

# QUANTAR TO GTR SYSTEM UPGRADE



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Motorola Solutions, Inc.  
1507 LBJ Freeway, Suite 700  
Farmers Branch, TX. 75234  
USA

September 11, 2017

Jim Barho  
Burnet County  
220 South Pierce Street  
Burnet, Texas 78611

RE: Western County Quantar to GTR System Upgrade

Dear Mr. Barho:

Motorola Solutions, Inc. ("Motorola") is pleased to present to you the enclosed proposal for the Western County Quantar to GTR System Upgrade.

This proposal is subject to the terms and conditions of the enclosed System Purchase Agreement or, alternatively, a negotiated version thereof and is valid for ninety (90) days from the date of this letter. Motorola would be happy to discuss any concerns Western County may have with the proposal.

Sincerely,

MOTOROLA SOLUTIONS, INC.

A handwritten signature in black ink, appearing to read 'Rick Russek', written over a horizontal line.

Rick Russek  
Areas Sales Manager  
North American Government Markets

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# SYSTEM OVERVIEW

This system overview describes the system components that will be replaced as part of the migration path proposed for the Western Counties Consortium's radio system. This proposal takes into account the equipment that is reaching end of life and will be going out of support. The current GATRRS migration plan is to migrate to release A7.17 in 2018. In 2020 the GATRRS system plans to migrate to system release A7.19. Release A7.19 will not permit the QUANTAR Base Radio and PSC 9600 controller as supported devices. It is recommended that the Counties begin to migrate the Counties' radio equipment prior to this period of time.

Motorola is proposing the latest Expandable Site Subsystem (ESS). The repeater site utilizes the latest Motorola G-series RF radio equipment and G-series site controller.

Motorola has taken great care to propose an offering that will provide the Western Counties Consortium with a solution that meets their current and future needs. A description of the features, benefits, system architecture, and hardware components are provided in this system description.

## 1.1 PROJECT RESPONSIBILITIES

Motorola has based the system design on information gathered from meeting with the Western Counties. All assumptions have been listed below for the Western Counties' review. Should Motorola's assumptions be deemed incorrect or not agreeable to Western Counties, a revised proposal with the necessary changes and adjusted costs will be required. Changes to the equipment or scope of the project after contract will require a change order. Refer to the Statement of Work for the specific list of responsibilities to be performed by Western Counties and Motorola.

This section outlines the assumptions and dependencies used in developing the proposed solution.

- Prior to project completion, Motorola will perform an R56 audit at the repeater sites for the new equipment; however, Western Counties is responsible for performing any recommended or required R56 modifications at the locations. Motorola will install and connect equipment per R56 standards.
- Motorola shall remove the QUANTARS, Site Controllers, and the rack(s) associated with these equipment.
- Motorola shall reuse the existing combiner, receive multicoupler, and antenna system with the GTR 8000 ESS Base Radios for each site.
- No replacement is required for the existing network equipment at each site. Motorola shall reuse the network equipment including the GGM 8000 router, the PTP equipment, and the associated fan out switch for the PTP link. The equipment shall be installed in the proposed ESS rack.

- Singleton Bend site is already on the G series radio platform. No hardware upgrade is required for Singleton Bend.
- This proposal does not include the expansion to the Watson, LCRA, and Church Tank sites combiner and receive multicoupler. A separate quote will be required when frequencies are acquired to expand these two sites.
- Any software update not associated with this migration plan is not covered by this proposal.
- Motorola will not run any RF analysis as part of this proposal since the antenna(s) and antenna line(s) shall be a reused.
- No coverage guarantee/commitment is provided with this proposal.

Motorola is not responsible for interference caused or received by the Motorola provided equipment except for interference that is directly caused by the Motorola provided transmitter(s) to the Motorola provided receiver(s). Should the Western Counties radio system experience interference, Motorola can be contracted to investigate the source and recommend solutions to mitigate the issue(s).

## 1.2 SYSTEM COMPONENTS

The proposed system components for the migration are broken down on a per site basis. This proposal takes into the account the existing equipment at each site. The following equipment are required to be migrated; all PSC 9600 Site Controllers and QUANTAR Base Radios that are connected to the GATRRS system. Each site will have the 2 PSC 9600 site controllers and all QUANTAR base radios replaced. Table 1.1 below lists the equipment replacement on a per site basis.

Motorola is proposing to replace the equipment with the GTR 8000 Expandable Site Subsystem solution that will house up to 6 GTR 8000 Base Radios and 2 GCP 8000 Site Controllers.

This proposal shall reuse the network equipment, transector OP 8, combiner, and antenna system. The ESS rack shall house the FNE, PIDU and/or CMU, and the associate fan out switch.

Table 1-1 lists the type and number of station(s) and site controller(s) per site and county included in the proposed migration plan:

**Table 1-1: Western Counties Per Site Equipment**

| County | Site                | No. of Station | Type | No. of SC | Type     |
|--------|---------------------|----------------|------|-----------|----------|
| Burnet | Mustang Water Tower | 5              | GTR  | 2         | GCP 8000 |
| Burnet | 281 North           | 5              | GTR  | 2         | GCP 8000 |
| Burnet | Bertram             | 5              | GTR  | 2         | GCP 8000 |
| Burnet | Watson              | 5              | GTR  | 2         | GCP 8000 |
| Llano  | Lone Grove          | 5              | GTR  | 2         | GCP 8000 |
| Llano  | Fowler              | 5              | GTR  | 2         | GCP 8000 |
| Llano  | Lookout Mountain    | 5              | GTR  | 2         | GCP 8000 |
| Blanco | Round Mountain      | 5              | GTR  | 2         | GCP 8000 |
| Blanco | LCRA/Mountain Top   | 5              | GTR  | 2         | GCP 8000 |
| Blanco | Church Tank         | 5              | GTR  | 2         | GCP 8000 |

Based on the above table, Motorola proposes one ESS rack per site to accommodate the base stations and site controllers at each site. The following sections shall break down the proposed site migration plan for each site.

## 1.2.1 Burnet County—Mustang Water Tower

This proposal includes the replacement of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radio.
- Qty (2) GCP 8000 Site Controllers.

