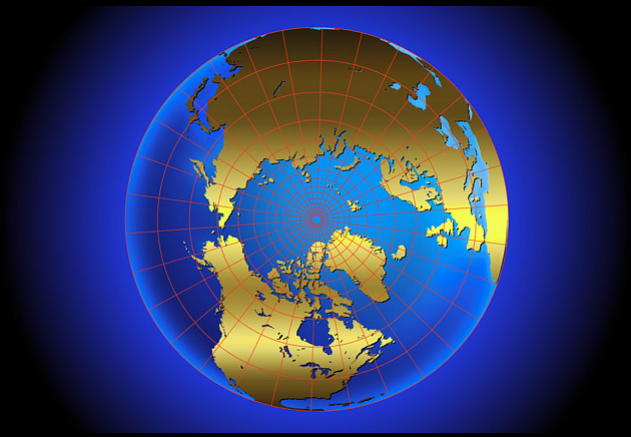
NTSC RF Systems in a Digital World



By Jim York

October 11, 2007

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Agenda

- General Overview
- Analog to DTV Conversions
  - Existing Analog systems
  - New Analog Systems
- Site Timing Issues, Planning, and Budgeting
- Recommendations and Wrap up

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Overview

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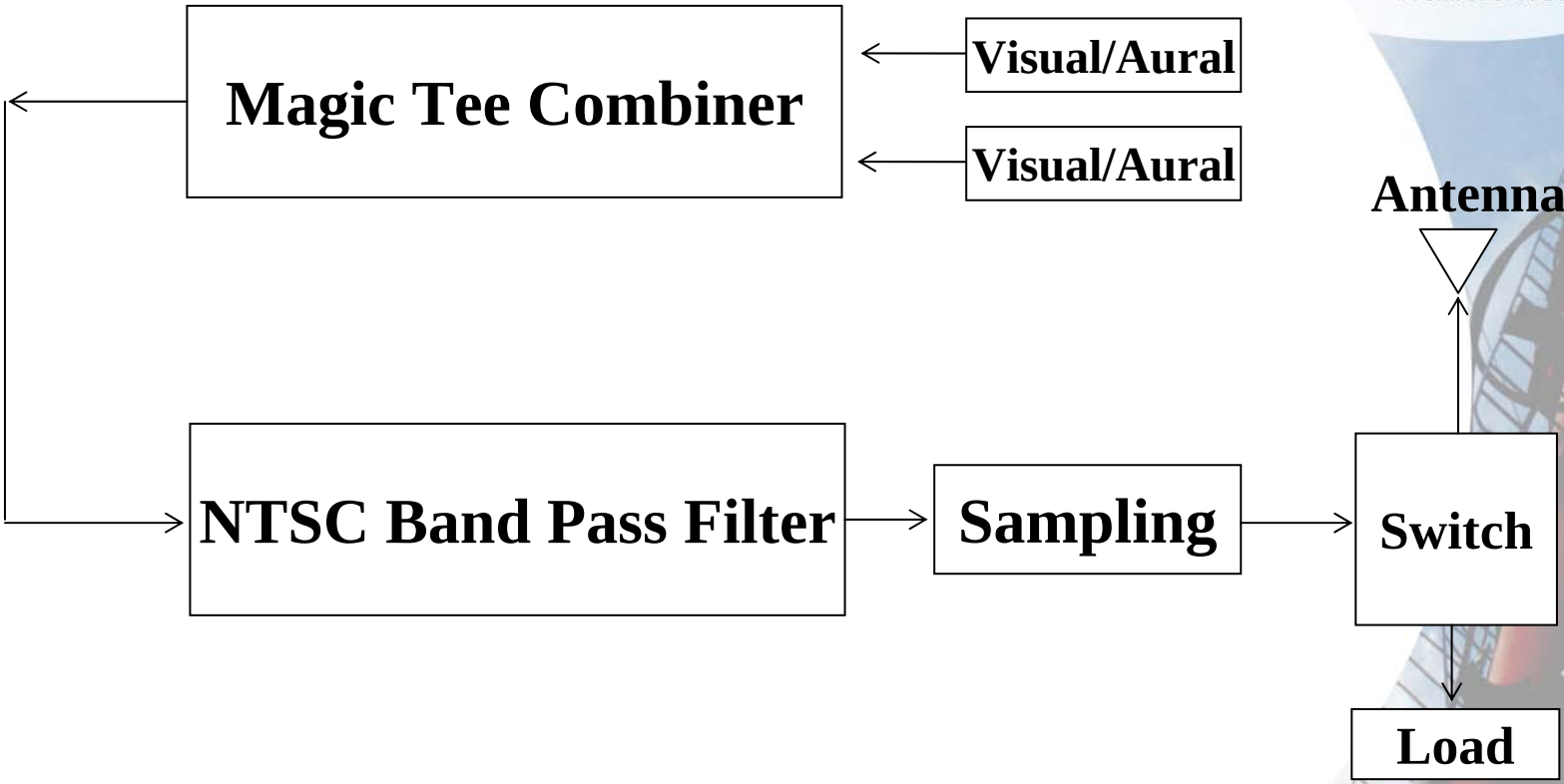
- **February 2009 is approaching *FAST***
- **Used NTSC Equipment After Analog Shut Off**
- **Existing DTV Channels Are Switching**

You Need Solutions To Make The Transition from NTSC To DTV less Costly.

