MM-101027V1-A1

Operator's Manual

Panther™ 300P
Portable Radio

TABLE OF CONTENTS

---- **NOTICE!** ----

SAFETY TRAINING INFORMATION

Your Com-Net Ericsson radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only" meaning it must be used only during the course of employment by individuals aware of the hazards and the ways to minimize such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment.

This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only." In addition, your Com-Net Ericsson radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.

- American National Standards Institute (C95.1 – 1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

- American National Standards Institute (C95.3 – 1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave.

> **To ensure that your exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines:**

- DO NOT operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed FCC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio.

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- DO NOT transmit for more than 50% of total radio use time ("50% duty cycle"). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the "TX" light appears in the display. You can cause the radio to transmit by pressing the "PTT" button.

- ALWAYS use Com-Net Ericsson authorized accessories (antennas, batteries, belt clips, speaker/mics, etc). Use of unauthorized accessories can cause the FCC RF exposure compliance requirements to be exceeded.

- ALWAYS keep the antenna at least 1 cm (0.4 inches) away from the body when transmitting to ensure FCC RF exposure compliance requirements are not exceeded. To provide the recipients of your transmission the best sound quality, hold the antenna at least 5 cm (2 inches) from mouth, and slightly off to one side.

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The information listed above provides the user with the information needed to make him or her aware of a RF exposure, and what to do to assure that this radio operates within the FCC RF exposure limits of this radio.

Electromagnetic Interference/Compatibility

During transmissions, your Com-Net Ericsson radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

SAFE PRACTICE INFORMATION

The operator of any land mobile radio should be aware of certain hazards common to the operation of radio transmitters. **A list of several possible hazards is given:**

1. **Explosive Atmospheres** - Areas with potentially explosive atmosphere are often, but not always, clearly marked. These may be fueling areas, such as gas stations, fuel or chemical transfer or storage facilities, and areas where the air contains chemicals or particles, such as grain, dust, or metal powders. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

   Turn OFF your radio when in any area with a potentially explosive atmosphere. It is rare, but not impossible that the radio or its accessories could generate sparks.

2. **Electronics Systems** - RF energy from your portable radio may affect some electronic equipment. Most modern electronic equipment in cars, hospitals, homes, etc. are shielded from RF energy. However, in areas that instruct you to turn off two-way radio equipment, always observe the rules. **If in doubt, turn it off.**

3. **Dynamite Blasting Caps** - Dynamite blasting caps may be caused to explode by operating a radio within 500 feet of the blasting caps. Always obey the **"Turn Off Two-Way Radios"** signs posted where dynamite is being used.

   When transporting blasting caps in your vehicle:

   - Carry the blasting caps in a closed metal box with a soft lining.

   - Leave the radio **OFF** whenever the blasting caps are being put into or removed from the vehicle.

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4. **Radio Frequency Energy** - Do not use a radio with a damaged or missing antenna. A minor burn may result if a damaged antenna comes into contact with the skin. Replace a damaged antenna immediately. A missing antenna could damage your radio. Use only the supplied or approved antenna. Unauthorized antennas, modifications, or attachments could damage the radio unit and may violate FCC regulations.

   Always turn off your portable radio before boarding any aircraft. Use it on the ground only with crew permission. Do not use it in the air.

5. **Safe Driving Recommendations** - (Recommended by AAA)

   Read the literature on the safe operation of the radio.

   Keep both hands on the steering wheel and the radio secured whenever the vehicle is in motion.

   Place calls only when vehicle is stopped.

   - When talking from a moving vehicle is unavoidable, drive in the slower lane. Keep conversations brief.

   - If a conversation requires taking notes or complex thought, stop the vehicle in a safe place and continue the call.

   - Whenever using a radio, exercise caution.

OPERATING RULES AND REGULATIONS

Two-way FM radio systems must be operated in accordance with the rules and regulations of the local, regional, or national government.

