headroom. Normally, no change is required and a value of 0 should be suitable in most cases. If radio stations are broadcast at an unusually high level, an experienced user can make an adjustment here.

Values from 0 dB to -12 dB can be selected.

5.6 DRC „DRC“

DRC stands for Dynamic Range Control and is used only by some radio stations. This setting affects the dynamic range of the broadcast radio signal. If the option is enabled, the radio station can make use of DRC, if it is disabled, it cannot.

- Dynamic Range Control enabled: “DRC ON”
- Dynamic Range Control disabled: “DRC OFF”

5.7 Meter Factor „METER F“

To ensure that the signal-quality analog meter always shows the correct value, you can adjust the voltage corresponding to full-scale reading 10. Use buttons 1 or 5 to adjust the setting until the analog meter is exactly at full-scale reading 10. Due to aging, not all analog meters have the same sensitivity. If full scale can no longer be reached, the meter should be checked.

Values from 0 to 254 can be selected.

5.8 Display Dimming “DIMMING”

This setting adjusts the brightness of the red segment displays. It applies to both DAB and FM.

5.9 Display Color for DAB+ “VU RGB”

By default, the display color is yellow, as on the original unit. In this menu you can select a different color and brightness for DAB+. The selected color is then used whenever you listen to DAB+.

Use the following buttons to select the color:

- Red → 1 = plus, 6 = minus
- Green → 2 = plus, 7 = minus
- Blue → 3 = plus, 8 = minus

A short press increases or decreases the value by 1, a long press changes it by 40. Each color can be set to a value from 0 to 254.

The display shows the values from left to right for RED, GREEN, BLUE.

Setting all colors to 0 switches the illumination off.

5.10 Test Tone „TESTTONE“

Use buttons 1 and 5 to move through the different test tones. This is not an actual setting that can be saved. It is only a temporary function for testing the audio outputs.

- Test signals off
- Noise on both channels
- 1 kHz sine wave, left channel
- 1 kHz sine wave, right channel
- 1 kHz sine wave, both channels

5.11 Factory Reset “FA RESET”

To reinitialize the DAB+/FM tuner completely, the entire memory contents can be erased. This deletes all settings and all DAB+, FM, and AMP stations/settings.

To perform the reset, while “FA RESET” is selected in the menu, press button 1 five times in succession. “RESET” then appears on the display. As soon as “done” appears, everything has been erased and you must switch the unit off and then on again using the main power switch.

The “Factory Reset” menu also provides the following additional functions:

- Button 9: displays the number of stored DAB and FM stations
- Button 0: displays the installed software version

5.12 Exiting the Settings Menu

You can leave this menu at any time while adjusting settings without saving. Simply press the “CHANGE TUNING MODE” button. The menu closes and the station name is displayed again. You **MUST** then switch the unit off and back on using the main power switch! If you do not, the changed settings remain active until the next restart.

The same method can be used to discard all changes while sorting or deleting stations.

Pressing “STORE MEMORY” exits the menu and saves all settings.

6 Storing, Listening, and Organizing FM Stations

When the DAB+/FM tuner is delivered, no stations are stored. To store FM stations, first switch on the unit using the power switch at the far right. Make sure the unit is in FM mode. Press and hold the “TUNER” button, “FM” then appears in the right-hand display.

6.1 Automatically Storing FM Stations “SCAN”

You can now start the automatic station scan. Press and hold the “STORE MEMORY” button under the flap on the left for approximately 7 seconds until the automatic scan starts. “AutoMEM” followed by “Search” appears on the display. Release the button immediately. The tuner now scans all FM frequencies, and you can watch the frequencies being tested from low to high. When a station is found, it is stored. Several options in the FM Settings menu can be adjusted to optimize the result so that the tuner does not store too many stations that cannot be received properly or miss too many stations. When the automatic scan is complete, “END” is briefly displayed and the first station found is selected. The stations are stored in ascending frequency order.

During the scan, incorrect frequency values may occasionally be shown on the display. Do not be concerned, the scan still operates normally and correctly.

You can add or delete individual stations manually at any time afterwards.