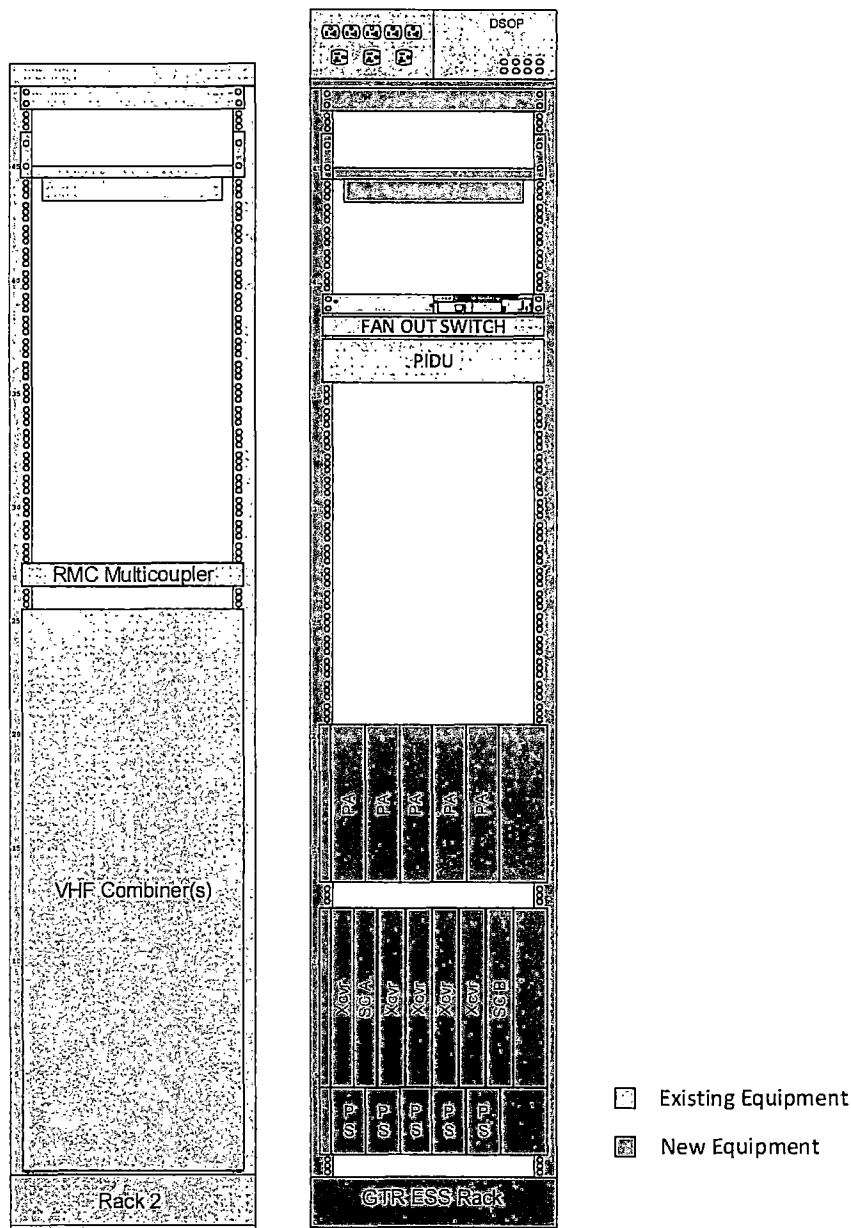


Figure 1-1: Burnet County—Mustang Water Tower Diagram

## 1.2.2 Burnet County—281 North Tower

This proposal includes the replace of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS)
- Qty (5) GTR 8000 VHF Base Radio
- Qty (2) GCP 8000 Site Controllers

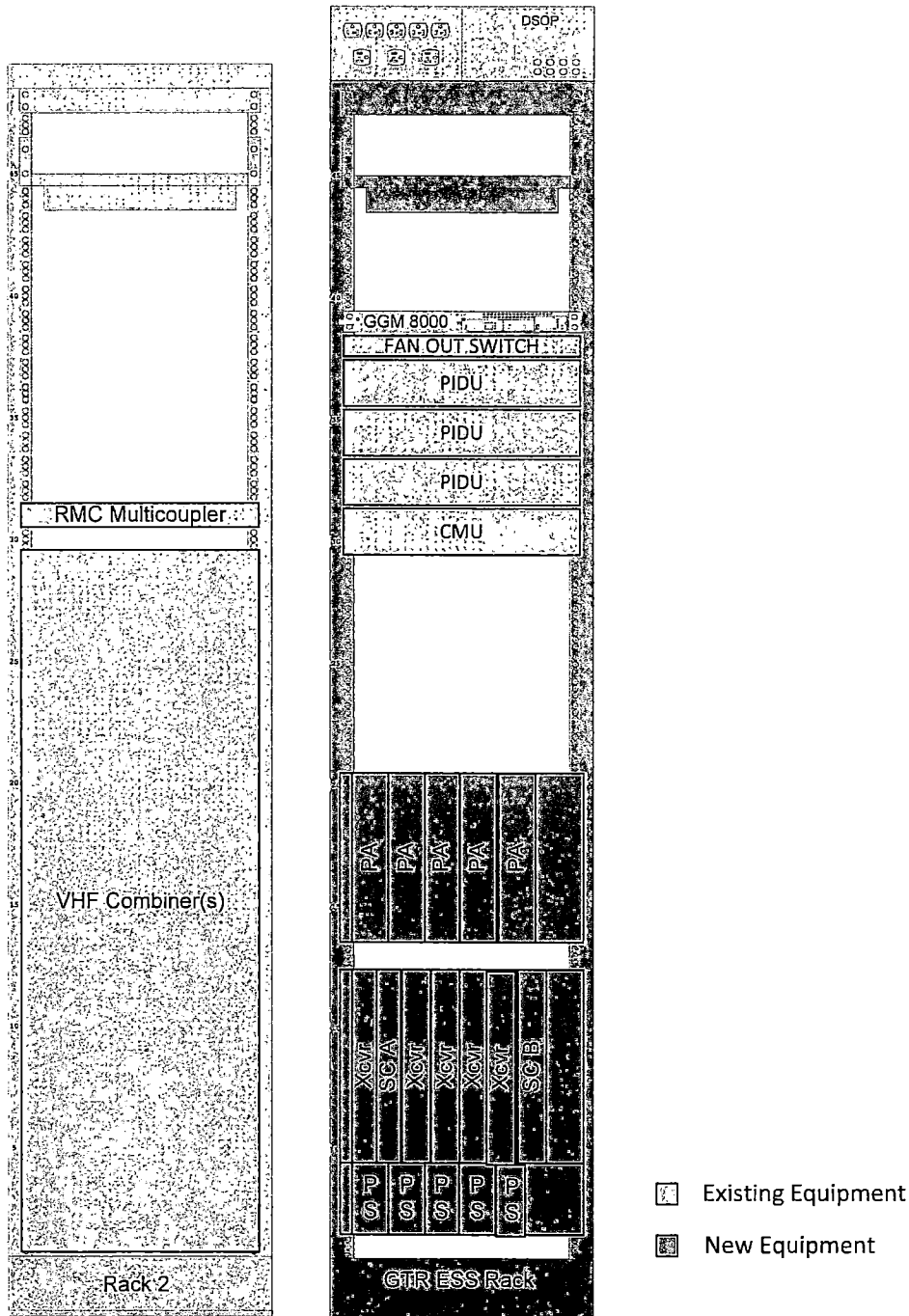


Figure 1-2: Burnet County—281 North Tower Diagram

### 1.2.3 Burnet County—Bertram Tower

This proposal includes the replacement of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radio.
- Qty (2) GCP 8000 Site Controllers.

