

Galen Belen

Senior RF Engineer

Burke, VA

-Email me on Indeed: <http://www.indeed.com/r/Galen-Belen/7185fa2c614bd270>

Twenty-five years of experience in the wireless industry that includes seventeen years in RF engineering, implementation, network expansion and overlay, installation, troubleshooting, integration, optimization, RF Design including DAS, RF Network Performance and project management. System background includes LMR, P25, AMPS, TDMA, CDMA, GSM, UMTS, EVDO, LTE and VoLTE. Familiar with vendor equipment like Alcatel-Lucent, Motorola, Nokia, and Ericsson. Propagation tools used are PathPro, dB Planner, ASSET, Atoll, Mentum Planet EV, and Keima Overture. Network Performance tools used includes Alcatel-Lucent's Service Aware Manager (5620 SAM) and Network Performance Optimizer (NPO). Equipment expertise includes Andrew GWMT-1920 transmitter test; Invex3G GWMP 4000 test receiver, frequency counter; spectrum analyzer; RF power meter; Hewlett Packard (HP) 4934A; HP 8920A RF communication test set; HP 86408 signal generator; Marconi 2955 radio communication test set; Marconi 2945 communication service monitor; LCC Mission Scenario Analysis Tool (MSAT); Remote Server Administration Tools (RSAT) 2000; MLJ path search receiver; MLJ PCS 20/Cell-20 transmitters; Telecommunications Management System (TEMS) Investigation 8.1.1 Data Collection; W1314A-E09 JDSU receiver; Rohde & Schwarz SMR20 Signal Generator, Agilent E4407B Spectrum Analyzer, Agilent N5230A PNA-L Network Analyzer, and Agilent N5225A PNA Microwave Network Analyzer.

Authorized to work in the US for any employer

Work Experience

Senior RF Engineer

Amentum - Fort Meade, MD

July 2020 to Present

- Supporting the Department of the Navy on Spectrum Certifications at Fort Meade, MD under the Department of Defense contract.
- Use Spectrum Management Software tools like EL-CID, SCS, BPM and etc., ...
- Understanding of a wide variety of spectrum dependent systems including radars, communications, data links, and SATCOM.
- Knowledge of Federal Communications Commission (FCC) and National Telecommunications and Information Administration (NTIA) system certification process.

Senior Field Engineer (CCR)

ManTech - Baghdad, IQ

October 2019 to July 2020

- Supporting the US Department of State Diplomatic Security on Contingency Communication Radio (CCR) under the Protective Technology Branch (PTB) at the US Embassy in Baghdad, Iraq.
- Work on preventive and corrective maintenance of various VHF/UHF/SATCOM Type 1 & 3 encrypted radios, including Iridium Satellite network radios, Line of Site (LOS) radios and their associated hardware devices in support of the Diplomatic Security.

Senior RF Engineer

Zantech - Lorton, VA

April 2019 to October 2019

- Supported the Immigration and Custom Enforcement (ICE) Homeland Security Investigation (HSI) Spectrum Project at Lorton, Virginia under the Department of Homeland Security (DHS) contract.
- Worked on Sierra Wireless Networking Solution using routers and gateways like RV50, GX440 and GX450 modems for Smart IoT/M2M connectivity managed by Air Vantage, ACEManager and Airlink Mobility Manager (AMM) platform solutions on a 4G/LTE network connection.
- Provided leadership for engineering activities in a specialized engineering or technology subject area. Provided graphs and spreadsheet for status reports.
- Worked with transmission systems, device design, and placement of antennas for optimum performance.

Lead RF Engineer

Alion Science and Technology - Fort Meade, MD

September 2017 to April 2019

- Supported the Department of the Air Force on Spectrum Certifications at Fort Meade, MD under the Department of Defense contract.
- Review and recommend action on Identification Friend or Foe (IFF) requests for NTIA certification of spectrum support.
- Provided support for the Federal Aviation Administration (FAA) on technical and regulatory issues at the SPS Working Group 8 meetings on IFF.
- Used Spectrum Management Software tools like EL-CID, SCS, ACD and etc.,
- Understanding of a wide variety of spectrum dependent systems including radars, communications, data links, and SATCOM.
- Knowledge of Federal Communications Commission (FCC) and National Telecommunications and Information Administration (NTIA) system certification process.

