

*HARRIS  
DX-10 AM  
TRANSMITTER*

*Digital Modulation*

Virtual Tour



# *DX-10 FEATURES/BENEFITS*



- All solid state
- Typically 86% overall efficiency
- Highly redundant
- Field proven with over 1500 DX transmitters on air
- Reliable
- Future compatibility
- Superior performance into any antenna system



# THE BENEFITS OF DX

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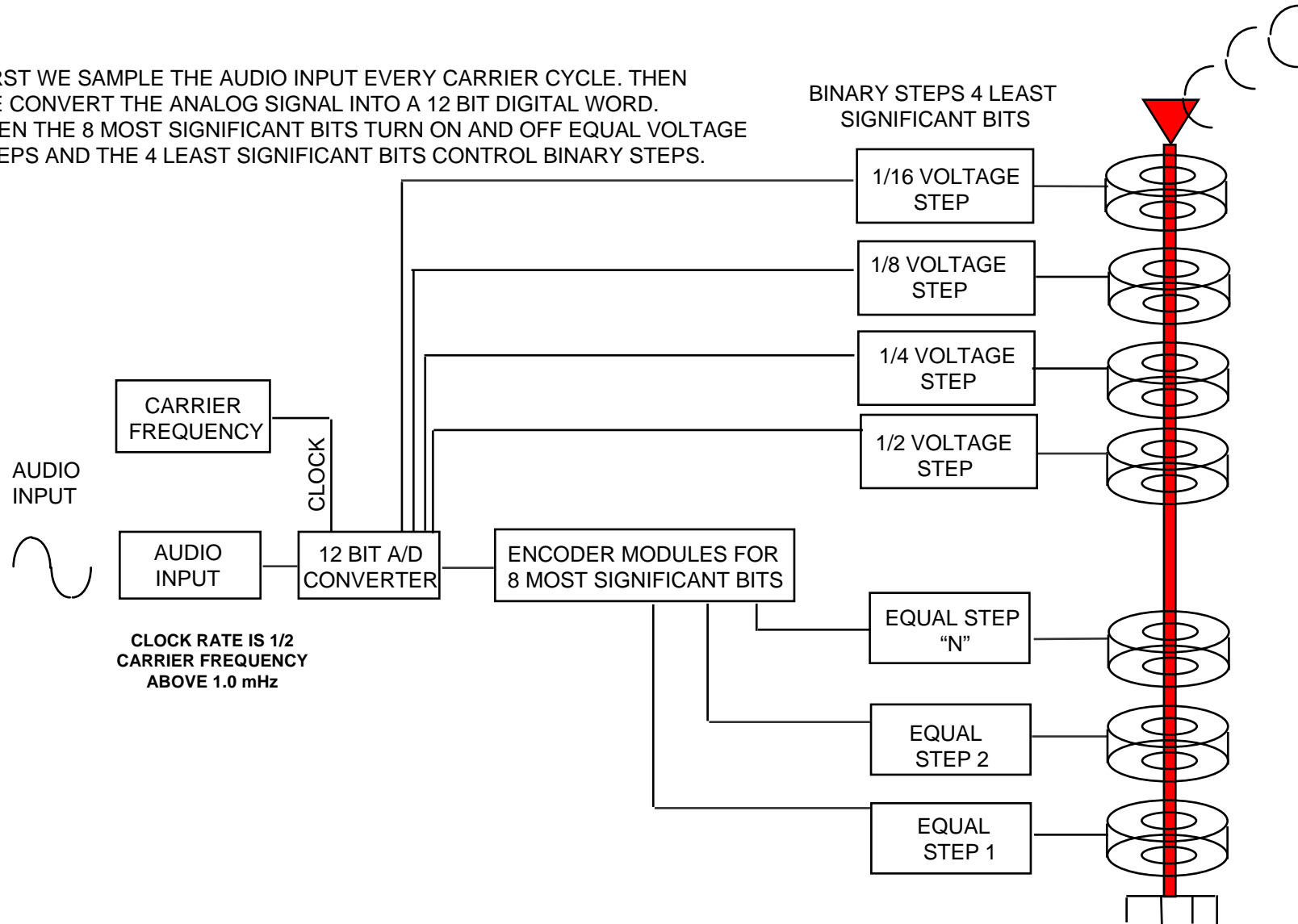
- Provides better signal coverage
  - High average modulation capability
  - Can modulate to 100% negative peaks
- Provides the lowest operating cost
  - Exceptional field reliability
  - Semi-annual maintenance only
- Superior audio performance
  - Direct digital synthesis of the RF envelope
- Future Digital Radio capable
  - DX transmitters have operated over the air in DRM and HD Radio



