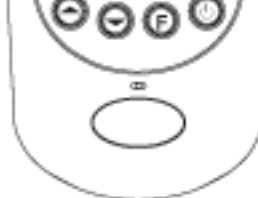


Owner's Manual



Customer Service
1-800-354-8785



AT&T

Model ATT650/655
General Mobile Radio Service (GMR)
Transceiver

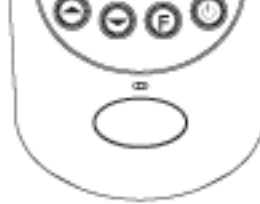


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Model ATT655LE, ATT650CM, & ATT650CMB 22 Channel GMRS Transceiver with 38 CTCSS Sub-channels

Owner's Manual

Product Description

The ATT655LE, ATT650CM, & ATT650CMB General Mobile Radio Service(GMRS) radio has been designed to allow you to communicate with both GMRS and FRS radios. This is a sophisticated multi-channel, battery powered, 462 MHz/467 MHz FM two-way radio. The controls and accessories are easy to use and the ATT655LE, ATT650CM, & ATT650CMB can be used to communicate with other FRS radios on channels 1 to 14, and 8 GMRS channels. Also, the ATT655LE, ATT650CM, & ATT650CMB has 38 CTCSS sub-channel tones to provide clearer communication without hearing unwanted signals.

Package Contents

Model ATT655LE:

1. GMRS Radio Unit
2. Detachable Belt-clip
3. Neck Strap
4. Owner's Manual
5. Alkaline Batteries (4)

Model ATT650CMB:

1. GMRS Radio Unit
2. Detachable Belt-clip
3. Neck Strap
4. Owner's Manual
5. AC Adapter

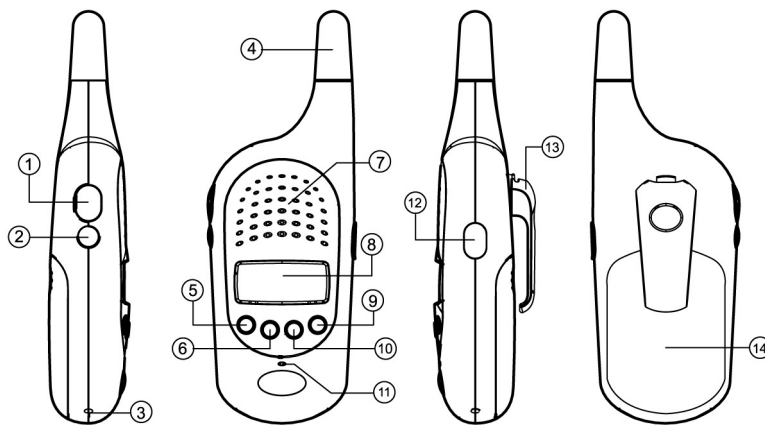
Model ATT650CM:

1. GMRS Radio Unit
2. Detachable Belt-clip
3. Neck Strap
4. Owner's Manual

General Features

1. Up to 5 Mile Range
2. Dual output power (1.5 watts GMRS and 1/2 watt for FRS channels)
3. 38 privacy channels
4. Push To Talk button
5. 3 level voice activation (VOX): Hands free operation with optional accessories
6. Call Function.
7. Audible low battery alert
8. LCD backlit display

9. Volume up/down
10. Monitor function key
11. Key Lock function
12. Auto Power Save circuitry
13. Auto Squelch
14. Keypad Beep Tone
15. Battery source (4 AAA)
16. Jack for headset and wall battery charging



Functions and controls

1. Push-to-talk button [PTT]
2. Call / Monitor button [M]
3. Neck strap holes
4. Antenna
5. Up button/volume control []
6. Down button/volume control []
7. Speaker
8. Display panel
- 9 On/Off/Enter button [⏻]
10. Function button [F]
11. Internal Microphone
12. External Headset & Charging Jack [Ω]
13. Belt clip (detachable)
14. Battery Cover

FCC WARNING

Replacement or substitution of transistors, diodes or other parts of a unique nature, with parts other than those recommended by the manufacturer, may cause a violation of the technical regulations of Part 15 of FCC Rules.

