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Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

"TV Repack: Post-Auction Licensing and Implementation Challenges"

for

SCBA Winter Conference
South Carolina Broadcasters Association
Columbia, SC
January 21, 2016

Brief Digital TV History

Mar 1998	First DTV station goes on-air (27 total in 1998)

DTV Construction Deadlines

May 1999	Top 10 Markets, 4 network affiliates
Nov 1999	Markets 11-30, 4 network affiliates
May 2002	All Commercial Stations
May 2003	All Noncommercial Stations

Many stations initially built reduced facilities and "maximized" later

July 2005	"Use it or Lose it" deadline – Commercial stations
July 2006	"Use it or Lose it" deadline – Noncommercial stations

2005-2006	Channel Elections for Post-Transition Election conflict resolution
2009	Analog operations terminate DTV operations on final channel

Revisiting TV Spectrum Reallocation

2009 +/-	Rumblings of a "Repacking" to move more spectrum from TV broadcasting to wireless carriers
Mar 2010	FCC Releases "The National Broadband Plan"
Feb 2012	"The Middle Class Tax Relief and Job Creation Act of 2012" a.k.a. "Spectrum Act"
Oct 2012	FCC NPRM, Docket No. 12-268 "Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions"
June 2014	FCC Incentive Auction 1st Report & Order
Jan 12, 2016	Applications Due to Participate
Mar 29, 2016	Initial Commitment Deadline
~Late Apr 2016	Initial Clearing Target and Band Plan Announced

Post Auction Band Plan
"All Paired, Down from 51"

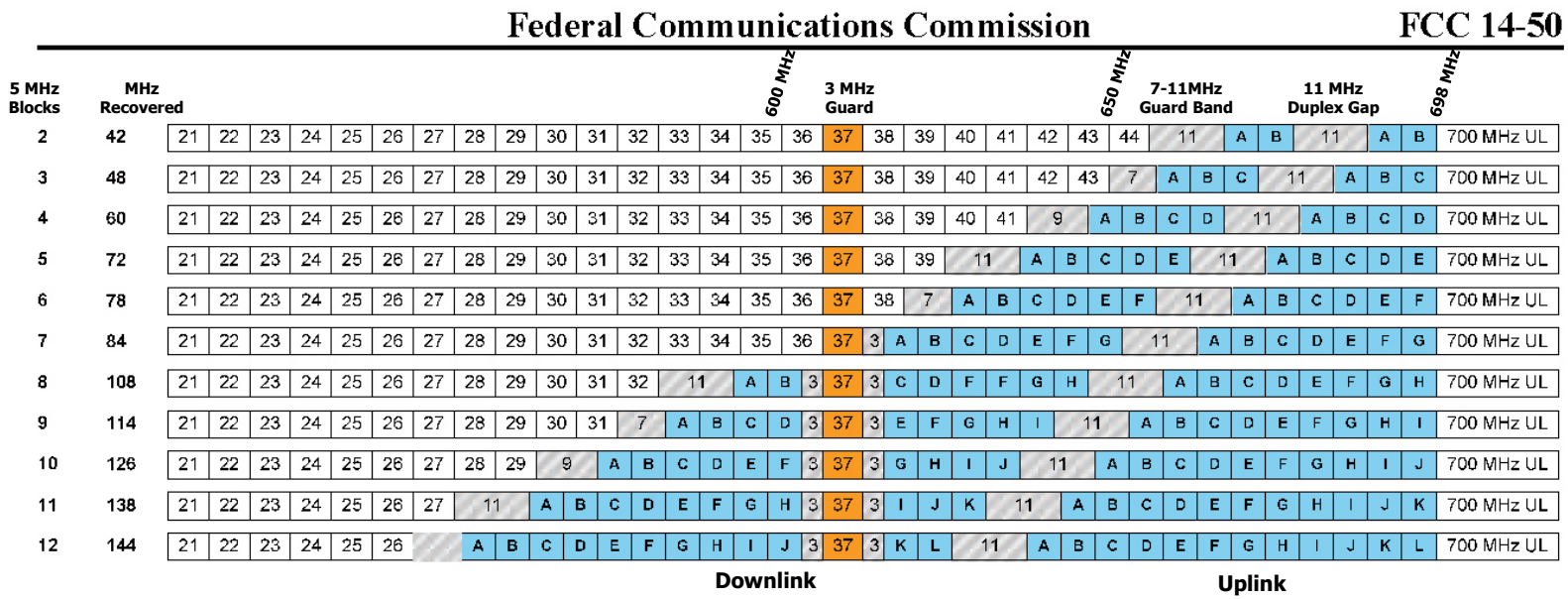


Figure 23. Band Plan Scenarios

Auction outcome to dictate final "TV Band" and Wireless "600 MHz Band"
Most markets - uniform band
Constrained markets – less spectrum recovered – impaired wireless blocks
Possible issues with inter-service interference ("ISIX" OET Bulletin 74)

Broadcaster Auction Options

Auction participation is not mandatory. Participation is confidential.

Bid options for participating stations:

1. License relinquishment
2. Change bands (U to Hi-V, U to Lo-V, Hi-V to Lo-V)
3. Share channel with another station

Post-Auction: Repacking

Non-participating stations may have to change to a new channel within the same band. Existing coverage area is replicated to new channel.

Participating stations who exit the auction may have to change channel within the same band.

Replication to New Channel

New channel assignment based on licensed antenna location and height

No change to directional pattern

UHF Power changes with dipole factor

Normalized to 615 MHz (Ch. 38)

-2.31 dB on Ch. 14

+1.03 dB on Ch. 51

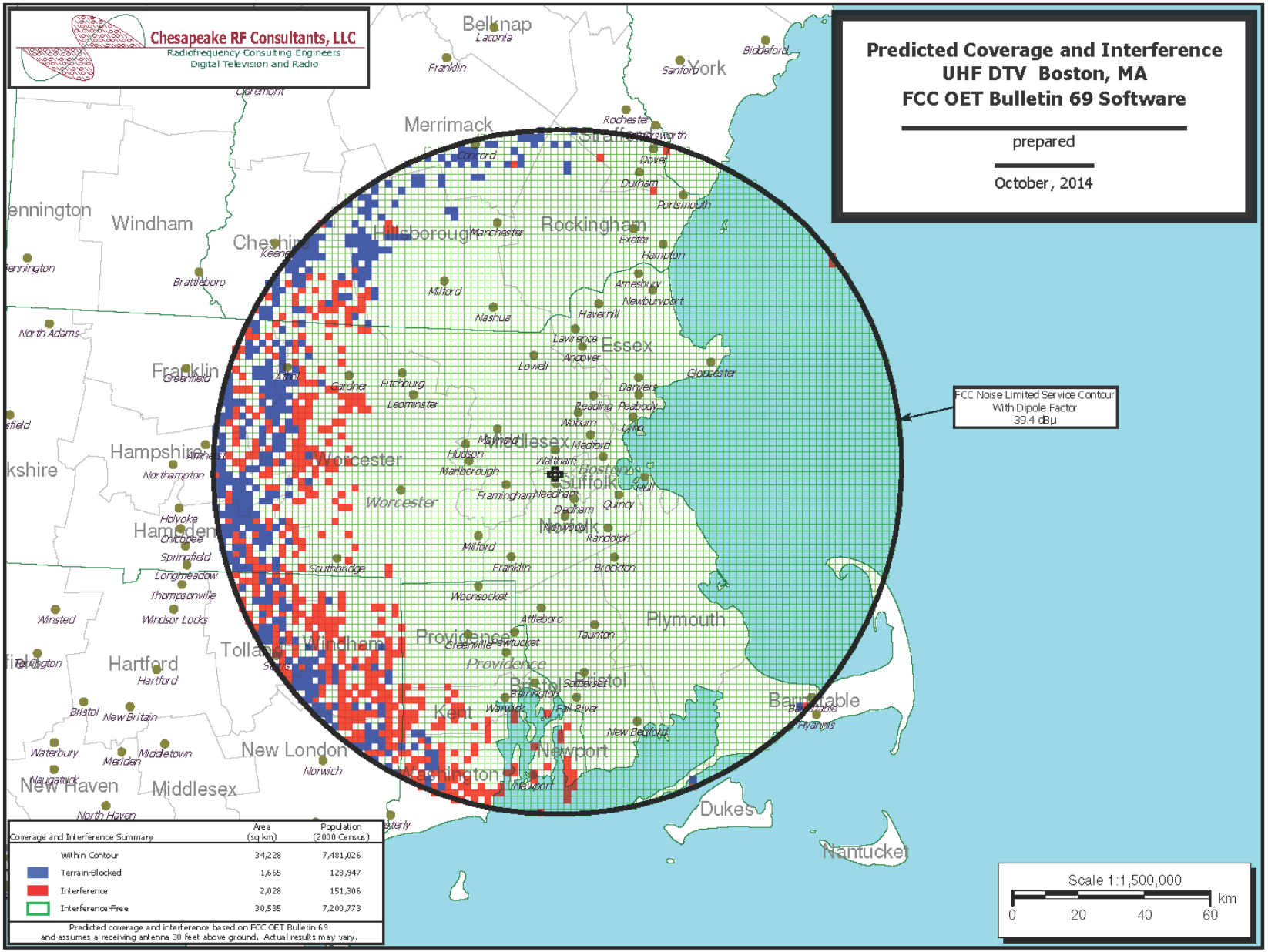
1000 kW on Ch. 50 = 546 kW on Ch. 20

1000 kW on Ch. 18 = 1256 kW on Ch. 28 (cap at 1000 kW)

Table 2

Field Strengths Defining the Area subject to Calculation for DTV Stations

Channels	Defining Field Strength, dBu, to be predicted for 50% of locations, 90% of time
2 - 6	28
7 - 13	36
14 - 69	41 - 20 log[615/(channel mid-frequency in MHz)]


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Predicted Coverage and Interference
UHF DTV Boston, MA
FCC OET Bulletin 69 Software
prepared
October, 2014
FCC Noise Limited Service Contour
With Dipole Factor
39.4 dBμ
Scale 1:1,500,000
0 20 40 60 km
Coverage and Interference Summary | Area (sq km) | Population (2000 Census)
Within Contour | 34,228 | 7,481,026
Terrain-Blocked | 1,665 | 128,947
Interference | 2,028 | 151,306
Interference-Free | 30,535 | 7,200,773
Predicted coverage and interference based on FCC OET Bulletin 69 and assumes a receiving antenna 30 feet above ground. Actual results may vary.
Belknap
Laconia
Franklin
York
Sanford
Biddeford
Merrimack
Rochester
Dover
Durham
Portsmouth
Rockingham
Exeter
Hampton
Amesbury
Newburyport
Haverhill
Windham
Brattleboro
North Adams
Hillsborough
Manchester
Milford
Nashua
Lawrence
Andover
Essex
Lowell
Gloucester
Fitchburg
Leominster
Gardner
Danvers
Reading
Peabody
Woburn
Lynn
Franklin
Greenfield
Hampshire
Northampton
Middlesex
Medford
Hudson
Marlborough
Waltham
Boston
Suffolk
Worcester
Framingham
Needham
Quincy
Dedham
Norfolk
Randolph
Holyoke
Chicopee
Springfield
Longmeadow
Thompsonville
Southbridge
Franklin
Brockton
Woonsocket
Attleboro
Taunton
Plymouth
Winsted
Windsor Locks
Tolland
Windham
Providence
Greenville
Pawtucket
Providence
Hartford
Bristol
Kent
Warwick
Fall River
New Bedford
Barnstable
Hyannis
New Britain
Waterbury
Meriden
Middletown
New London
Norwich
Newport
New Haven
Middlesex
Naugatuck
North Haven
Dukes
Nantucket

Timelines and Milestones

Incentive Auction (FCC Auction #1001 – reverse #1002 – forward)
Reverse and Forward Auctions (begins after March 29, 2016 commitment)
Auction closes when "Final Stage Rule" is satisfied

ASAP After Auction Concludes

Forward auction licenses are granted, disbursement of auction proceeds are made to broadcasters that are relinquishing spectrum

Relinquishing stations must vacate pre-auction channels within 3 months

Channel sharing stations must vacate pre-auction channels within 6 months, possible extensions up to 6 months more

Channel Reassignment Public Notice

Final TV channel assignments and parameters announced
Post-Auction period begins
t = 0 Ready Set GO!