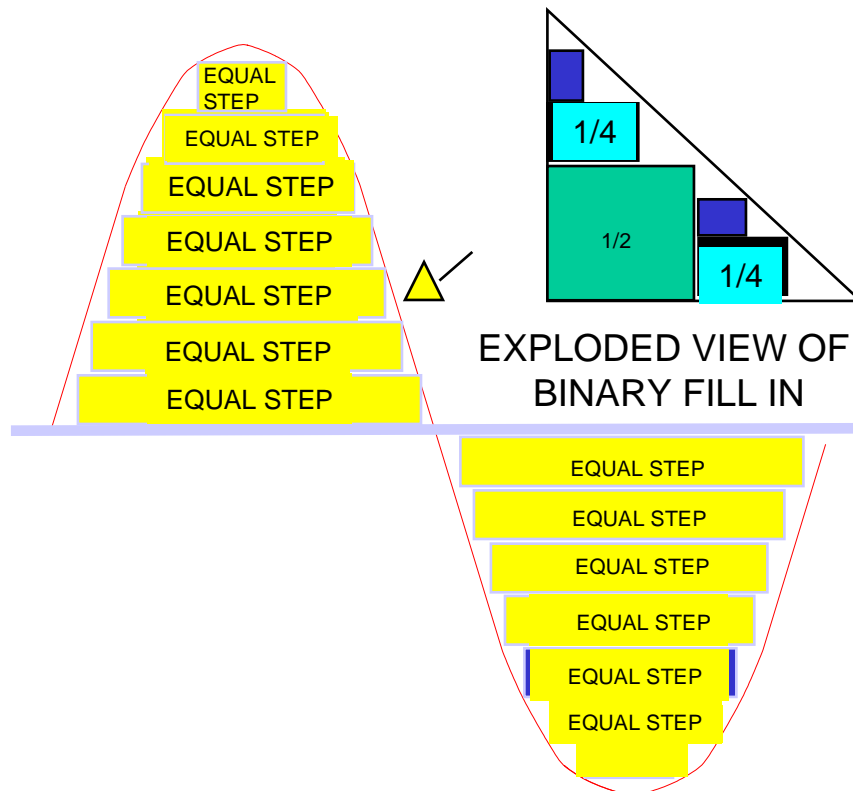
# DIGITAL MODULATION IS SIMPLE



FIRST WE SAMPLE THE AUDIO INPUT EVERY CARRIER CYCLE. THEN WE CONVERT THE ANALOG SIGNAL INTO A 12 BIT DIGITAL WORD. THEN THE 8 MOST SIGNIFICANT BITS TURN ON AND OFF EQUAL VOLTAGE STEPS AND THE 4 LEAST SIGNIFICANT BITS CONTROL BINARY STEPS.