RF Engineer E3

AECOM - Dahlgren, VA

April 2016 to September 2017

- Worked with communication systems, Electromagnetic Compatibility (EMC), Electromagnetic Interference (EMI), Radar systems, Electronic Warfare(EW) systems, Electromagnetic (EM) field measurements, or Electromagnetic Environmental Effects(E3) testing at the Navy Surface Warfare Center Dahlgren Division under the Department of Defense contract.
- Good understanding with electromagnetic (EM) theory and applications.
- Knowledgeable with laboratory test equipment including power meter, signal generators, spectrum analyzers and network analyzers etc.
- Knowledgeable with microwave, HF, VHF, UHF, SATCOM, communication links/systems, radar principals, antennas, and RF components.
- Created plan, schedule, and shipboard EMI testing.

RF Engineer Performance Analytics

Global Technology Associates - Reston, VA

January 2013 to August 2015

- Worked on Alcatel-Lucent with Sprint Network Vision projects on 800/900 MHz Frequency Division Duplex (FDD)-LTE pre-cluster optimization and 2.5 GHz Time Division Duplex (TDD)-LTE top offenders.

- Optimized LTE/4G cell sites by identifying top offender sectors, and performed troubleshooting, and resolve performance issues to bring the sectors' performance to specified performance service level targets.
- Resolved a variety of complex technical/performance issues, like downlink (DL) throughput, latency, high Call Failure Rate (CFR), high Call Drop Rate CDR, and mobility.
- Performed preliminary analysis of top offending sector performance including, but not limited to, site configurations, backhaul configurations, analyzing alarms, Rules of Procedure (ROP), asserts by logging into OSS with the use of 5620 SAM, NPO, and various other platforms/network elements. Used Siterra Site Database to confirm site information.
- Submitted reports to management as needed and worked with RF engineers, integration, and support teams and agreed upon escalation paths to arrive at a resolution.
- Was responsible for resolving performance issues/tickets within service level for resolution along with any parameter changes to effect in performance.
- Provided support to the RF team in optimization activities by providing performance updates and inputs.
- Attended and led customer on internal meetings covering complex technical issues.

Senior RF Engineer

LCC International, Inc - Chantilly, VA
November 2012 to January 2013

Worked on Sprint/Samsung Network Vision project, reviewed site configuration and construction drawing from Siterra Site Database; used Google Earth for terrain information and performed theoretical maximum permissible exposure (MPE) studies to create a compliance report based on the Federal Communications Commission (FCC) guidelines.

Senior RF Engineer

Telecom Technology Services, Inc - Charlotte, NC
April 2012 to November 2012

- Worked with the AT&T optimization group for the Radio Access Network (RAN) optimization for UMTS and LTE technologies using OptPCS iCE analysis and provided RF recommendations in Detroit, MI.
- Led the drive test team in collecting scan and on call drive test data using JDSU receiver.
- Worked on the AT&T/ASG for the Democratic National Convention (DNC) DAS/RAN optimization for UMTS/3G and LTE/4G technologies using OptPCS iCE analysis for RF recommendations in Charlotte, NC.
- Worked on the T-Mobile modernization project in Charlotte, NC., Washington, DC, Baltimore, MD, Chicago, IL and Milwaukee, WI markets.
- Created RFDS (Radio Frequency Data Sheet) with overlay of LTE technology on T-Mobile's existing UMTS network.
- Created MPE compliance report base on the FCC guidelines.
- Reviewed preliminary construction drawings and issue the final RF configuration sheet.

Senior RF Design Engineer

Bechtel Communications, Inc - Montvale, NJ
July 2011 to April 2012

- Created RFDS for UMTS and LTE rollouts for AT&T mobility project.
- Selected and configured antenna design for the required coverage objective.
- Prepared RND/CIQ for ATT networks for various markets.
- Prepared MPE study to ensure site was in compliance with FCC standard using on-site measurements and software analysis.

- Represented AT&T on zoning hearing to justify the site alteration. Created zoning plots using Mentum Planet or Atoll.

RF Design Lead Engineer

Telecom Technology Services, Inc - Simi Valley, CA

January 2011 to July 2011

- Led the T-Mobile Los Angeles (LA) North market with the UMTS/3G and GSM/2G wireless network design.
- Standardized RF team's procedures for site candidate approval, documentation, and on-air drive test for new site.
- Worked closely with site acquisition managers and construction managers for site status.
- Conducted management site walks for sites with complicated design.
- Assisted development group to assure that every Site Search Rings had candidates.
- Was involved in DAS design, acceptance test, and coordinating with vendors (Commscope and mobile access) and general contractors.
- Prepared zoning documents with propagation plots and identified significant gap in coverage; and described in detail the nature of the area or the number of potential users affected by the claimed significant gap.
- Performed continuous wave (CW) drive test to verify the site design and for zoning justification.
- Approved RFDS prior to issuing Note to Proceed (NTP) for construction. RFDS contains the height, size, model, location of the antenna, cable size and length, etc., it also includes the technologies that will be use and a plumbing diagram from the radio port to antenna. Reviewed antenna system sweep test.