Two Cabinet Analog (NTSC) System RF Flow



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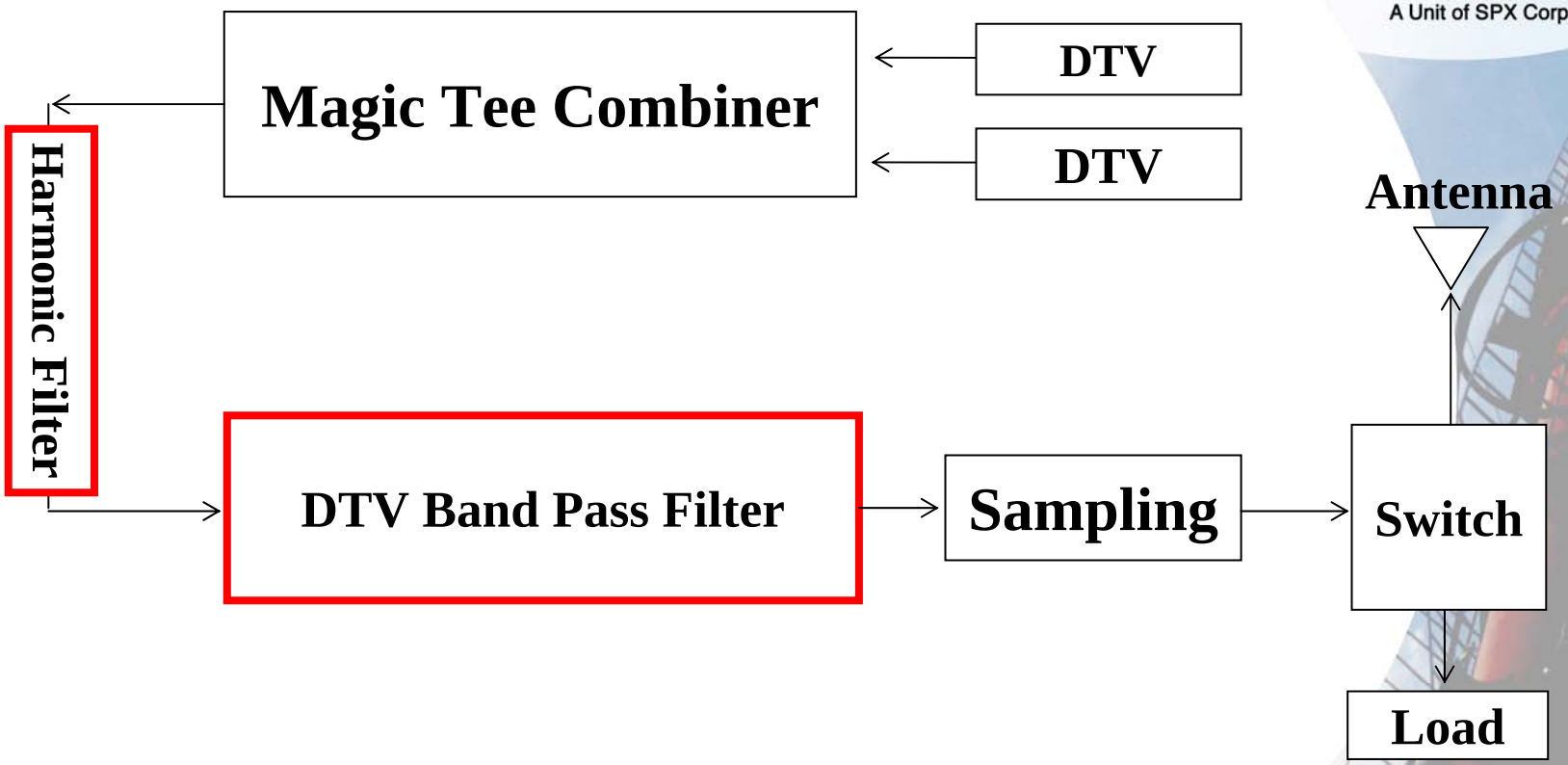
Two Cabinet DTV System RF Flow