In the United States, the PANTHER™ 300P portable radio must be operated in accordance with the rules and regulations of the Federal Communications Commission (FCC). As an operator of two-way radio equipment, you must be thoroughly familiar with the rules that apply to your particular type of radio operation. Following these rules helps eliminate confusion, assures the most efficient use of the existing radio channels, and results in a smoothly functioning radio network. When using your two-way radio, remember these rules:

1. It is a violation of FCC rules to interrupt any distress or emergency message. As your radio operates in much the same way as a telephone **"party line"**, always listen to make sure that the channel is clear before transmitting. Emergency calls have priority over all other

messages. If someone is sending an emergency message - such as reporting a fire or asking for help in an accident - *KEEP OFF THE AIR!*

2. The use of profane or obscene language is prohibited by Federal law.

3. It is against the law to send false call letters or false distress or emergency messages. The FCC requires that you keep conversations brief and confine them to business. To save time, use coded messages whenever possible.

4. Using your radio to send personal messages (except in an emergency) is a violation of FCC rules. You may send only those messages that are essential for the operation of your business.

5. It is against Federal law to repeat or otherwise make known anything you overhear on your radio. Conversations between others sharing your channel must be regarded as confidential.

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6. The FCC requires that you identify yourself at certain specific times by means of your call letters. Refer to the rules that apply to your particular type of operation for the proper procedure.

7. No changes or adjustments shall be made to the equipment except by an authorized or certified electronic technician.

IMPORTANT

Under U.S. law, operation of an unlicensed radio transmitter within the jurisdiction of the United States may be punishable by a fine of up to \$10,000, imprisonment for up to two years, or both.

OPERATING TIPS

Antenna location and condition is important when operating a portable radio. Operating the radio in low areas or terrain, under power lines or bridges, inside of a vehicle or in a metal or steel framed building can severely reduce the range of the unit. Mountains and buildings can also reduce the range of the unit.

In areas where transmission or reception is poor, some improvement may be obtained by ensuring that the antenna is vertical. Moving a few yards in another direction or moving to a higher elevation may also improve communications. Vehicular operation can be aided with the use of an externally mounted antenna.

Battery condition is another important factor in the trouble free operation of a portable radio. Always use properly charged batteries.

For efficient radio operation, hold the front of the portable radio approximately two inches from your mouth and speak into the microphone at a normal voice level. Keep the antenna in a vertical position when

receiving or transmitting a message. Do not hold the antenna when receiving a message and, especially, do **not** hold when transmitting a message.

INTRODUCTION

This manual describes the operation of the Com-Net Ericsson PANTHER™ 300P portable radio. The PANTHER 300P portable radio is a high performance FM portable radio providing reliable two-way communication in a Conventional Radio System.

The PANTHER 300P portable radio can be programmed with six channels. The PANTHER 300P portable radio operates on any of the following Conventional platforms:

- Channel Guard
  (Squelch Tail Elimination (STE) optional)

- Digital Channel Guard

- Type 99

CONTROLS AND INDICATORS
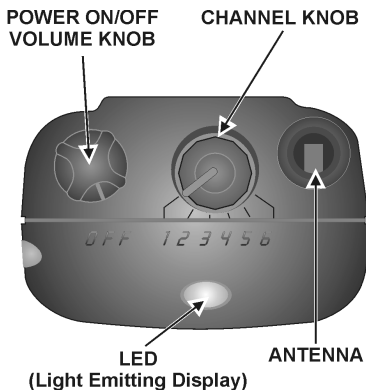
**Figure 1 – PANTHER 300P Radio
Top View**

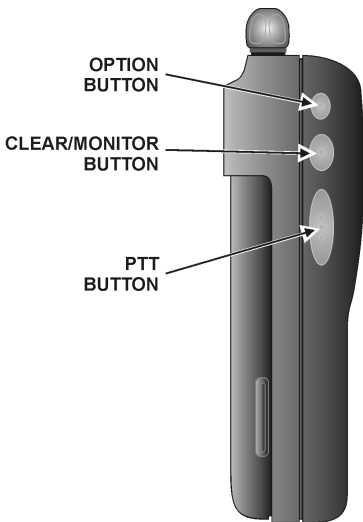**Figure 2 – PANTHER 300P Radio Side View**

Monitor/Clear Button Function

This section describes the functionality of **Monitor/Clear** button.

