this exclusion zone would be extended, depending on the specific location and power levels of the XM equipment.

The antenna gain of the "victim" receiver is one important factor in determining the size of exclusion zones. Higher antenna gains create larger exclusion zones, but provide angular discrimination against interference from multiple transmitters.

In previous correspondence, AT&T calculated exclusion zones for its equipment using 17 dB antennas. BellSouth has calculated the exclusion zones for various SDARS repeater power levels using the AT&T assumption of a 17 dB "victim" receive antenna:

INTERFERENCE EXCLUSION ZONES WITH 17 dB CPE

SDARS Repeater Power (KW)	40	20	10	5	2
SDARS Repeater Power (dBm)	76	73	70	67	63
BellSouth WCS Filtering (dB)	4	4	4	4	4
BellSouth Receiver Blocking Threshold (dBm)	-35	-35	-35	-35	-35
BellSouth Receiver Antenna Gain (dBi)	17	17	17	17	17
SDARS Power at Input to BellSouth Receiver (dBm)	89	86	83	80	76
Path Loss Required (dB)	124	121	118	115	111
Interference Exclusion Distance at 2300 MHz (Mi)	10	7	5	3.6	2.3

These calculations, while not identical to AT&T's show good agreement as to exclusion zone size.

Summary:

As shown by these calculations, the impact of blanketing interference from SDARS terrestrial repeaters on WCS system operation even with the lower gain CPE is significant. Even at 2000 watts, BellSouth will find itself excluded from operation in

significant areas of its urban and suburban markets where its customers are located. With higher powered repeaters in the range of 40 Kilowatts, BellSouth will be excluded in practical terms – from serving the vast majority of its customers with WCS based services.

The only practical way to reduce the impact of these SDARS terrestrial repeaters on BellSouth's intended WCS operation is to limit their power levels to the 2000 Watt level of other transmitters in adjacent bands such as MMDS and WCS.

ATTACHMENT B

Maps of BellSouth WCS Exclusion Zones Created By Operation of SDARS Terrestrial Repeaters at Power Levels in Excess of 2 kW.

ATTACHMENT B

ATTACHMENT B
Exhibit 1

Attachment B. Exhibit 1 consists of maps (topographical and EDX interference analysis) for 13 BellSouth markets identified by XM and Sirius for placement of terrestrial repeaters.

The EDX maps show the extent of interference for each of the listed SDARS repeaters. The interference estimate are shown on the topo maps in order to provide a street and road frame of reference as to the extent of the potential distruption to WCS licensee service areas.

Each SDARS repeater is labeled within each market as follows:

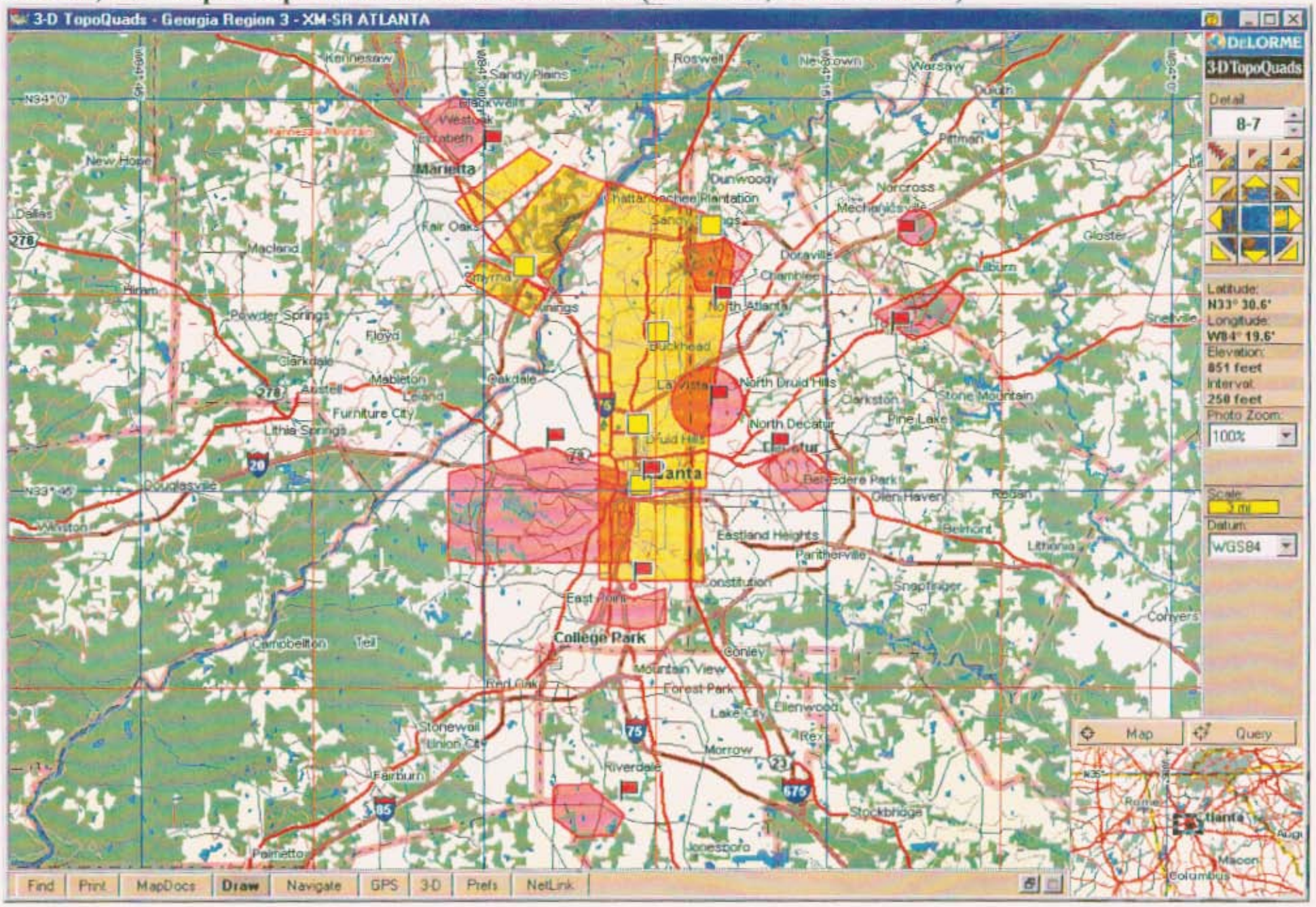
Company Name
Identification # as provided by the SDARS operator or, if none, numbered sequential
Kilowatts of proposed repeater
Antenna orientation/sector size in degrees
Height (AGL) of the antenna

Ex: XM001A 4.1KW 240/90* 250'