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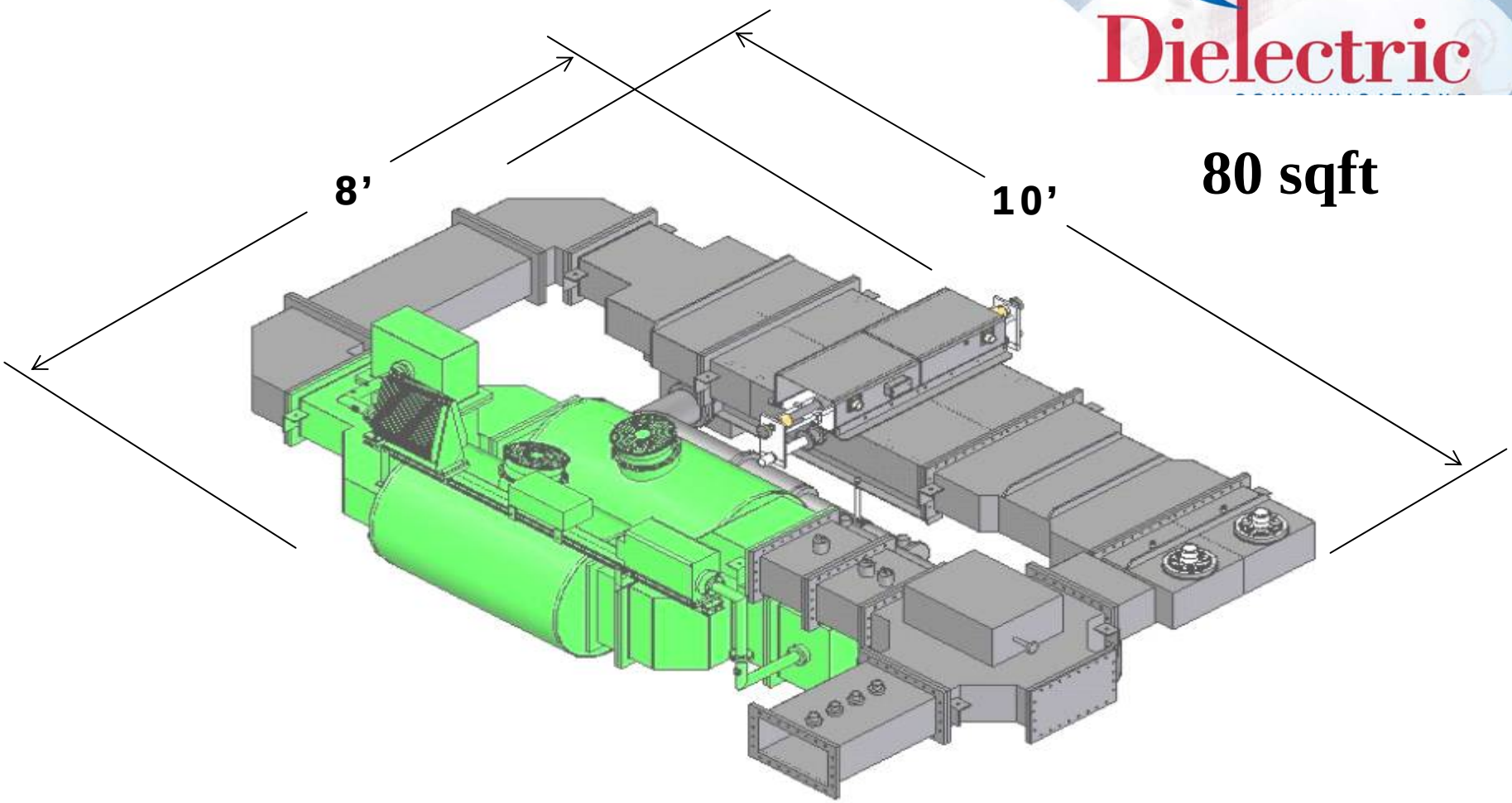
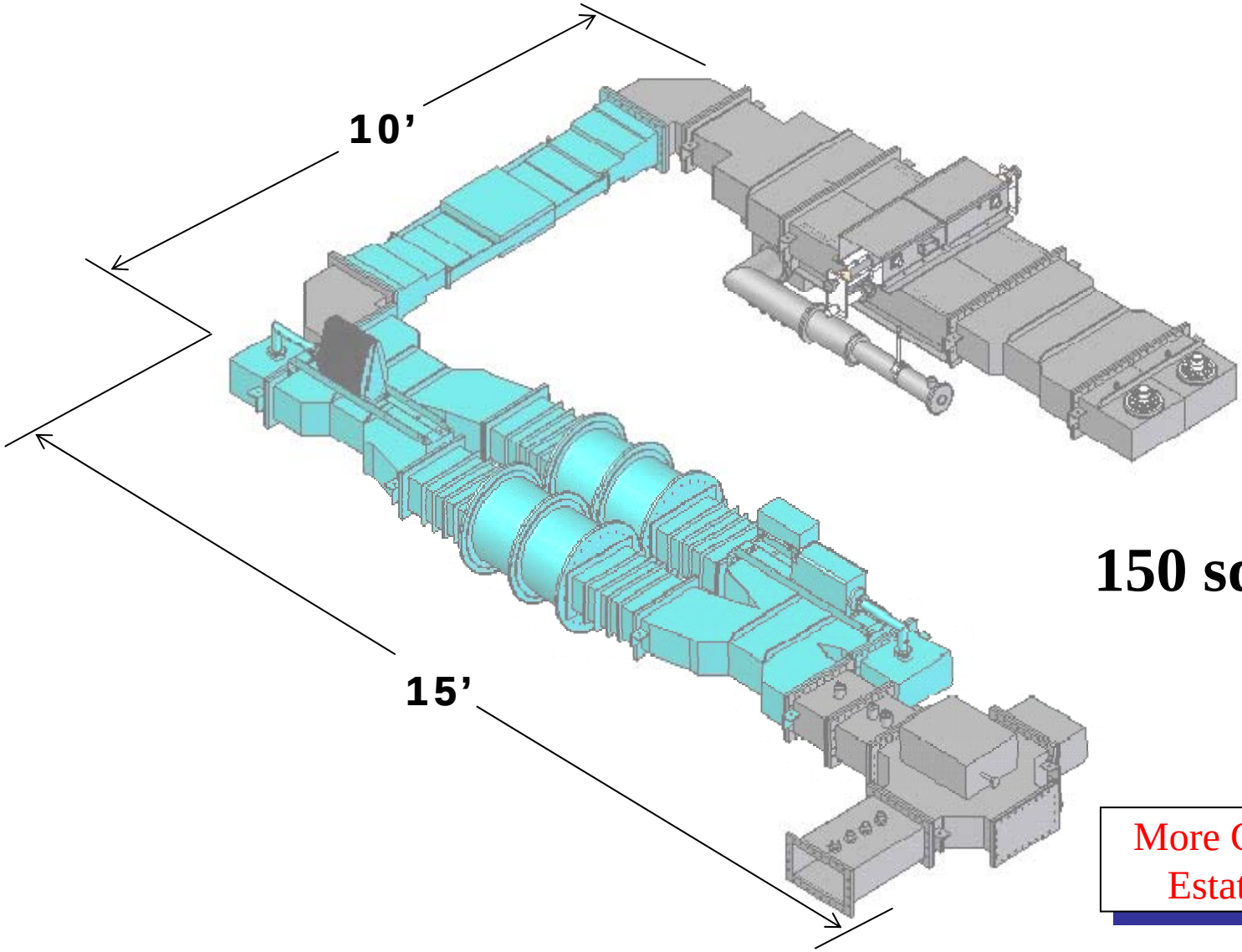
Analog RF System