LTE RF Design Lead Engineer

Telecom Technology Services, Inc - Los Angeles, CA

October 2010 to January 2011

- Worked on the initial design of 899 sites for the Lightsquared and Nokia Siemens LTE project in the Los Angeles area, applying local and technical knowledge.
- Selected and configured the antenna design for the required coverage objective, while considering the use of existing satellite communications (SATCOM) services with ground-based Fourth Generation Long Term Evolution (4G-LTE) network that transmitted on the same radio band as its satellites.
- Used Mentum Planet and Keima Overture as the design tool.
- Was involved in outdoor DAS design for areas with low rate to no zoning approval with the use NextG, ATC, and Crown Castle database for faster implementation.
- Performed model tuning and validation using Planet.
- Reviewed SCIP and RF configuration sheet.
- Attended site walks with site acquisition and A&E groups.

RF Design Lead Engineer

Telecom Technology Services, Inc - Simi Valley, CA

February 2010 to October 2010

- Led T-Mobile LA North market with the UMTS and GSM design.
- Standardized RF Team's procedures for site candidate approval, documentation, and drive test for on air site for GSM and UMTS technologies.
- Selected and configured antenna design for the required coverage objective.
- Approved site configurations (antenna height, azimuths, feeder lengths, and antenna separation) prior to issuing Notice to Proceed (NTP) for construction.
- Helped to reach the market's goal of on-air sites every quarter.

RF Design Engineer

Telecom Technology Services, Inc - Simi Valley, CA

July 2007 to February 2010

- Worked with T-Mobile LA North Simi Valley California market; handled 110 sites (of 390 cell sites) for new site build using Ericsson RBS 2106, RBS 2206, RBS 2111, for GSM, and RBS 3208, and RBS 3106 for UMTS. Used ASSET propagation tool from Aircom.
- Attended planning meetings and zoning hearings.
- Was involved in creating site data fill and E911 work order, site integration, test calls, and drive test before the site got on air.
- Trained new engineers on the project.

RF Engineer

Collaborative Technologies - Wallingford, CT

December 2006 to July 2007

- Worked with Sprint/Nextel in Connecticut market for overlay design of 199 cell sites and visited sites for possible colocation for CDMA technology.
- Used Planet EV for propagation study.
- Selected and configured the antenna design for the required coverage objective.

Rf Engineer

GCB Services - Simi Valley, CA

August 2005 to December 2006

- Worked with T Mobile LA North Simi Valley, California market. Designed 80 cell sites (out of 230 cell sites) for the market using Ericsson RBS 2106, RBS 2206, or RBS 2109. Used ASSET from Aircom as the propagation tool for GSM technology.
- Designed in-building coverage using RBS 2308 or IP BTS for retail stores and marketing support.
- Selected and configured antenna design for the required coverage objective.
- Provided the development group with justification packages and RFDS for each cell site.
- Was responsible for search ring scrub, site approval, site candidate ranking, construction drawing review, zoning plots, and site data fill.
- Was involved in site integration, test calls, and drive test before the site got on air.

Rf Engineer

Avenger Engineering - Austin, TX

June 2005 to August 2005

- Worked with Cricket Communications on the Greenfield market in Houston and Austin, TX, market. Identified existing cell site structures to be used on the initial design using Planet EV from Marconi as the propagation tool for CDMA technology.
- Selected and configured antenna design for the required coverage objective.

RF Engineer

Bechtel Communications, Inc - Fair Lawn, NJ

September 2003 to June 2005

- Worked with AT&T Wireless Service (AWS)/Cingular special projects for overlay and growth of GSM/2G 850 and GSM 1900 network in the TriState Market (CT, NJ, and NY) with more than 1,000 cell sites using Nokia Ultrasite Base Station with General Packet Radio Service (GPRS) capabilities, Powerwave Multi-Carrier Power Amplifier (MCPA), and other growth solutions.

- Worked with new site built as a zoning hearing support and used Planet EV for preparing zoning plots.
- Selected and configured antenna design for the required coverage objective.
- Designed and created the templates of RFDS to be submitted to the client for approval.
- Was involved with cell site troubleshooting, sweep test review, antenna analysis, construction evaluation, and zoning application and testimony.