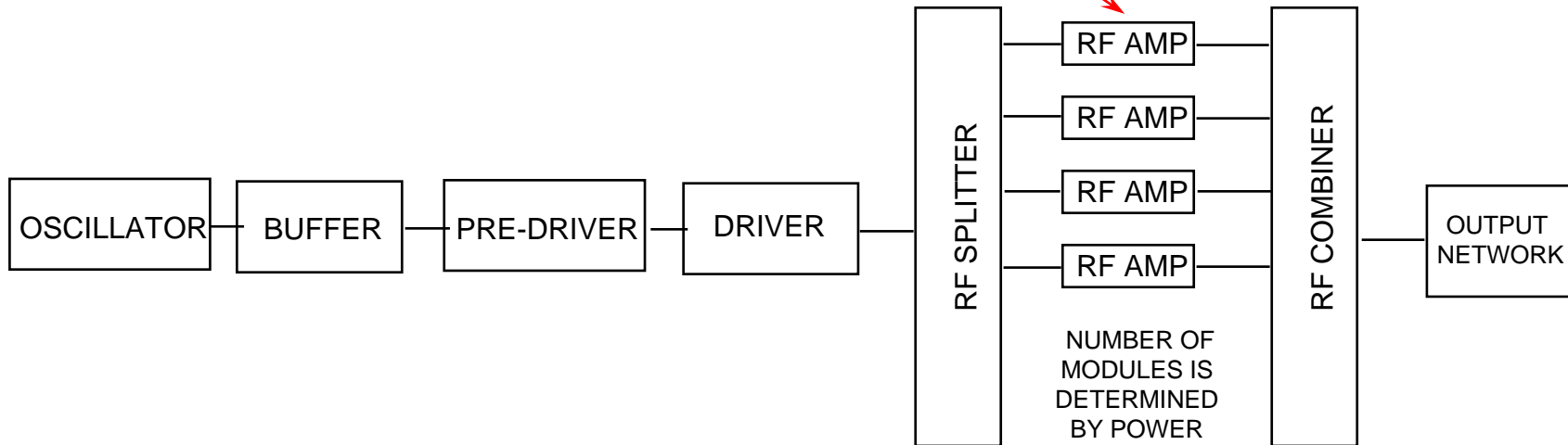
# DIGITAL MODULATION



# DIGITAL MODULATION IN THE RF CHAIN



Modules Turn On and Off  
with Modulation



# *DX 10 FRONT VIEW*



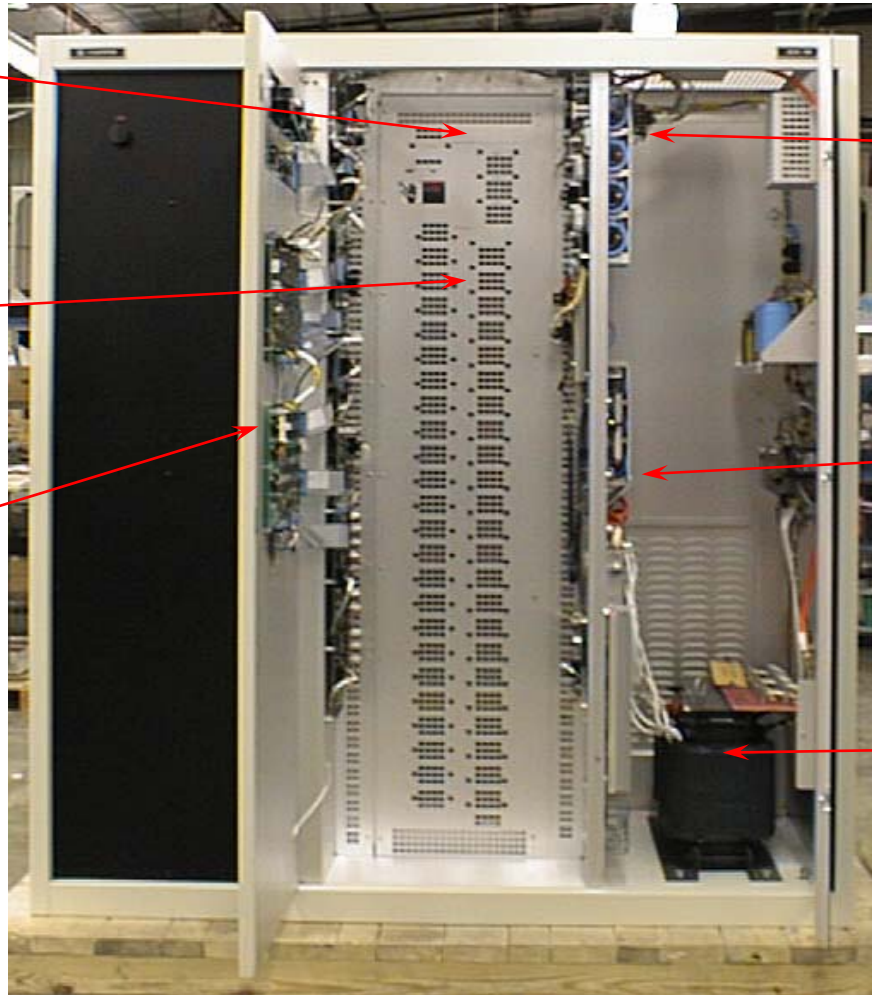
# *DX 10 FRONT VIEW - OUTSIDE DOORS OPEN*