80 sqft

Typical DTV RF System



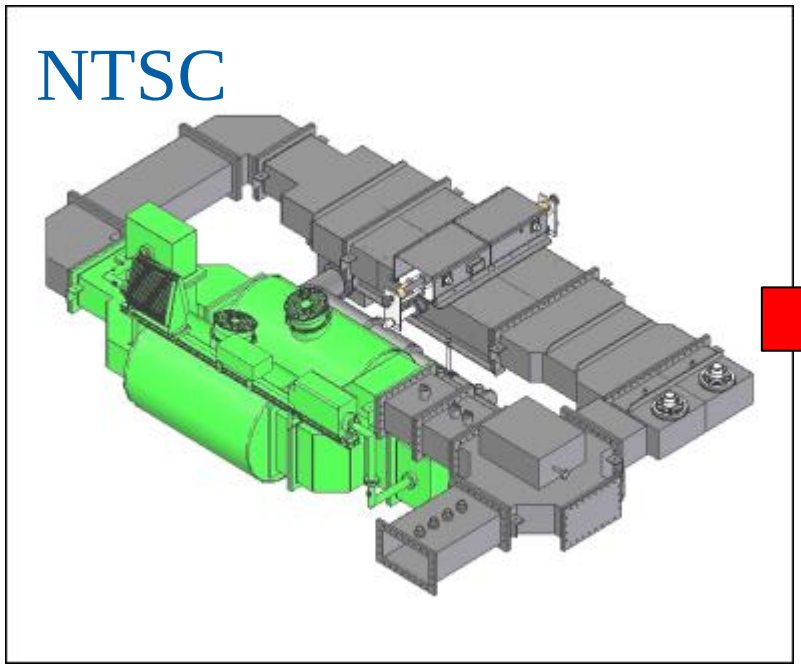
150 sqft

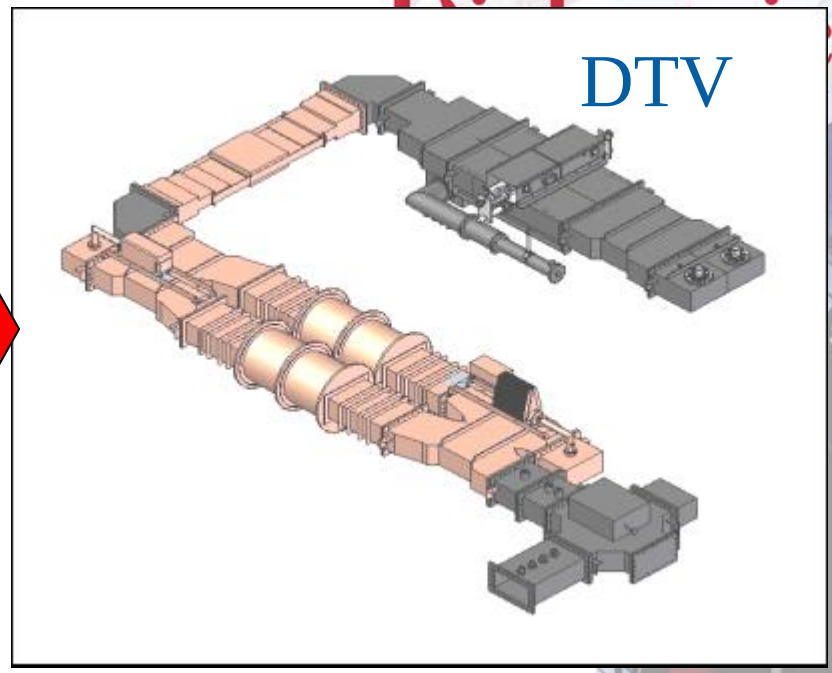
More Ceiling Real Estate Needed

Assumptions

- NTSC Amplifier Converting To DTV
- Ceiling Mount RF System
- Converting Common Amplification To DTV
- Running NTSC To Shutdown Date

“Direct Replacement” UHF Analog To DTV Conversion