Timelines and Milestones

Deadline at "t + 3" Months

- Repacked stations must file Construction Permit applications
- Must file estimated costs for channel relocation
- Crunch time – to plan new facility and transition

After "t + 3" Months, 36 month "Broadcast Construction Period" begins

- CP's are issued ASAP
- FCC establishes construction deadlines for new channel implementation
- Deadlines to vary by region, complexity, and other factors
  - Some stations will have less than the full 36 month period

Timelines and Milestones

Meeting Construction Deadline

- 6-month extension of **construction deadline** upon suitable request
- Subsequent extensions via much stricter criteria

- At "t + 39" months, all operations on pre-auction channels must cease
- Must go dark if not ready at "t + 39"
- 12 months silent = automatic license expiration
  - FCC can reinstate with waiver – if involuntarily dark and if "equity and fairness" apply

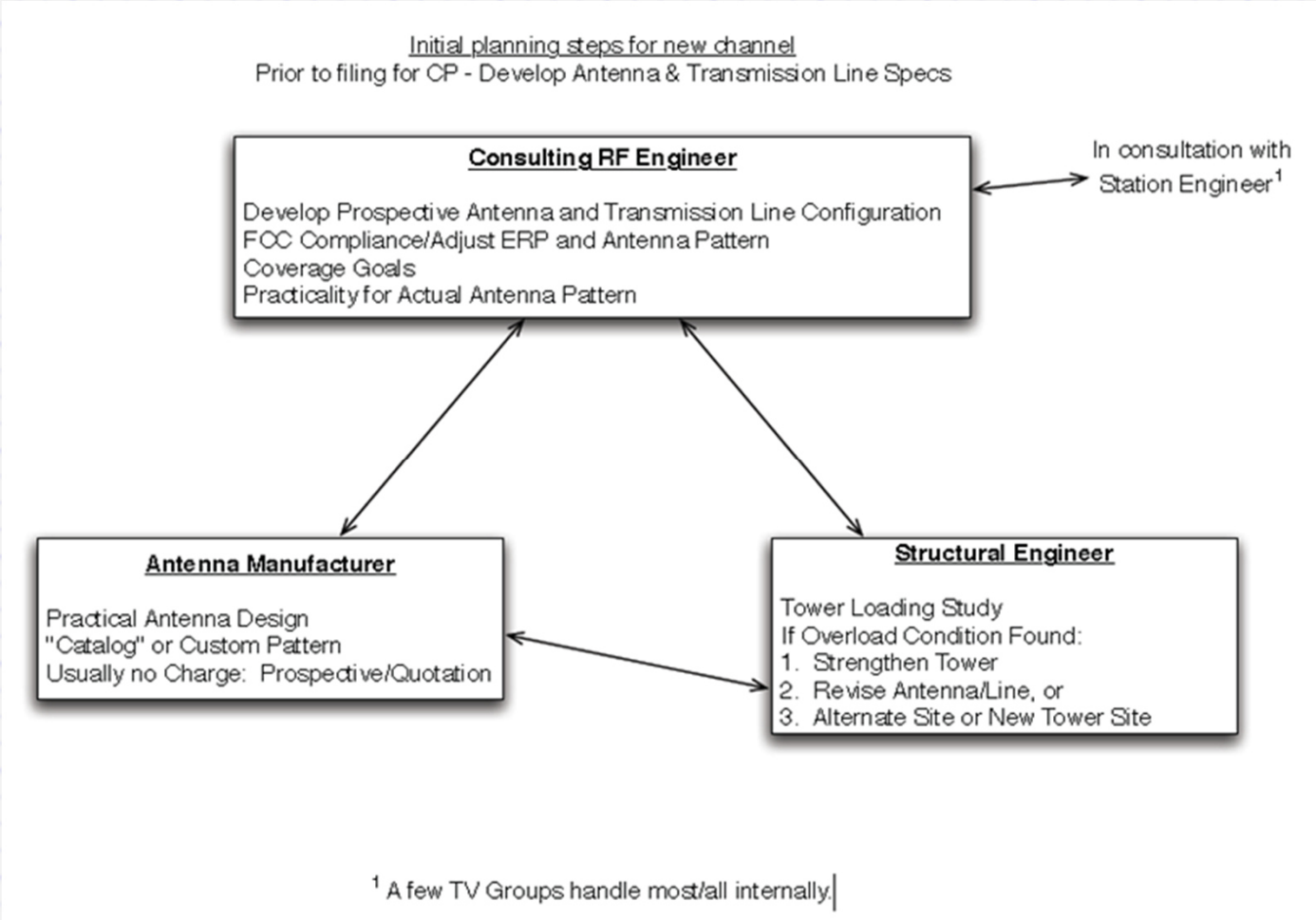
Interim operations will be necessary for many stations

- Existing or new auxiliary transmitter/antenna
- Temporary installation
- On pre-auction and/or post-auction channel
- Reduced facilities
- Alternate site
- Temporary channel

Facility Planning

Limited opportunity for pre-planning until repack results are available

By t = 3 months must apply for Construction Permit



Facility Planning

1. Pre-planning (t = 0)
2. RF Engineering
3. Structural Engineering
4. Negotiate with tower owners
5. Permitting
6. Estimated Costs to FCC for Reimbursement

------ t = 3 months ------

7. Acquire equipment/manufacturing
8. Tower Work
9. Field Engineering

Planning and Application Procedures

Construction Permit Applications:
Repacked stations - three filing deadlines depending on nature of proposal

1. "Initial Applications" – generally conforming – file by t=3 months

   Comply with new parameters, no contour expansion
   Interference study not required, serve > 95% reference population
   Expedited grant by FCC

   Slight contour extension up to 1 percent OK if needed to achieve the new assignment or to address a loss area on the new channel
   Interference is <0.5% to any other station
   Antenna pattern must closely conform to new assignment

   Cannot request alternate channel in initial application

   1 percent contour extension limit not applicable to winning bidders going from UHF to VHF due to pattern matching issues

Planning and Application Procedures

Last two filing deadlines follow FCC processing of first set of applications

2. "Priority" Expanded Facilities (Maximization) and Alternate Channels
   Applicable if new assignment can't be constructed for reasons beyond station's control. MB to describe standards for priority.
   Contour extension over 1 percent
   New interference <0.5% to any other station

What is a Priority Station?

"Specifically, we will provide a priority to any station that demonstrates that it is unable to construct facilities that meet the technical parameters specified in the *Channel Reassignment PN*, or the permissible contour coverage variance discussed above, for reasons beyond its control."

"In addition, we delegate authority to the Media Bureau to define other categories of stations that may be eligible for a filing priority due to extraordinary circumstances beyond a station's control."

Footnote – an example of priority:

"We anticipate that such stations would include those that cannot submit a construction permit application for their assigned channel because they are unable to construct at their current tower site due to technical or legal issues."

What is a Priority Station?

More than one percent population loss from terrain and/or interference

"…stations predicted to experience a loss in population served in excess of one percent as a result of the repacking process – either because of new station-to-station interference or terrain loss resulting from a new channel assignment (or a combination of both) - may file an application proposing an alternate channel or expanded facilities in a priority filing window…"

Planning and Application Procedures

Last two filing deadlines follow FCC processing of first set of applications

2. "Priority" Expanded Facilities (Maximization) and Alternate Channels
   Applicable if new assignment can't be constructed for reasons beyond station's control.
   Standards for priority TBA, include
   1 percent population loss from terrain and/or interference
   Contour extension over 1 percent
   New interference <0.5% to any other station

3. "Non-Priority" Expanded Facilities and Alternate Channels
   Contour extension over 1 percent
   New interference <0.5% to any other station

   After processing initial CP applications in "1", MB to issue PN's with deadlines for "2" and "3", processing guidelines, cut-off and MX resolution