SAFETY INFORMATION

Your wireless hand-held portable transceiver contains a low power transmitter. When the PTT button is pushed it sends out radio frequency (RF) signals. The device is authorized to operate at

a duty factor not to exceed 50%. In August 1996, the Federal Communications Commissions (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless devices.

Important: To maintain compliance with the FCC's RF exposure guidelines hold the transmitter at least 4 - 6 inches (10 – 15 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away. If you wear the handset on your body while using the headset accessory, use only the AT&T supplied belt clip for this product and ensure that the antenna is at least 1 inch (2.5 centimeters) from your body when transmitting. Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

Normal Position: Hold the transmitter approximately 4 –6 inches (10 –15 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away.

Electromagnetic interference/compatibility

The FCC requires that you be advised of certain requirements involving the use of this device. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can generate radio frequency energy, if not installed and used in accordance with the instruction, it may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception(which can be determined by turning the equipment off and on), the user is encouraged to correct the interference by one of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. Consult the manufacturer for technical assistance.

Accessories

To enhance the use of your ATT650/655 series GMRS transceiver, depending on model and included accessories, several other approved accessories such as headset, wall battery trickle charger, along with replacement neck strap, battery compartment door, and belt clip are available from KNG America. To order accessories, call KNG America's Customer Service Department at 1-800 354-8785 during regular business hours.

Order by the following part numbers to ensure accuracy and quick service.

Item:	Part Number:
Headset:	702500
Wall Charger	702520 (110 VAC 50/60 Hz)
Neck Strap	701230
Battery door	702240
Belt Clip	702250

Battery installation

Each radio requires four 'AAA' size batteries.

1. Remove the battery cover by sliding it firmly downwards.
2. Following the polarity diagram inside the battery compartment, insert the batteries.
3. Replace the battery cover.

IMPORTANT!

Ensure that the batteries are installed correctly. Reversing the polarity may damage the unit.

Do not mix old and new batteries.

Do not mix alkaline, standard (carbon-zinc) or rechargeable Ni-MH batteries.

Battery disposal

Depleted batteries need to be disposed of in a way to not damage the environment. Check your local phone directory for recycling sites.

Automatic Power Saver Mode

Your ATT650/655 has a unique circuit designed to dramatically extend the life of its batteries. After 6 seconds of inactivity, the ATT650/655 will switch to Power Saver Mode. While in Power Saver Mode, the transceiver will remain ready to receive any incoming transmissions. It is automatic and no icon appears on the LCD display.

Battery charging

Safe and approved battery charging requires the use of Nickel Metal Hydride – NiMH batteries exclusively and an approved Wall Battery Charger (Part number 702520) supplied by KNG America. The use of other types of rechargeable batteries including rechargeable Alkaline batteries is not recommended and will void the warranty. Non-approved batteries could potentially pose a safety risk also.

Warning: Do not attempt to charge depleted non-rechargeable Alkaline or standard (carbon-zinc) batteries as this could present a potential safety risk.

Name brand NiMH batteries including Energizer, Rayovac, Duracell, and Panasonic AAA 1.2 volt 650 mAh or higher capacity will perform well when used with the approved trickle Battery Charger.

Operating tip: The use of rechargeable batteries results in reduced performance due to lower battery voltage. For intermittent use, regular disposable Alkaline or standard carbon-zinc batteries will perform well and offer a good cost effective solution. Be sure to remove the batteries should the ATT650/655 series GMRS transceiver not be used for several weeks or months to prevent possible damage from a leaking battery.

Battery Charging Procedure:

Follow the procedure as outlined above for installing 4 AAA NiMH rechargeable batteries.

Insert the charger (702520) plug into the jack after lifting up the lower end of the rubber cover over the Headset/Charger jack on the antenna side of the transceiver's Headset/Charger jack.

Plug the Charger into a 110 Volt AC 50/60Hz outlet. The batteries should be fully charged in approximately 15 hours.

Make sure the ATT650/655 series transceiver is turned off or battery charging time will be significantly increased.