- **Brut Force Approach**
- **Ceiling Real Estate May Not Allow**
- **Field Tuning Required**
- **Moves Output Switch Location**

You Need A Backup Transmitter Or You Will Be Off Air.

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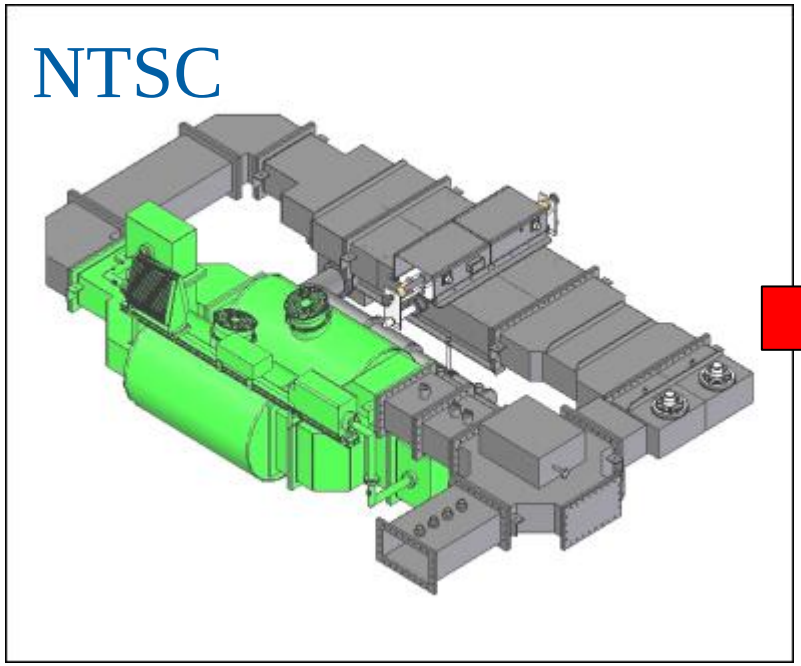
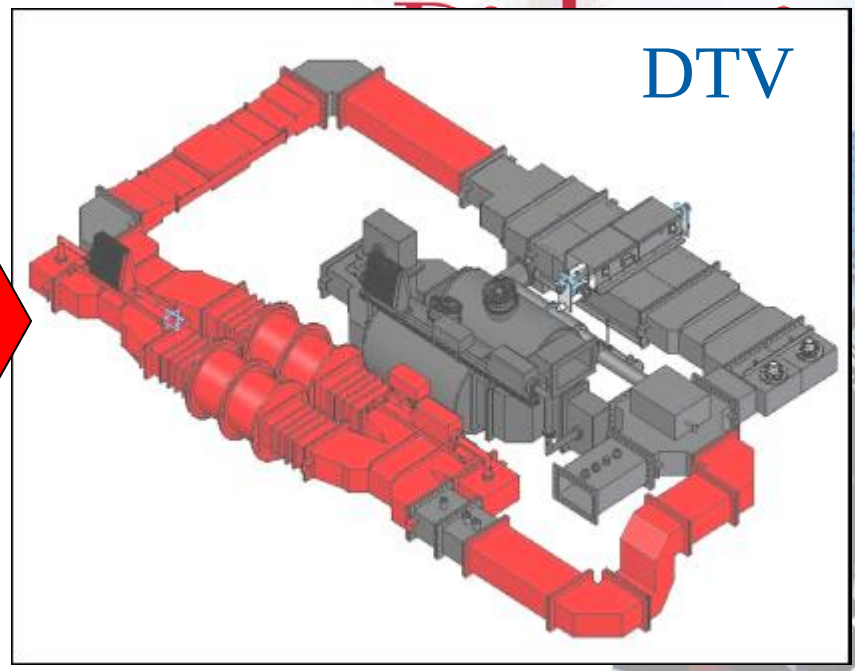
"Limited Off Air Time" UHF Analog To DTV Conversion

