

# **DMX, DSX High Power 1995**

**User Manual**

**Version 003**

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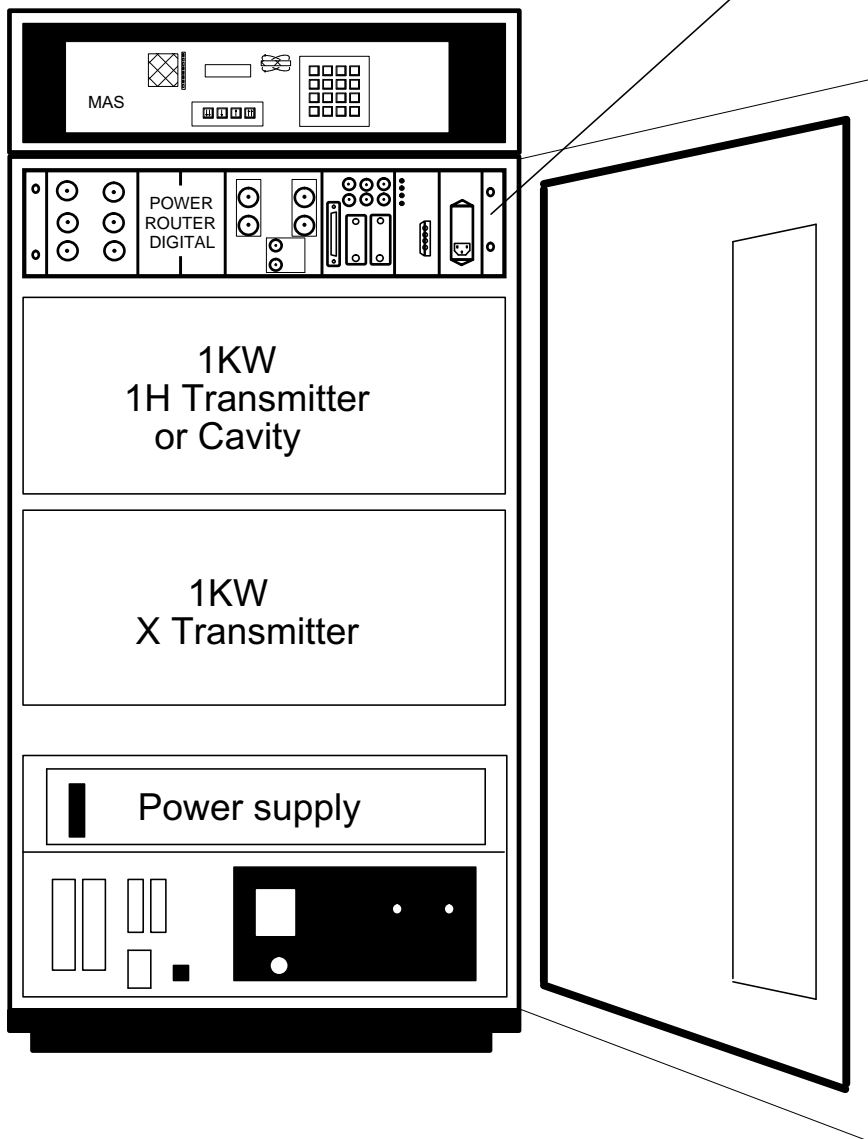
# ***Cabinet Configurations***