Neckstrap and belt-clip

1. A neck strap and belt-clip are provided to enable you to carry your radio easily and safely.
2. To attach the belt-clip. Firmly slide the belt-clip onto the tracks on the rear of the radio.
Ensure the locking lug snaps into position.
3. To remove the belt-clip. Push the locking lug, at the top of the belt-clip, away from the radio and slide the belt-clip up.
4. To attach the neck-strap. Feed the small loop of the strap through the hole on the bottom of unit. Pass the remaining strap through the loop and pull tight.

Applying for An FCC License

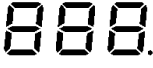
General Mobile Radio Service operators are required to obtain a Federal Communication Commission (FCC) license.

To obtain the necessary application forms and information about the license please call the FCC Toll Free Number at:

1-800-418-FORM (Please request Form #159 & Form #605)

Should you have any questions regarding the licensing forms, please contact the FCC directly at 1-888-225-5322.”

Display panel and icons

1		Key-lock indicator. Appears when the key-lock is activated.
2		VOX indicator. Flashes in VOX edit mode and appears when VOX is activated.
3		Large display. Indicates the channel number. Displays the main MENU in the function edit mode indicating CH for channel and Uo for VOX operation.
4		Small display. Shows the CTCSS Sub Channel tone or code. Displays the SUBMENU in the function edit mode including Hi, nr, Lo, and off for VOX.

Equipment controls

2	M	Call / Monitor	Press this button momentarily to transmit a call melody to the other party in standby mode. The display will glow red. Press to monitor the current channel (overriding CTCSS) before use. Use this function to check volume level. Press during VOX mode to disable VOX function for approximately ten seconds. Press the monitor button for more than three seconds to enter continuous monitoring mode.
1	PTT	Push-to-talk	Press and hold to transmit. The display will glow red . Release to receive.
11	Ω	Ext.. Headset &	This jack may be used to connect an headset for hands free operation. This jack also is used to connect a battery charger to your GMRS radio. Contact KNG America (1-800-354-8785 for more information about the charger and

		Charging	other accessories.
5		Up	In standby mode press to increase the volume. In function edit mode press to step forwards through the MENU & SUBMENU options.
6		Down	In standby mode press to decrease the volume. In function edit mode press to step backwards through the MENU & SUBMENU options.
10	F	Function	Press in standby mode to enter the function edit mode. Press and hold for 1.5 seconds to activate or deactivate the KEY LOCK
9		Enter	Power on. Press for two seconds. A confirming melody will play. Power off. Hold for three seconds. A confirming melody will play. Press to enter the SUBMENU option in function edit mode.

Equipment functions

Channel selection

To provide maximum flexibility and reduce interference from others, your transceiver is fitted with twenty two different radio channels..

To change the radio channel, press [F] once and 'CH' appears in the large display along with the last channel that was selected flashing. Use [] and [] to select the desired channel and press [M] to confirm your selection.

CTCSS (Coded Tone Controlled Squelch System)

CTCSS Mode (Sub-Channel) Selection

The CTCSS (Continuous Tone Coded Squelch System) provides 38 individual Sub-Channel Frequencies to allow you to utilize the coded squelch tones (1-38). In order to communicate with another party on the same main channel, the same Sub-Channel must be used. This allows you to **only** hear others on your channel if they are using your same Sub-Channel tone. This tone operates continuously in the background while you are transmitting voice but cannot be heard on the other person's transceiver speaker because of its low frequency. Your transceiver acts like a filter and only allows reception of signals with the same Sub-Channel. Since there are 38 Sub-Channels for each main channel, 38 different Sub-Channels may be selected for each of the 14 main channels. To be sure others with different tones are not using your main channel before you transmit, a common code of courtesy dictates that you press the Monitor button momentarily to see if the channel is clear. This is being courteous since all others on **your** main channel using different Sub-Channels would not be recognized and heard by your transceiver. Therefore you would likely jam others who could still be communicating on your shared main channel. To change the Sub-Channel:

- Press the[F] (function) button and the channel number will begin flashing.
- Press the Power button [o] once and the 00 to the right of the main channel number begins flashing.
- Then press the Up or Down button to select the desired Sub-Channel for use.
- Press the [M] button momentarily to confirm selection.