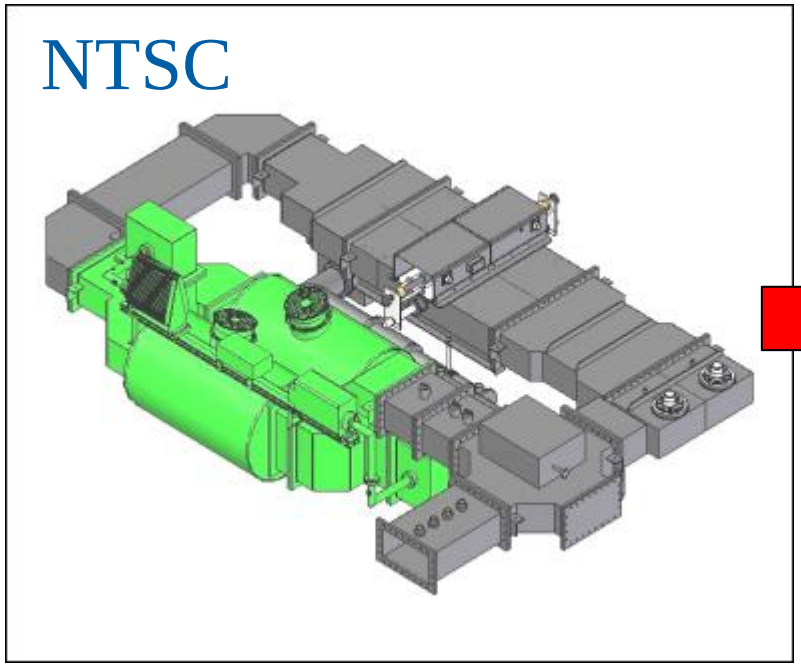


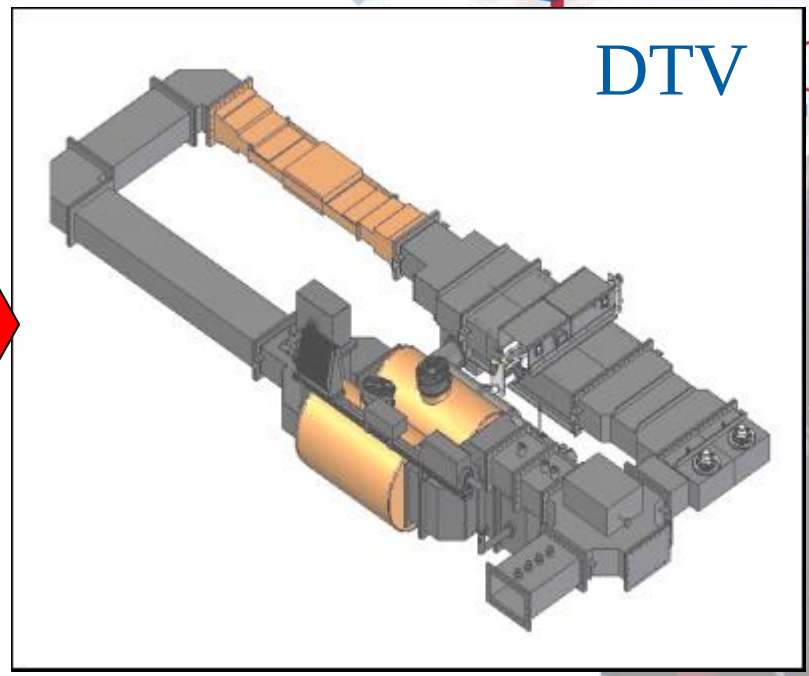


- **More Ceiling Real Estate**
- **Structural Issues**
- **More Costly If Different Channel**