6.2 Manually Adding FM Stations

To add stations manually, proceed as follows:

1. The unit must be set to FM.
2. Press the “NOISE REDUCTION” pushbutton at the lower left of the unit so that it is latched in.
3. You can now search upward or downward using the arrow buttons. As soon as a station is found, the search stops and the station is played.
4. To store this station, press and hold the “STORE MEMORY” button. The station is stored and added to the end of the station chain. “added” is briefly shown on the display.
5. Repeat steps 3 and 4 until you have added all desired stations.

When finished, press the “NOISE REDUCTION” pushbutton again so that it is released. You are then back in the mode in which stored stations can be recalled using the preset buttons

6.3 Listening to and Changing FM Stations

As with the original B780, the first 20 stations can be selected directly using the 10 buttons on the right. A short press on button 1 plays station 1 in the station chain. A long press on button 1 plays station 11.

The preset buttons do not need to be assigned separately. They automatically point to the corresponding station in the internal chain of stored stations. For example, button 2 automatically selects the station that was stored in the second position of the station chain during the scan.

If you know the station number, you can enter it directly using the star button. Briefly press the star button, placeholders for the digits then appear on the display. Enter the desired station number using the numeric buttons. Only as many placeholders are shown as are required for the actual number of stored stations. If the desired station number has fewer digits than the number of placeholders shown, enter leading zeros.

You can also navigate up and down through the entire station chain using the arrow buttons. The station name is shown immediately, but the station itself is selected only after approximately 1 second. A dot on the right side of the display indicates this delay. The dot means that the tuning process is waiting until you have stopped navigating for approximately 1 second. The station is then selected and the dot disappears.

If you are listening to a station and want to know its position in the station chain, press and hold the star button. The current station position is briefly displayed.

These three methods allow you to select any stored station.

6.4 Changing the FM Station Order

During the automatic storing process, FM stations are generally stored in ascending frequency order. You can change this order as desired. To reorder the stations, start with the station you want in first position, then the station you want in second position, then third, and so on. In this way, you build the new station order from the beginning of the chain.

When a station is moved backward in the chain (to a higher position number), it is inserted **after** the selected target position. When a station is moved forward (to a lower position number), it is inserted **before** the selected target position.

If you want to swap two stations, for example moving the station at position 30 to position 5, first move the station from position 30 to position 5. Then move the station

now at position 6 (which was previously at position 5) to position 30. Position numbers are not displayed, so use the station frequencies as your reference.

Proceed as follows:

1. Briefly press the "STORE MEMORY" button under the flap on the left. "MENU FM" appears on the display.
2. Use the up arrow button to select the first option, "STA SORT".
3. To start the sorting process, press the star button. A single dot appears on the left side of the display.
4. Using the arrow buttons (or preset buttons 1–10), select the station you want to move. Once a station has been selected, two dots appear on the left in addition to the station name. You can change the station selection as often as necessary until you are sure. (CAUTION: Preset buttons 11–20 do not work in this mode.)
5. Press the star button to confirm this station. The display clears and three dots appear on the left.
6. Now use the arrow buttons or preset buttons 1–10 to select the position to which the station should be moved. The station currently at the target position is automatically shifted. Stations are never overwritten or deleted. Gaps are always created or closed automatically as required.
7. Press the star button again to complete the operation. You are automatically returned to the main menu at the station-sorting option.
8. You can now repeat steps 3–7 as often as necessary until all stations are arranged in the order you want.
9. When you have finished moving stations, press "STORE MEMORY" to complete the sorting process. The FM menu is closed and you return to normal listening mode.

If you do not want to save the changes, exit the menu using the "CHANGE TUNING MODE" button. The changes are still present in volatile memory, so the unit must be switched off and on again.

Meaning of the "dots" at a glance

- . Waiting for you to select the station to be moved.
- .. A station has been selected and can be moved.
- ... The station to be moved has been confirmed, the system is now waiting for the target position to be entered.
- A target position for the station has been selected.

The station frequencies themselves contain decimal points, which unfortunately makes the dot display less clear in this mode. Do not let this confuse you. After a few

operations, the procedure will become familiar. Simply follow the instructions step by step.