RF DRIVER SECTION

POWER AMPLIFIER CABINET

CONTROLLER

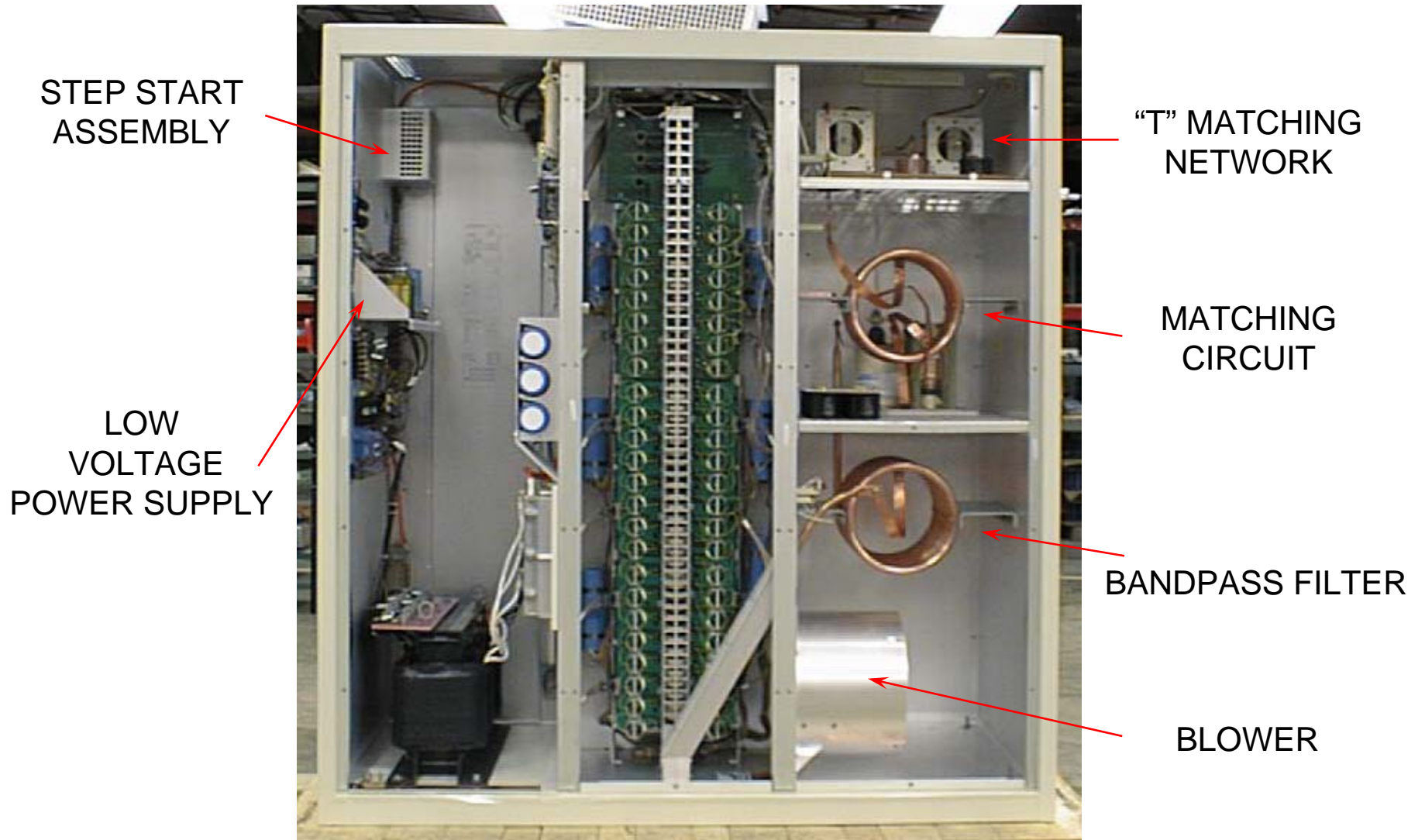


POWER SUPPLY DISTRIBUTION

RECTIFIER ASSEMBLY

POWER SUPPLY TRANSFORMER

# DX 10 REAR VIEW



# FRONT PANEL CONTROL, STATUS, AND METERING



EASY TO  
READ METERS



POWER CONTROL

LOW  
MEDIUM  
HIGH  
RAISE  
LOWER

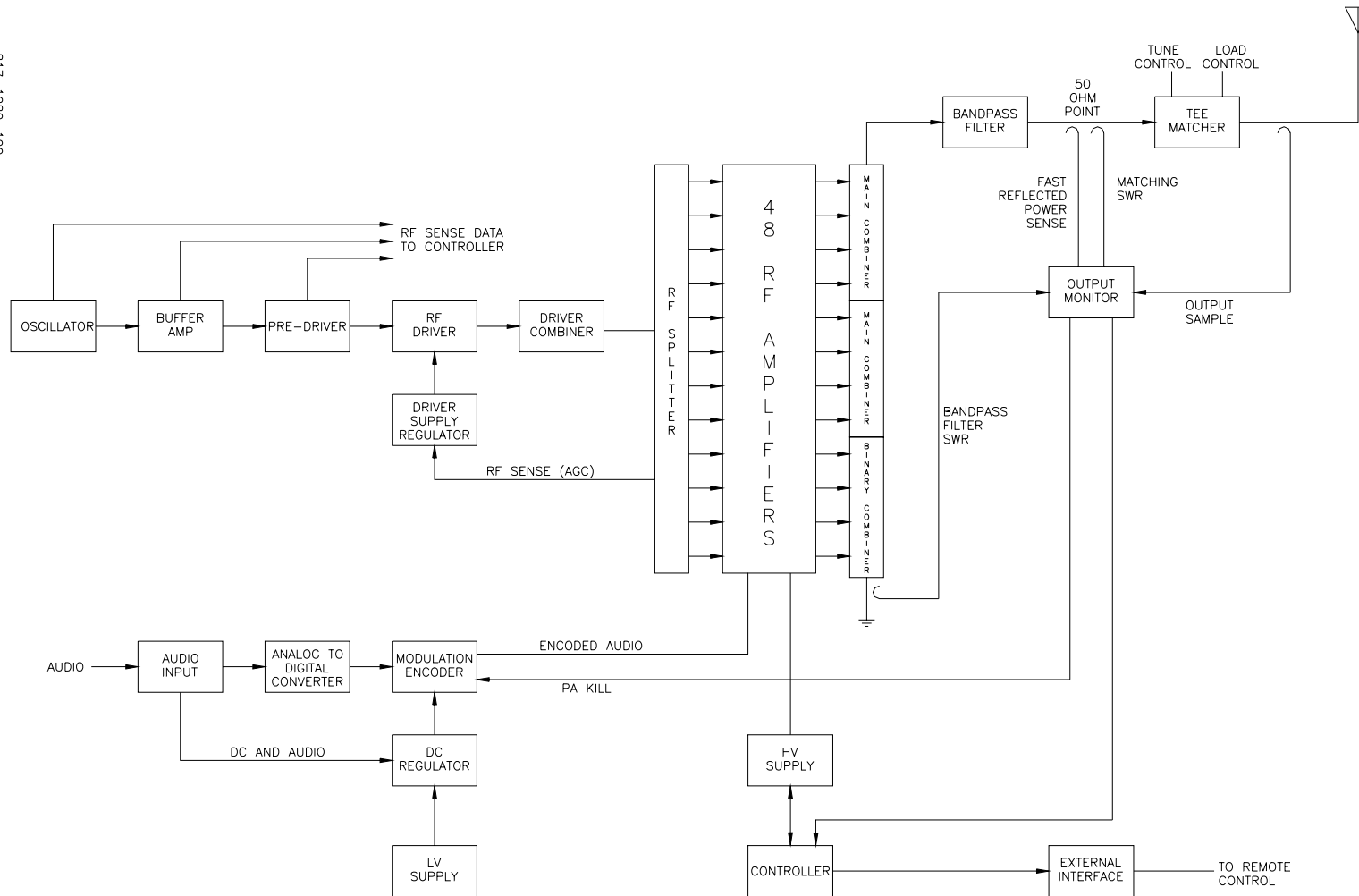


BI-COLOR  
RED/GREEN  
STATUS LED'S  
IN TRANSMITTER  
BLOCK DIAGRAM  
LAYOUT

# DX 10 BLOCK DIAGRAM



817-1280-100



# DX 10 RF REDUNDANCY

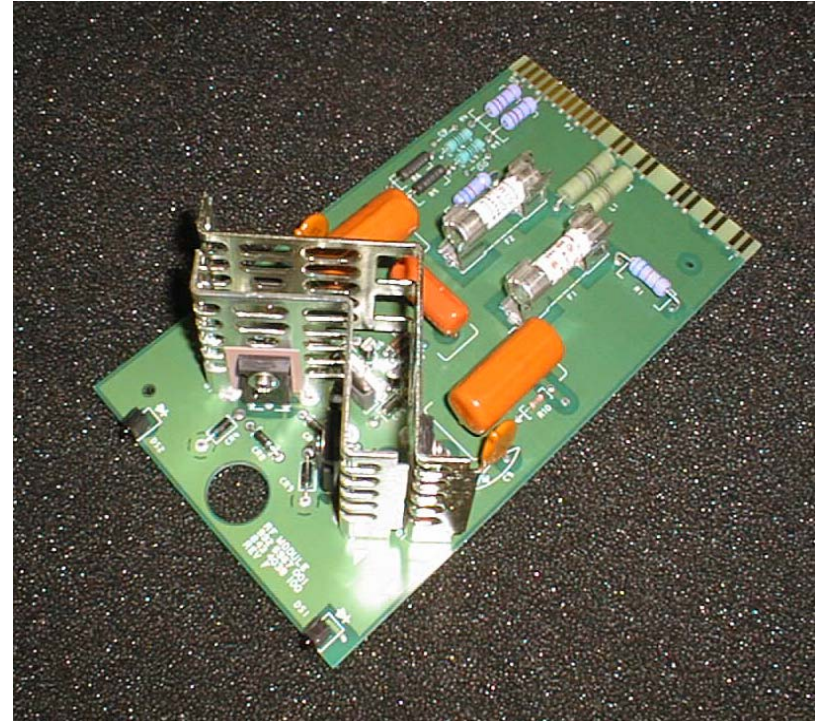


- Dual oscillators with automatic switchover
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- Dual predriver amplifiers
- 3 RF driver amplifiers
  - One driver is regulated forming an RF AGC