Monitor/Clear

The **Monitor/Clear** function monitors the channel for activity. While the **Monitor/Clear** pressed, squelch,

Channel Guard, and Type 99 are disabled.

If the channel is clear, squelch noise will be heard. If the channel is busy, traffic will be heard.

When the option button is released, squelch, Channel Guard, and Type 99 are re-enabled.

After a successful Type 99 decode, press the **Monitor/Clear** button to switch the Type 99 Decoder state from Monitor mode to Selective mode.

Option Button Functions

The following functions can be assigned to the **Option 1** button.

NOTE	Press and hold the **Option 1** button to execute the programmed function.

Table 1: Programmed Functions States

Function	1 Short High Tone	2 Short High Tones
High/Low Power	High Power	Low Power
Local/Distant Squelch	Local	Distant
Type 99	ON	OFF

Disabled

No function is assigned to the **Option 1** button. When pressed, the radio will emit a Denied Alert Tone.

High/Low Power

The High/Low Power function toggles the transmitter power between "High" and "Low". "High" power is the longer-range setting. "Low" power is the battery-life conserving setting.

Local/Distant Squelch

The Local/Distant Squelch function toggles the channel squelch setting between "Local" and "Distant". "Local" squelch is reduces the number of received degraded transmissions. "Distant" squelch increases the number of received transmissions.

Type 99 ON/OFF

The Type 99 function toggles the state of the Type 99 Decoder between "ON" and "OFF". Type 99 mutes receive audio until a valid Type 99 call is received. "ON" indicates the radio is operating in Selective mode. "OFF" indicates the radio is operating in Monitor mode.

If an invalid or no Type 99 decode is programmed on a channel, the Type 99 function is programmed for the **Option 1** button and the **Option 1** button is pressed the radio will emit a Denied Alert Tone.

PANTHER 300P RADIO INDICATORS

The Light Emitting Diode (LED) and tones indicate the state of the radio.

Table 2: Radio Indicators

LED Indicators: ● continuous c flashing

LED	Tone	Function
	3 mid tones	Power-up complete
	1 mid tone	Low battery
	continuous high tone	Transmit timer has expired[1]
	continuous mid tone	Channel is busy[2] or synthesizer error
	continuous low tone	Fatal error
	1 short mid tone	Action denied

These radio indicators require that the following controls are enabled during programming:

[1] CCT (Carrier Control Timer) – the radio will emit this alert until the PTT button is released.
[2] TX Busy

LED Indicators: ● continuous c flashing

LED	Tone	Function
	1 short high tone	Programmed function toggled
	2 short high tones	Programmed function toggled
✿ green	1 short tone	Receiving Type 99 Individual Call
✿ green	2 short tones	Receiving Type 99 Group Call
✿ green	3 short tones	Receiving Type 99 Super Group/Quick Call
✿ red	continuous mid tone	Battery too low to transmit[3]
● red		Transmitting
● green		Receiving or channel in use
✿ green		Program mode
✿ amber		Error or failure
✿ red ✿ green		Low battery while operating on a Type 99 channel

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[3] Multiple Low Battery Alerts – occurs after PTT

BASIC OPERATION

Selecting A Channel

Rotate the **Channel Knob** clockwise or counterclockwise until the raised rib aligns with the desired channel number.

Transmitting A Basic Call

1. Power ON the radio.

2. Select a channel.

3. Ensure there is no activity on the channel by:

   - checking the **TX/RX LED**.

   - pressing and holding the **Monitor/Clear** button. Squelch noise will be heard if the channel is clear of traffic.

4. Hold the radio approximately 2 inches from your mouth, press the **PTT** button and speak in the microphone.

> **NOTE** Speak in a normal volume. Shouting will degrade your transmission.