The CTCSS Sub-Channel mode can be turned off by accessing the flashing Sub-Channel number icon and using the Up or Down button to select 00 as the Sub-Channel, and then press [M] again.

NOTE : To communicate with other FRS/GMRS units, they must be switched to the same main channel (1-14)FRS or (1-22) GMRS and Sub-Channel code (1-38). To communicate with other transceiver units that do not have Sub-Channels, switch your unit to their same main channel with the Sub-Channels set to 00. The Sub-Channels do not prevent others from hearing your transmission. This Sub-Channel technology will only allow you to not hear all the traffic on your channel not using the same Sub-Channel tone.

NOTE: CTCSS does not increase the number of radio channels. Do not transmit when the channel is in use, even with a different CTCSS tone.

Setting CTCSS to '00' allows the radio to receive all transmissions, regardless of CTCSS tone.

VOX

NOTE: The VOX feature will work the same without a headset by following these instructions but do not plug in a headset. Speak into the ATT650/655 series microphone and the transceiver will transmit and switch to receive after you stop speaking into the microphone. The transceiver behaves exactly like a speakerphone in this mode without the headset.

The voice activated transmission (VOX) function allows your voice to activate the PTT automatically. This may be useful when the radio is used with an optional hands free headset. To access the VOX menu, press [F] in the channel selection mode until 'Uo' appears and VOX option flashes. Press the [] and [] to select from Hi, nr, Lo or OFF. Press the [M] button momentarily to confirm your selection. The high, normal (nr) or low setting determines VOX response sensitivity. Select Hi when in a quiet environment and Lo for a noisy environment

Transmission Power

The transmission power is internally set to low power on channels 8 to 14, and is high on the other channels to comply with FCC regulations for power limits on FRS and GMRS channels. Channels 1 to 7 are shared between FRS (low power) and GMRS (high or low power), 8 to 14 are exclusively FRS with only low power allowed, and 15 to 22 are for GMRS use with high or low power permitted.

Note: The output power is automatically selected depending on which channel you are using and cannot be changed by the user.

Notes for good communication

Your radio's channels are shared on a 'take turns' basis. This means other groups may be talking on any of the channels. A common code of courtesy is to switch to another vacant channel and not to attempt to 'talk over' or interrupt someone who is already using a channel. Your radios have been designed to offer the best performance and transmission range. To avoid interference, it is recommended that you do not use the units within 2m (6 feet) of one another. For best transmission results, always keep the radio 10~15cm (4 –6 inches) away from your mouth. Speak slowly and clearly into the microphone and avoid releasing the PTT until you have finished speaking.

Care and maintenance

Clean your unit with a damp (never wet) cloth. Solvent or detergent should never be used.

Avoid leaving your unit in direct sunlight or in hot, humid or dusty places.

Keep your unit away from heating appliances and sources of electrical noise such as fluorescent lamps or motors.

Equipment specifications

Radio Channels	22	Output Power	GMRS : 1.5 W Max /FRS : 0.5 W
CTCSS tones	38 (per channel)	Power Source	4 * 'AAA' alkaline cells, 6VDC
Frequency Range	462.5500 MHz ~ 467.7125 MHz		4 * 'AAA' Ni-MH rechargeable cells, 4.8VDC
Talk Range	Up to 5miles*	Battery life	Approx. 14hr (Al), 10hr (Ni-MH) (5:5:90/Tx:Rx:Standby)

*Channels 1-7 shared by FRS/GMRS - high transmit power, Channels 8-14 FRS only-low transmit power allowed, and channels 15-22 GMRS - high transmit power. The range will vary depending on battery type and strength, channel and power setting, terrain, as well as buildings, trees or other obstructions.