RF Engineer

Bechtel Communications, Inc - Meriden, CT

November 2001 to September 2003

- Worked with AWS Liberty Project for new site builds in the Connecticut market with more than 400 cell sites using Nokia Ultrasite Base Station GSM 1900 with GPRS capabilities.
- Determined site search areas and evaluated site candidates to fit with the RF design using DBPlanner.
- Performed drive test to verify the signal propagation from the design.
- Coordinated with site acquisition and construction engineers to confirm site candidate qualifications. Populated database with required fields.
- Prepared RF data sheet, MPE reports, zoning plots, TOWAIR, and other zoning requirements for sitting council application. Attended public hearing for zoning applications.
- Identified sites that required FCC and Federal Aviation Administration (FAA) applications.

RF Engineer

JMS Worldwide, Inc - Arlington, VA

March 2001 to November 2001

- Worked on the preliminary GSM/GPRS RF design for Panama City to include 13 sites for the initial design.
- Worked on RF optimization and design for US Cellular and Sprint PCS network with a total of more than 100 cell sites.
- Determined site search areas, tower height, antenna type, and power. Analyzed RF coverage using PathPro as propagation tool. Selected and configured antenna design for the required coverage objective.
- Performed drive test by collecting RF data using Comarco Genii and Grayson Surveyor and analyzed results using WorkBench, Pathpro (included easy to use mapping interface, terrain, demanded LULC data visualization, full 32-bit compatibility), and IQanalyzer post processing tools for AMPS, 18-136, iDEN, GSM, and CDMA cellular/PCS network.
- Produced maps and drive data plots utilizing MapInfo.

Technical Supervisor/GSM

Norconsult Telematics - SA

February 1999 to March 2001

- Engaged in a consultancy role to Saudi Telecom Company (STC) for supervising the implementation of public network expansion with more than 1,000 cell sites kingdom wide by Lucent Technologies K.S.A. (TEP 6/GSM) 500 K lines and by Ericsson (GSME4) 1 million lines.
- Supervised installation test, integration, test, and change-out of Lucent's BTS 2000 to Ericsson's RBS 2202 using BSC Simulator It revision 12 and TEMS. Monitored installation of BTS 2000 (900 MHz and 1800 MHz) Lucent GSM equipment, microwave (MW) transmission equipment (Harris, P-COM, and NERA), Wireless Local Loop (WLL) Airloop, and direct current (DC) power plant to ensure that standard installation practices and procedures were being met.
- Detailed work activity, quantity, quality, and installation progress at the site and produced relevant documentation.
- Performed Preliminary Acceptance Test (PAT) of MW transmission equipment, WLL equipment, and BSS equipment, including RF drive test, making sure that technical specifications agreed upon were applied.

- Worked on RF drive test of GSM dual band (900 MHz/1800 MHz) for the PAT using TEMS and RSAT 2000 for collecting data and post data processing.

Network Engineer

EXTELCOM Express Telecommunications Company, Inc
February 1998 to February 1999

- Worked on cell sites audit and minimized the percentage of dropped call and interference; and conducted drive test survey using LCC MSAT, RSAT 2000, and Comarco drive test equipment for AMPS technology.
- Worked on cell site power adjustment and implemented antenna down-tilt and orientation based on computed values resulting from uplink and downlink signal measurements. Was responsible for cell site troubleshooting and retuning using Wavetek SI 4032 STABLOCK.

Installation Engineer

EXTELCOM Express Telecommunications Company, Inc
January 1997 to February 1998

- Was responsible for installation of Motorola DYNA T.A.C. 10 channels HDII/Narrowband Advanced Mobile Phone Service (NAMPS), LD/AMPS cell site equipment. Supervised contractors in the installation of 20 channels HDII/NAMPS LPA for network upgrade project.
- Conducted transmission path calculations to verify LOS and to determine the optimum antenna heights, beam directions, and sizes. Installed Harris Farion Quadralink digital microwave radio and California Microwave's 7 GHz and 15 GHz radios. Performed radio frequency interference measurement for effective frequency plan.

Network Engineer

Liberty Telecoms, Inc
February 1996 to January 1997

Was responsible for the installation, commissioning, and preventive and corrective maintenance of trunk radio system for Libertyphone, Versaphone, Businesscom, and Trunknet Radio Base Station (RBS).

Service Technician

Veteran's Electronics Communications, Inc
August 1991 to February 1993

Was responsible for the installation, repairs, service, and maintenance of very high frequency (VHF), ultra high frequency (UHF), and high frequency (HF)/single sideband (SSB) for military and commercial radio transceivers.

Education

B.S. in Electronics Communication Engineering Technology

Technological University of the Philippines
1988 to March 1991

Skills

- 4G/LTE

- 3G
- RF Design
- Optimization
- Integration
- LMR
- Program Management