5. Release the **PTT** button after you have finished speaking.

Channel Guard

Channel Guard is a method of reducing "channel chatter" by equipping receivers with tone-responsive devices, which only allow calls with the correct signaling-tones to be heard by the user. Channel Guard options and parameters are defined in the radio personality.

The radio always transmits with Channel Guard, unless the channel is programmed without Channel Guard.

Channel Guard Monitor Function

Ensure there is no activity on the channel by:

- checking the **TX/RX LED**.

- pressing and holding the **Monitor/Clear** button. Squelch noise will be heard if the channel is clear of traffic.

SELECTIVE SIGNALING

Selective signaling controls the muting and unmuting of the receive audio. This allows a user or dispatcher to selectively call an individual radio or group of radios. The PANTHER 300P portable radio supports selective signaling in Type 99.

In a selective signaling environment, the PANTHER 300P portable radio operates in one of two states, Monitor mode or Selective Call mode.

In the Monitor mode, the decoder is disabled and all calls are heard by the user.

In the Selective Call mode, the decoder is enabled and only calls intended for the user will be heard.

Selective signaling operates with or without Channel Guard. If Channel Guard is enabled, the radio can be programmed with an "And" or an "Or" option.

If the "And" option is programmed, only calls with the correct selective signaling and correct Channel Guard tones are heard by the user.

If the "Or" option is programmed, calls with the correct Channel Guard or calls with the correct selective signaling and Channel Guard tones are heard by the user.

A radio operating in Selective Call mode that receives a selective call switches to the Monitor mode and the **TX/RX LED** flashes green. The **TX/RX LED** indicates whether the channel has a carrier signal. The following graphic depicts the flashing pattern of the **TX/RX LED**.

Monitor mode	On
Without Carrier	Off

Monitor mode	On
With Carrier	Off
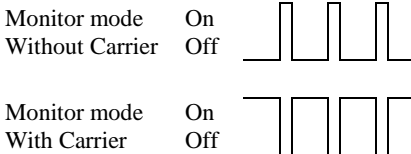
Type 99 Operation

Type 99 is Com-Net Ericsson's proprietary method for in-band, two-tone sequential signaling. Type 99 is a conventional signaling protocol that controls the muting and unmuting of a radio. Type 99 selectively calls individual units or groups of units in a conventional system. Type 99 is used in paging operations, a dispatcher has

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the ability to selectively call a radio or group radios.

If Type 99 is enabled in the radio personality, the radio can decode Individual, Group and Supergroup Type 99 calls. See Table 2 for radio indicator information for each of these types of calls.

Resetting Type 99 After A Call

After decoding a Type 99 call, the radio operates in Monitor mode and all traffic on the channel is audible. If the channel has Channel Guard, only the traffic with the radio's Channel Guard tone will be heard.

To reset Type 99 operation, use one of the following methods:

- Press the **Monitor/Clear** button.

- Press the **Option 1** button, only if **Option 1** button is programmed with Type 99 ON/OFF function.

- Allow the "Auto-Reset" timer to reset the Type 99 decoder, only if the "Auto-Reset" timer in enabled in the radio personality.

PROGRAMMABLE PTT FUNCTIONS

Channel Busy Lockout

The radio may be programmed with the Channel Busy Lockout feature, which denies the use of the transmitter when the channel is busy with traffic.

If the **PTT** button is pressed while the **TX/RX LED** is ON, the radio will emit an alert tone until the **PTT** is released.

Channel Guard Channel Busy Lockout

The radio may be programmed with the Channel Guard Busy Lockout feature, which denies the use of the transmitter when the channel is busy with another Channel Guard tone. The radio will transmit when the channel is busy with the radio's Channel Guard tone.

If the **PTT** button is pressed while the **TX/RX LED** is ON and the radio is muted because of an incorrect Channel Guard tone, the radio will emit an alert tone until the **PTT** is released.