Radio channel frequency table

Channel No.	Freq. (MHz)	Channel No.	Freq. (MHz)
1	462.5625	12	467.6625
2	462.5875	13	467.6875
3	462.6125	14	467.7125
4	462.6375	15	462.5500
5	462.6625	16	462.5750
6	462.6875	17	462.6000
7	462.7125	18	462.6250
8	467.5625	19	462.6500
9	467.5875	20	462.6750
10	467.6125	21	462.7000
11	467.6375	22	462.7250

CTCSS tone frequency table

Code	Freq.(Hz)	Code	Freq.(Hz)	Code	Freq.(Hz)	Code	Freq.(Hz)
1	67.0	11	97.4	21	136.5	31	192.8
2	71.9	12	100.0	22	141.3	32	203.5
3	74.4	13	103.5	23	146.2	33	210.7
4	77.0	14	107.2	24	151.4	34	218.1
5	79.7	15	110.9	25	156.7	35	225.7
6	82.5	16	114.8	26	162.2	36	233.6
7	85.4	17	118.8	27	167.9	37	241.8
8	88.5	18	123.0	28	173.8	38	250.3
9	91.5	19	127.3	29	179.9		
10	94.8	20	131.8	30	186.2		

Relevant Standards

This product complies with the regulations of the GMRS service and has been independently tested to the type acceptance requirements of FCC Rule Parts 95(A) and other relevant USA standards.



CAUTION

WARNING

- * Remove the batteries from the transceiver if it is not expected to be used for long periods. This will eliminate the possibility of battery acid leaking from the batteries and corroding the transceiver which will void your warranty.
- * Depleted or dead batteries must be disposed of by recycling them to prevent damage to the environment. Check local listings in your area for appropriate recycling sites.
- * Avoid exposing the unit to water or extremes of temperature.
- * Do not use this device in or near a mining facility, which uses remotely triggered explosives or in areas labeled "Blasting Area". Premature or accidental detonation may result.
- * Do not attempt to modify or in any way increase the output of this transceiver. Its output is designed to meet the legal limits set by the FCC.
- * Do not use this device or change its batteries in potentially explosive atmospheres as sparks in such areas could result in an explosion.
- * Turn your transceiver off wherever posted notices restrict the use of radios or cellular telephones. Facilities such as hospitals may use equipment that is sensitive to RF energy.
- * Turn your transceiver off while on-board aircraft when requested to do so.
- * Do not place your transceiver in front of a vehicle's air-bag. If the air-bag deploys, it could propel the transceiver like a projectile.
- * This transceiver complies with FCC regulations for use in the United States.

Use in other countries may be prohibited or restricted by local regulation.

Please check with the local regulating agency before using this device outside of the United States.

Damaged Antenna

Do not use any radio with a damaged antenna. If a damaged antenna comes in contact with the skin, a minor burn may result. Return your equipment for repair before further use.

Batteries

Do not short circuit any battery or charging terminal with any conductive materials. In doing so, the batteries and/or material may become hot, causing damage to property and/or injury, such as burns.

Technical Specifications:

General Specifications

- Channel Frequency 462.5500 MHz 467.7125 MHz
- Main-channel capacity 22
- Sub-channel capacity 38
- Channel spacing 12.5 kHz
- Ambient temperature -30 +60 Celsius
- Antenna Fixed 1/4 Wave
- Power supply 6V Alkaline (4 x AAA),
 or 4.8V Ni-MH (4 x AAA)

- Battery life Alkaline : 1.5 W (14hr, 1000mA - 5:5:90)
 Ni-MH : 1.0 W (10hr, 600mA - 5:5:90)
- Dimensions(H/W/D) 160.0mm / 56.0mm / 30.6mm
- Weight 150g (with batteries)

Transmitter

- Carrier power 1.5 Watts (1.5 W-Alkaline, 1.0 W-Ni-MH)
- Emission type F3E
- Frequency deviation ± 2.5 kHz (w/tone)
- Audio distortion $< 5\%$ (1kHz 60% modulation)
- Hum & Noise w/CCITT > -40 dB Min. (1kHz 60% modulation)
- Frequency tolerance ± 5 ppm (-20 +60)

Receiver

- Receive sensitivity -119dBm (12dB SINAD)
- Squelch sensitivity -122dBm (12dB SINAD)
- Maximum audio output power 200mW
- Selectivity < -50 dB (12.5 kHz)
- Audio distortion $< 5\%$ Max. (1kHz 60% modulation)
- Hum & Noise w/CCITT > -40 dB Min. (1kHz 60% modulation)

