

## **Preliminary Users Manual, Telex FMR-1000 System.**

Telex Model FMR-1000 Wireless Microphone Receiver.

Telex Model WT-1000 Wireless Beltpack Transmitter.

Telex Model HT-1000 Wireless Handheld Transmitter.

The components above form the Telex “1000” Professional Grade Wireless Microphone System. The system is designed to be used in professional installations where Sound Quality and Reliability are of prime importance. Auto-set features and simplicity of operation are assured along with flexibility for varying venues. These features save valuable installation time at the outset and in the future to help prevent “recalls”. The features of the “1000” system such as user programmable frequencies or pre-programmed frequency sets mean that other users such as Rental Houses with itinerant operations will spend the least amount of time feasible during set-up.

Features:

Receiver....

- In-Line Receiver Power Supply saves terminal strip occupation.
- International Power Supplies and cordsets off the shelf.
- Phase Locked Frequencies for stable Operation.
- 950 Radio Channels, user programmable or factory installed.
- LCD Displays for ease of viewing.
- Patented Phase Diversity System.
- USB Port for uploading software improvements.
- Control Port for remote COR or Relay closure.
- Adjustable Line Level ¼ inch output jack.
- Fixed Microphone Level XLR output jack.
- Front Panel Power ON/OFF Switch.
- Quadruple Tuned Ceramic Resonator front end for superior interference rejection.
- SAW Filter 1<sup>st</sup> I.F for out of band rejection.
- Triple ceramic filters in 2<sup>nd</sup> I.F for adjacent channel rejection..
- Double Tuned Quadrature circuit for low audio distortion.
- On-board MIDAS EQ with Amplitude, Q (bandwidth) and Frequency controls.
- Permanent Flash Memory for frequency/system storage.

- Front Panel Software Control of Squelch settings with channel monitor.
- Double Squelch Amplitude and Tone Squelch system prevents false squelch.
- Auto-Select of frequencies speeds set-up time.
- Rugged Steel Case with Powder Coat Paint.
- Modern front panel design with tamper resistant control cover.

#### Handheld Transmitter.....

- 950 Radio Channels, user programmable or factory installed.
- Phase Locked Frequencies for Stable Operation.
- Efficient current drain vs. power system.
- High/Low power switch for range cut/boost or intermod reduction.
- Patented Internal Dipole antenna eliminates wires or “rubber duck” antennas.
- Removable Heads allow personal selection of available heads.
- Specially shaped Handle with “softpaint” for comfort and low handling noise.
- 9 Volt Alkaline “rattle-proof” battery area.
- Low Profile Audio Mute and Power Switch.
- LCD Display for ease of viewing.
- On-board frequency program and menu switch.
- Superior MIDAS microphone pre-amp design.
- Permanent “Flash Memory” for frequency/system storage.
- Transmit Tone for squelch control.
- Microphone Gain control for talent/head set-up.
- Low Battery LED.

#### Beltpack Transmitter.....

- 950 Radio Channels, user programmable or factory installed.
- Phase Locked Frequencies for Stable Operation.
- Efficient current drain vs. power system.
- High/Low power switch for range cut/boost or intermod reduction.
- Flexible wire rope replaceable antenna.

- Microphone/Instrument input connector for personal selection of microphones/instruments or ease of cord change.
- Rugged Die Cast housing with wear resistant spatter paint coating.
- Non detachable battery door with dual latches.
- 9 Volt Alkaline battery operation.

### Telex Model FMR-1000 UHF Wireless Microphone Receiver

The Telex Model FMR-1000 Receiver is a 950 Channel, frequency-selectable full diversity system operating within the frequency range of 520.0 to 746.0 MHz, on specific pre-set bands of frequencies with designated systems for UHF Television Channels . This configuration allows some operation even if several TV channels are in use locally. If any of the TV channels are some distance away from the area where the FMR-1000 is to be used, some of the FMR-1000 channels can also be used in those channels , with some risk of minor interference. Channel spacing has been computer calculated and programmed to minimize interference. Systems of FMR-1000 and its companion transmitters are capable of operating on at least 5 sets of frequencies in a single TV channel simultaneously, sometimes more depending on the individual venue. Certain frequencies can be combined to form a system of 16. Digital frequency control of the FMR-1000 permits flexibility within a given area and assures confidence in the equipment capability.

