

# COMPLAN®

## MAXIMIZE CAPACITY UTILIZATION, OPTIMIZE SYSTEM DESIGN, AND REDUCE COSTS

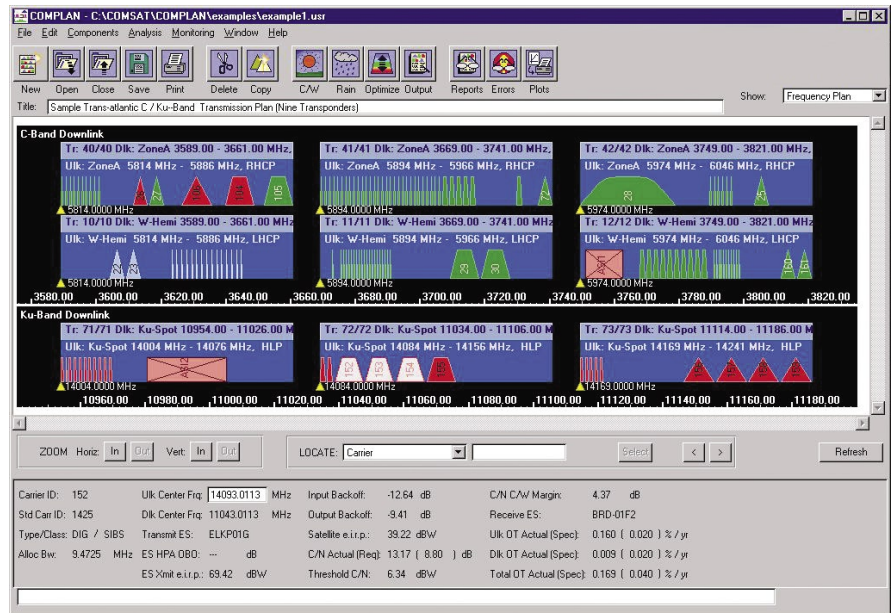


COMPLAN® is a capacity management tool useful in all phases of communications satellite development and operations, including requirements specification, long-range planning, satellite network design, operational transmission planning, capacity management, and troubleshooting.

COMPLAN accurately models and analyzes impairments for C-, Ku-, X-, and Ka-band transponders, and can automatically optimize carrier power to meet user-specified quality of service, both in clear weather and rain-degraded conditions.

### BENEFITS

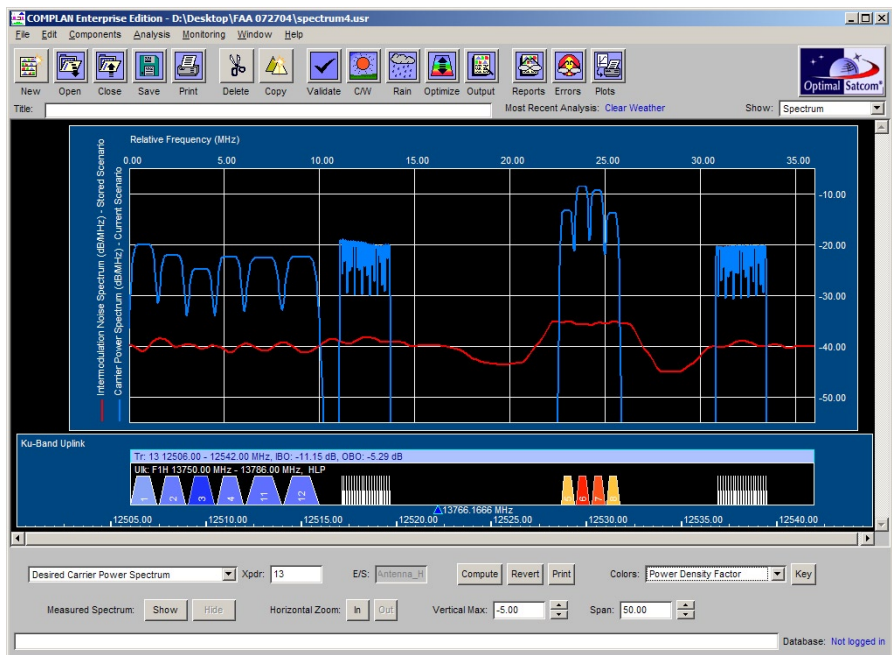
- Reduce costs by maximizing space-segment capacity utilization
- Perform trade-off analyses to minimize ground-segment infrastructure costs
- Design complex satellite-based networks with ease
- Manage and efficiently plan large scenarios with hundreds or thousands of links in multiple transponders
- Achieve orders-of-magnitude increase in productivity of satellite planners
- Track power and bandwidth utilization, and discover "hidden" capacity
- Troubleshoot operational plans and easily identify complex problems
- Evaluate future satellite systems and assess long-term capacity requirements
- Plan with confidence using the most accurate, laboratory and field verified models, that serve as benchmarks for validating other planning systems