- **Hold Output Switch Location**
- **Minimize Field Tuning If Same Channel**

"NTSC Style Filter" UHF Analog To DTV Conversion





- **Common Amplification Only**
- **Some Off Air Time**
- **Converting To Same Channel Less Costly**

- **Reduction In Required Ceiling Real Estate**
- **Field Tuning Required For Different Channel**
- **Holds Switch Location**

Limited DTV Transmitter Power

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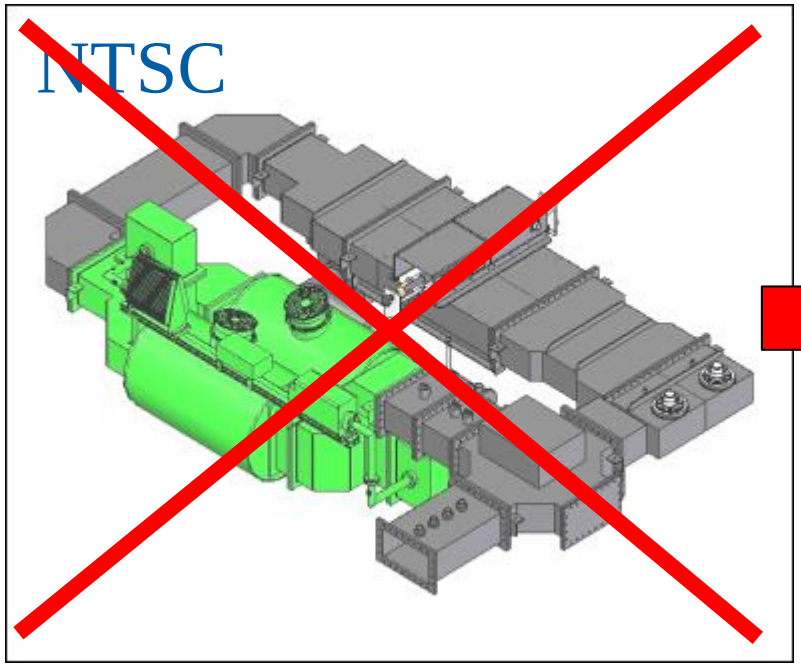
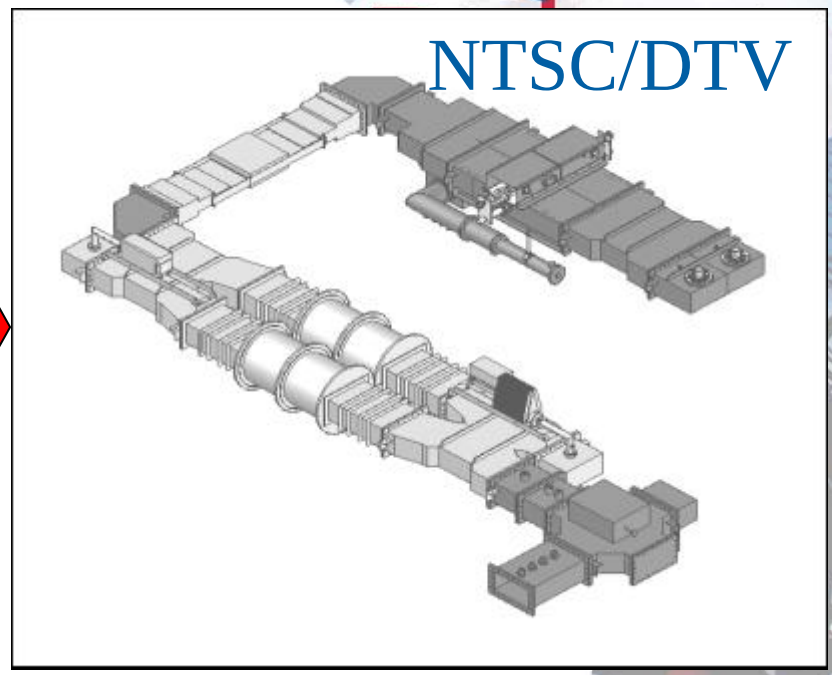
"New NTSC System" Convertible to DTV in the Future.