4. Stations that are not repacked ("Stays")
   Contour extension and channel substitution freezes lifted

Expansion of Stations in 600 MHz Band

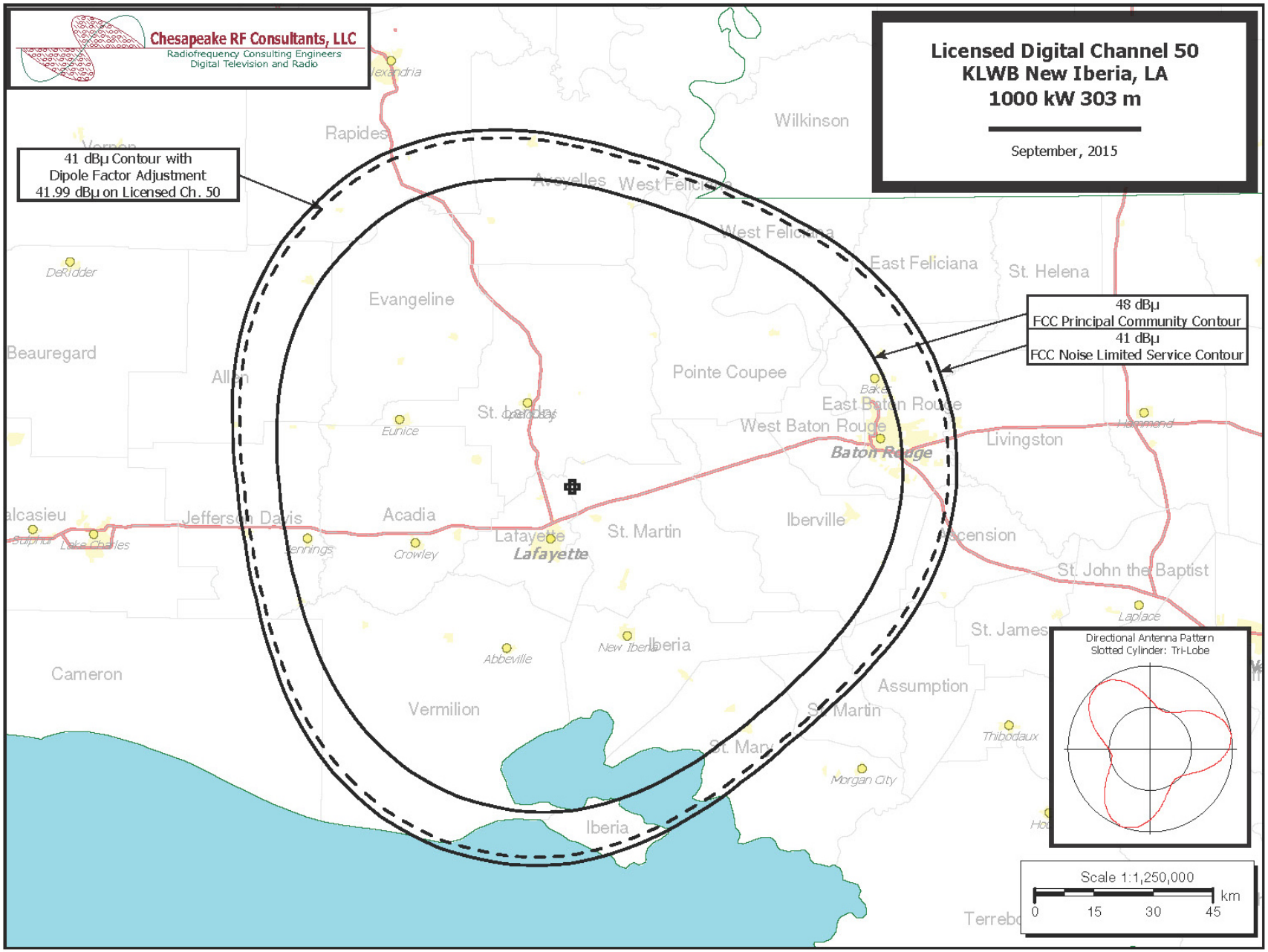
Can't extend contour towards wireless licensee area if potential interference to wireless licensee is increased

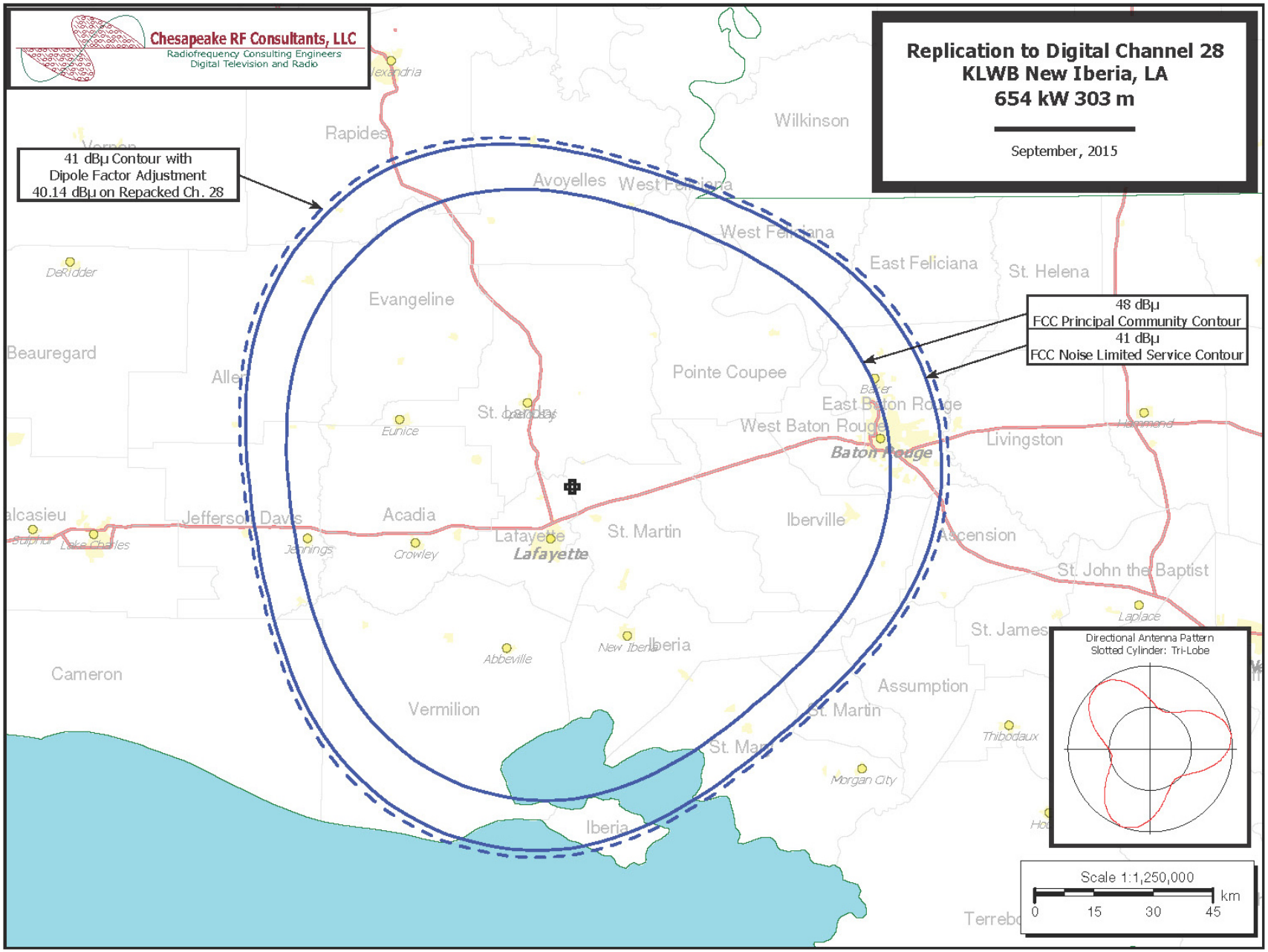
OK if wireless licensee consents

Waiver on a case-by-case basis

Interference analysis must consider co-channel and adjacent-channel wireless operations within 500 km of DTV's expanded NLSC

Initial application – Can expand by one percent (distance) without regard to wireless, if necessary to achieve the reassignment contour or to address a loss of coverage area

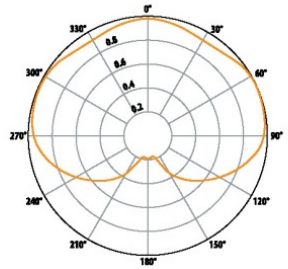

Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Licensed Digital Channel 50
KLWB New Iberia, LA
1000 kW 303 m
September, 2015
41 dBμ Contour with
Dipole Factor Adjustment
41.99 dBμ on Licensed Ch. 50
48 dBμ
FCC Principal Community Contour
41 dBμ
FCC Noise Limited Service Contour
Rapides
Wilkinson
Avoyelles
West Feliciana
East Feliciana
St. Helena
Evangeline
Beauregard
Allen
Pointe Coupee
East Baton Rouge
West Baton Rouge
Baton Rouge
Livingston
Eunice
Jefferson Davis
Acadia
Lafayette
St. Martin
Iberville
Crowley
Ascension
St. John the Baptist
Laplace
St. James
Cameron
Abbeville
New Iberia
Iberia
Vermilion
Assumption
St. Martin
St. Mary
Thibodaux
Morgan City
Directional Antenna Pattern
Slotted Cylinder: Tri-Lobe
Scale 1:1,250,000
0
15
30
45
km


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Replication to Digital Channel 28
KLWB New Iberia, LA
654 kW 303 m
September, 2015
41 dBμ Contour with
Dipole Factor Adjustment
40.14 dBμ on Repacked Ch. 28
48 dBμ
FCC Principal Community Contour
41 dBμ
FCC Noise Limited Service Contour
Rapides
Avoyelles
Wilkinson
West Feliciana
East Feliciana
St. Helena
Evangeline
Beauregard
Allen
Pointe Coupee
East Baton Rouge
West Baton Rouge
Baton Rouge
Livingston
Jefferson Davis
Acadia
Lafayette
St. Martin
Iberville
Ascension
St. John the Baptist
St. James
Assumption
Cameron
Vermilion
Iberia
Directional Antenna Pattern
Slotted Cylinder: Tri-Lobe
Scale 1:1,250,000
km
0
15
30
45

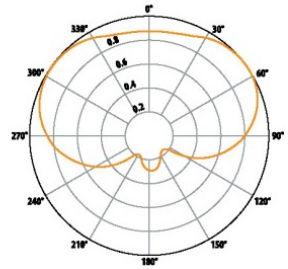
UHF Slotted Cylinder Antenna Azimuthal Patterns

Typical Azimuth Patterns

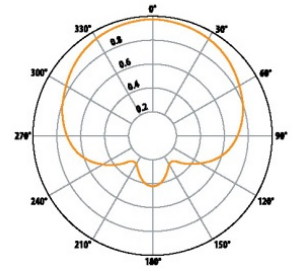
As shown below and on the following page, a wide variety of Azimuth patterns can be selected or customized for TRASAR® antennas.