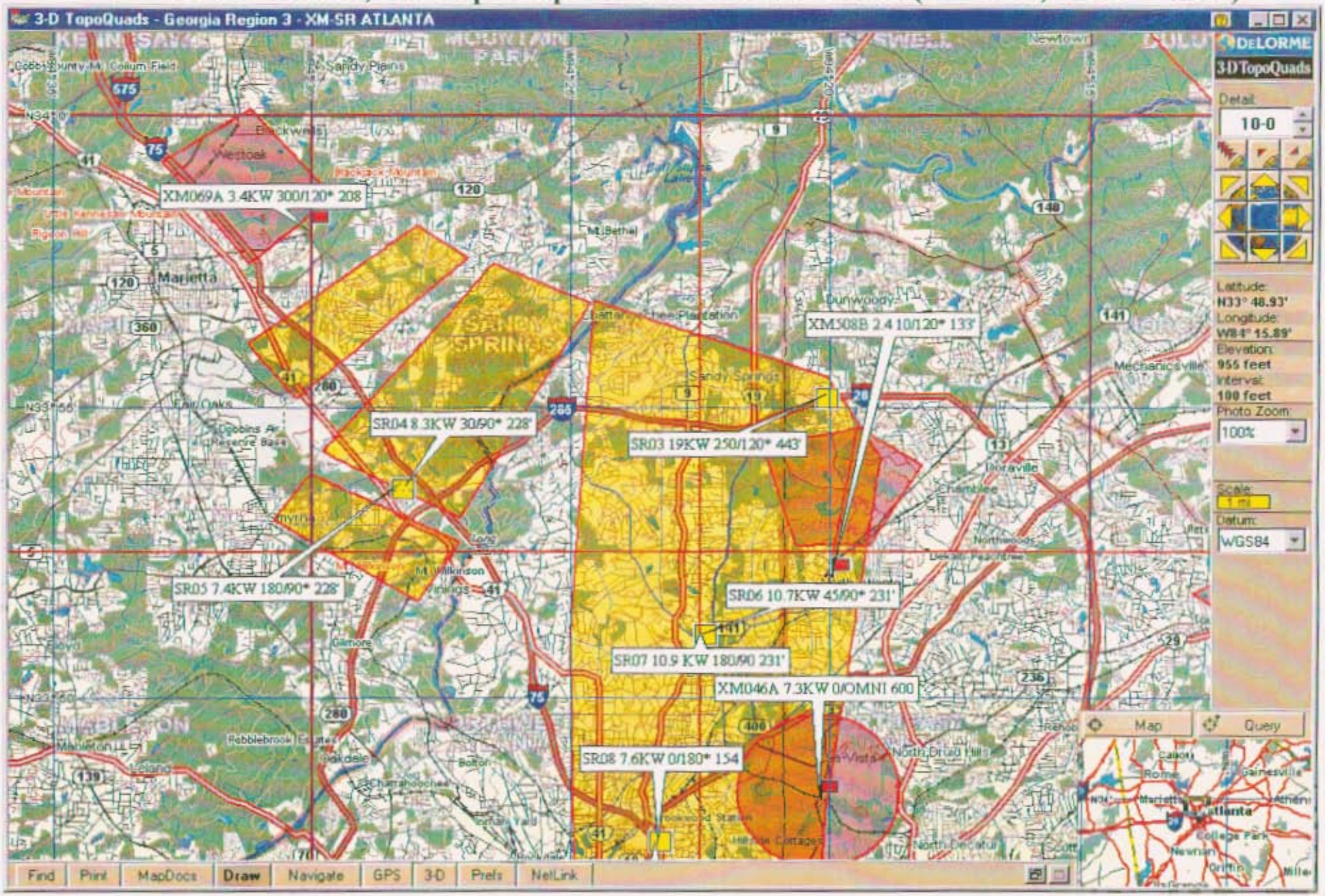
ATTACHMENT B
Exhibit 1.A
Atlanta, Ga

Page 3. Atlanta Area topographical map w/ SDARS exclusion zones
Page 4. North Central Atlanta topo map w/SDARS exclusion zones
Page 5. Northeast Atlanta topo map w/SDARS exclusion zones
Page 6. Central& South Atlanta topo map w/SDARS exclusion zones
Page 7. Atlanta: EDX plots for both XM & Sirius SDARS radios
Page 8. Atlanta: EDX plots for XM SDARS radios
Page 9. Atlanta: EDX plots for Sirius SDARS radios

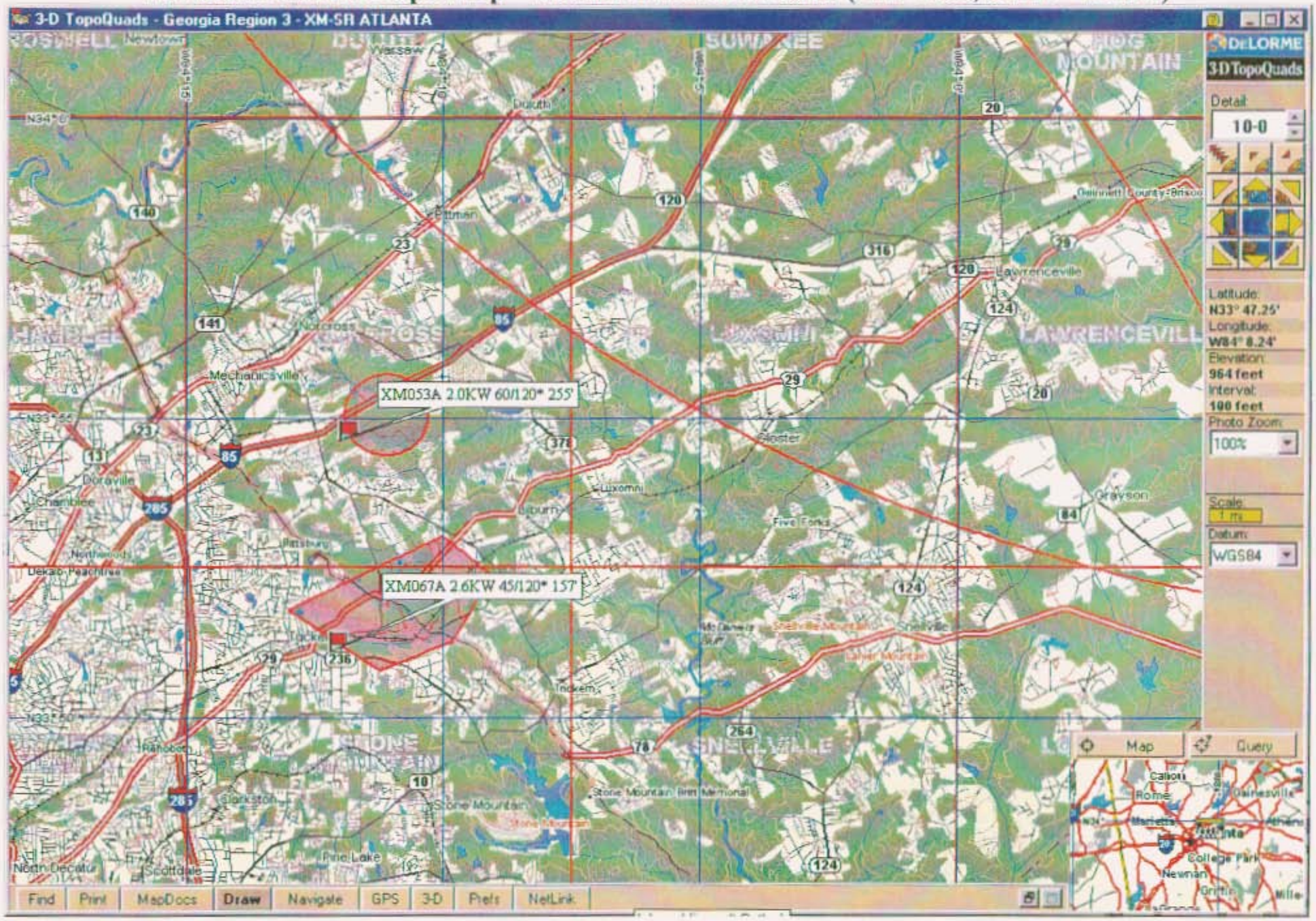
Atlanta, Ga. Topo Map – SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