6.5 Deleting Individual FM Stations

You can delete any stored station individually. Proceed as follows:

1. Briefly press the “STORE MEMORY” button below the display. “MENU FM” appears on the display.
2. Use the up arrow button to select the first option, “STA SORT”.
3. Press the star button. A single dot appears on the left side of the display. A single dot indicates that the unit is ready for you to select the station to be moved or deleted.
4. Use the arrow buttons or the preset buttons to select the station to be deleted. Once a station has been selected, two dots appear on the left in addition to the station name. You can change the station selection as often as necessary until you are sure.
5. Press “RECORD OUTPUT OFF” under the flap on the right to delete the station. “deleted” is briefly shown on the display, after which you are returned to the main menu at the station-sorting option.
6. You can now repeat steps 3–5 as often as necessary until all stations you want to remove have been deleted.
7. When you have finished deleting stations, press “STORE MEMORY” to exit the menu, save all changes, and return to normal listening mode.

If you do not want to save the changes, exit the menu using the “CHANGE TUNING MODE” button. The changes are still present in volatile memory, so the unit must be switched off and on again.

As you have probably noticed, moving and deleting stations are performed in the same menu. You may also combine these operations.

6.6 Manual FM Operation

The original B780 provides a manual operating mode that lets you search conveniently for an FM frequency and listen to it directly. This manual mode is also available here in FM mode.

Press the “NOISE REDUCTION” pushbutton so that it latches in. “MAN TUNE” immediately appears on the display, followed after 2 seconds by the currently tuned frequency. You can now use the two arrow buttons to search upward or downward for stations. The search stops automatically when a station is found. You can then listen to that station or continue searching. The criteria that determine when the scan stops can be adjusted using several options in the FM menu.

To exit Manual Tuning mode, press the “NOISE REDUCTION” pushbutton again so that it is released. The most recently played station from the stored station list is then selected.

In Manual Tuning mode, the RDS station name and RadioText are also displayed according to the selected settings.

6.7 Direct Entry of an FM Station Frequency

In Manual Tuning mode, you can enter a station frequency directly. This mode must be active, meaning that the “NOISE REDUCTION” pushbutton must be latched in.

To begin, press the star button. The display then shows _____. Start by entering the first digit. Only digits that can form a valid frequency are accepted. When you reach the last digit, the frequency is automatically completed with a zero and the tuner switches to the entered frequency.

You now hear the selected frequency. RDS is also supported and is displayed according to the selected settings.

6.8 Deleting All FM Stations

To delete all stored FM stations, press and hold the “RECORD OUTPUT OFF” button in normal FM listening mode until “Del All?” appears. Release the button, then press and hold it again until “deleted” appears on the display. All stored FM stations are now deleted, the preset buttons are empty, and you can start a new automatic station scan. The delete-all function cannot be used in Manual Tuning mode described in Section 6.6.

6.9 Switching FM Reception to Mono

If signal strength is insufficient, stereo reception may contain noise. Use the “FM MONO” button to force the currently selected station to mono until you change stations. If the tuner switches to stereo too early, you can adjust the stereo signal-to-noise threshold in the Settings menu as described in Section 7.4 Stereo is automatically enabled again when a new station is selected. If you also want to listen to the next station in mono, briefly release the pushbutton and latch it in again.

6.10 Displaying FM RDS RadioText

The FM RDS RadioText setting can be configured so that RadioText is not displayed at all, is displayed once after each change, or is displayed continuously. At any time (except when the RDS station-name display is selected), you can start displaying the RadioText again by briefly pressing the “CHANGE TUNING MODE” button below the display. The RadioText then scrolls across the display once. When RDS station-name display is selected, the station name would continually compete with the RadioText and the two displays would overwrite each other. For this reason, RadioText is not read in this mode and cannot be displayed using “CHANGE TUNING MODE”.

To change this setting, see Sections 7 and 7.1

7 Settings Menu „MENU FM“

You are already familiar with the first settings item, which is used to sort and delete stations. The remaining settings are explained individually below. While these settings are being adjusted, the signal-quality indication on the analog meter and the stereo indicator are not updated.

To open the Settings menu, press the “STORE MEMORY” button. To edit an individual menu item, use the arrow buttons to navigate to that item.