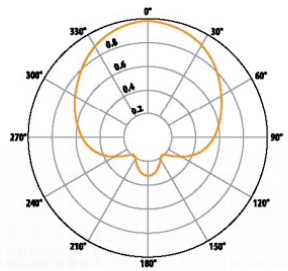
Type	C1	
Directivity	1.52	(1.82 dB)



Type	C2	
Directivity	1.80	(2.55 dB)

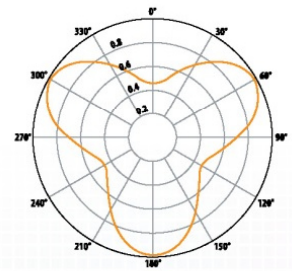


Type	C3	
Directivity	2.00	(3.01 dB)

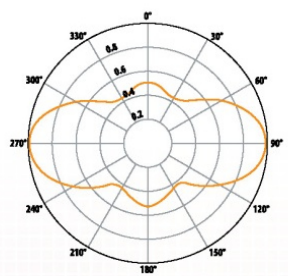


Type	C4	
Directivity	2.54	(4.05 dB)

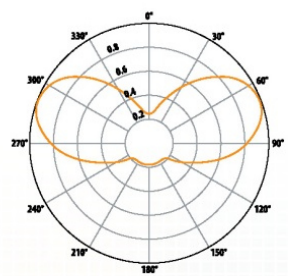
Type	C5	
Directivity	3.40	(5.31 dB)



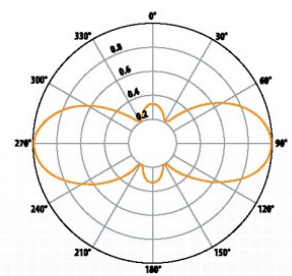
Type	T1	
Directivity	1.78	(2.50 dB)



Type	P3	
Directivity	2.24	(3.50 dB)



Type	P4	
Directivity	2.85	(4.55 dB)



Type	P5	
Directivity	2.90	(4.62 dB)

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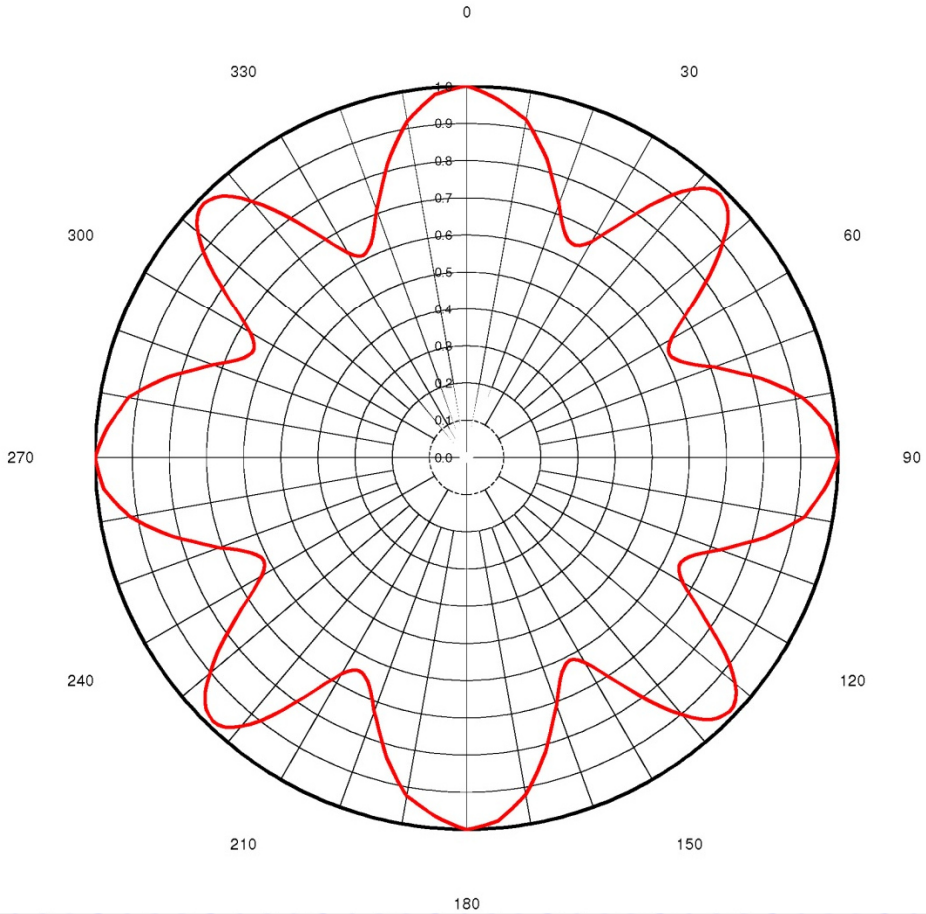
UHF Panel Antenna Azimuthal Patterns: Nondirectional

Dielectric

Serial Number:	TUA6-R001
Channel	42
Antenna Type	TUA-O4-2/8U-1-S

AZIMUTH PATTERN

Gain	1.45	(1.61 dB)	Frequency	641.00 MHz
Calculated / Measured		Calculated	Drawing #	TUA-O4-6410

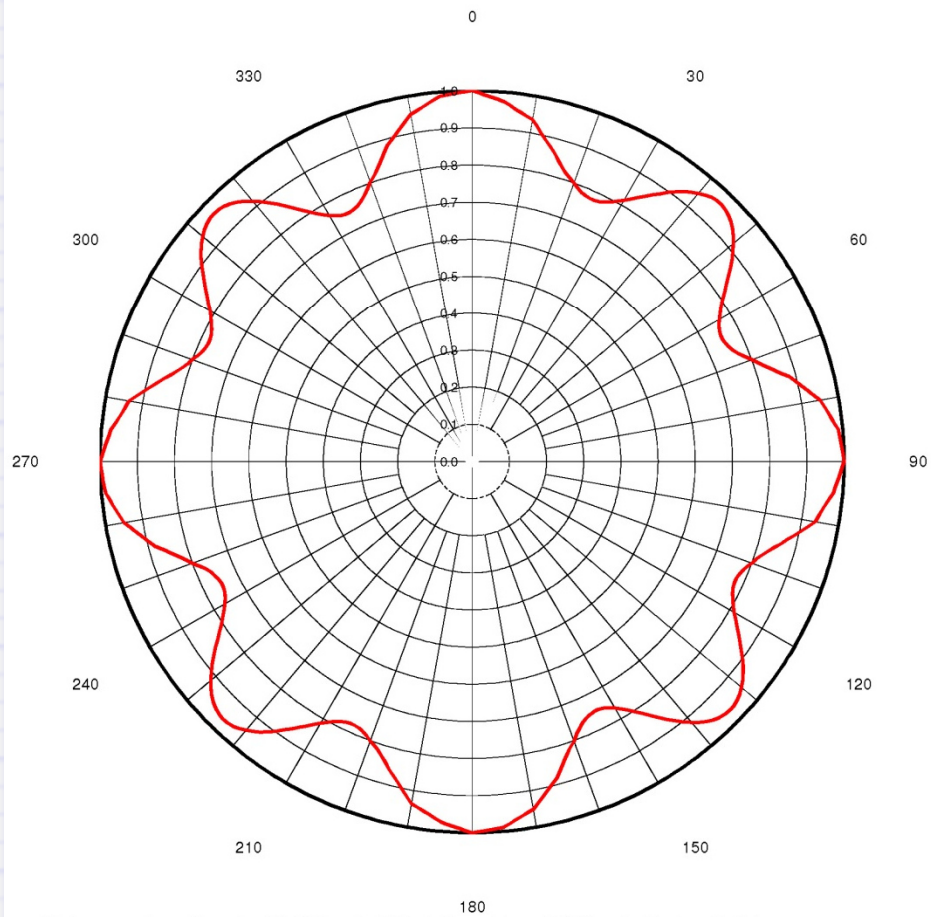


Dielectric

Serial Number:	TUA6-R001
Channel	23
Antenna Type	TUA-O4-2/8U-1-S

AZIMUTH PATTERN

Gain	1.30	(1.14 dB)	Frequency	527.00 MHz
Calculated / Measured		Calculated	Drawing #	TUA-O4-5270



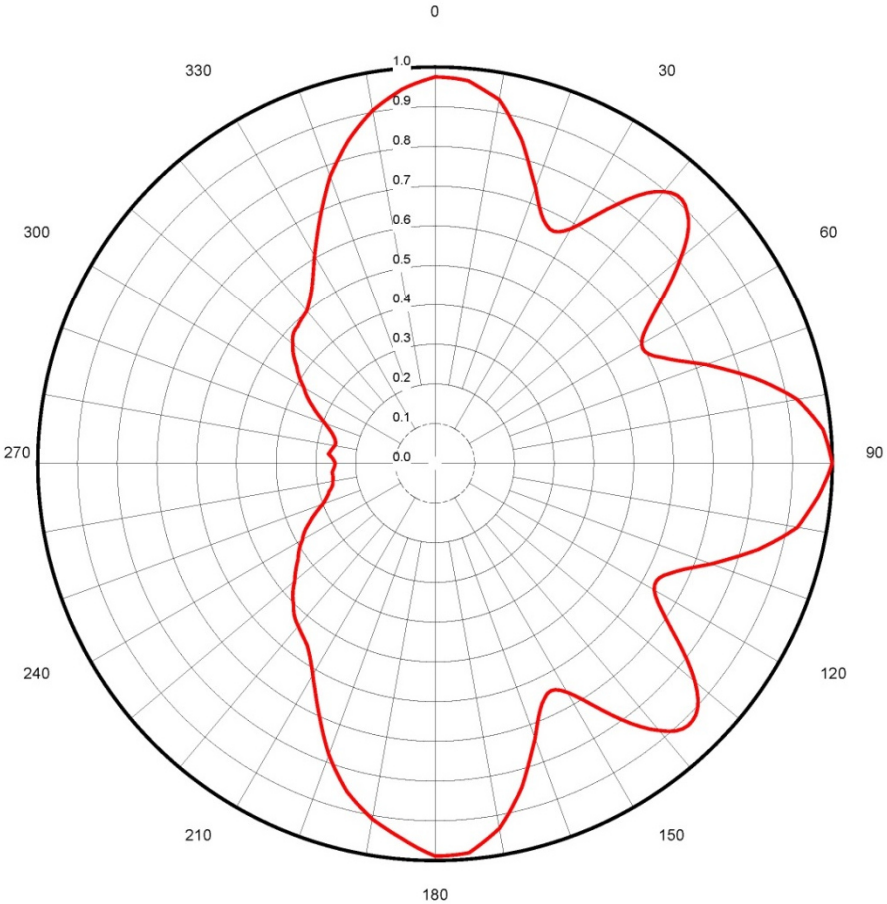
UHF Panel Antenna Azimuthal Patterns: Directional

Dielectric

Proposal Number	C		
Date	8-Mar-07		
Call Letters	K----DT	Channel	44
Location			
Customer			
Antenna Type	TUA-C4SP-12/40U-1-S		

AZIMUTH PATTERN

Gain	2.00	(3.01 dB)	Frequency	653.00 MHz
Calculated / Measured	Calculated		Drawing #	TUA-C4SP-6530