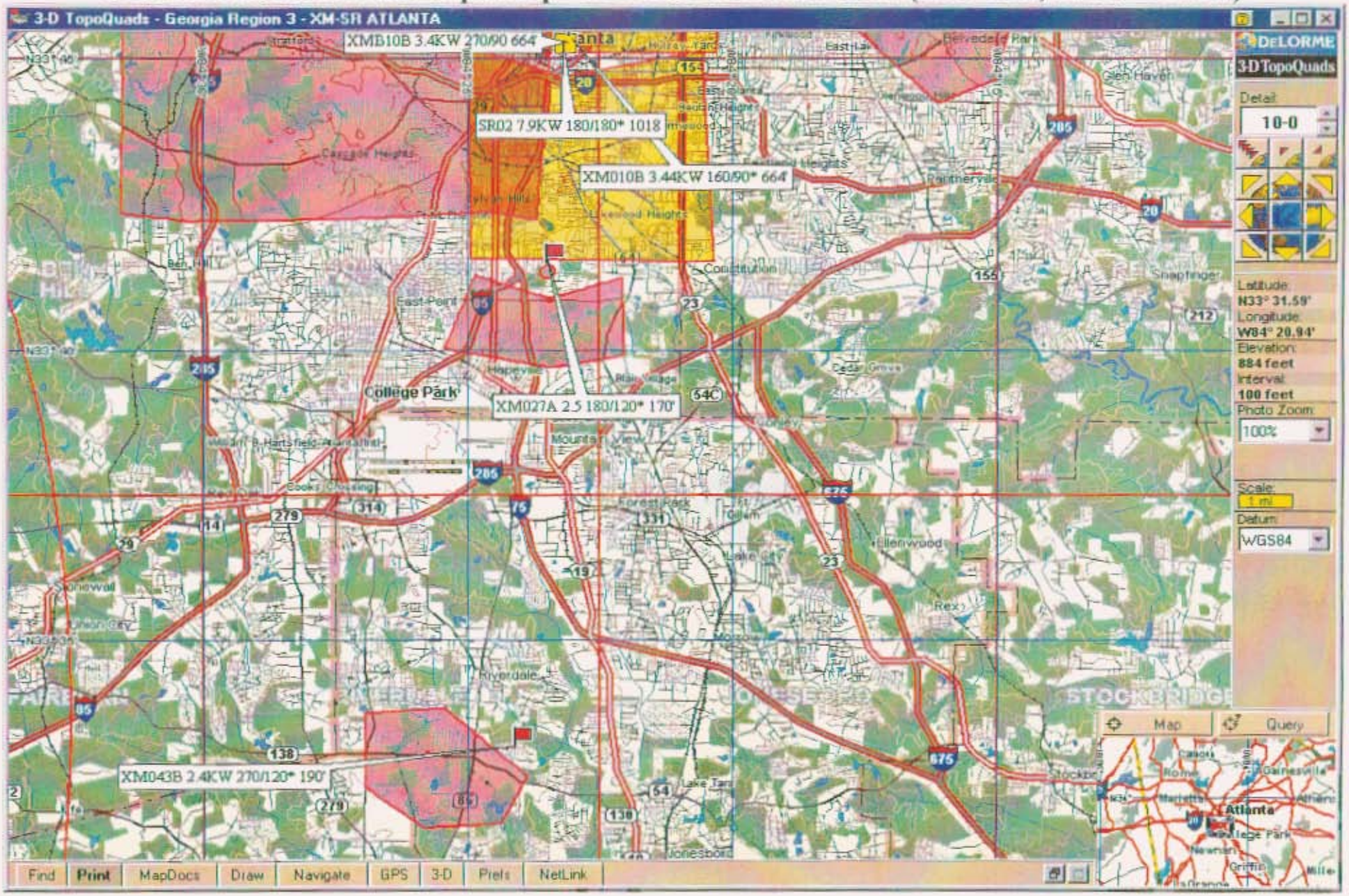
North-Central Atlanta, Ga. Topo Map – SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



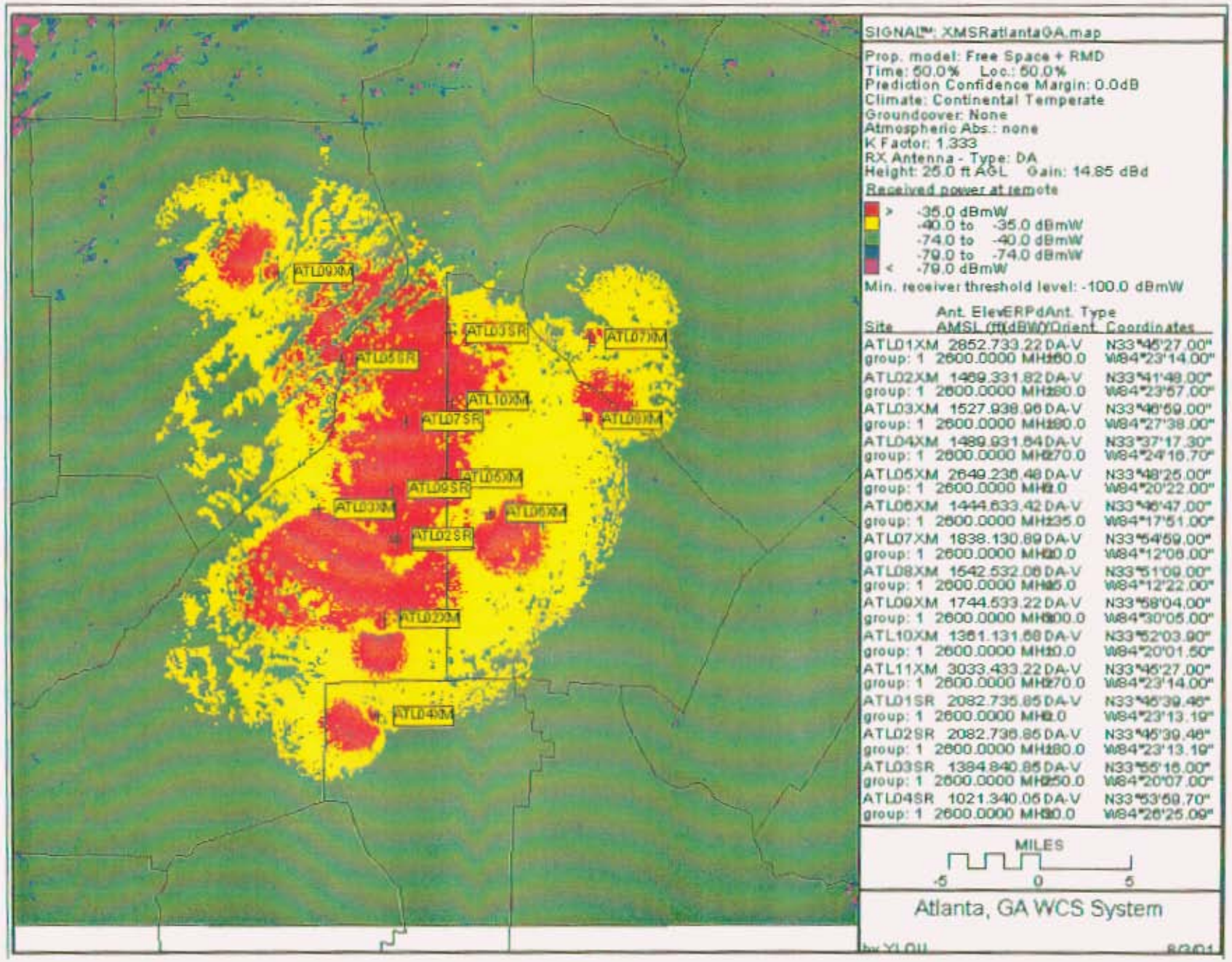
Northeast Atlanta Topo Map – SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



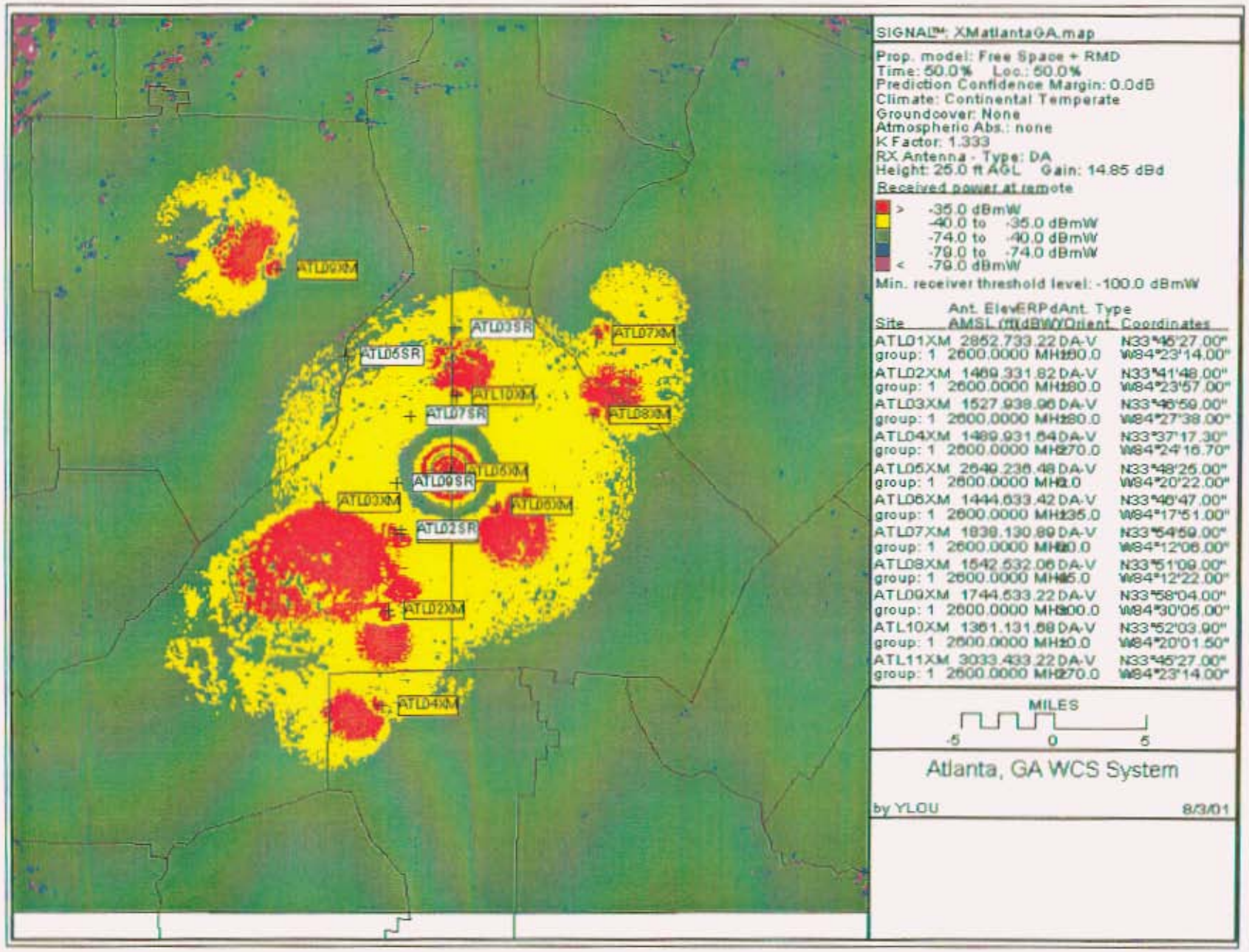
Central & South Atlanta Topo Map – SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