Figure 1.1. DSX HP Cabinet 100-400 MHz

# DMX/DSX HP CABINET

## 100 - 400 MHz

HPCU behind POWER ROUTER DIGITAL

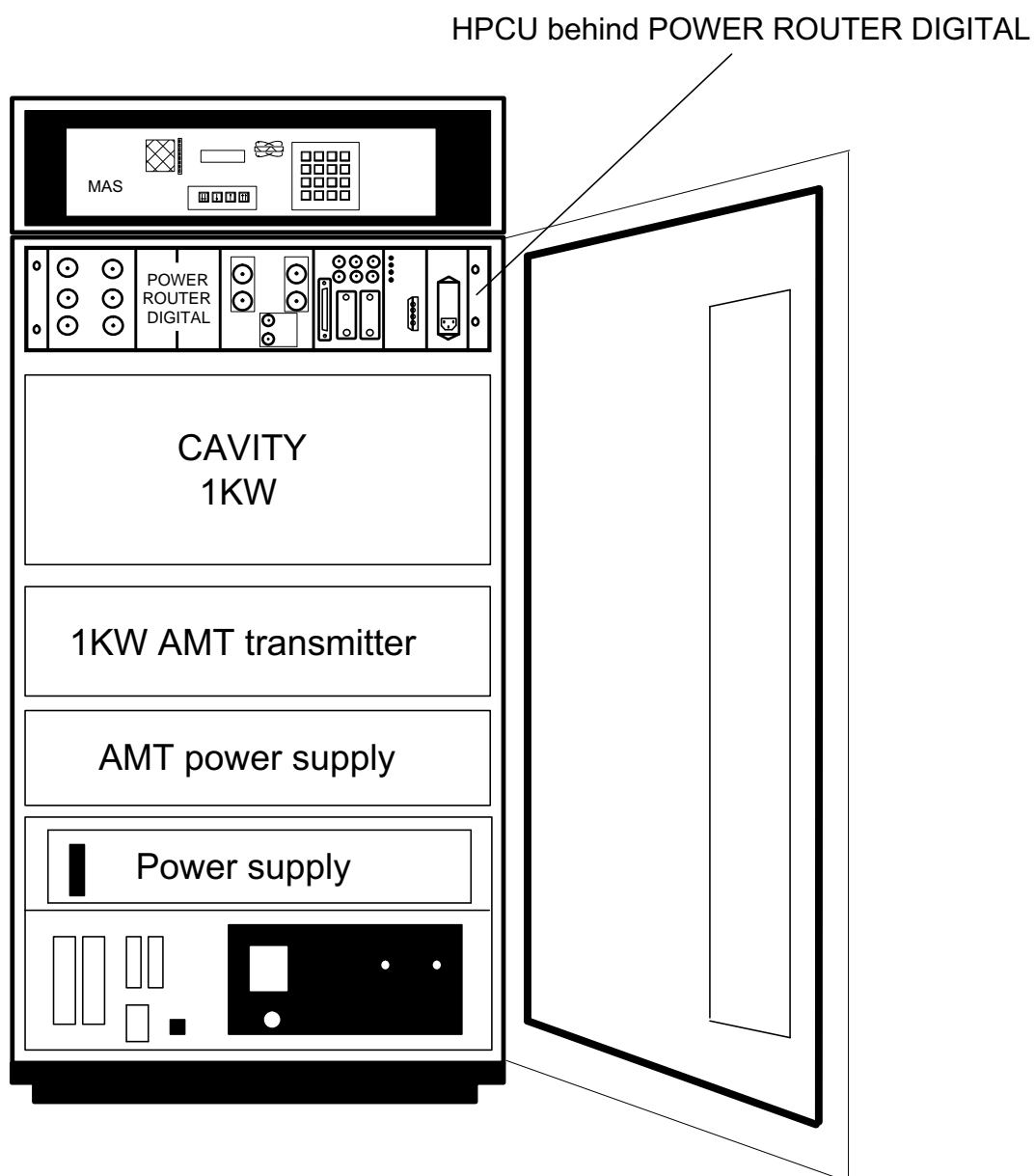


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Figure 1.2. DSX HP Cabinet AMT 500-600 MHz

# DMX/DSX HP CABINET AMT

## 500 - 600 MHz



NIL 19.12.94 Prelim\Projects\hpower\blocl\HPC\_DSX1.DS4

Table 1.1. 200 MHz DSX, DMX Configuration

<b>200 MHz</b>	<b>DSX</b>	<b>DMX</b>
	<b>H002204/40</b>	<b>H002204/60</b>
Cabinet wired 19"	H5552	H5552
Single Cabinet	H11848	H11848
Hochspannung	P2157	P2157
HPCU	H5148	H5148
HP TRANSM 1H	H5342	H5342
HP TRANS X-BB	H5349	H5349
Att SET HP 200	H5362	H5362
HP Sensor		
HP Router	H5556	H5556 + H5627
Cable set	H5557	H5644
AQR FT-Filter	Z002812	Z002812
AQX FADC	H5652	H5652
4 Ph Mod 2 Chan	H5649	H5649
FU Quad	X	Z003002
HPHP 1H	X	Z012682
HPHP X-BB	X	Z012684
Filter 7 - 14 MHz	X	Z002692
Filter 12 - 32 MHz	X	Z002693
Filter 30 - 75 MHz	X	Z002694
Filter 70 - 125 MHz	X	Z002695