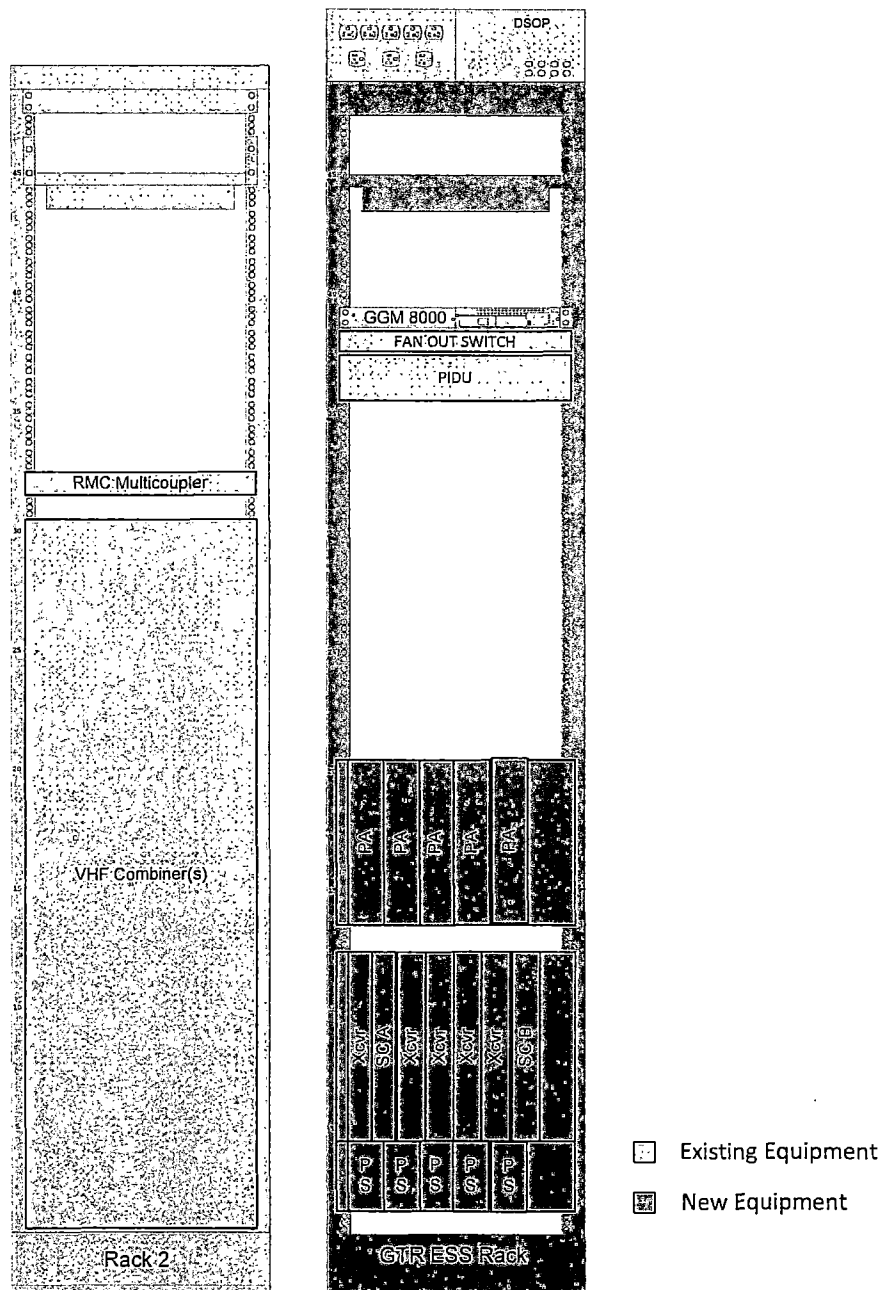


Figure 1-3: Burnet County—Bertram Diagram



## 1.2.4 Burnet County—Watson Tower

This proposal includes the replacement of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radio.
- Qty (2) GCP 8000 Site Controllers.

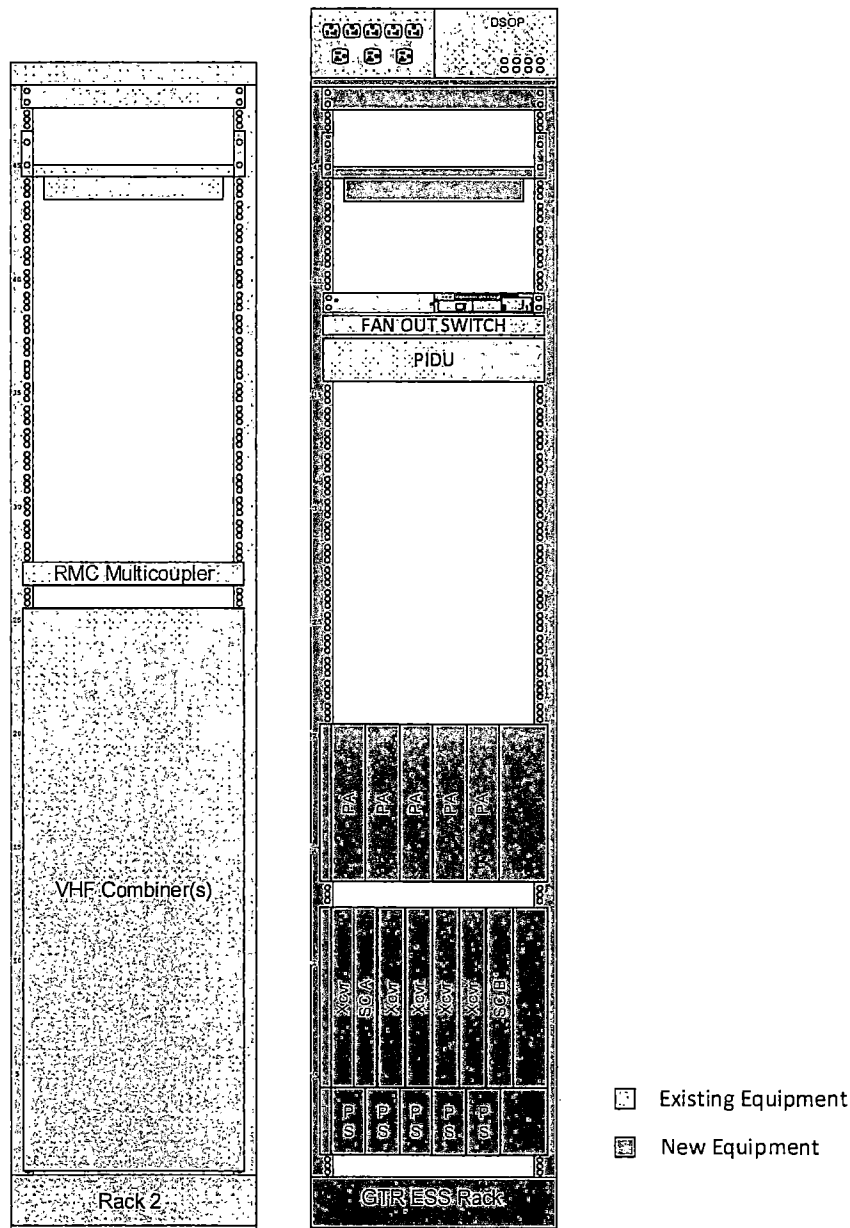


Figure 1-4: Burnet County—Watson Diagram

## 1.2.5 Llano County—Lone Grove Tower

This proposal includes the replacement of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radio.
- Qty (2) GCP 8000 Site Controllers.