EDX Plots for Both XM and SIRIUS SDARS Radios in Atlanta, GA Market



EDX Plots for XM SDARS Radios in Atlanta, GA Market



EDX Plots for SIRIUS SDARS Radios in Atlanta, GA Market

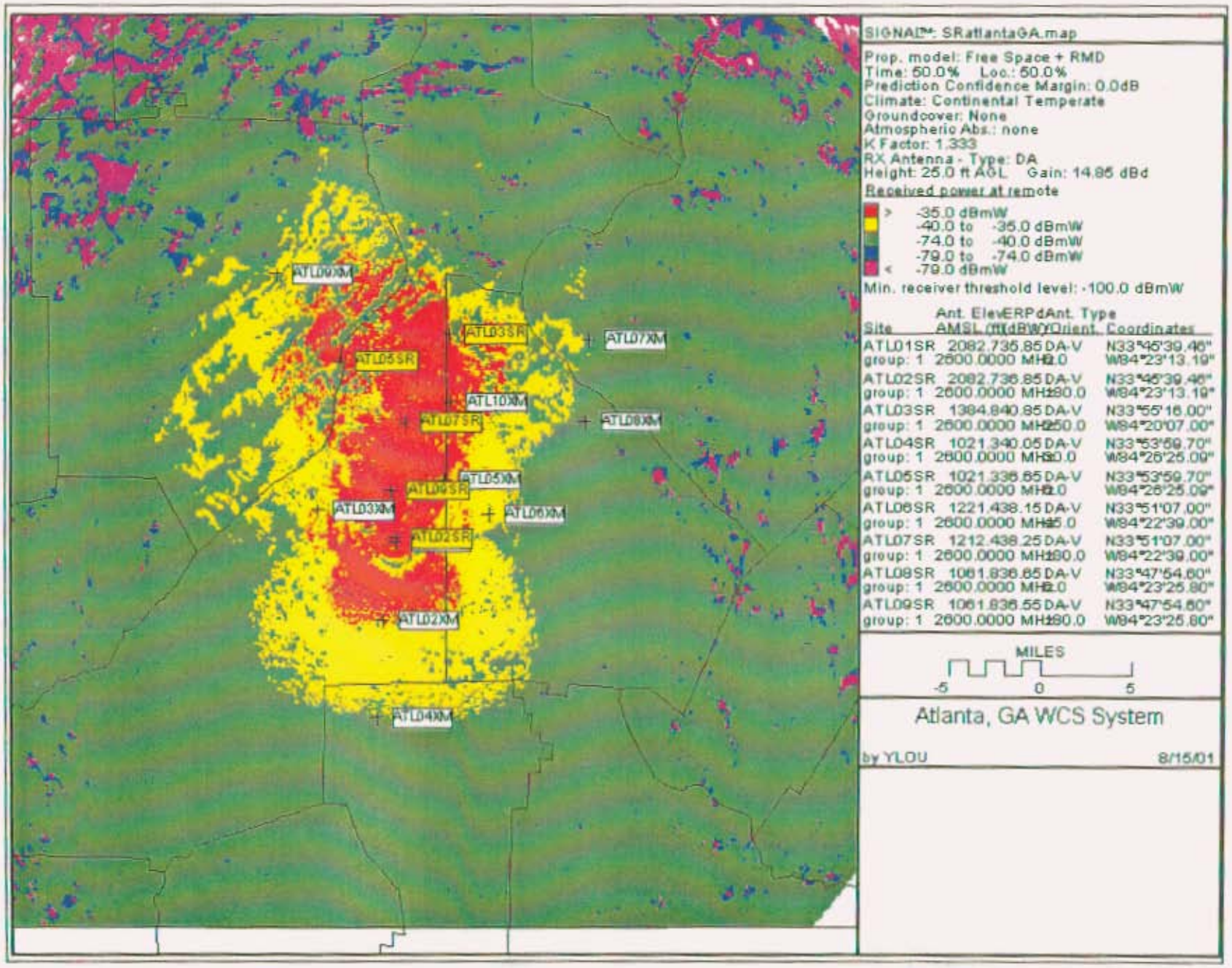
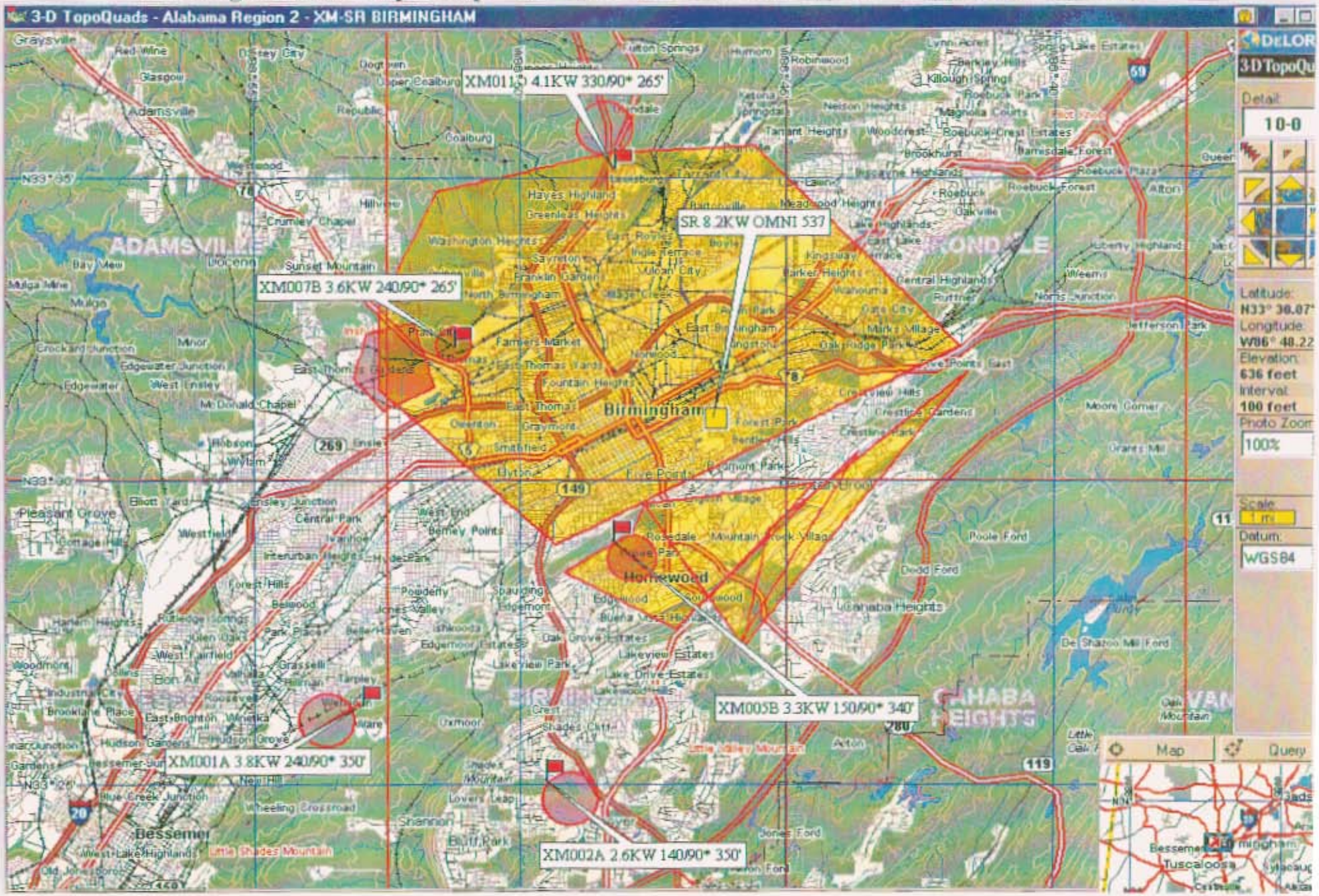