Troubleshooting

Problem	Possible Cause	Corrective Action
No transmission while pressing the PTT button	Weak batteries	Charge or replace batteries
	Incorrect battery polarity	Install the batteries in the directions indicated on battery tray
Weak or no signal Received	Weak batteries	Charge or replace batteries
	Channel and privacy code not Set the same as target transceiver	Adjust the transceiver's settings to match those settings of the target transceiver
	Volume level too low	Increase volume level
	PTT button inadvertently depressed	Release PTT button
	Excessive radio interference on a particular channel	Channel to a different channel
	Obstruction of radio signal	Avoid operating in or near large buildings or vehicle
Transceiver Beeps, but will not turn on when Power button is pressed	Batteries extremely discharged	Charge or replace batteries
Reception of unwanted signals	CTCSS privacy mode not on	Turn on the CTCSS privacy mode and set code number to match the setting of the target transceiver

	Interference from electronic devices such as cell phones or electronic power lines.	Turn the device off or move farther way from interfering device or electrical lines
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Warranty

KNG America

One Year Limited Warranty

KNG America warrants to the original purchaser that this product is free from defective materials and workmanship for a period of one year from date of original purchase.

Should a failure occur in normal usage during the one-year warranty period, KNG America will repair or, in its discretion, replace this product without charge

This warranty excludes (A) Damages due to misuse, negligence abuse or accidents. (B) Repair by persons not authorized by KNG America and (C) Use of accessories other than defined in this manual and provided by KNG America (D) Installation, improper maintenance or commercial use (E) Cracked or broken cabinets (F) Acts of GOD.

AT&T and AT&T and Globe Design are registered trademarks and trade dress of AT&T Corp., used under license by KNG America. Any replacement or warranty service, and all questions about this product, should be directed to:

KNG America
1 Trade Zone Court
Ronkonkoma, NY 11779 USA
Phone: 800-354-8785
Phone: 631-981-1600
Fax: 631-981-1702

In no event shall KNG America or AT&T Corp. be liable for any indirect, special, incidental or consequential loss or damage (including, without limitation, damages for loss of profits, savings or data) in any way related to this product.

When returning this product:

- (A) You will need to call our toll free number (1-800-354-8785) and ask for the Service Department.
- (B) After you speak to our Service Department and upon returning the unit for repair, you must enclose a copy of your sales slip to verify warranty service.
- (C) Include a note with explanation of defect problem, and your contact information (name, mailing address, and phone number).

All products sent after the warranty period or without proof of date of sale will be serviced on an out-of-warranty basis. Our Service Department can inform you of all out-of warranty repair charges.

This warranty is valid only in the United States of America. This warranty gives you specific legal rights, and your rights may vary from state to state. This warranty does not extend to owners of the product subsequent to the original purchaser.

In accordance with "Moss Magnuson warranty act " of July 10, 1975. This is termed a "limited " warranty, which in no way compromises KNG America's high standards of quality and workmanship.

J COMM/ATT-655LE

Important Safety Information(FRS/GMRS Combo)

Your wireless handheld portable transceiver contains a low power transmitter. When the Push-to-Talk(PTT) button is pushed it sends out radio frequency (RF) signals. This device is authorized to operate at a duty factor not to exceed 50% using alkaline "AAA" size batteries to comply with Federal Communications Commissions (FCC) RF exposure safety level guidelines for hand-held wireless devices.

To maintain compliance with the FCC's RF exposure guidelines, hold the transmitter and antenna at least 1 inch (2.5 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away from the face. If you wear the handset on your body while using the headset accessory, use only the manufacturers supplied belt clip for this product and ensure that the antenna is at least 1 inch(2.5 centimeters) from your body when transmitting.

Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

GMRS License :

Use of GMRS radios within the United States requires a FCC GMRS license. An individual 18 years of age or older, who is not a representative of a foreign government is eligible to apply for a GMRS system license. You will need two forms from the FCC, FCC Form 159 and FCC Form 605 Main Form and Schedule F. You can find the forms online at <http://www.fcc.gov/formpage.html>, or call 1-800-418-3676.