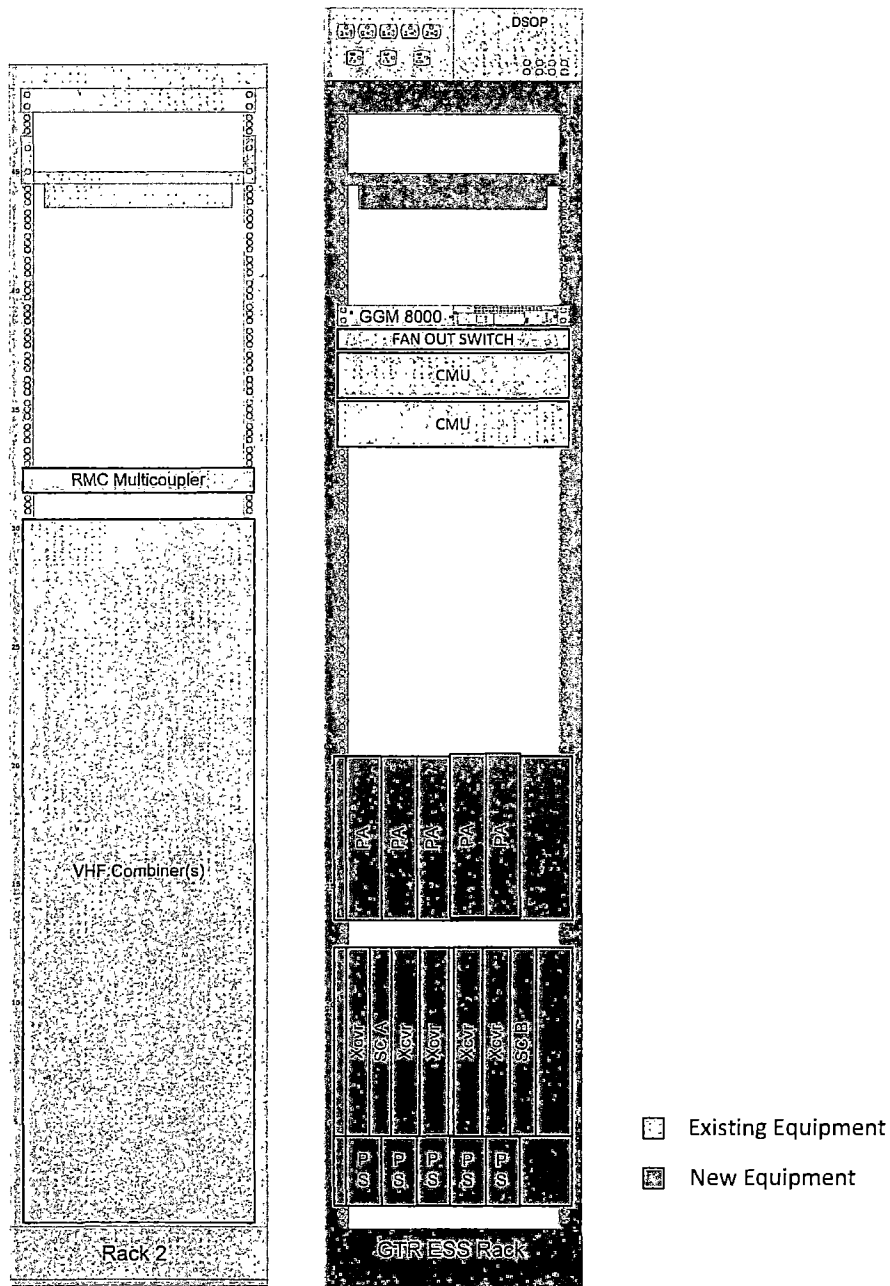
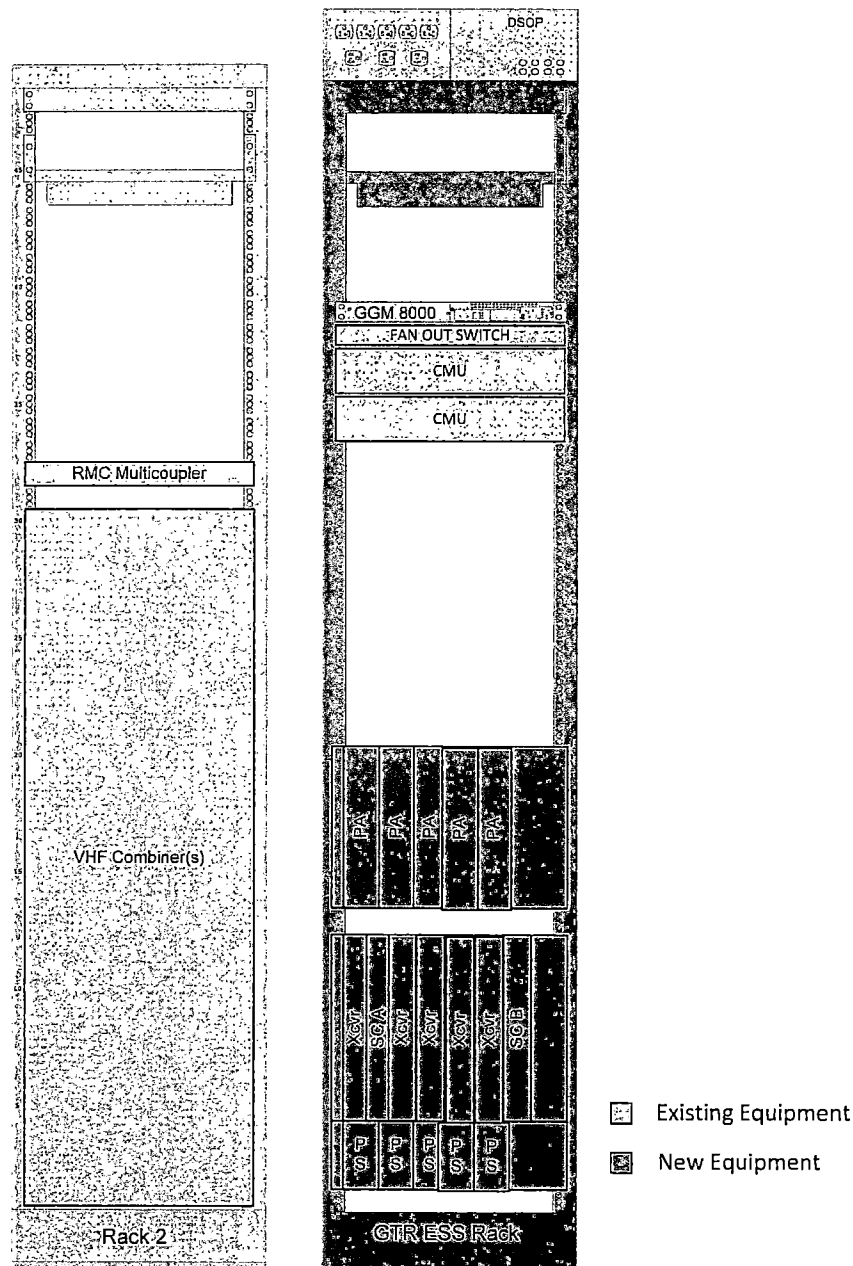


Figure 1-5: Llano County—Lone Grove Diagram

### 1.2.6 Llano County—Fowler Tower

This proposal includes the replacement of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radio.
- Qty (2) GCP 8000 Site Controllers.