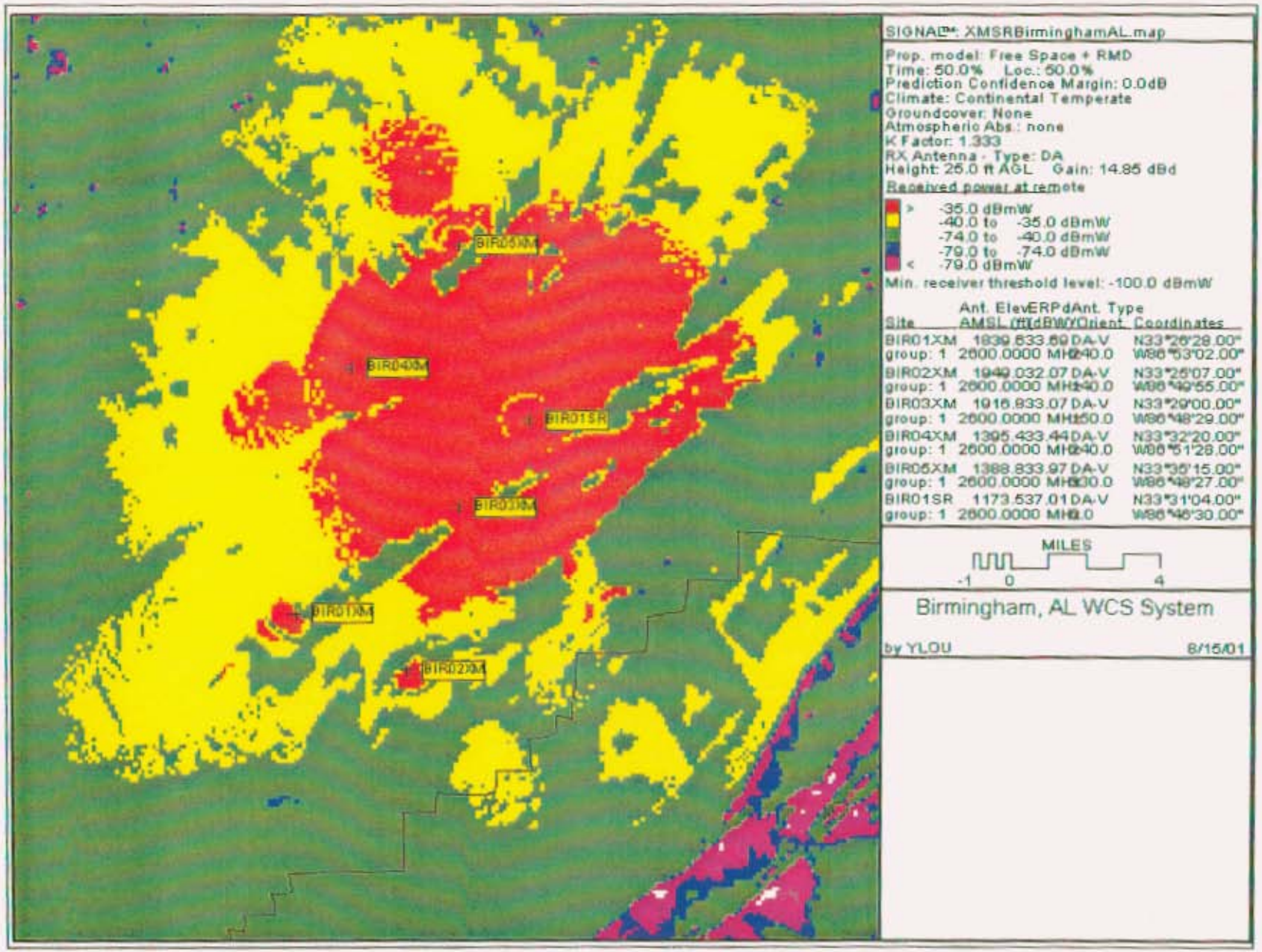
Exhibit 1.B
Birmingham, Alabama

Page 11. Birmingham area topo map with SDARS exclusion zones
Page 12. Birmingham: EDX plots for both XM & Sirius SDARS radios
Page 13. Birmingham: EDX plots for XM SDARS radios
Page 14. Birmingham: EDX plots for Sirius SDARS radios

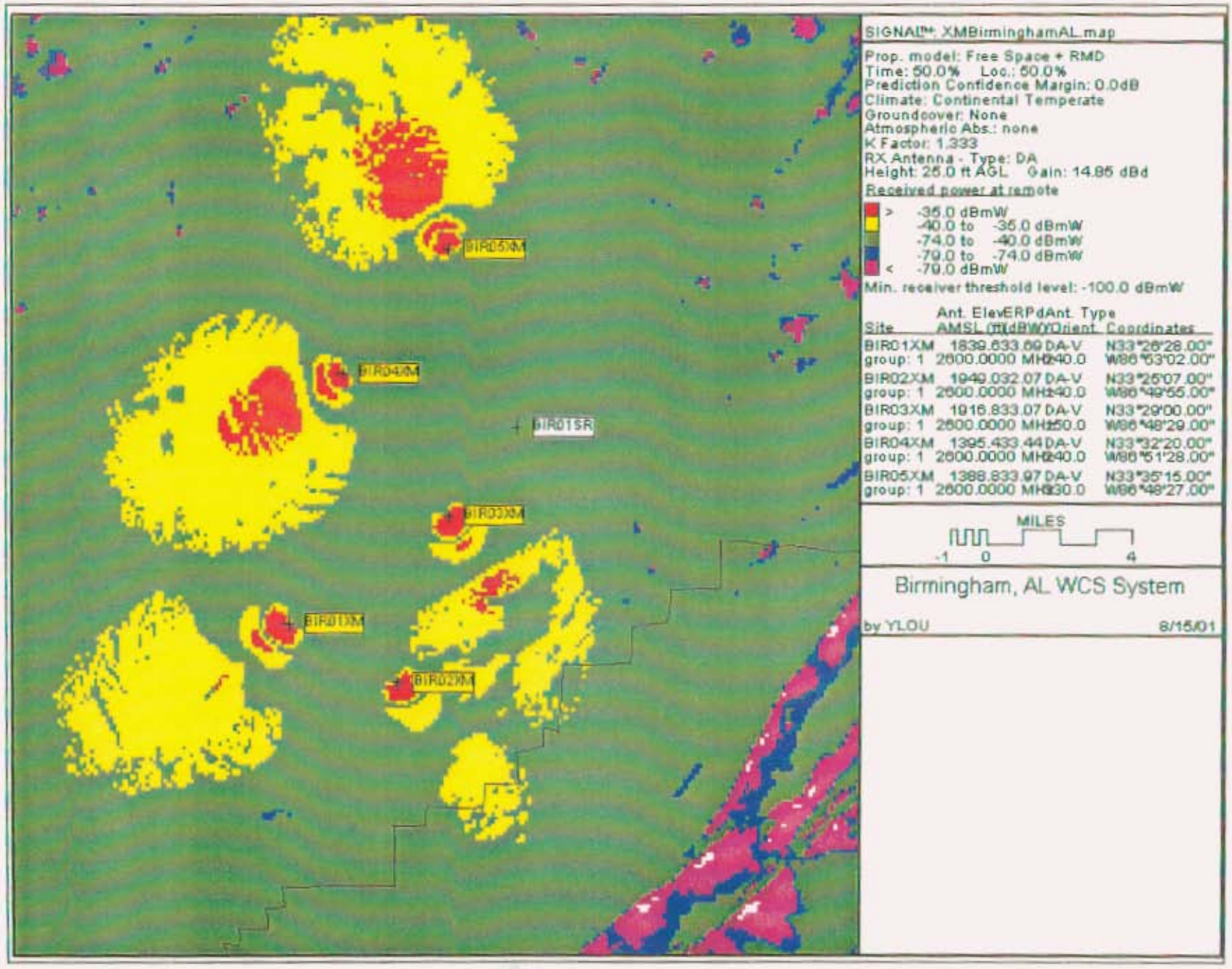
Birmingham, Al. Topo Map – SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