### COMPLAN INTERACTIVE FREQUENCY PLANNING SCREEN

### FEATURES

- Accurately models thermal noise, adjacent carrier and co-channel interference, adjacent satellite interference (ASI), intermodulation noise and propagation impairments
- Powerful features for broadcast and wide-area planning and performance prediction
- Comprehensive and accurate modeling of complex nonlinear effects
- Uses the COMSAT® PAP, ITU, and Crane Two Component rain models; and includes databases of digitized rain zone maps and rainfall statistics
- Provides drag-and-drop carrier frequency assignment
- Interfaces with commercial Communication System Monitoring (CSM) systems
- Interfaces with the Satellite System Database (SSDB)



### INTERACTIVE SPECTRUM PLANNING SCREEN

## ADDITIONAL FEATURES

- Plans saved in XML standard file format and can be viewed/modified by publicly available tools
- Ability to retrieve and save plans from/to the database
- Ability to model entire satellite and plan a large number of links simultaneously
- Ability to model FDMA, TDMA, CDMA, and Carrier-in-Carrier (CnC)
- Models all major sources of interference - adjacent-carrier (ACI), co-channel (CCI) and adjacent satellite (ASI)
- Models extensively verified in the lab, field test, and customer-site measurements
- Extremely fast computation utilizing sophisticated algorithms
- Can be used to perform sophisticated trade-off analyses, complex system studies, and optimal design of satellite-based networks
- Approved by US Government as benchmark for validating other systems

## COMPLAN REPORTS & PLOTS

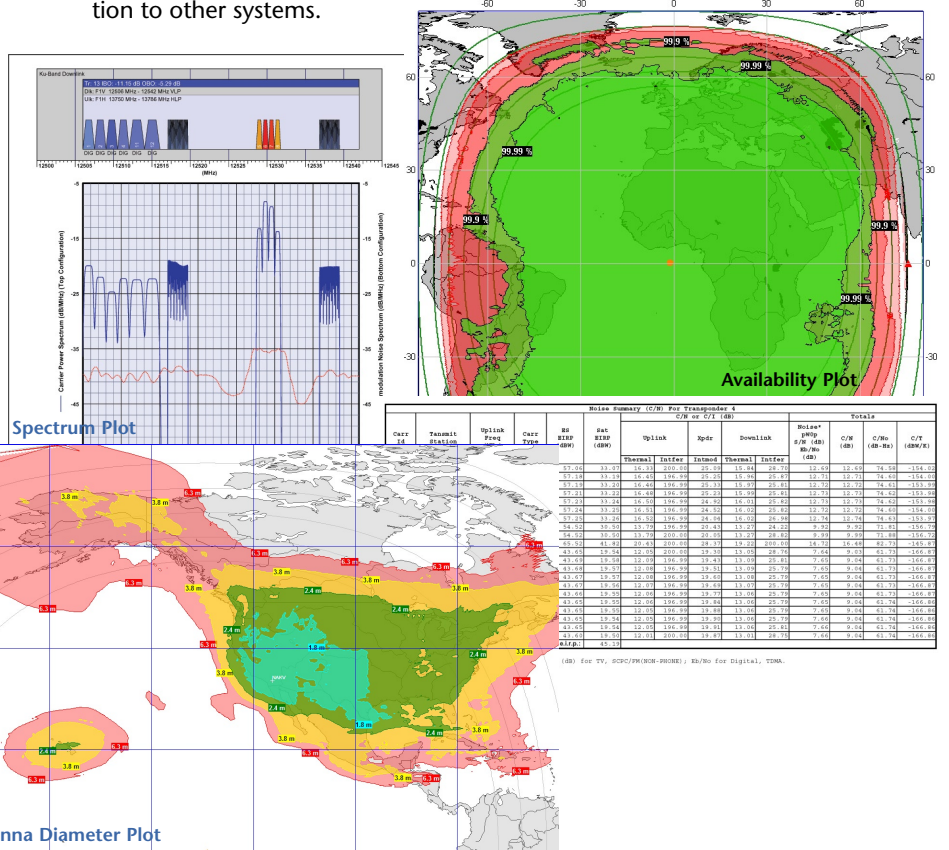
- Extensive set of reports and plots in ASCII, Word, Excel, and PDF
- Sawtooth transmission plan plots
- Noise, margin, and power summary reports
- Rain analysis, predicted link availability, and required rain margins
- Intermodulation power spectral density plots and reports
- Receive co-pol power spectrum and cross-pol power spectrum at earth stations
- Carrier power spectrum plots

## SATELLITE SYSTEM DATABASE CONTAINS:

- Space segment information** – detailed satellite communications payload information for multiple satellite fleets: satellite orbital parameters and orientation, antennas and antenna coverage patterns, amplifier non-linear characteristics, possible and actual connectivity, possible and actual gain settings, frequency layout and transponder characteristics, etc.
- Ground segment information** – thousands of earth stations with their transmit and receive characteristics, and rainfall statistics; modem characteristics for several different manufacturers.
- Plan information** – save and retrieve plans to enable work-sharing between planners, and to provide plan information to other systems.

## MINIMUM SYSTEM REQUIREMENTS

Windows XP / Vista  
 100 MB free hard drive space  
 1 GHz CPU  
 SVGA video adapter  
 1 GB RAM  
 1024 x 768 res / 16-bit color  
 CD-ROM Drive



## SAMPLE COMPLAN REPORTS AND PLOTS

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