**Figure 1-6: Llano County—Fowler Diagram**

## 1.2.7 Llano County—Lookout Mountain

This proposal includes the replace of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radios.
- Qty (2) GCP 8000 Site Controllers.

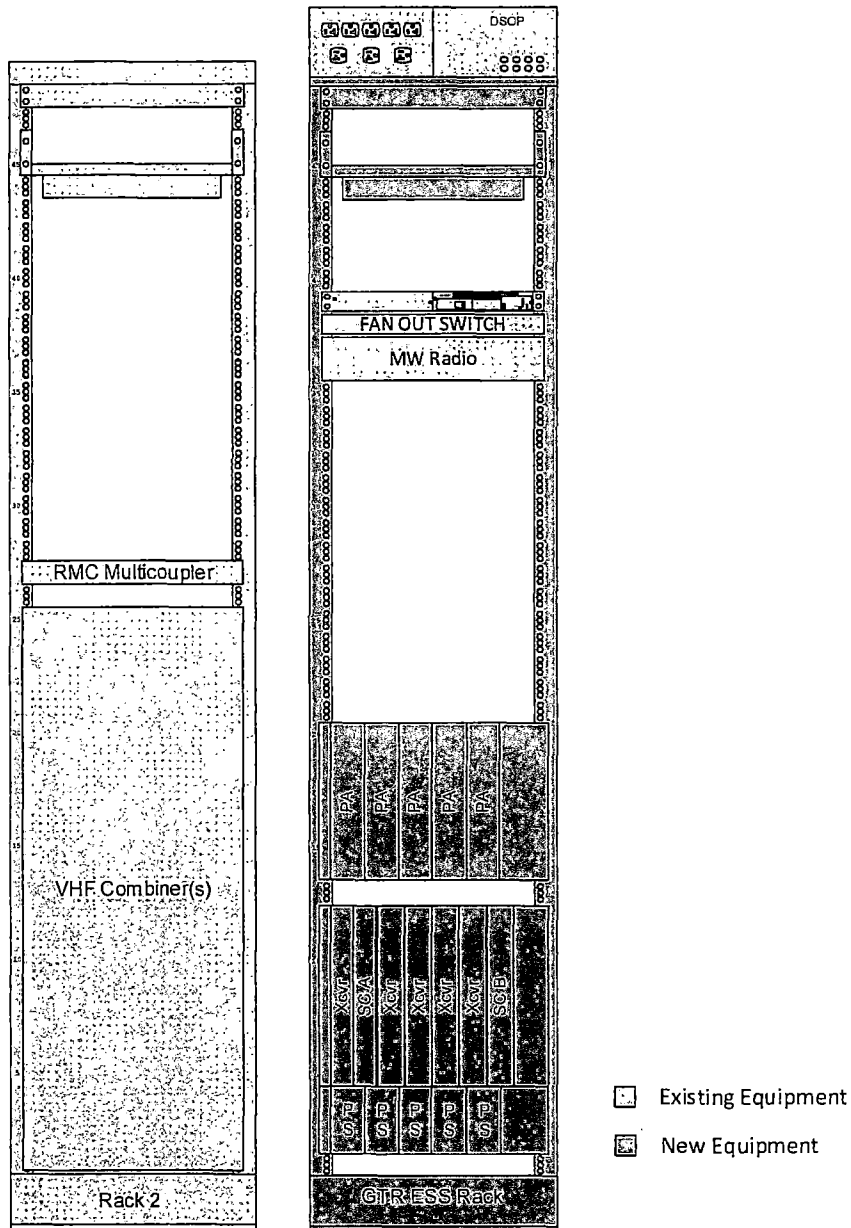
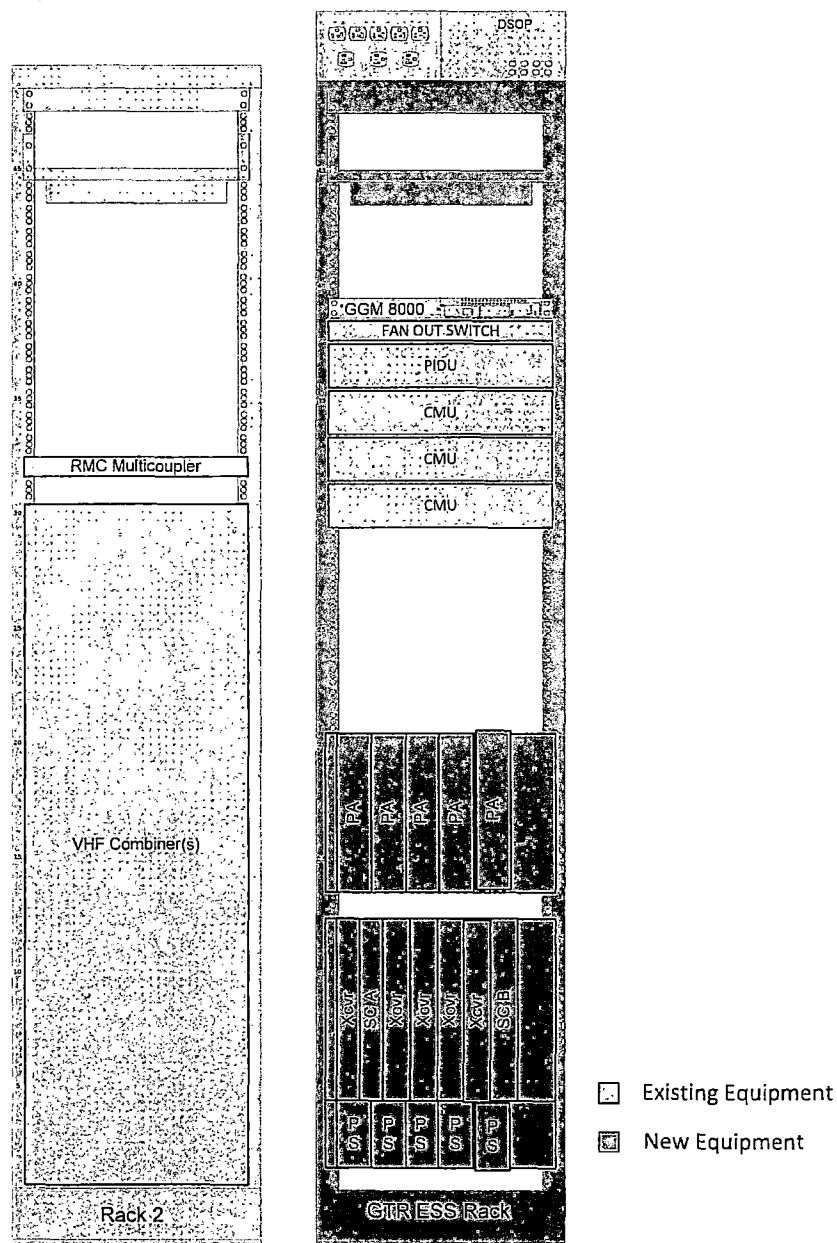


Figure 1-7: Llano County—Lookout Mountain Diagram

### 1.2.8 Blanco County—Round Mountain

This proposal includes the replacement of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radios.
- Qty (2) GCP 8000 Site Controllers.