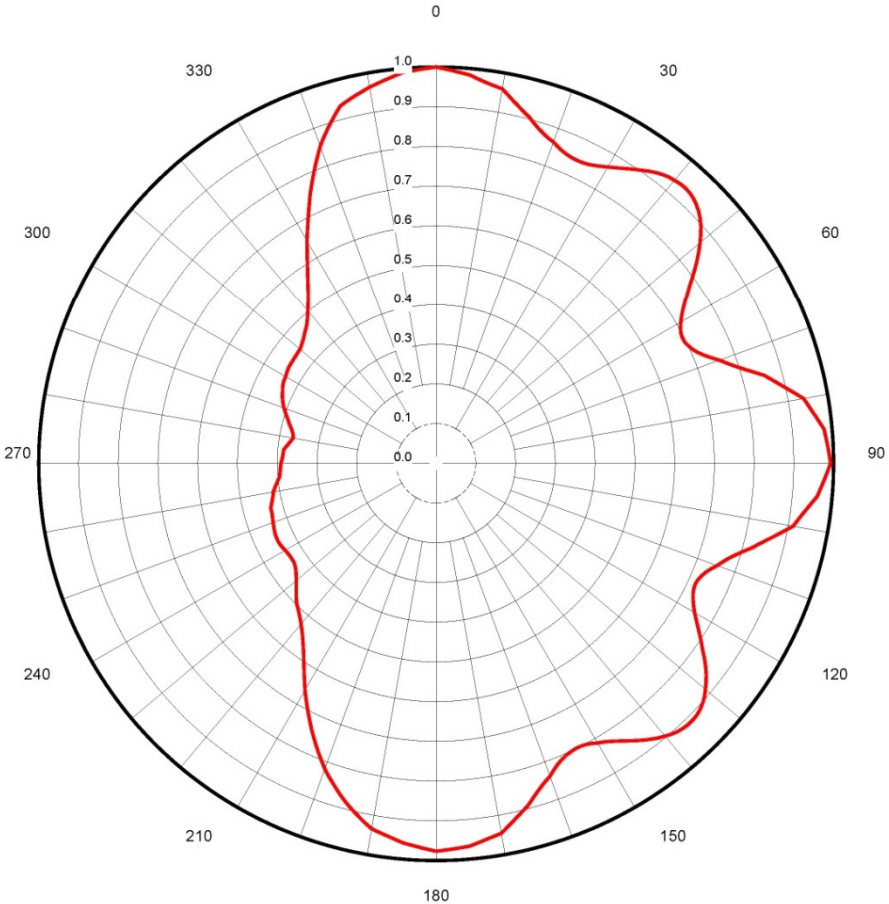


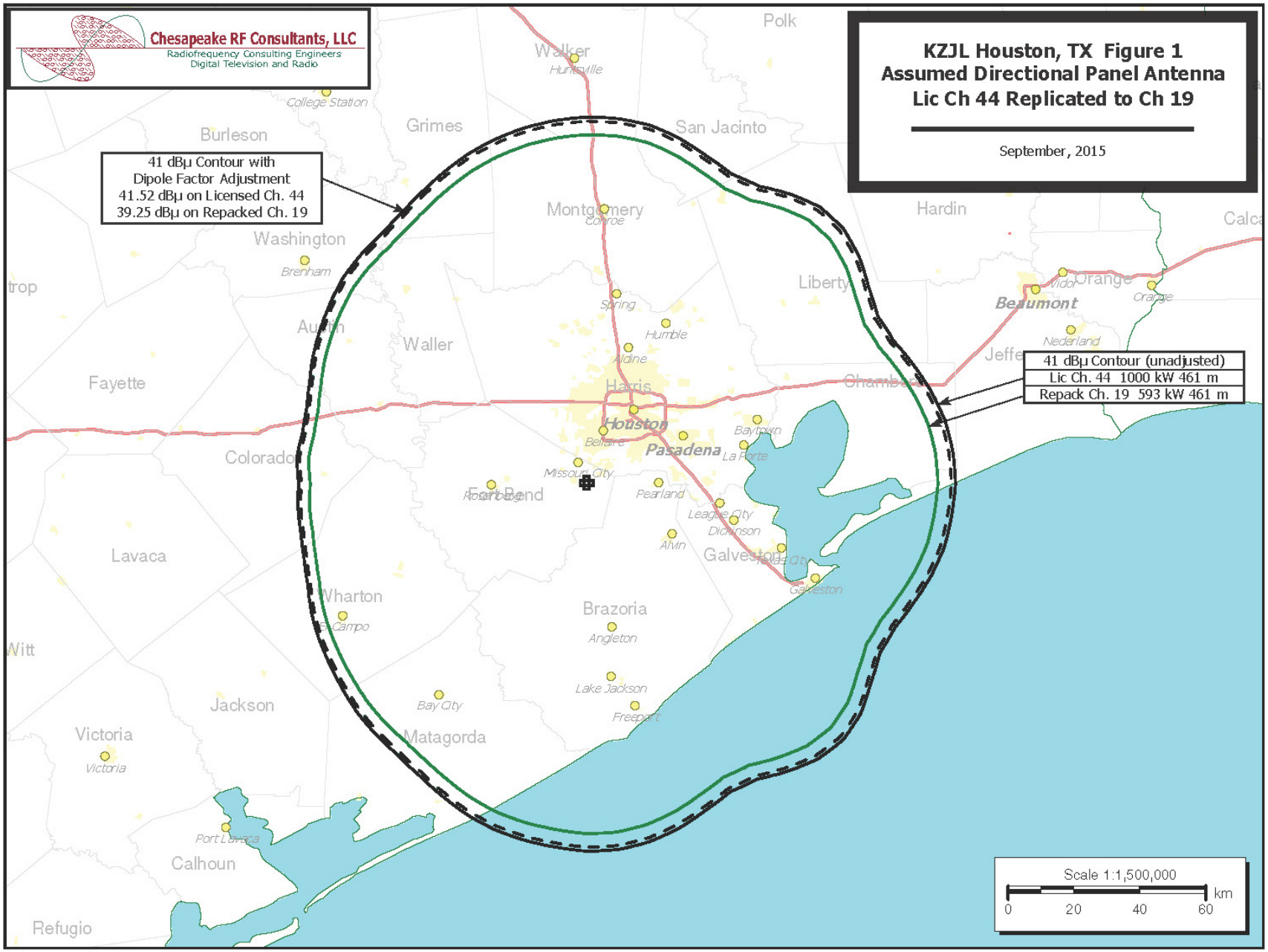
Dielectric

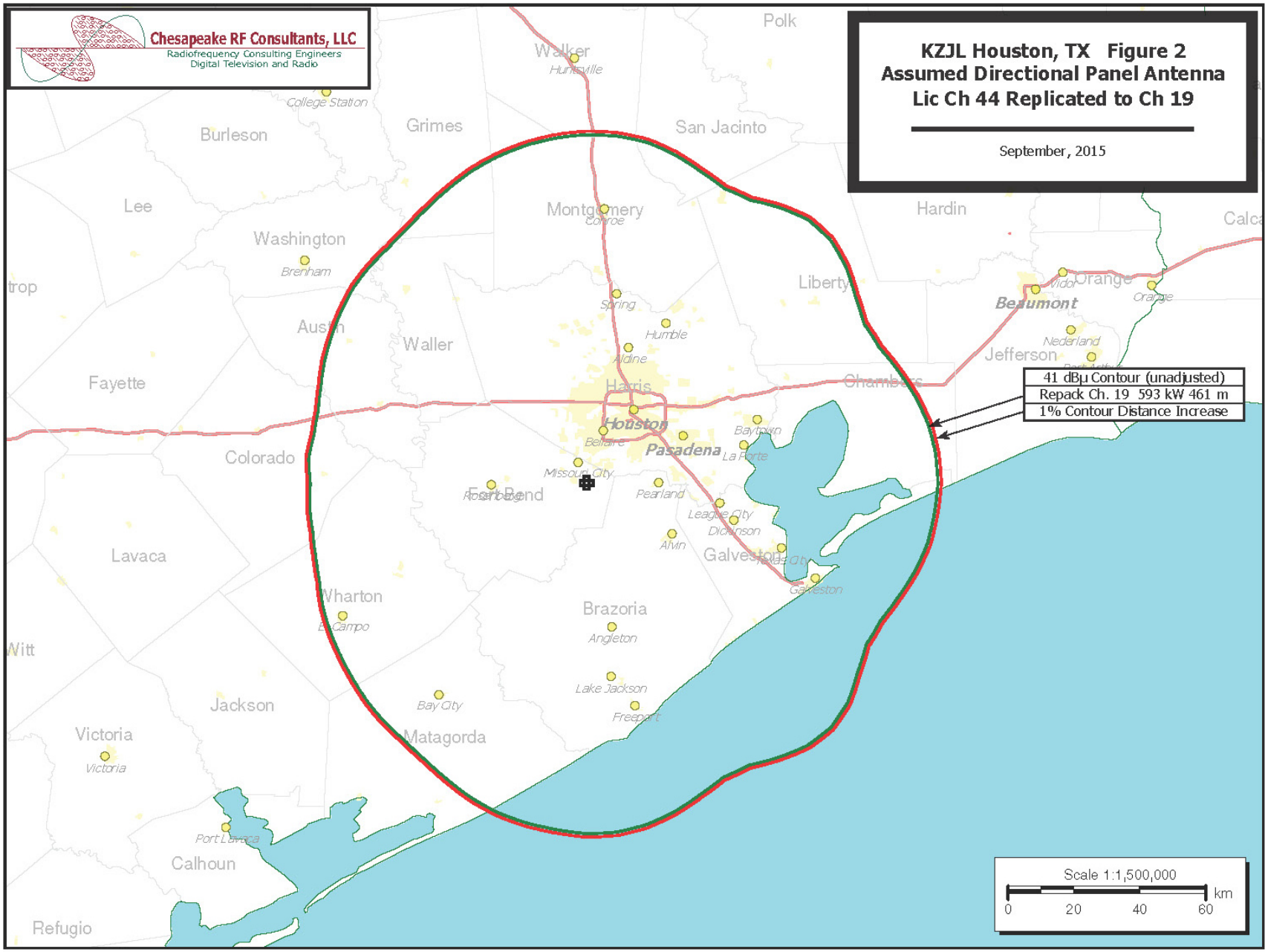
Proposal Number	C		
Date	8-Mar-07		
Call Letters	K-----DT	Channel	19
Location			
Customer			
Antenna Type	TUA-C4SP-12/40U-1-S		