EDX Plots for Both XM and SIRIUS SDARS Radios in Birmingham, AL Market



EDX Plots for XM SDARS Radios in Birmingham, AL Market



EDX Plots for SIRIUS SDARS Radios in Birmingham, AL Market

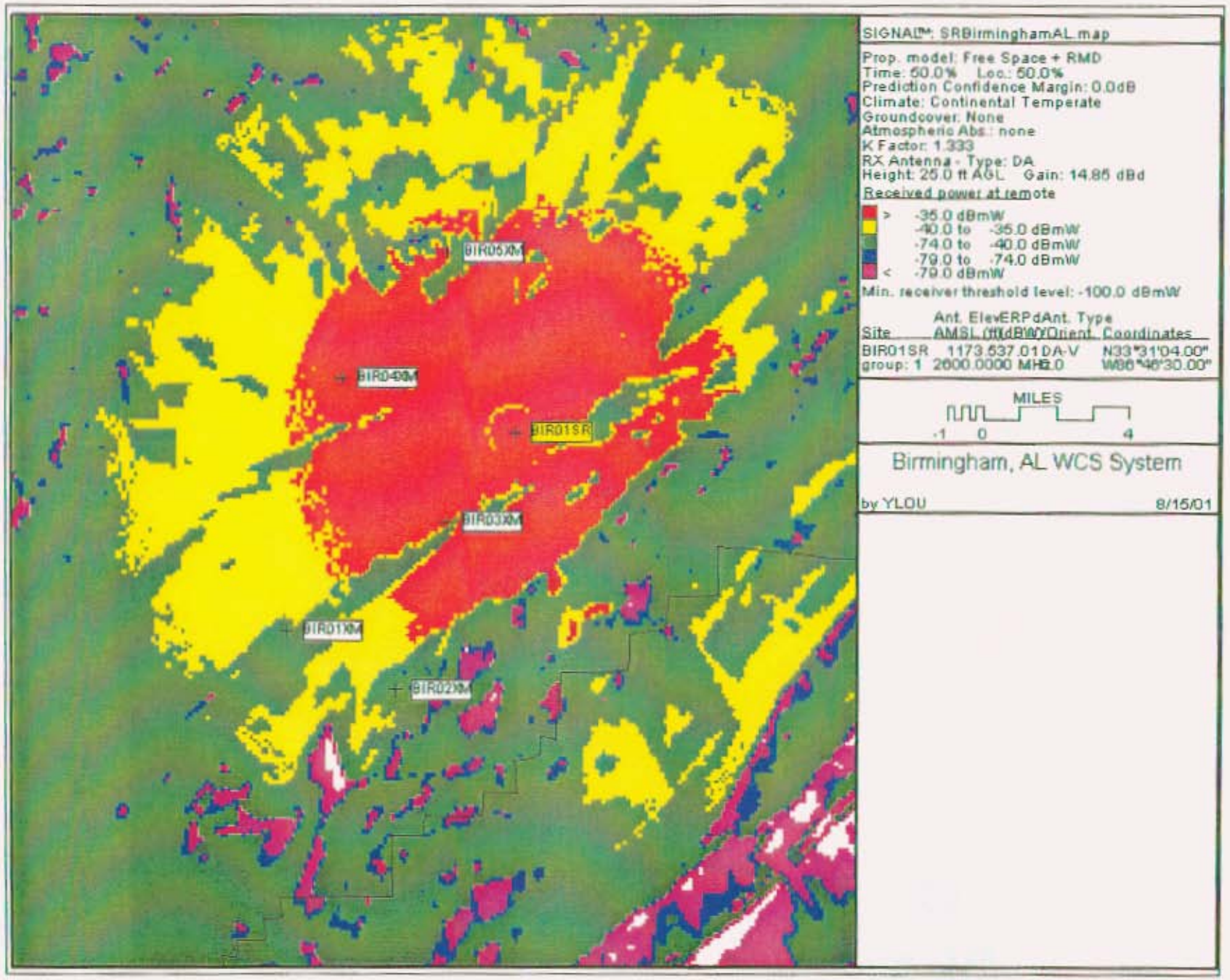
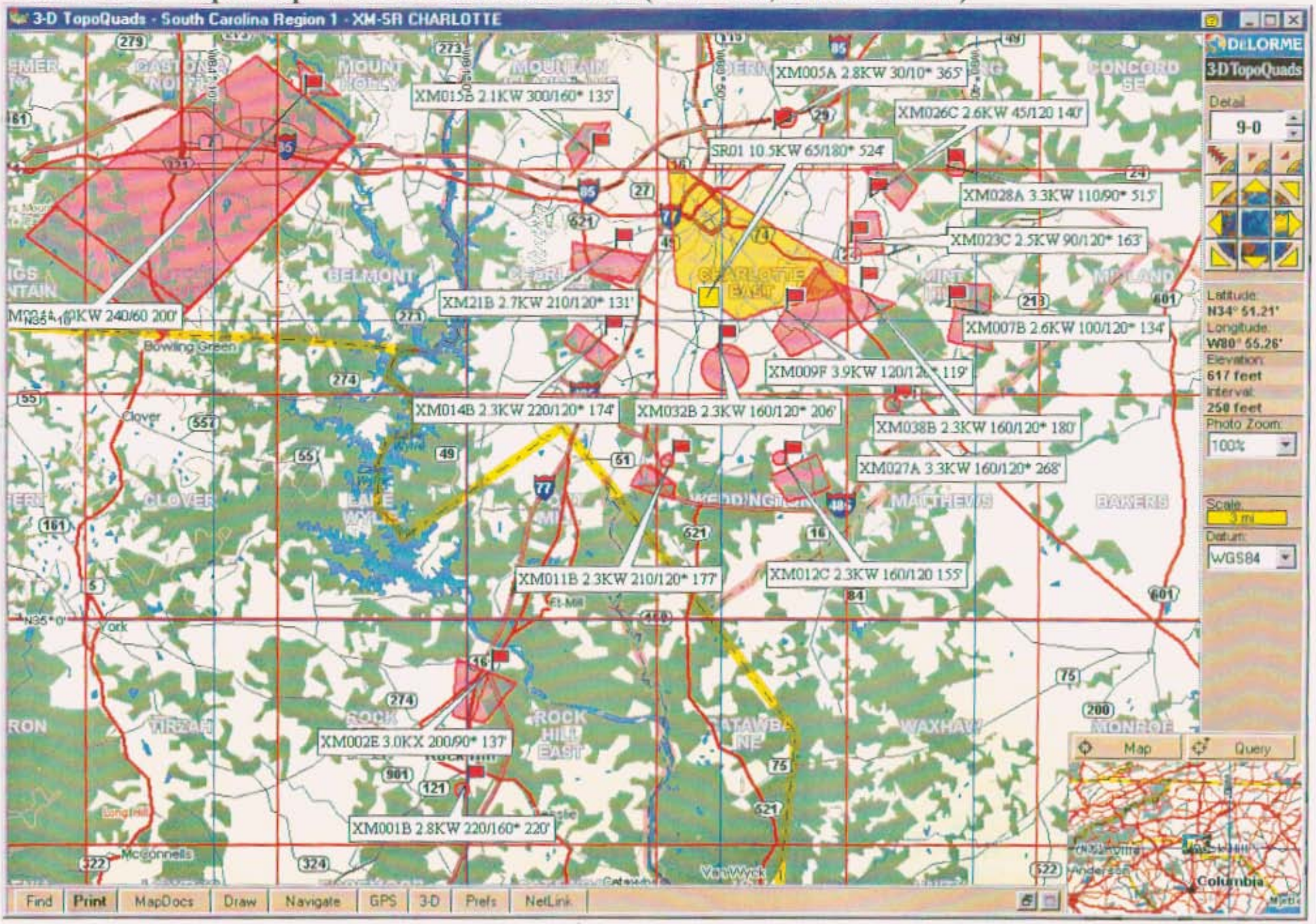