**Figure 1-8: Blanco County—Round Mountain Diagram**

## 1.2.9 Blanco County—LCRA/Mountain Top

This proposal includes the replacement of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radio.
- Qty (2) GCP 8000 Site Controllers.

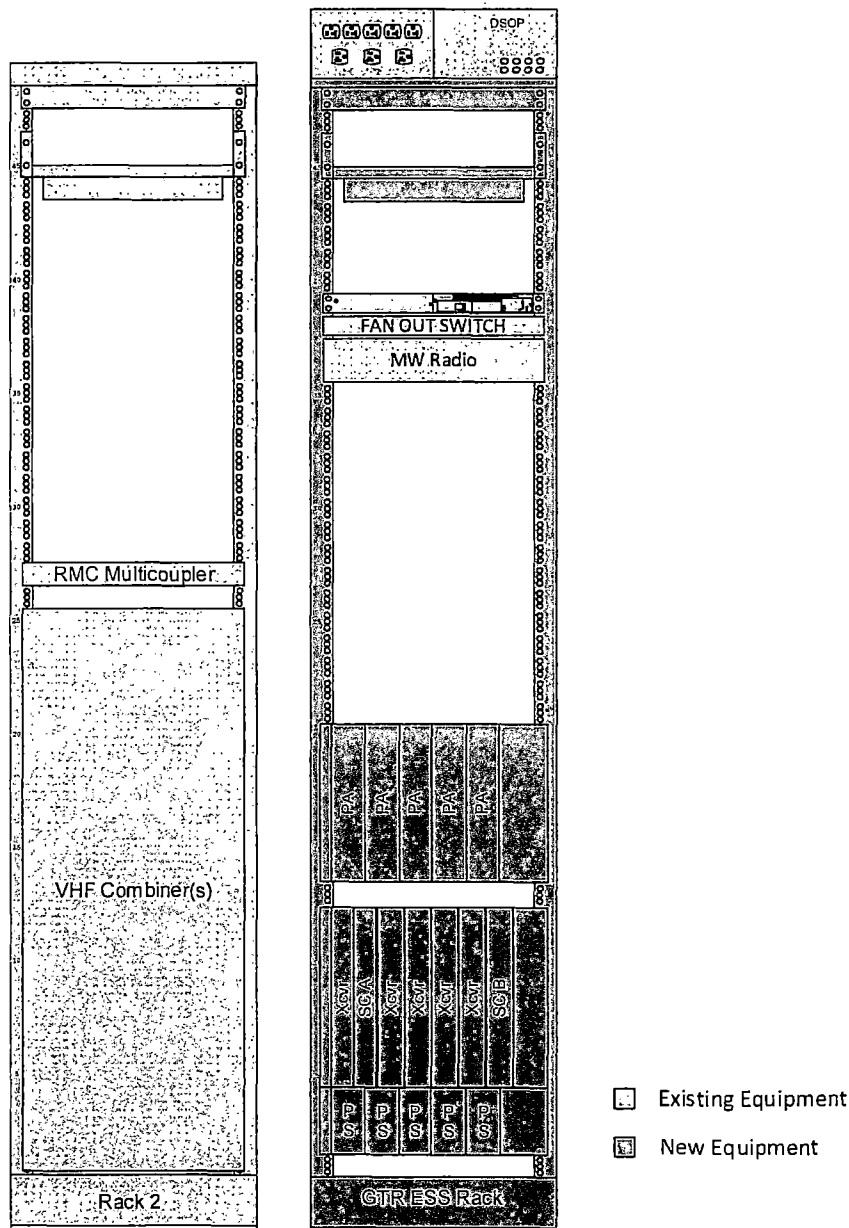


Figure 1-9: Blanco County—LCRA/Mountain Top

## 1.2.10 Blanco County—Church Tank

This proposal includes the replacement of the QUANTARs and PSC 9600s with the following equipment:

- Qty (1) GTR 8000 VHF Expandable Site Subsystem (ESS).
- Qty (5) GTR 8000 VHF Base Radio.
- Qty (2) GCP 8000 Site Controllers.