Table 1.2. 300 MHz DSX, DMX Configuration

	<b>DSX</b>	<b>DMX BH0032 DMX300</b>
<b>300 MHz</b>	H002304/40	H002304/60
Cabinet wired 19"	H5552	H5552
Single Cabinet	H11848	H11848
Hochspannung	P2157	P2157
HPCU	H5148	H5148
HP TRANSM 1H	H5343	H5343
HP TRANS X-BB	H5350	H5350
Att SET HP 300	H5363	H5363
HP Sensor		
HP Router	H5556	H5556 + H5627
Cable set	H5557	H5644
AQR FT-Filter	Z002812	Z002812
AQX FADC	H5652	H5652
4 Ph Mod 2 Chan	H5649	H5649
FU Quad	Z003003	Z003003
HPHP 1H	Z012510	Z012510
HPHP X-BB	Z012512	Z012512
Filter 12 - 32 MHz	Z002693	Z002693
Filter 30 - 75 MHz	Z002694	Z002694
Filter 70 - 125 MHz	Z002695	Z002695

Table 1.3. 360 MHz DSX Configuration

	<b>DSX</b>
<b>360 MHz</b>	H002104/40
Cabinet wired 19"	H5552
Single Cabinet	H11848
Hochspannung	P2157
HPCU	H5148
HP TRANSM 1kW	H5348
HP TRANS X-BB	H5346

Table 1.3. 360 MHz DSX Configuration

<b>360 MHz</b>	<b>DSX</b>
	H002104/40
Att SET HP #00	H5361
HP Sensor	
HP Router	H5556
Cable set	H5557
AQR FT-Filter	Z002812
AQX FADC	H5652
4 Ph Mod 2 Chan	H5649
FU Quad Z003008	Z003007
HPHP 1H	Z012513
HPHP X-BB	Z012515
Filter 120 - 205 MHz	Z002696
Filter 70 - 125 MHz	Z002695
Filter 12 - 32	Z002693
Filter 30 - 75	Z002694

Table 1.4. 400 MHz DSX, DMX Configuraton

<b>400 MHz</b>	<b>DSX</b>	<b>DMX</b>
	H002404/40	BH0032 DMX400 H002404/60
Cabinet wired 19"	H5552	H5552
Single Cabinet	H11848	H11848
Hochspannung	P2157	P2157
HPCU	H5148	H5148
HP TRANSM 1H	H5345	H5345
HP TRANS X-BB	H5352	H5352
Att SET HP 400	H5364	H5364
HP Sensor		
HP Router	H5556	H5556 + H5627

Table 1.4. 400 MHz DSX, DMX Configuraton

	<b>DSX</b>	<b>DMX</b>
<b>400 MHz</b>	H002404/40	BH0032 DMX400 H002404/60
Cable set	H5557	H5644
AQR FT-Filter	Z002812	Z002812
AQX FADC	H5652	H5652
4 Ph Mod 2 Chan	H5649	H5649
FU Quad	X	Z003004
HPHP 1H	X	Z012516
HPHP X-BB	X	Z012518
Filter 12 - 32 MHz	X	Z002693
Filter 30- 75 MHz	X	Z002694
Filter 70 - 125 MHz	X	Z002695
Filter 120 - 205 MHz	X	Z002696
FU enfällt		Z04680

Table 1.5. 500 MHz DSX, DMX Configuration

	<b>DSX</b>	<b>DMX</b>
<b>500 MHz</b>	H002504/40	BH0032 DMX500 H002504/60
Cabinet wired 19"	H5553	H5553
Single Cabinet	H11848	H11848
Hochspannung	P2157	P2157
HPCU	H5148	H5148
HP TRANSM 1kW	H5237	H5237
HP TRANS X-BB	O0293	O0293
Att SET HP 500	H5365	H5365
HP Sensor		
HP Router	H5556	H5556 + H5627
Cable set	H5557	H5644
AQR FT-Filter	Z002812	Z002812
AQX FADC	H5652	H5652

Table 1.5. 500 MHz DSX, DMX Configuration

<b>500 MHz</b>	<b>DSX</b>	<b>DMX</b>
	H002504/40	BH0032 DMX500 H002504/60
4 Ph Mod 2 Chan	H5649	H5649
FU Quad	÷	Z003005
HPHP 1H	÷	Z012519
HPHP X-BB	÷	Z012521
Filter 12 - 32 MHz	÷	Z002693
Filter 30- 75 MHz	÷	Z002694
Filter 70 - 125 MHz	÷	Z002695
Filter 120 - 205 MHz	÷	Z002696
FU enfällt		Z03680