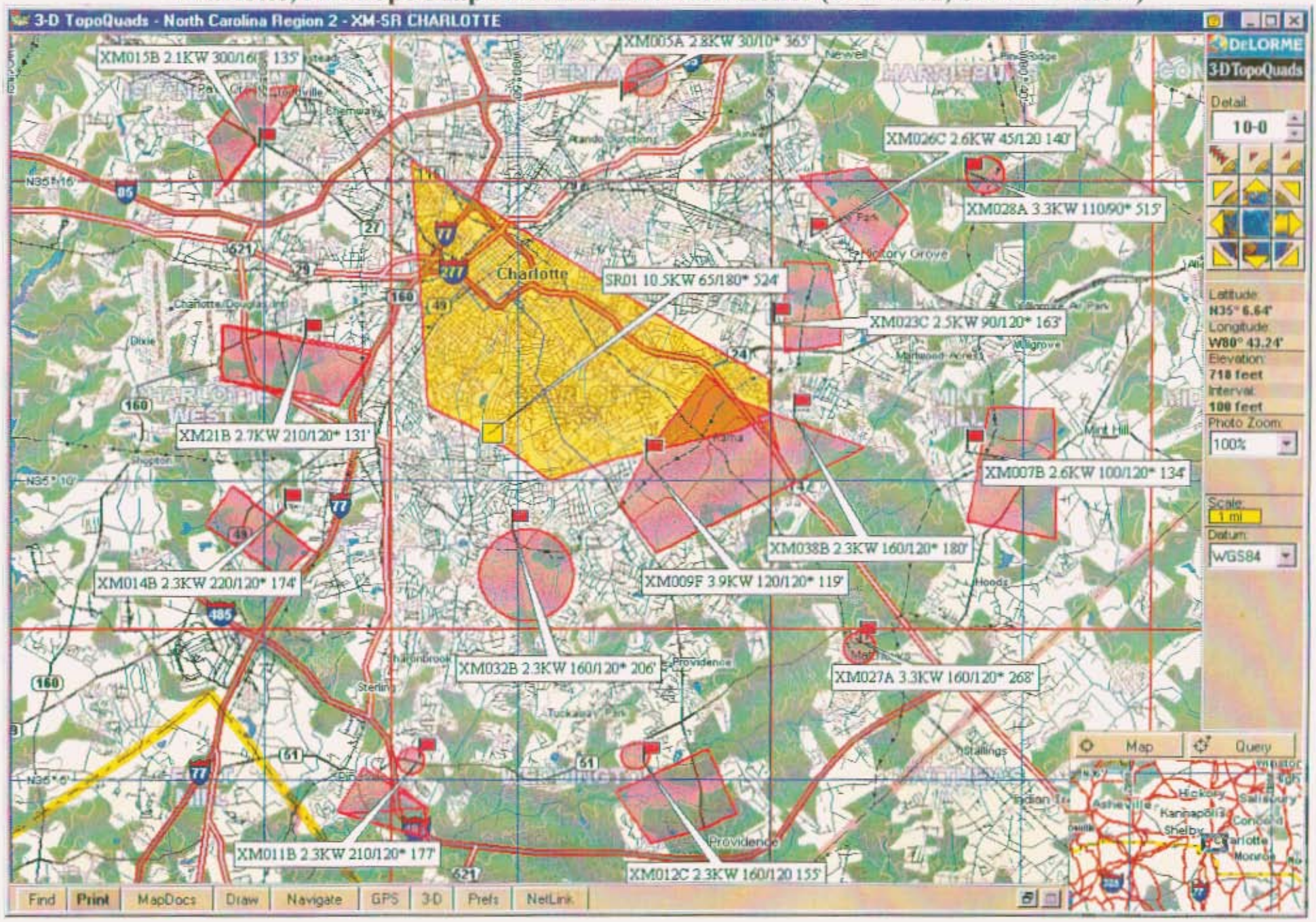
Exhibit 1.C
Charlotte, NC

Page 16. Charlotte area topo map with SDARS exclusion zones
Page 17. Charlotte topo map with SDARS exclusion zones
Page 18. Charlotte (Gastonia) topo map with SDARS exclusion zones
Page 19. Charlotte (Rock Hill, SC) topo map with SDARS exclusion zones
Page 20. Charlotte: EDX plots for both XM & Sirius SDARS radios

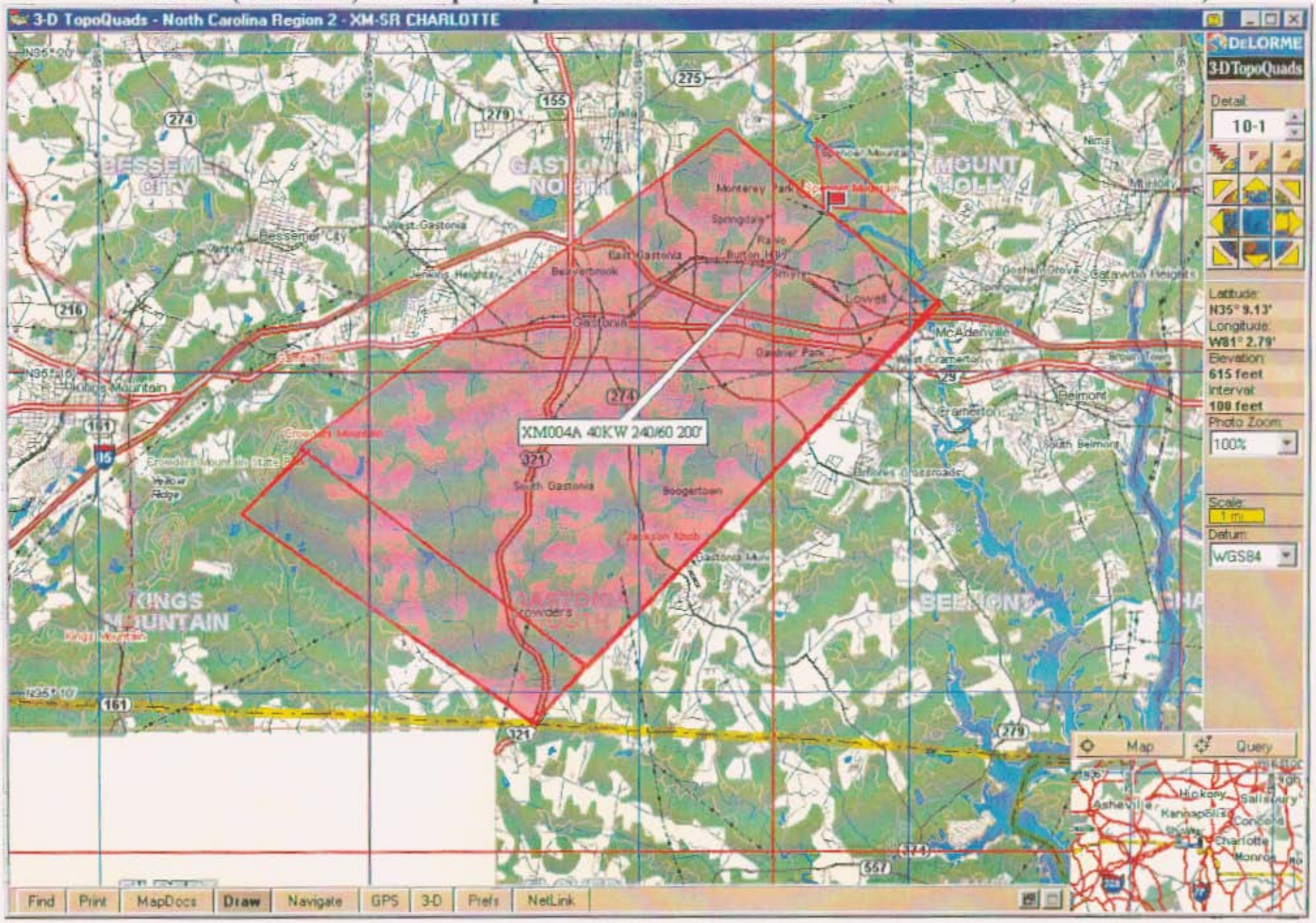
Charlotte NC Topo Map - SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