Type 99 Disable After PTT

The radio may be programmed with the Type 99 Disable After PTT feature, which automatically disables the Type 99 decoder after a transmission.

Using one of the methods outlined in the "Resetting Type 99 After A Call" section to reset Type 99 operation.

CLONING

CopyCat™ Technology, a cloning feature, allows supervisor radios to duplicate radio personalities into subordinate radios on-site without a technician or PC. For more information about the CopyCat Technology and configuration refer to the Panther 300 Series Maintenance manuals, the On-Line Help in ProGrammer, or contact your system administrator.

BATTERY OPERATION

Removing The Battery

Make sure the power to the radio is turned OFF.

1. Press the latch at the bottom of the battery pack.

2. Lift the battery pack from the bottom.

3. Remove the battery pack from the radio.
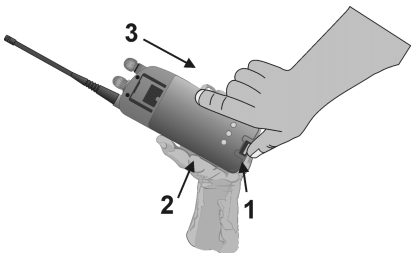
Attaching The Battery

Make sure the power to the radio is turned OFF.

1. Align the tab on the top of the battery pack with the slot at the top of the battery cavity.

2. Push the battery pack down to attach the battery to the radio.

3. Verify the battery is securely latched to the radio.

Low Battery Detection And Operation

The PANTHER 300P portable radio constantly monitors the charge-state of the battery. The radio will emit a Low Battery Alert Tone when the battery capacity is low and the **TX/RX LED** will flash red. When this occurs recharge the battery.

The radio can be programmed to emit only one Low Battery Alert Tone or emit one Low Battery Alert Tone every 60 seconds.

The PANTHER 300P portable radio also monitors the battery voltage while transmitting. If the battery level drops below a set level, the radio will stop transmitting, the **TX/RX LED** will flash red and emit an alert tone until the PTT switch is released.

The PANTHER 300P portable radio is not capable of turning itself off when the battery level falls below that required for the radio to operate. It is possible to excessively discharge the battery, which will reduce battery capacity and battery life.

Battery Error

If the radio detects a problem with the battery, the **TX/RX LED** will flash amber and the radio will emit a "Battery Error" alert tone every ten seconds.

The Battery Error condition can be avoided by using Com-Net Ericsson approved batteries.

Recharging The Battery

Recharge the battery when the radio **TX/RX LED** exhibits a Low Battery indicator. When charging a battery pack that is attached to a radio, always turn the power to the radio OFF to ensure a full charge. For specific instructions, refer the applicable charger Operator's Manual. Charging in non-Com-Net Ericsson equipment may lead to battery damage and void the battery warranty.

Conditioning The Battery

Batteries that have been stored (charged or discharged) will generally not be capable of full capacity until the batteries have been fully cycled two or three times. (Charging the battery in a Com-Net Ericsson charger and then discharging the battery pack with the radio until low battery is indicated is considered one cycle.)

Battery Care & Maintenance

- Your charger is intended for indoor use only. Keep the charger and/or wall cube dry. **Do Not** use in or near water.

- **Never** let the battery contacts touch metal objects that could short-circuit the contacts. For example, keys or coins in your pocket.

- **Do Not** disassemble a battery.

- **Do Not** dispose of a battery in a fire.

- Use only the supplied or Com-Net Ericsson specified batteries and chargers.

- When the radio is not in use, turn the power to the radio OFF. Do not over discharge the battery. This will reduce battery capacity and battery life.

- Do not overcharge the battery. A battery should not be kept in a charger for over 24 hours. Overcharging batteries will reduce battery capacity and battery life.

- Periodically condition your battery for improved battery capacity and performance.

Battery Recycling

The product that you have purchased contains a rechargeable, recyclable battery. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal. Call Toll Free 1-800-8-BATTERY or go to the Rechargeable Battery Recycling Corporation website www.rbrc.com for additional information.

NOTE