  - RF driver amplifiers are the same as the PA amplifiers
  - RF drivers operate from 1/2 PA amplifier power supply



## *THE "H" BRIDGE MODULE*

- Simple field repairable RF amplifier module
- Each half of the module is individually fused
- Uses (4) standard irf-350 FET transistors
- Over 6 million hours MTBF
- 48 RF amplifiers
  - 42 equal steps
  - 6 binary steps
- +145% positive peak modulation capability
- 17 RF amplifiers on for 10 KW carrier
- At 100% modulation 34 RF amplifiers are turned on - 8 RF amplifiers still in reserve (may be used as spares)
- “Electronic” patching of RF amplifiers available while the transmitter is on air



## KEY VALUE POINTS TO REMEMBER

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- Harris patented Direct Digital Synthesis for high efficiency, high performance in the medium and high power segments
  - Field proven technology (worldwide customer base: 1500-plus units on air)
  - High efficiency (80% plus)
  - Digital ready (IBOC and DRM)
  - Internal DRM modulator
- Soft Fail” RF configuration keeps you on the air
- Proportional VSWR fold back provides safe operation into poor loads
- Automatic AC restart after loss of power returns to previous mode
- Good power factor, low line harmonics
- WEB Interface supports remote diagnostics and logging
- ISO 9001 accredited manufacturing facility
- Very fast, easy installation

*Thank you for taking the Virtual Tour of  
the DX 10 AM transmitter*

To speak with a Harris representative call  
800-622-0022 US  
217-222-8200 Global