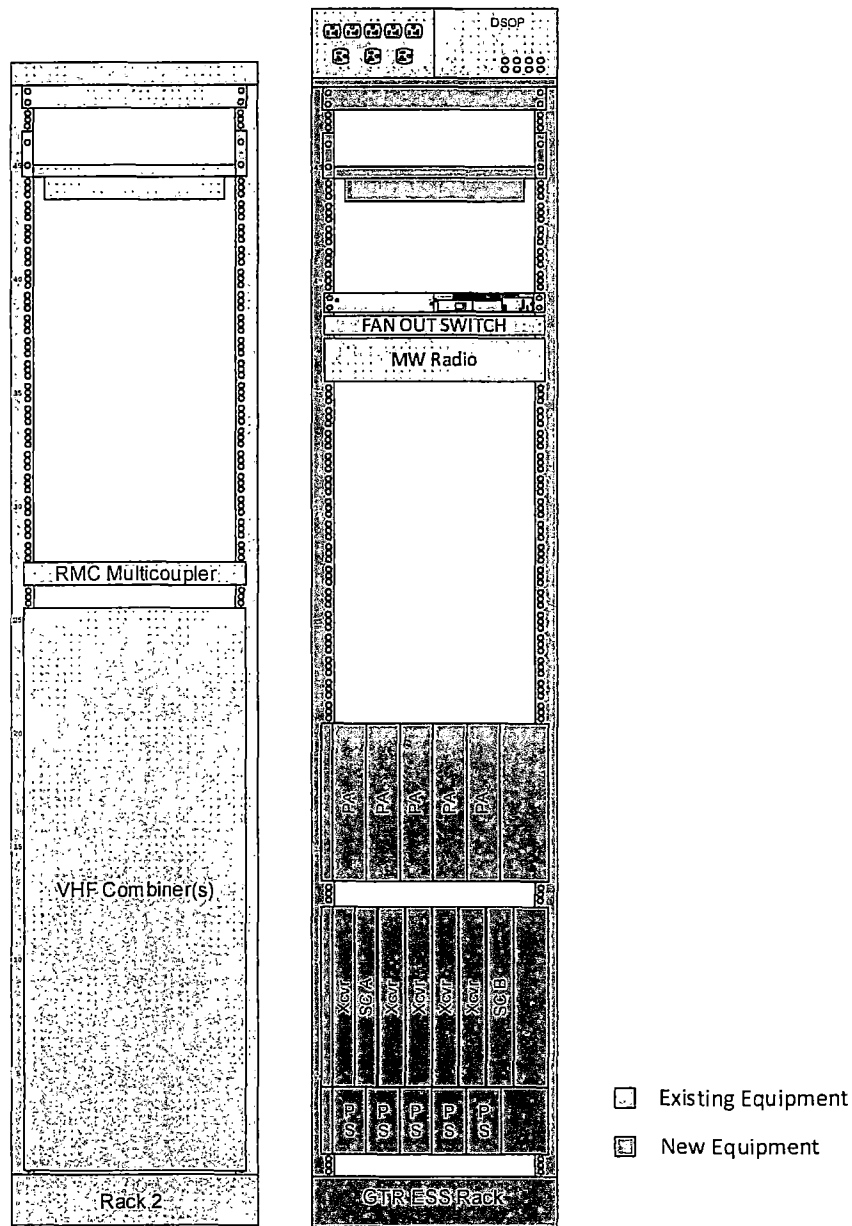


Figure 1-10: Blanco County—LCRA/Mountain Top

## 1.2.11 Repeater Site Electrical and Heat Requirements

All equipment provided in this section is based off AC power. Table 1-1 provides the power and heat specifications of the proposed equipment:

Table 1-1: AC/HVAC Sizing for New Motorola Provided Equipment

| Device                              | QTY | PWR (W)/Device | Total PWR (W) | BTU/HR/Device | Total BTU/HR |
|-------------------------------------|-----|----------------|---------------|---------------|--------------|
| GTR 8000 ESS RACK (up to 6 channel) | 1   | 3000           | 3000          | 7650          | 7650         |
| GCP 8000 Site Controller            | 2   | 80             | 160           | 175           | 350          |
| Equipment Room Total                |     |                | 3160          |               | 8000         |

Figures are based on maximum simultaneous current draw for a fully loaded 6 channel ESS rack. Motorola recommends sizing UPS for at least 20% growth.

The proposed equipment does not require any change or upgrade to the electrical system at each site.

## 1.2.12 Acceptance Test

Acceptance of the ISR sites will be based on the completion of a Functional Acceptance Test Plan (FATP).

The FATP tests the functionality of all installed equipment to verify operation. Typical trunking features, such as Talk group Call and Patch Call will be tested, as well as applicable failure scenarios.

## 1.3 ASTRO 25 PRODUCT INFORMATION

### 1.3.1 ASTRO 25 Repeater Site Equipment

The ASTRO 25 digital platform is the main Motorola solution for small (single site) to very large size (multizone) implementations. The evolution of the ASTRO 25 trunking solution provides competitive advantages while also ensuring a migration path for existing systems.

A repeater site radio system provides continuous coverage over a large geographic region using a set number of different frequencies. A repeater is a combination of a receiver and transmitter that uses two frequencies to transmit and receive at the same time (i.e. full duplex system). Repeaters are used to extend the range of the radio thereby extending the system's RF coverage especially in areas where physical barriers (for example, mountains and buildings) and long distances (a wide area like a Counties) can cause deficiencies in signal coverage.

An ASTRO 25 repeater site with GTR 8000 ESS is a single-solution, RF communication site designed to optimize channel capacity requirements operating in the VHF band. The ASTRO 25 repeater site subsystem consists of a number of trunked repeaters connected through LAN to a local site controller which support mutual aid/conventional channels as well as IV&D and HPD overlay. Network infrastructure includes a site router and ESS. A typical ASTRO 25 repeater site subsystem is shown below. Note that this diagram is for illustration purposes only and shows a fully populated 28 channel site. This proposal does not include all of the equipment shown in the typical repeater site diagram in Figure 1-11.



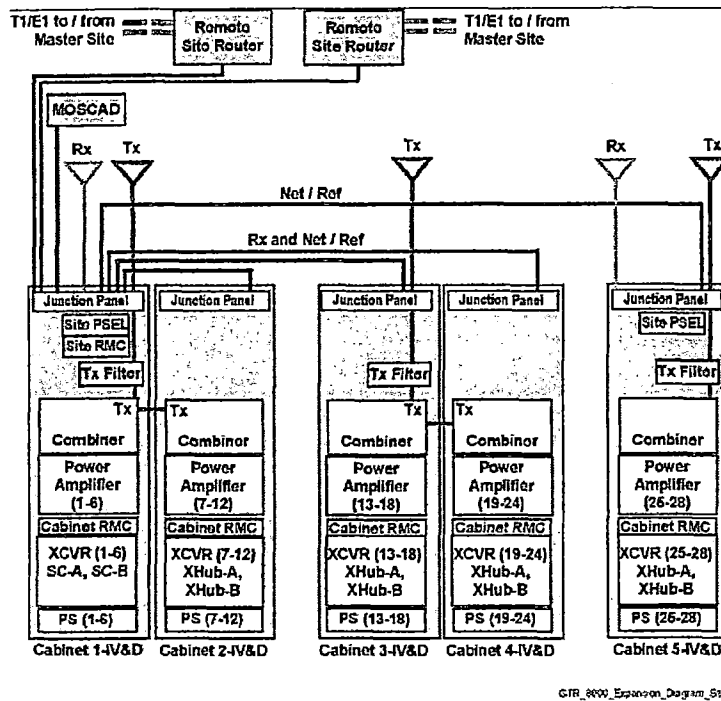


Figure 1-11: Basic diagram of a typical ASTRO 25 Repeater Site with additional components.

The RF transmitters and receivers are located at the repeater sites. These sites transmit information to the subscribers. The receivers at these sites receive the audio from the user radios. Equipment at a repeater site includes GTR 8000 base radios, GCP 8000 site controllers and GGM 8000 site routers.

### 1.3.2 GTR 8000 Radio (Expandable Site Subsystem Configuration)

The GTR 8000 Radio in the ESS configuration is used at ASTRO 25 repeater sites and can operate in the VHF frequency band. Each ESS at the site can include up to six transceivers, six 48V DC power supplies and six RF power amplifiers. The ESS provides a modular, flexible design for today's communication systems and those of the future. The innovative design allows for upgrades within systems via hardware and/or software to avoid total infrastructure replacement. The software based design and the use of the software download manager eases the ability for future upgrades. A GTR 8000 ESS chassis is shown below in Figure 1-12.