For all settings except sorting and deleting in the first menu item, the following button functions apply:

- Button 1: decrease the value or move to the left
- Button 5: increase the value or move to the right
- Button 0: display the current value of this setting

“STORE MEMORY” = save settings and exit the menu

“CHANGE TUNING MODE” = exit the menu without saving settings

(The settings remain active only temporarily, until the unit is switched off.)

7.1 RDS „RDS“

RDS is the Radio Data System, which transmits additional information along with the music. This includes the radio-station name and the somewhat longer RadioText. Here you can select which information should be displayed. When a stored FM station is selected, the frequency is shown first. Once the RDS data has been received correctly, the selected RDS information is displayed in place of the frequency.

- Do not display RDS data, the frequency remains visible: "DISABLED"
- Display the station name: "RDS NAME". CAUTION: Some radio stations change this text frequently to also show the current song title and artist.
- Each time the long RadioText changes, it scrolls across the display once, the frequency is then shown again: "RDS TXT1"
- The long RadioText is displayed continuously and scrolls repeatedly until new RadioText is received, the new text then scrolls continuously: "RDS TXTe"

7.2 Volume FM „VOLUME“

Here you can adjust the basic output level of the FM tuner so that it matches the other sources as closely as possible. Values from 0 to 16 can be selected.

7.3 Equalizer FM „EQUALIZE“

Here you can select one of the predefined equalizer settings to be used for all FM radio stations, according to your preference.

- Disabled "DISABLED"
- Bass boost "BASS BST"
- Jazz "JAZZ"
- Live "LIVE"
- Vocal "VOCAL"
- Acoustic "ACOUSTIC"

7.4 S/N Threshold for Stereo "STE THD"

Sets the signal-to-noise-ratio threshold at which the tuner switches between mono and stereo. Values from 0 to 9 can be selected. The default value is 4.

7.5 Station Search – Detection Threshold "RSSI THD"

Sets the signal-strength threshold at which the automatic station search stops. Values from 0 to -100 dBm can be set. This setting is used only for automatic FM station programming and for station searches in Manual Tuning mode. The default value is 20.

7.6 Station Search – S/N Ratio “NSE THD”

Sets the signal-to-noise-ratio threshold at which the automatic station search stops. Values from 0 to 12 can be selected. This setting is used only for automatic FM station programming and for station searches in Manual Tuning mode. The default value is 9.

7.7 Station Search – Storage Threshold “MIN LVL”

Sets the threshold that determines whether a station found during the automatic FM scan is actually stored.

During the station search, the tuner stops according to the two values above, remains on the frequency, and optimizes reception. After 1–2 seconds, the value is measured again. If this threshold is exceeded, the station is stored automatically, otherwise, the search continues. Values from 0 to 100 can be entered. The default value is 20. This setting is used exclusively for automatic FM station programming.

7.8 Display Color for FM “VU RGB”

By default, the display color is yellow, as on the original unit. In this menu you can select a different color and brightness for FM. The selected color is then used whenever you listen to FM.

Use the following buttons to select the color:

- Red → 1 = plus, 6 = minus
- Green → 2 = plus, 7 = minus
- Blue → 3 = plus, 8 = minus

A short press increases or decreases the value by 1, a long press changes it by 40. Each color can be set to a value from 0 to 254.

The display shows the values from left to right for RED, GREEN, BLUE. Setting all colors to 0 switches the illumination off.

7.9 Exiting the Settings Menu

You can leave this menu at any time while adjusting settings without saving. Simply press the “CHANGE TUNING MODE” button. The menu closes and the station name is displayed again. You **MUST** then switch the unit off and back on using the main power switch! If you do not, the changed settings remain active until the next restart.

The same method can be used to discard all changes while sorting or deleting stations.

Pressing “STORE MEMORY” exits the menu and saves all settings.

8 Settings Menu “AMPLIFIER FM”

The unit must be set to one of the PHONO, AUX, TAPE1, or TAPE2 inputs. To open the Settings menu, press the “STORE MEMORY” button. To edit an individual menu item, use the arrow buttons to navigate to that item.

For all settings, the following button functions apply:

- Button 1: decrease the value or move to the left
- Button 5: increase the value or move to the right
- Button 0: display the current value of this setting

“STORE MEMORY” = save settings and exit the menu

“CHANGE TUNING MODE” = exit the menu without saving settings

(The settings remain active only temporarily, until the unit is switched off.)