Table 1.6. 600 MHz DMX Configuration

<b>600 MHz</b>	<b>DMX</b>
	BH0032 DMX600 H002604/60
Cabinet wired 19"	H5553
Single Cabinet	H11848
Hochspannung	P2157
HPCU	H5148
HP TRANSM 1H	H5238
HP TRANS X-BB	O0293
Att SET HP 600	H5366
HP Sensor	
HP Router	H5556 + H5627
Cable Set	H5644
AQR FT-Filter	Z002812
AQX FADC	H5652
4 Ph Mod 2 Chan	H5649
FU Quad	Z003006

Table 1.6. 600 MHz DMX Configuration

		<b>DMX</b>
<b>600 MHz</b>	BH0032 DMX600 H002604/60	
HPHP 1H	Z012522	
HPHP X-BB	Z012524	
Filter 12-32 MHz	Z002693	
Filter 30-75 MHz	Z002694	
Filter 70-125 MHz	Z002695	
Filter 120-205 MHz	Z002696	
Filter 195 MHz	Z002699	
FU enfällt	Z00680	

Table 1.7. Parts List

Baugruppe: **H002104** Gruppe: PB Typ: 1  
 Bezeichnung: **HIGH POWER ACCESSORY 100 MHz** Dispo.: 4000  
 Zeichnung: Letzte Aenderung: 19/10/92

L	Pos	Teil	Menge	ME	Bezeichnung	TP	Einlauf	Auslauf
	5	H5148	1.000	ST	B-HPCU HIGH POWER CONTROL KPL	0	03/06/92	**/**/**
	10	H5361	1.000	ST	ATTENUATOREN SET HP 100 MHz	1	20/10/92	**/**/**
	15	H5755	1.000	ST	HP TRANSM 1H 100 MHz 1kW 19"	1	11/04/94	**/**/**
	20	H5346	1.000	ST	HPTRANSM+BOXES SET 100 MHz 19"	1	01/04/93	**/**/**
	25	P2157	1.000	ST	MSL HP HOCHSPANNUNG	1	03/06/92	**/**/**
	30	P2809	1.000	ST	HP SERVICE SPARE PARTS	1	11/11/93	**/**/**
	35	H5552	1.000	ST	HP 100-400 CABINET WIRED DIGIT	1	**/**/**	**/**/**
	40	H5557	1.000	ST	HP CABLE SET SOLIDS DIGITAL	1	**/**/**	**/**/**
	45	H5556	1.000	ST	HP POWER ROUTER DIGITAL	1	**/**/**	**/**/**

Baugruppe: **H002204** Gruppe: PB Typ: 1  
 Bezeichnung: **HIGH POWER ACCESSORY 200 MHz** Dispo.: 4000  
 Zeichnung: Letzte Aenderung: 19/10/92

L	Pos	Teil	Menge	ME	Bezeichnung	TP	Einlauf	Auslauf
	5	H5148	1.000	ST	B-HPCU HIGH POWER CONTROL KPL	0	03/06/92	**/**/**
	10	H5362	1.000	ST	ATTENUATOREN SET HP 200 MHz	1	20/10/92	**/**/**
	15	H5342	1.000	ST	HP TRANSM 1H 200 MHz 1kW 19"	1	01/04/93	**/**/**
	20	H5349	1.000	ST	HPTRANSM+BOXES SET 200 MHz 19"	1	01/04/93	**/**/**
	25	P2157	1.000	ST	MSL HP HOCHSPANNUNG	1	03/06/92	**/**/**
	30	P2809	1.000	ST	HP SERVICE SPARE PARTS	1	11/11/93	**/**/**
	35	H5552	1.000	ST	HP 100-400 CABINET WIRED DIGIT	1	**/**/**	**/**/**
	40	H5557	1.000	ST	HP CABLE SET SOLIDS DIGITAL	1	**/**/**	**/**/**
	45	H5556	1.000	ST	HP POWER ROUTER DIGITAL	1	**/**/**	**/**/**

Baugruppe: **H002304** Gruppe: PB Typ: 1  
 Bezeichnung: **HIGH POWER ACCESSORY 300 MHz** Dispo.: 4000  
 Zeichnung: Letzte Aenderung: 19/01/94