### **Specifications:**

General: (System)

Operating Frequency Range.....520-608 and 614-746 MHz in 24 MHz wide bands.  
 Frequency Stability..... 50 PPM.  
 Channels.....950 (25 KHz steps).  
 RF Power Output.....5 mW Low, 100 mW High, typical (terminated).  
 Modulation Type.....FM, 40 KHz Deviation.  
 Audio Frequency Range.....30-15000 Hz, +/- 2 db.  
 (30-15000 Hz instruments) (80-15000 Hz microphones).  
 Audio Frequency Distortion.....0.5 % THD @ 1000 Hz.  
 Audio Frequency Dynamic Range.....100 db.  
 Audio Frequency Signal/Noise Ratio.....100 db.  
 Temperature Range.....-18 deg.C to 54 deg. C.

## FMR-1000 Receiver:

Sensitivity.....	0.8 uV for 12 db SINAD Nominal.
Image Rejection.....	60 db minimum.
Spurious Rejection.....	60 db minimum,
Selectivity.....	180 KHz at -6 db points.
Modulation Acceptance.....	40 KHz nominal deviation.
Squelch Type.....	Tone with Amplitude Backup.
Squelch Adjustment Range.....	0 to 30 uV Typical.
Squelch Quieting.....	100 db.
Audio Output, mic level.....	-20 dbu.
Audio Output, line level.....	0 dbm (0.775 V RMS-600 Ohm RL).
Audio Signal to Noise ratio.....	94 db A Weighted.
Audio Distortion (system).....	0.5 % typ, 0.9 % max THD.
Audio Frequency Response, instruments.....	30-15000 Hz, +/- 2 db system.
Audio Frequency Response, microphones.....	80-15000 Hz, +/- 2 db system.

## WT-1000 Transmitter.

RF Power Output 5 mW Low, 100 mW High (typical), Terminated.	
Antenna.....	1/4 Wave flexible.
Modulation, FM.....	40 KHz Deviation.
Modulation Limiter.....	Limiter/Compressor.
Audio Input.....	7.75 mV for 40 KHz Deviation.
(77.5 mV for instruments).	
Power.....	9.0 VDC (Alkaline).

## HT-1000 Transmitter.

RF Power Output 5 mW Low, 100 mW High (typical), Terminated.	
Antenna.....	Internal 1/2 Wave Dipole.
Modulation, FM.....	40 KHz Deviation.
Modulation Limiter.....	Limiter/Compressor.
Audio Input.....	7.75 mV for 40 KHz Deviation.
(77.5 mV for instruments).	
Power.....	9.0 VDC (Alkaline).

## **SYSTEM PROGRAMMING**

The FMR-1000 System uses the same basic programming steps in the Receiver and Transmitters. Learning these basic steps early will save time and effort.

**SCREENS:** Computer controlled screens will advance or return automatically. The software version screens will stay on for about 3 seconds after power is applied. To see them again, you must turn power OFF and then ON again.

**MENU:** Pressing this “key” once will advance the current screen to the next screen. This key will also perform a “SET” operation as the current screen is left. To review the various screen status, press the key to advance screens. No change to screens will occur unless the “SET” Key is pressed.

**SET:** This key is used to initiate any change to the screen currently being viewed. Flashing (blinking) characters will be seen after the SET Key is pressed. The flashing characters can be changed by use of the “Arrow” Keys or accepted as is by using the SET key. Use the MENU Key to exit the current screen. Exiting a screen with the MENU Key terminates any flashing operation.

**ARROW:** These keys are used to make changes to the screen currently being viewed. The keys are not active until SET is pressed, with one exception. When the SQUELCH screen is displayed, the squelch bar can be changed with the Arrow Keys without pressing SET. Exiting the SQUELCH Screen by pressing MENU saves the setting.

**Power:** Removing power from any unit saves the last operation of all screens.

**Other:** All other unit controls are manually operated.

**Quick Set-up: Receiver.**

1. Do not connect the receiver to any other equipment yet!
2. Connect the Antennas to the receiver.
3. Plug the Wall supply output cord into the receiver 12-15V input jack.
4. Plug the AC Wall supply into a 120 VAC Outlet.
5. Press the POWER switch. Display should light.
6. Display shows Telex/Ev names and software versions for about 3 seconds then displays the 1st operating screen. Note the GP (Group Number) and CH (Channel Number). Also note if the RF Bar Scale (1-100) is displaying any Reading over about 3 to 10. If so this indicates RF interference and you should change Group/Channels before proceeding.
7. Press the Menu Button 7 times. Display shows the Squelch setting. Should be near the U in squelch. If the squelch bar *is not seen or is at extreme left*, proceed to step 13 for setting the squelch. ***Skipping step 13 may cause loud white noise in the audio system!!***
8. Press the Menu Button one more time. The first operating screen appears again.
9. Press the Power switch on the receiver front panel to turn the unit off.
10. Plug the mixer or other audio system into the receiver XLR Microphone Level Connector or into the ¼ inch Line Level Jack. Set the Line Level Control near the ¼ inch jack to about 50 % of rotation.
11. Insure that the audio mixer or other system input level is turned down.
12. Press the Power switch button in again. The 1<sup>st</sup> operating screen should appear in about 3 seconds. The receiver should be ready to operate unless the squelch requires setting as in step 13.
13. The SQUELCH Screen will show a rectangular box with SQUELCH” above it. To change or open the squelch, press SET once. This starts the display flashing. Press and hold the UP or DOWN Button as long as required to place the squelch bar in the desired position. The factory setting with the bar ending under the “U” of the squelch label is recommended. When the setting is complete, press SET once. Press the Menu Button as required to go to a new screen.