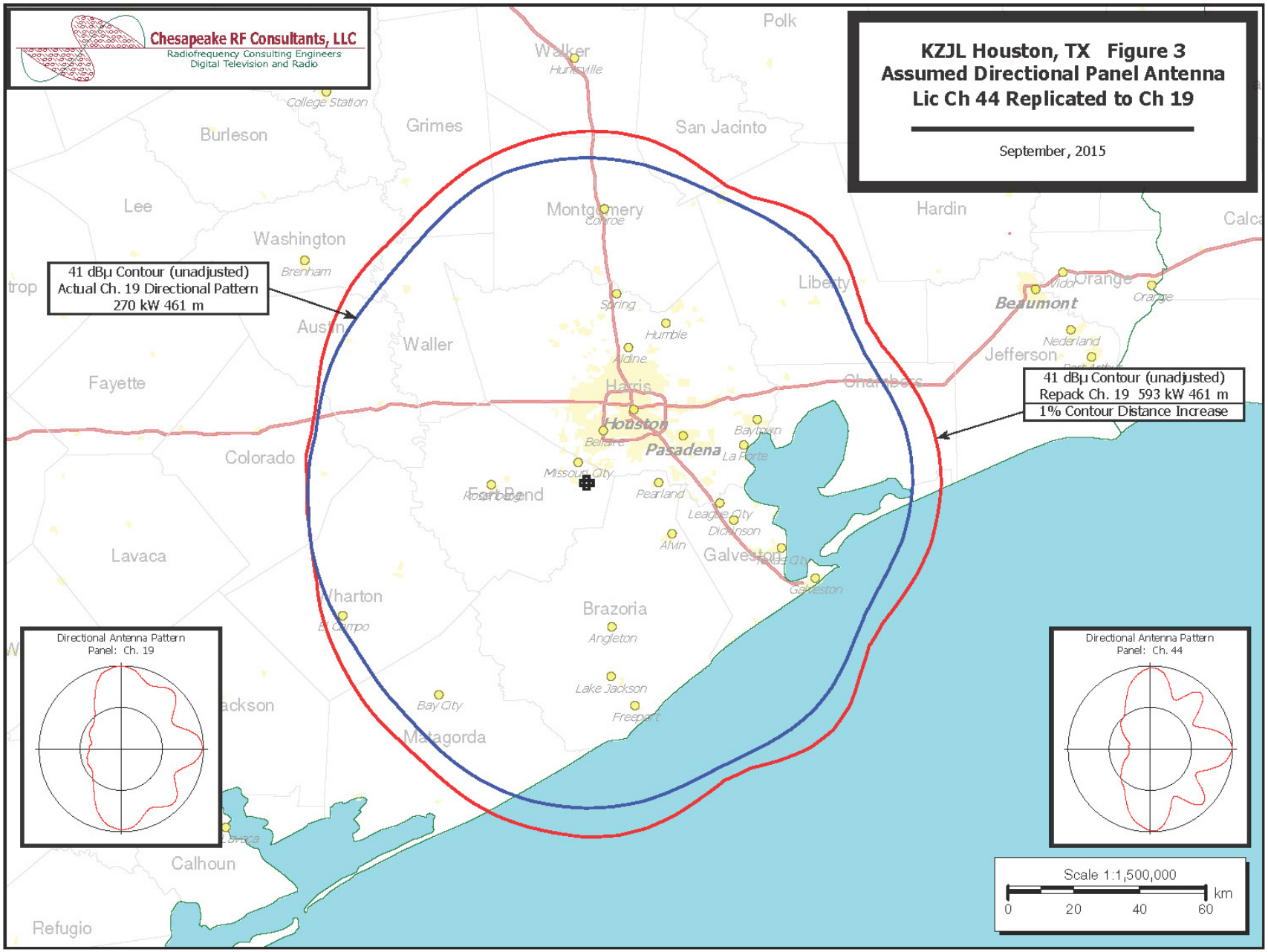
AZIMUTH PATTERN

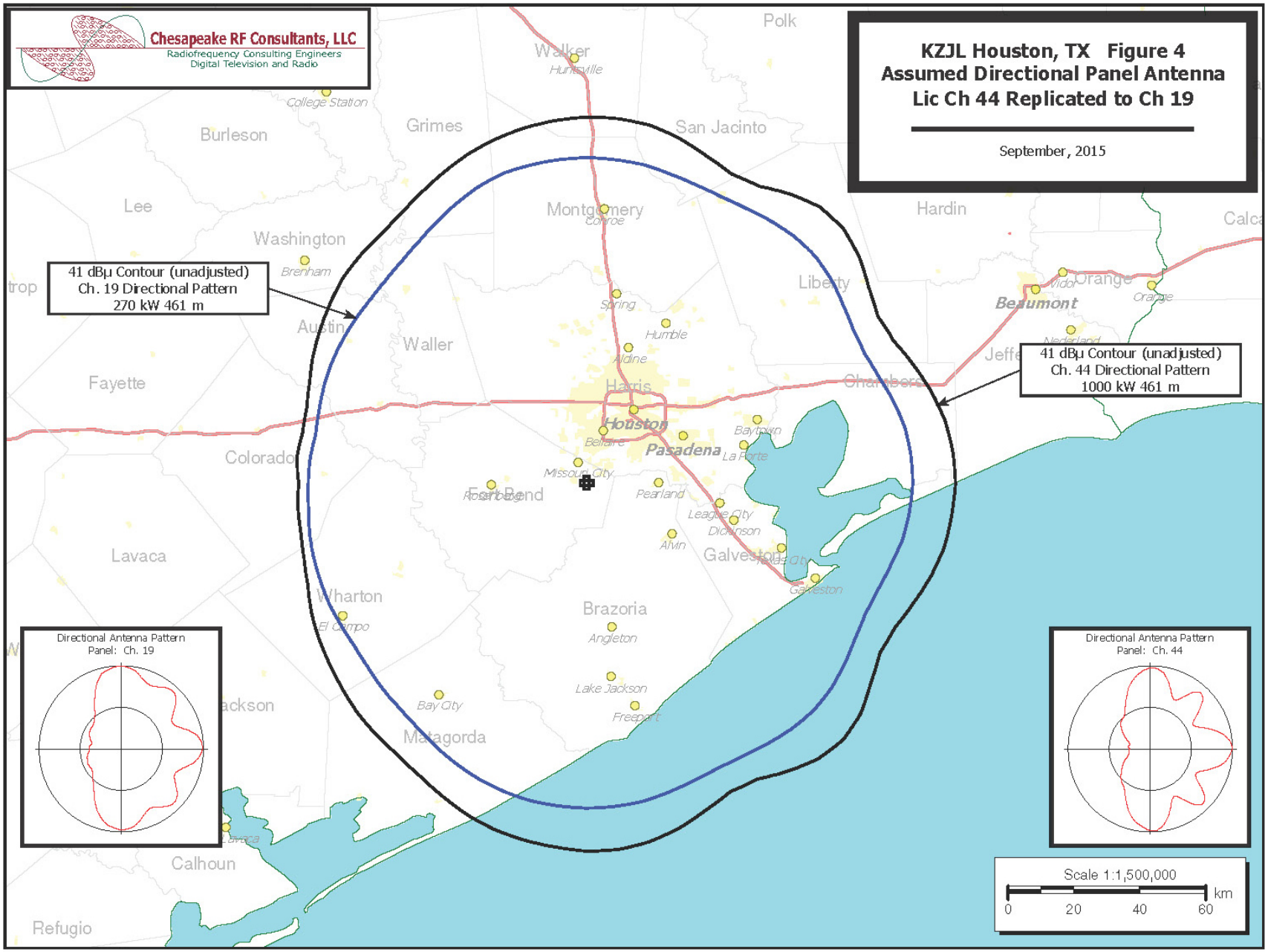
Gain	1.70	(2.30 dB)	Frequency	503.00 MHz
Calculated / Measured	Calculated		Drawing #	TUA-C4SP-5030