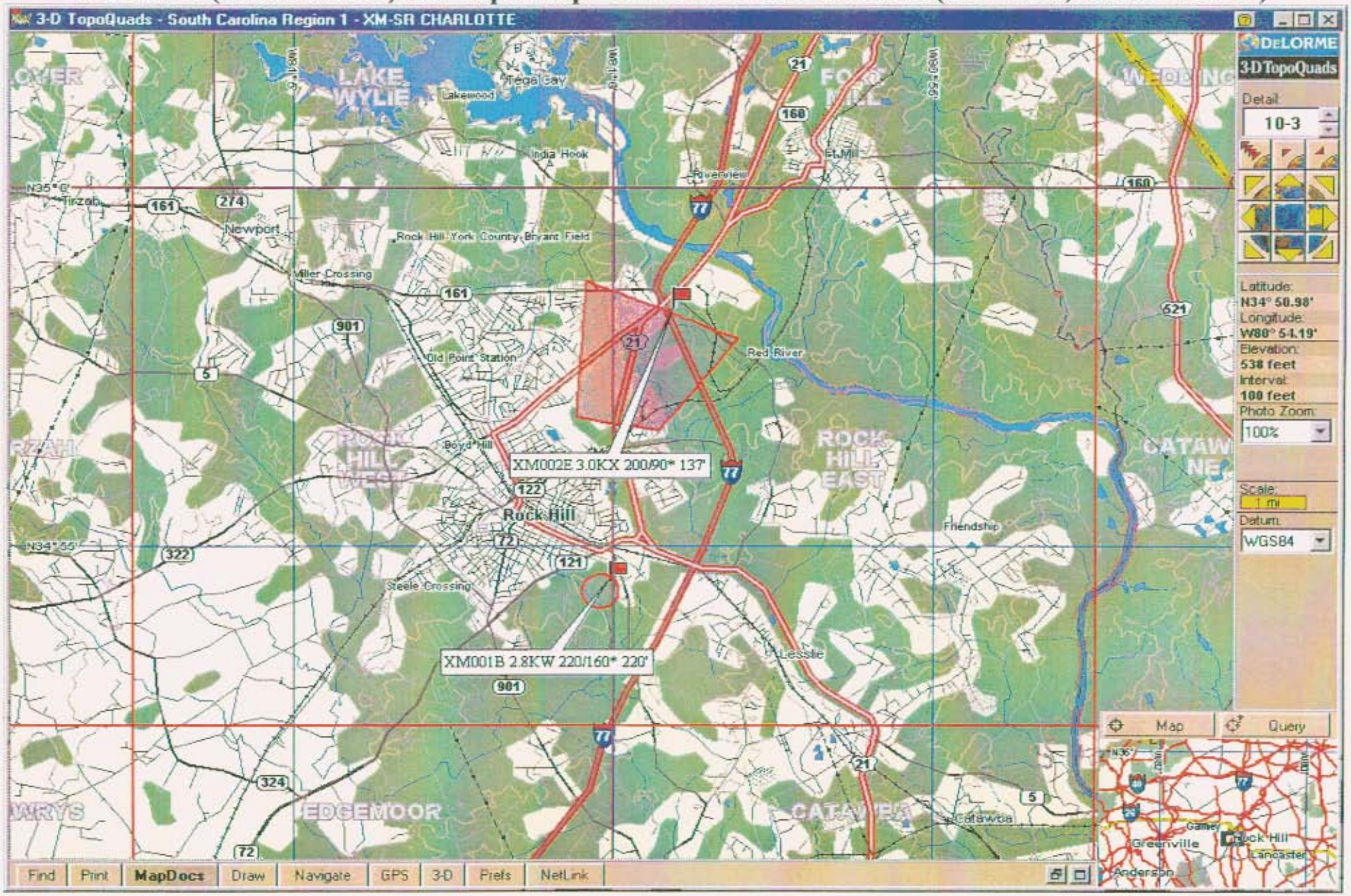
Charlotte, NC Topo Map - SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



Charlotte (Gastonia) NC Topo Map - SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



Charlotte (Rock Hill SC) NC Topo Map - SDARS Exlcusion Zones (XM=Red, Sirius=Yellow)



EDX Plots for Both XM and SIRIUS SDARS Radios in Charlotte, NC Market

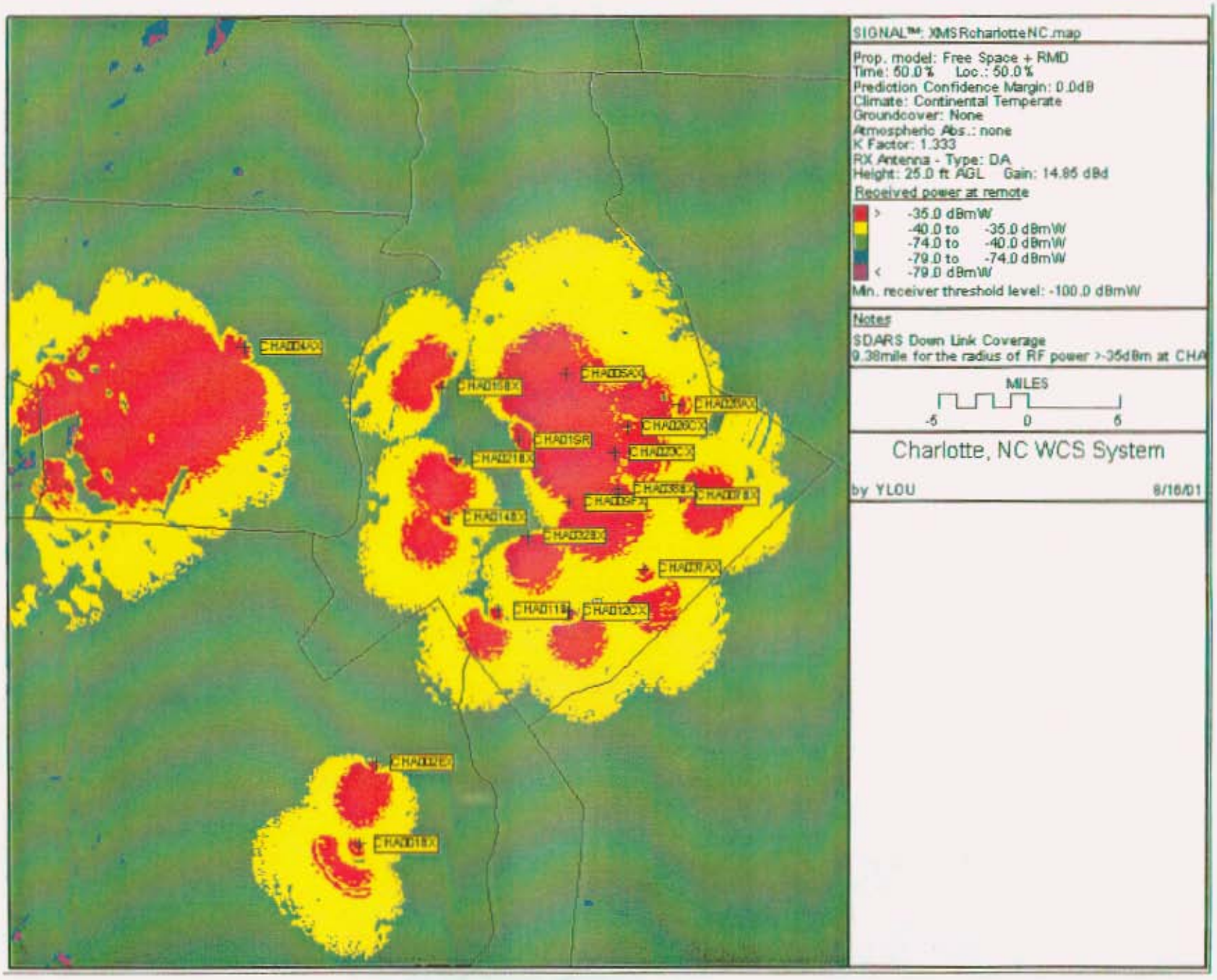


Exhibit 1.D.
Greensboro, NC

Page 22. Greensboro/Winston-Salem area topo map with SDARS exclusion zones
Page 23. Greensboro & Highpoint NC topo maps with SDARS exclusion zones
Page 24. Winston-Salem topo maps with SDARS exclusion zones
Page 25. Grensboro area: EDX plots for both XM & Sirius SDARS radios
Page 26. Greensboro area: EDX plots for XM SDARS radios
Page 27. Grensboro area: EDX plots for Sirius radios