**Quick set-up: Handheld Transmitter.**

1. Insure that the Power switch in Transmitter is in the OFF position.
2. Install a fresh Alkaline Battery into the transmitter.
3. Insure that the Microphone Gain Control is set at about 50 % of rotation.
4. Check the position of the Transmit Power Switch. If this is a single microphone System, place the switch in the High Power position. If this is a multiple microphone system, particularly when used with other non-coordinated units and intermod is experienced, placing the Transmit Power Switch to “Norm” will frequently eliminate intermod.
5. Place the transmitter Power Switch to the ON position.
6. The Red Low Battery Light near the display should come on for a few seconds. The display will also come on briefly, displaying two screens of software versions.
7. The screen will stop at the GP (Group) and CH (Channel) screen. If the Group and Channel agree with the receiver Group and Channel, proceed to step 8. If the Group and Channel do *not* agree with the receiver, go to step 10.
8. Monitor the FMR-1000 Receiver 1<sup>st</sup> operating screen. Note that the RF (1-100) Bar graph should indicate near the 100 mark. The AF Bar should show very little If any indication until you talk or sing into the microphone. Adjust the microphone gain control *if necessary* to cause the AF Bar Graph to peak near -6 to -3 but not over +3 for best performance.
9. If you are satisfied with the Group/Channel and audio screen displays, the mixer or sound system gain/volume can be increased to monitor the sound.

10. If the Group/Channels in step 7. did not agree or you wish to change them for any reason, proceed with this step . The transmitter Group/Channel screen should be displayed now. If not, press the Menu Switch one touch at a time until the Group/Channel is displayed. Press the SET switch one time. The CH number will start flashing. Use the UP arrow switch to increase the channel number or the Down arrow to decrease the channel number. Once you have the desired channel selected, press SET once more. The channel number is now stored and the Group number will start flashing. Use the arrow switches to select the new group number. Press SET again. The number will continue to flash. Press Menu one time. This will store both channel and group.  
If the Group/Channel/Frequency is changed, go back to step 8. and check the set-up.

**Quick set-up: BeltPack Transmitter.**

1. Insure that the Power switch in Transmitter is in the OFF position.
2. Install a fresh Alkaline Battery into the transmitter.
3. Insure that the Microphone Gain Control is set at about 50 % of rotation.
4. Check the position of the Transmit Power Switch. If this is a single microphone System, place the switch in the High Power position. If this is a multiple microphone system, particularly when used with other non-coordinated units and intermod is experienced, placing the Transmit Power Switch to “Norm” will frequently eliminate intermod.
5. Place the transmitter Power Switch to the ON position.
6. The Red Low Battery Light near the Power Switch should come on for a few seconds. The display will also come on briefly, displaying two screens of software versions. The screen will stop at the GP (Group) and CH (Channel) screen. If the Group and Channel agree with the receiver Group and Channel, proceed to step 7. If the Group and Channel do *not* agree with the receiver, go to step 9.



7. Monitor the FMR-1000 Receiver 1<sup>st</sup> operating screen. Note that the RF (1-100) Bar graph should indicate near the 100 mark. The AF Bar should show very little If any indication until you talk or sing into the microphone. Adjust the microphone gain control *if necessary* to cause the AF Bar Graph to peak near -6 to -3 but not over +3 for best performance.
8. If you are satisfied with the Group/Channel and audio screen displays, the mixer or sound system gain/volume can be increased to monitor the sound.
9. If the Group/Channels in step 6. did not agree or you wish to change them for any reason, proceed with this step . The transmitter Group/Channel screen should be displayed now. If not, press the Menu Key one touch at a time until the Group/Channel is displayed. Press the SET Key one time. The CH number will start flashing. Use the UP arrow switch to increase the channel number or the Down arrow to decrease the channel number. Once you have the desired channel selected, press SET once more. The channel number is now stored and the Group number will start flashing. Use the arrow switches to select the new group number. Press SET again. The number will continue to flash. Press Menu one time. This will store both channel and group.

Once the Group/Channel/Frequency is changed, go back to step 7 and 8. and check the set-up.

This completes the quick set-up manual.

END