- **More Costly**
- **Minor Retuning Required For Same Channel**
- **Get A Jump On Shut Down Date.**

- **Converting Diplexed Systems To Common Amp.**

Maximizes DTV Power With Limited Down Time

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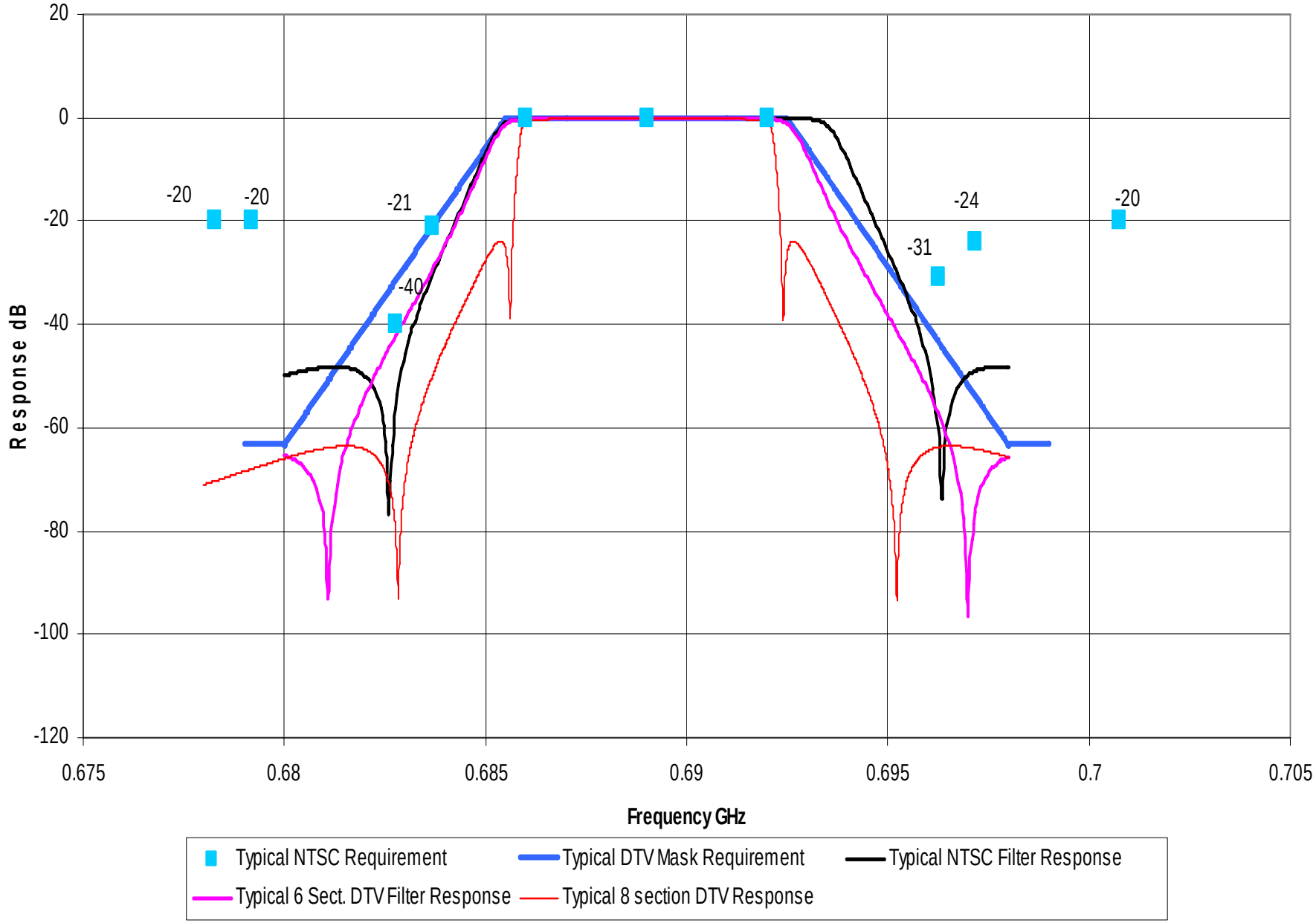
Response NTSC vs DTV



Economics Of Decision*

Conversion Option	Time To Convert	Installation Cost	Equipment Cost	Total Cost
"Direct Replacement"	1-2 days	$6-$12k	$60-$75k	$66-$87k
"Limited Off Air Time"	3-4 days	$18-$24k	$70-$80k	$88-$104k
"NTSC Style Filter"	1-2 days	$6-$12k	$45-$58k	$51-$70k
"New NTSC/DTV System"	2 day	$12k	$123-$172k	$135k-$184k

- **Timing and Proper Planning is Critical..**
  - **Field Engineering Resources**
  - **Manufacturing Lead Times**
  - **Solutions That Fit Your Specific Site Requirements.**
  - **Manage To Reduce Off Air Time**

**The above numbers are estimates only their can be increased cost due to wide differences in installations and site conditions.*

Conclusion and Wrap up

- Each RF System Looks Different
- Building Mechanical Load
- Space Constraints
- Allowable Downtime
- Budgeting
- Do I add a Backup
- Can I Spread The Cost
- Timing and Planning

The Clock It Ticking!!

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Questions?

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