8.1 Source Display “SCR STYL”

Originally, the B780 shows the currently played or recorded sources only as numbers from 1 to 5 on the right-hand display. The new alphanumeric display can also show the sources using letters, making them easier to read.

There are two display modes, “NEW” and “CLASSIC”. CLASSIC shows the sources as numbers, as on the original unit, while NEW uses the following abbreviations:

DAB, FM, PHON, AUX, TAP1, TAP2

If a Record Out source has been selected, the display is limited to showing the source using two characters:

DB, FM, PH, AU, T1, T2

8.2 Display Color for PHONO, AUX, TAPE1, and TAPE2

By default, the display color is yellow, as on the original unit. In this menu you can select a different common color and brightness for the four non-radio inputs. The selected color is then used whenever you listen to any of these four sources.

Use the following buttons to select the color:

- Red → 1 = plus, 6 = minus
- Green → 2 = plus, 7 = minus
- Blue → 3 = plus, 8 = minus

A short press increases or decreases the value by 1, a long press changes it by 40. Each color can be set to a value from 0 to 254.

The display shows the values from left to right for RED, GREEN, BLUE.

Setting all colors to 0 switches the illumination off.

8.3 Exiting the Settings Menu

You can leave this menu at any time while adjusting settings without saving. Simply press the "CHANGE TUNING MODE" button. The menu closes and the selected source is played again. You **MUST** then switch the unit off and back on using the main power switch! If you do not, the changed settings remain active until the next restart.

Pressing "STORE MEMORY" exits the menu and saves all settings.

9 Troubleshooting

9.1 Display Shows “+5V FAIL”

The supply voltage for an active antenna is switched on, but either there is a short circuit in the antenna cable or the antenna requires too much current. Check the technical specifications of your antenna.

Disconnect the antenna cable from the B780, switch the unit off and back on, and check whether the error message reappears.

9.2 Display Shows “no RS232”

The communication link between the two installed circuit boards has been interrupted. Check that all connectors are firmly seated on all boards. CAUTION: This check can only be performed by a qualified technician with the unit open.

9.3 No Reception with an Active Antenna

An active antenna has a built-in signal amplifier, which requires power in order to operate. Active antennas requiring 5 V and no more than 30 mA can be powered directly by the DAB+/FM tuner module. Press the “DEEMPHASIS” pushbutton so that it is latched in. Check that your antenna is designed for 5 V, max. 30 mA, and that the antenna supply is enabled.

10 Technical Specifications

DAB frequency range: 174 - 240 MHz
DAB frequency band: III
DAB channels: 5A – 13F
DAB sensitivity: -99dBm

FM frequency range (Switzerland): 87.50 – 108.00 MHz
FM frequency range, special version (other countries): 76.00 – 108.00 MHz
FM frequency band: II
FM sensitivity: -106dBm

Broadcast types: DAB, DAB+ and FM
B780 antenna connector: Belling-Lee connector for 50 or 75 Ohm
Antenna phantom power: 5V $\pm$ 10%, max. 30mA

11 Warranty

The warranty period is 24 months from the date of purchase.

For service, your first point of contact is your authorized dealer.

If your dealer is unable to assist you, please contact the distributor.

12 Support & Questions

You can find many helpful answers and contact details at:
www.M-DAB.ch.

Manual Version 1.00
For firmware version:: 1.00
For hardware version: T1.5 D1.5
August 2026

13 General Information

When disposing of the circuit boards, comply with all local laws and regulations governing the disposal of electronic equipment



Konformitätserklärung:

Diese finden Sie unter:
www.M-DAB.ch

My Personal Station List

DAB

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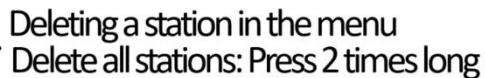
26.

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Functions like the original B780

Display radio text
Exit menu without saving
DAB: TechData

Update DAB station name

Menu and station navigation

Station number direct input
Station number query

FM Mono

Direct select buttons

DAB Dual Channel

FM Manual Mode

5V antenna power supply

Start Menu / Save / Autostore