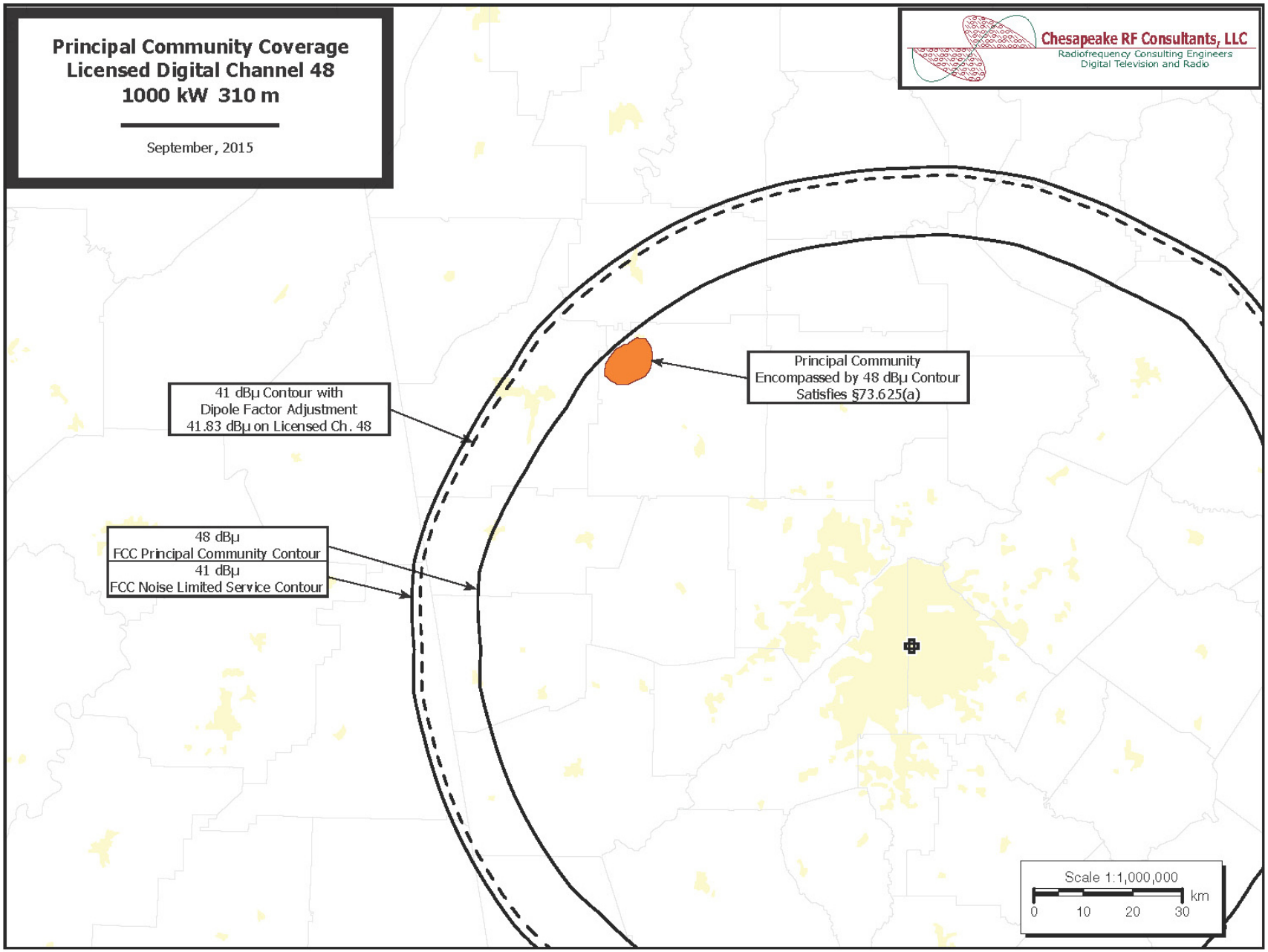


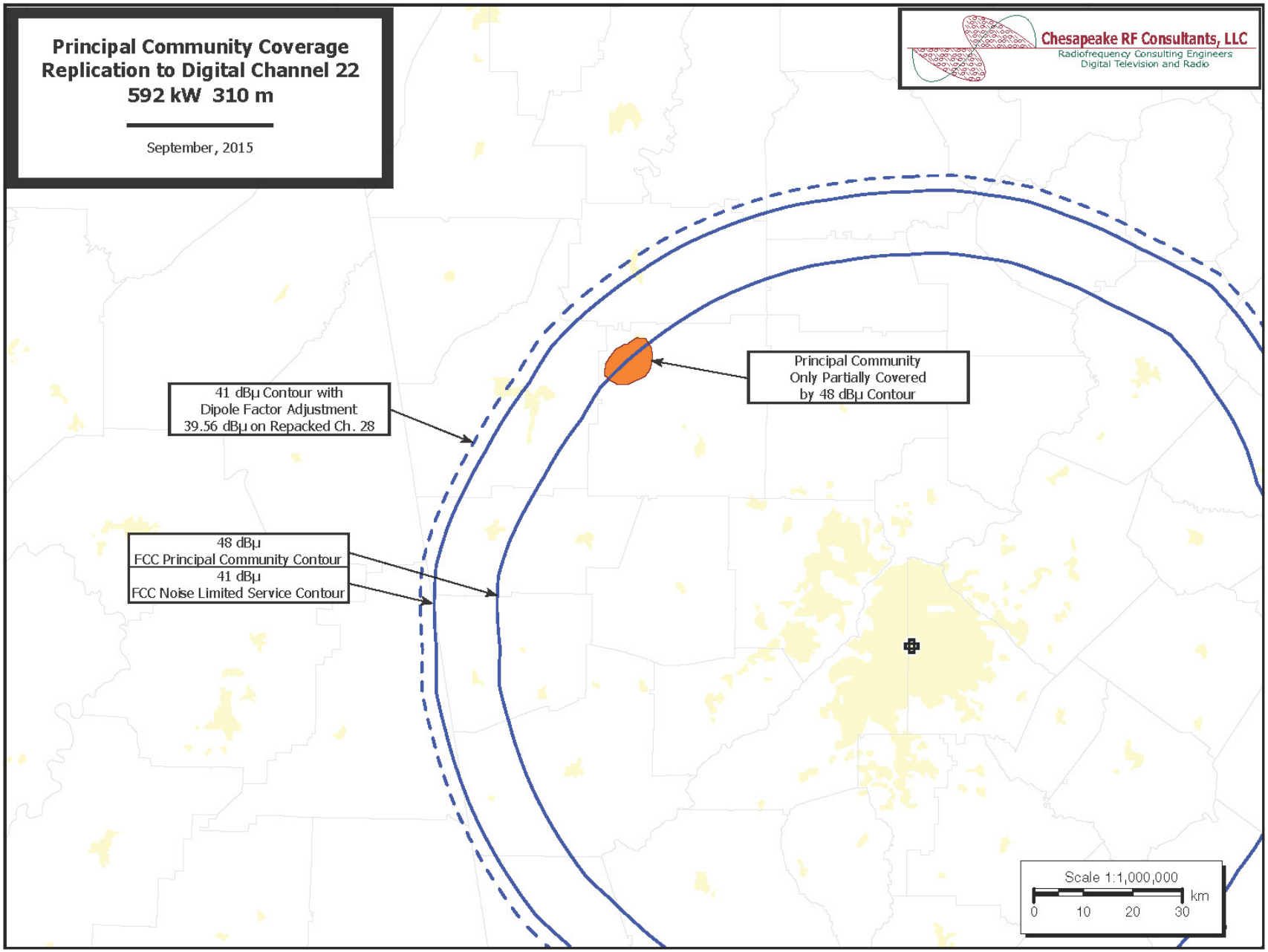

Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
KZJL Houston, TX Figure 1
Assumed Directional Panel Antenna
Lic Ch 44 Replicated to Ch 19
September, 2015
41 dBμ Contour with
Dipole Factor Adjustment
41.52 dBμ on Licensed Ch. 44
39.25 dBμ on Repacked Ch. 19
41 dBμ Contour (unadjusted)
Lic Ch. 44 1000 kW 461 m
Repack Ch. 19 593 kW 461 m
Polk
Walker
Huntsville
College Station
Burleson
Grimes
San Jacinto
Montgomery
Conroe
Hardin
Washington
Brenham
Liberty
Orange
Beaumont
Nederland
Spring
Humble
Aldine
Waller
Harris
Houston
Pasadena
Baytown
La Porte
Fayette
Colorado
Missouri City
Fort Bend
Rosenberg
Pearland
League City
Dickinson
Alvin
Galveston
Texas City
Lavaca
Wharton
El Campo
Brazoria
Angleton
Lake Jackson
Freeport
Bay City
Matagorda
Jackson
Victoria
Port Lavaca
Calhoun
Refugio
Scale 1:1,500,000
0 20 40 60 km


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
KZJL Houston, TX Figure 2
Assumed Directional Panel Antenna
Lic Ch 44 Replicated to Ch 19
September, 2015
41 dBμ Contour (unadjusted)
Repack Ch. 19 593 kW 461 m
1% Contour Distance Increase
Scale 1:1,500,000
0 20 40 60 km
Polk
Walker
Huntsville
College Station
Burleson
Grimes
San Jacinto
Lee
Montgomery
Conroe
Hardin
Washington
Brenham
Liberty
Orange
Vidor
Beaumont
Austin
Waller
Spring
Humble
Aldine
Nederland
Jefferson
Fayette
Harris
Chambers
Houston
Baytown
Bellaire
Pasadena
La Porte
Colorado
Missouri City
Fort Bend
Rosenberg
Pearland
League City
Dickinson
Alvin
Galveston
Texas City
Lavaca
Wharton
El Campo
Brazoria
Angleton
Witt
Lake Jackson
Freeport
Jackson
Bay City
Matagorda
Victoria
Victoria
Port Lavaca
Calhoun
Refugio


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
KZJL Houston, TX Figure 3
Assumed Directional Panel Antenna
Lic Ch 44 Replicated to Ch 19
September, 2015
41 dBμ Contour (unadjusted)
Actual Ch. 19 Directional Pattern
270 kW 461 m
41 dBμ Contour (unadjusted)
Repack Ch. 19 593 kW 461 m
1% Contour Distance Increase
Directional Antenna Pattern
Panel: Ch. 19
Directional Antenna Pattern
Panel: Ch. 44
Scale 1:1,500,000
0 20 40 60 km
Polk
Walker
Huntsville
College Station
Burleson
Grimes
San Jacinto
Lee
Montgomery
Conroe
Hardin
Washington
Brenham
Liberty
Orange
Beaumont
Austin
Waller
Spring
Humble
Aldine
Nederland
Jefferson
Fayette
Harris
Chambers
Houston
Baytown
Bellaire
Pasadena
La Porte
Colorado
Missouri City
Fort Bend
Rosenberg
Pearland
League City
Dickinson
Alvin
Galveston
Texas City
Lavaca
Wharton
El Campo
Brazoria
Angleton
Lake Jackson
Freeport
Bay City
Matagorda
Calhoun
Refugio


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
KZJL Houston, TX Figure 4
Assumed Directional Panel Antenna
Lic Ch 44 Replicated to Ch 19
September, 2015
41 dBμ Contour (unadjusted)
Ch. 19 Directional Pattern
270 kW 461 m
41 dBμ Contour (unadjusted)
Ch. 44 Directional Pattern
1000 kW 461 m
Directional Antenna Pattern
Panel: Ch. 19
Directional Antenna Pattern
Panel: Ch. 44
Scale 1:1,500,000
0 20 40 60 km
Polk
Walker
Huntsville
College Station
Burleson
Grimes
San Jacinto
Lee
Montgomery
Conroe
Hardin
Washington
Brenham
Liberty
Beaumont
Orange
Austin
Waller
Spring
Humble
Aldine
Harris
Houston
Pasadena
Baytown
La Porte
Fayette
Chambers
Colorado
Missouri City
Fort Bend
Rosenberg
Pearland
League City
Dickinson
Alvin
Galveston
Texas City
Lavaca
Wharton
El Campo
Brazoria
Angleton
Lake Jackson
Freeport
Bay City
Matagorda
Calhoun
Refugio


Principal Community Coverage
Licensed Digital Channel 48
1000 kW 310 m
September, 2015
Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
41 dBμ Contour with
Dipole Factor Adjustment
41.83 dBμ on Licensed Ch. 48
48 dBμ
FCC Principal Community Contour
41 dBμ
FCC Noise Limited Service Contour
Principal Community
Encompassed by 48 dBμ Contour
Satisfies §73.625(a)
Scale 1:1,000,000
km
0
10
20
30


Principal Community Coverage
Replication to Digital Channel 22
592 kW 310 m
September, 2015
Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
41 dBμ Contour with
Dipole Factor Adjustment
39.56 dBμ on Repacked Ch. 28
Principal Community
Only Partially Covered
by 48 dBμ Contour
48 dBμ
FCC Principal Community Contour
41 dBμ
FCC Noise Limited Service Contour
Scale 1:1,000,000
km
0
10
20
30

Replication: Band Change (UHF to VHF)

New channel assignment based on licensed antenna location and height

No change to directional pattern

Pre-Auction UHF channel: apply dipole factor to set area to be replicated
Post-Auction VHF channel: dipole factor not used

Sample replication parameters:

Pre-Auction UHF				Post-Auction Hi-VHF
Ch. 15	295 m	non-d	75 kW	1.82 kW
Ch. 34	291 m	non-d	1000 kW	17.4 kW
Ch. 44	415 m	non-d	335 kW	5.85 kW
Ch. 49	279 m	DA	860 kW	9.06 kW

Replication: Band Change

Greenhill Report excerpt:

Overview of the UHF to VHF Band Change

Unique Opportunity to Receive Portion of Auction Proceeds, Remain on the Air and Maintain Current Coverage Standards