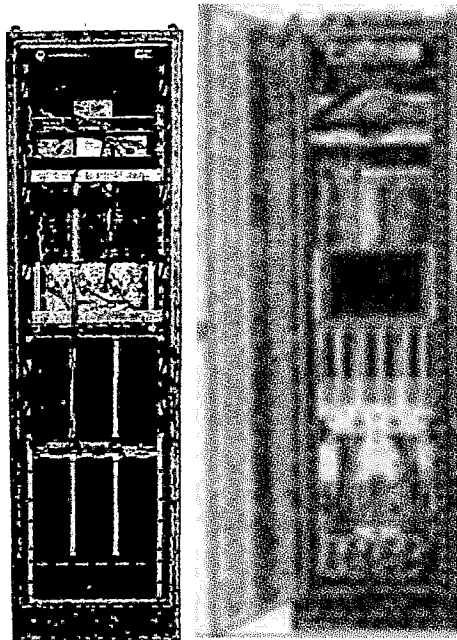


Figure 1-12: GTR 8000 Expandable Site Subsystem Front View (700/800) and Rear View (respectively)

## 1.4 EQUIPMENT LIST

| QTY | DESCRIPTION                                                   |
|-----|---------------------------------------------------------------|
|     | <b>BURNET COUNTY</b>                                          |
|     | <b>MUSTAND TOWER</b>                                          |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>281 NORTH</b>                                              |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |

| QTY | DESCRIPTION                                                   |
|-----|---------------------------------------------------------------|
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>BERTRAM</b>                                                |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>WATSON</b>                                                 |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (4) GTR 8000 BASE RADIOS                             |
| 4   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>SPARE</b>                                                  |
| 1   | FRU POWER SUPPLY                                              |

| QTY | DESCRIPTION                                                   |
|-----|---------------------------------------------------------------|
| 1   | FRU: PA VHF                                                   |
| 1   | FRU: XCVR VHF V2                                              |
| 1   | FRU: FAN MODULE                                               |
|     | <b>LLANO COUNTY</b>                                           |
|     | <b>LONE GROVE</b>                                             |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>FOWLER</b>                                                 |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>LOOKOUT MOUNTAIN</b>                                       |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |



| QTY | DESCRIPTION                                                   |
|-----|---------------------------------------------------------------|
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>SPARE</b>                                                  |
| 1   | FRU POWER SUPPLY                                              |
| 1   | FRU: PA VHF                                                   |
| 1   | FRU: XCVR VHF V2                                              |
| 1   | FRU: FAN MODULE                                               |
|     | <b>BLANCO COUNTY</b>                                          |
|     | <b>ROUND MOUNTAIN</b>                                         |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>LCRA/MOUNTAIN TOP</b>                                      |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |



| QTY | DESCRIPTION                                                   |
|-----|---------------------------------------------------------------|
|     | <b>CHURCH TANK</b>                                            |
| 1   | GTR 8000 EXPANDABLE SITE SUBSYSTEM                            |
| 1   | ADD: VHF (136-174 MHz)                                        |
| 1   | ADD: QTY (5) GTR 8000 BASE RADIOS                             |
| 5   | ENH: ASTRO 25 SITE REPEATER SW                                |
| 2   | ADD: QTY (1) SITE CONTROLLER                                  |
| 2   | ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D     |
| 1   | ADD: 7.5 FT OPEN RACK, 48RU                                   |
| 1   | ADD: AC DC POWER DISTRIBUTION                                 |
| 1   | RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS |
|     | <b>Connectors and Coax</b>                                    |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 95  | FSJ1-50A CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT              |
| 5   | F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE        |
| 5   | F1TBM-C 1/4" BNC MALE CONNECTOR                               |
|     | <b>SPARE</b>                                                  |
| 1   | FRU POWER SUPPLY                                              |
| 1   | FRU: PA VHF                                                   |
| 1   | FRU: XCVR VHF V2                                              |
| 1   | FRU: FAN MODULE                                               |

# SERVICES

## 2.1 PROFESSIONAL INTEGRATION SERVICES

To ensure a smooth installation and deployment, this budgetary proposal includes estimates for the following services: Includes system staging at the Motorola Customer Center for Systems Integration (CCSi).

- Includes Field Systems Technologist support for system installation and optimization.
- Includes system installation and optimization.
- Includes Project Management for system installation and optimization.

This solution will be installed, optimized, and tested by our dedicated Project Implementation Team.

## 2.2 MOTOROLA SYSTEM SUPPORT

Motorola's standard warranty covers on-site response during normal business hours and provides for the repair or replacement of defective hardware components.

In addition to this warranty, Motorola provides Warranty Wrap, which is a service package designed to support you 24x7 for a one-year warranty period. Warranty Wrap services are included in the price of the System. After the Warranty Wrap period expires, these services may be purchased under a separate agreement. Motorola's Warranty Wrap is comprised of the following services.

- Infrastructure Repair with Advanced Replacement.
- Dispatch Service and Call Management.
- Technical Support.
- Onsite Infrastructure Response (24x7).

# PRICING SUMMARY

Motorola's system solution and services are priced as follows:

Total solution price per equipment and services outlined in this proposal

| Description                                                                      | Total                 |
|----------------------------------------------------------------------------------|-----------------------|
| Western County Region List Price                                                 | \$2,294,432.00        |
| HGAC/GATRRS Discount                                                             | (\$414,432.00)        |
| <b>Grand Total</b>                                                               | <b>\$1,820,000.00</b> |
| Combined Project Discount<br>If PO is issued by 10-31-17                         | \$60,000              |
| Western Region Combined Project Technology Credit—If PO is<br>issued by 10-31-17 | \$90,830.00           |

| Description                                                                    | Total               |
|--------------------------------------------------------------------------------|---------------------|
| <b>Burnet County Total List Price</b>                                          | <b>\$916,686.00</b> |
| HGAC/GATRRS Discount                                                           | (\$166,686.00)      |
| <b>Grand Total</b>                                                             | <b>\$750,000.00</b> |
| Mustang Site (5 Channel)                                                       | \$185,000           |
| 281 North Site (5 Channel)                                                     | \$185,000           |
| Bertram Site (5 Channel)                                                       | \$185,000           |
| Watson Site (5 Channel)— <i>Does not include antenna network<br/>expansion</i> | \$185,000           |
| Spares Kit                                                                     | \$10,000            |

| Description                          | Total               |
|--------------------------------------|---------------------|
| <b>Llano County Total List Price</b> | <b>\$688,873.00</b> |
| HGAC/GATRRS Discount                 | (\$123,873.00)      |
| <b>Grand Total</b>                   | <b>\$565,000.00</b> |
| Lookout Mountain Site (5 Channel)    | \$185,000           |
| Fowler Site (5 Channel)              | \$185,000           |
| Lone Grove Site (5 Channel)          | \$185,000           |
| Spares Kit                           | \$10,000            |

| Description                                                                               | Total               |
|-------------------------------------------------------------------------------------------|---------------------|
| <b>Blanco County Total List Price</b>                                                     | <b>\$688,873.00</b> |
| HGAC/GATRRS Discount                                                                      | (\$123,873.00)      |
| <b>Grand Total</b>                                                                        | <b>\$565,000.00</b> |
| Round Mountain Site (5 Channel)                                                           | \$185,000           |
| LCRA Mountain Top Site (5 Channel)— <i>Does not include antenna<br/>network expansion</i> | \$185,000           |





SECTION 4

# TERMS AND CONDITIONS

Terms and Conditions are included on the following pages.