- Under this option, a Broadcaster will bid to relinquish its UHF spectrum in the Reverse Auction and be assigned a **full 6 MHz channel in the VHF spectrum – enabling delivery of the same services as on UHF**
  - UHF to VHF bidders have the flexibility to limit their bids to a high or low VHF channel
- Broadcasters will remain on the air and receive auction proceeds **with no change to licensee status**
- Pursuant to statute, **Broadcasters will retain must carry rights** at their new channel
  - Broadcasters could also utilize online delivery for programming for which they hold the applicable distribution rights
- The FCC will make all reasonable efforts to preserve a Broadcaster's population served and coverage area on its VHF channel, under the same standards applicable to repacking
- The FCC will work with winning UHF to VHF bidders seeking to modify their operations in order to mitigate any over-the-air reception issues
- For Broadcasters who rely largely on cable and satellite to reach their audience, there will be **little loss of viewership** from the switch to the VHF band
  - Likewise, Broadcasters in less dense locales may be able to generate significant payouts with little to no effect on existing coverage
- Allows Broadcasters to defer immediate taxation on a portion of the received auction proceeds
- Broadcasters can also elect to relinquish a high VHF channel in exchange for a low VHF channel

Replication: Band Change

Maximum DTV ERP's
Hi-VHF (Ch 7-13)

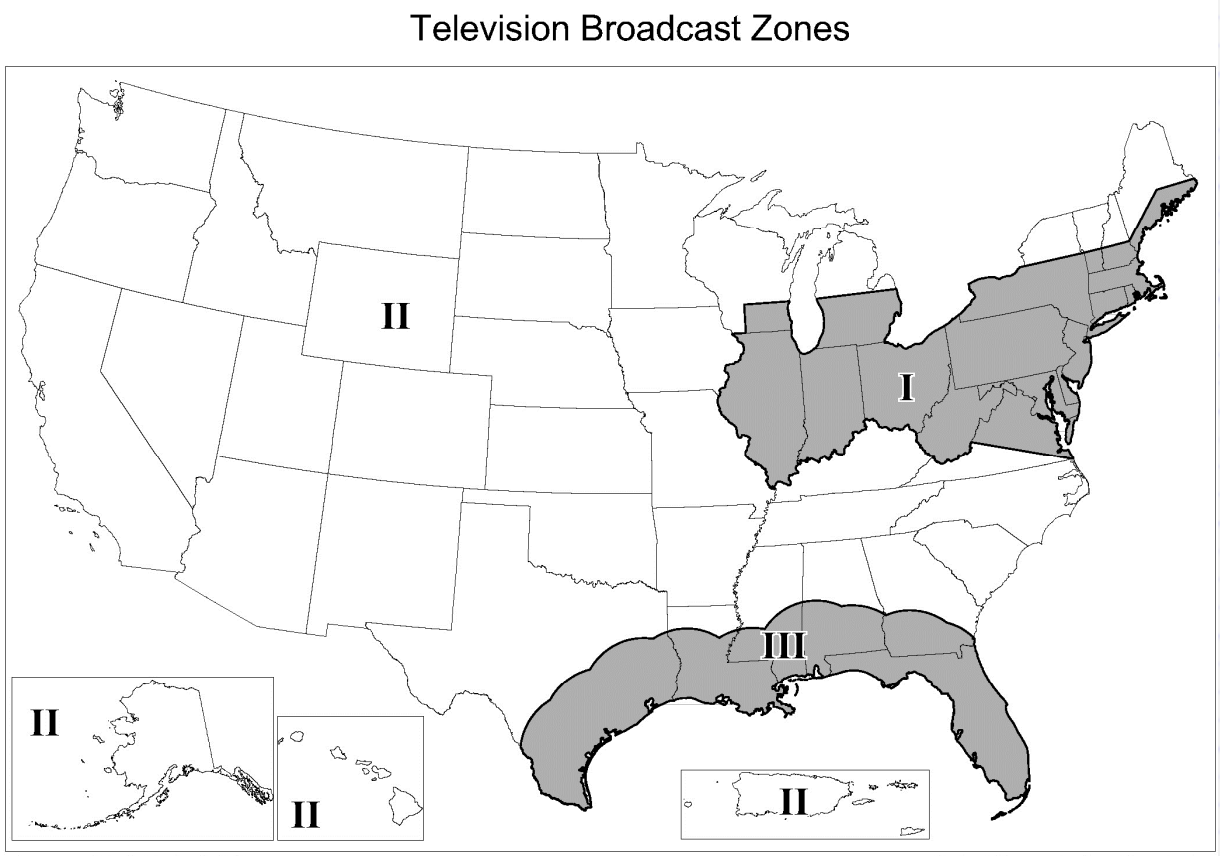
HAAT up to 305 m

Zone I:
30 kW

Zone II and III
160 kW

Equivalent ERP's when
HAAT is above 305 m

§73.622(f)



Replication: Band Change

FCC 14-50:

"In addition, we adopt the proposal to afford favorable consideration to post-incentive auction requests for waivers of the VHF power and height limits for winning UHF-to-VHF bidders that may be necessary to resolve coverage problems on their new channels. We decline, however, to establish a rebuttable presumption that such waivers are in the public interest."

"Thus, we will consider such waiver requests on **a case-by case basis after the winning bidder has completed construction** of its VHF facilities and determined that **its viewers are experiencing reception problems.** We will afford such requests favorable consideration and grant them where possible."

Vendor and Service Provider Capacity

Depressed marketplace for equipment, industry has contracted since 2009

Threat of repacking, FCC freezes, general economy

Severe domestic impact

High-power TV antenna manufacturers

Tower crews capable of working on tall and complicated towers

Vendor and Service Provider Capacity

Transmitter Manufacturers, high power

Supply of new transmitters vs support for existing or orphaned

Engineering Resources – Limited Capacity

Structural Engineers

Field Engineering – Transmitter installation & modification

RF Consulting Engineers

Collateral Damage

LPTV, Television Translators

Many expected to be displaced by spectrum reallocation or repacked station

Change to new channel if available, buildout must be coordinated

No reimbursement for channel change

MVPD's receiving OTA signals must be ready

Advance notice required from TV stations of changes

- 30 days – ceasing operation
- 30 days – sharing channel
- 90 days – changing channel – coordination required for cutover

Other users of UHF TV Spectrum

Wireless Microphones

Whitespace Devices

BAS – Part 74 microwave operations in TV band

"Perfect Storm" of challenges and shortages

Stations involuntarily repacked

Winning full power bidders for band changes

Site consolidation / expansion opportunity for others

STA's and interim operations

LPTV and translator station displacement and digital buildout

All will draw from the <u>same manufacturer and service provider resources</u>

Reimbursement for Eligible Expenses

$1.75 billion available
Reimbursement to broadcasters involuntarily repacked

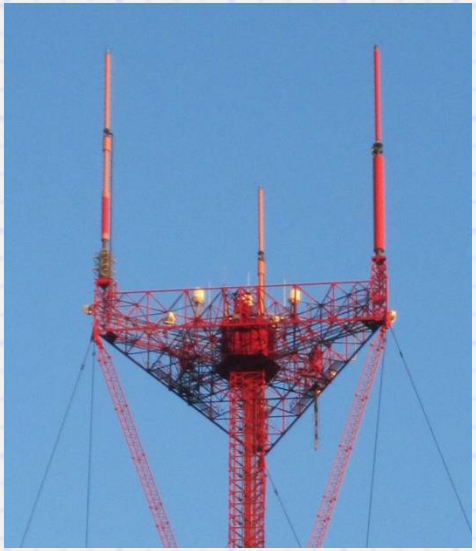
"Hard" and "Soft" Costs are eligible

Hard: Equipment replacement & installation
Modification of existing equipment
Tower work

Soft: Legal fees
Engineering fees (RF and structural consultants)
Health care facility notification

Can opt to forego reimbursement for a waiver of "service" rule ("Flex use")
Non-ATSC transmission
Still must provide at least 1 free TV program stream
Case-by-case review of waiver request

Reimbursement for Eligible Expenses



Reimbursement goes to station involuntarily repacked

- Impact at shared sites
  - TV stations not changing channel
  - FM stations, other tower users
  - Does contract specify obligations?

After t = 3 months FCC makes initial allocation

- 80 percent of estimated to commercial stations
- 90 percent of estimated to noncommercial stations
- can vary depending on overall totals of all stations

Update estimated costs as circumstances change & final costs known

Final allocation: upon completion or by a deadline TBD by FCC, file actual expense info and any remaining estimates.

All payments must be made by t = 39 months (statutory 3 year)

Reimbursement for Eligible Expenses

Schedule 399, Form 2100

FCC to write checks via internal vendor payment system

File requests as costs are incurred

- Per invoice (FCC can pay vendor directly)
- Submit groups (FCC will pay TV station)

User portal to track reimbursement history

Reimbursement for Eligible Expenses

FCC to hire contractor to administer reimbursement process

Waste & Fraud

- Progress reports required
- Keep receipts & documentation 10 years
- Audit, site visit, data validation by FCC or contractor
  - During and following reimbursement period

For transition concluding after t = 39 months, submit final expense docs

- Money recovered where actual < estimated can be disbursed to those stations where actual > estimated

What if $1.75 billion not enough? MB to prioritize claims

Can dispose of old equipment at will

Reimbursement for Eligible Expenses

Reasonable costs determined case-by-case
- must take reasonable steps to mitigate costs and share expenses

FCC "Catalog of Costs" to be released – general guidance not guarantee
- Neither exhaustive nor exclusive
- Provide justification for estimates that exceed catalog

Will not cover incremental costs for certain optional items
- Expansion beyond 1% for non-priority stations (OK for priority)
- Optional features beyond existing equipment's options
- New models may have improved functionality built-in - OK

Will cover interim facilities (additional transmitter, antenna, alternate site, temporary channel, modification to existing backup, purchase or rental)

No reimbursement for lost revenues or employee salary

Hints of Relief ???

November 17, 2015 congressional oversight hearing
All five FCC commissioners vowed they would not force any broadcaster off the air for failing to meet the 39-month deadline for moving to new channels after next year's incentive auction.

If meeting the deadline becomes a problem, Chairman Tom Wheeler said, the FCC will "work it out" with the broadcasters. "This is not a drop-off-the-edge-of-the-table situation.... I totally agree on the importance of local community broadcasting and why it has to remain after the auction."

Harry Jessell / TV Newscheck

January 2016 "Viewer Protection Act" Draft Bill – Rep Pallone (NJ)
$1 Billion emergency fund to support repack "if viewers are at risk of losing their broadcast signal"

FCC can't force off air for reasons outside station control

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Comments, Questions?

Must be Miller Time…

Thank You!

Joseph M. Davis, P.E.

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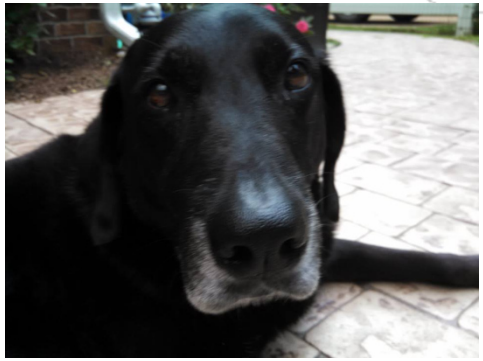

"RF Sniffer"