L	Pos	Teil	Menge	ME	Bezeichnung	TP	Einlauf	Auslauf
	5	H5148	1.000	ST	B-HPCU HIGH POWER CONTROL KPL	0	03/06/92	**/**/**
	10	H5363	1.000	ST	ATTENUATOREN SET HP 300 MHz	1	20/10/92	**/**/**
	15	H5343	1.000	ST	HP TRANSM 1H 300 MHz 1kW 19"	1	01/04/93	**/**/**
	20	H5350	1.000	ST	HPTRANSM+BOXES SET 300 MHz 19"	1	01/04/93	**/**/**
	25	P2157	1.000	ST	MSL HP HOCHSPANNUNG	1	03/06/92	**/**/**

Table 1.7. Parts List

30	P2809	1.000	ST	HP SERVICE SPARE PARTS	1	11/11/93	**/**/**
35	H5556	1.000	ST	HP POWER ROUTER DIGITAL		**/**/**	**/**/**
40	H5557	1.000	ST	HP CABLE SET SOLIDS DIGITAL	1	**/**/**	**/**/**
45	H5552	1.000	ST	HP 100-400 CABINET WIRED DIGIT	1	**/**/**	**/**/**

Baugruppe: **H002364** Gruppe: PB Typ: 1  
 Bezeichnung: **HIGH POWER ACCESSORY 360 MHz** Dispo.: 4000  
 Zeichnung: Letzte Aenderung: 19/10/92

L	Pos	Teil	Menge	ME	Bezeichnung	TP	Einlauf	Auslauf
	5	H5148	1.000	ST	B-HPCU HIGH POWER CONTROL KPL	0	03/06/92	
	10	H5360	1.000	ST	ATTENUATOREN SET HP 360 MHz	1	20/10/92	
	15	H5344	1.000	ST	HP TRANSM 1H 360 MHz 1kW 19"	1	01/04/93	
	20	H5350	1.000	ST	HPTRANSM+BOXES SET 360 MHz 19"	1	01/04/93	
	25	P2157	1.000	ST	MSL HP HOCHSPANNUNG	1	03/06/92	
	30	P2809	1.000	ST	HP SERVICE SPARE PARTS	1	11/11/93	
	35	H5552	1.000	ST	HP 100-400 CABINET WIRED DIGIT	1	**/**/**	
	40	H5557	1.000	ST	HP CABLE SET SOLIDS DIGITAL	1	**/**/**	
	45	H5556	1.000	ST	HP POWER ROUTER DIGITAL	1	**/**/**	

Baugruppe: **H002404** Gruppe: PB Typ: 1  
 Bezeichnung: **HIGH POWER ACCESSORY 400 MHz** Dispo.: 4000  
 Zeichnung: Letzte Aenderung: 19/10/92

L	Pos	Teil	Menge	ME	Bezeichnung	TP	Einlauf	Auslauf
	5	H5148	1.000	ST	B-HPCU HIGH POWER CONTROL KPL	0	03/06/92	**/**/**
	10	H5364	1.000	ST	ATTENUATOREN SET HP 400 MHz	1	20/10/92	**/**/**
	15	H5345	1.000	ST	HP TRANSM 1H 400 MHz 1kW 19"	1	20/10/92	**/**/**
	20	H5352	1.000	ST	HPTRANSM+BOXES SET 400 MHz 19"	1	20/10/92	**/**/**
	25	P2157	1.000	ST	MSL HP HOCHSPANNUNG	1	03/06/92	**/**/**
	30	P2809	1.000	ST	HP SERVICE SPARE PARTS	1	11/11/93	**/**/**
	35	H5556	1.000	ST	HP POWER ROUTER DIGITAL		**/**/**	**/**/**
	40	H5557	1.000	ST	HP CABLE SET SOLIDS DIGITAL	1	**/**/**	**/**/**
	45	H5552	1.000	ST	HP 100-400 CABINET WIRED DIGIT	1	**/**/**	**/**/**

Baugruppe: **H002504** Gruppe: PB Typ: 1  
 Bezeichnung: **HIGH POWER ACCESSORY 500 MHz** Dispo.: 4000  
 Zeichnung: Letzte Aenderung: 19/10/92

L	Pos	Teil	Menge	ME	Bezeichnung	TP	Einlauf	Auslauf
	5	H5148	1.000	ST	B-HPCU HIGH POWER CONTROL KPL	0	03/06/92	**/**/**
	10	H5365	1.000	ST	ATTENUATOREN SET HP 500 MHz	1	20/10/92	**/**/**

# Cabinet Configurations

Table 1.7. Parts List

15	H5237	1.000	ST	HP TRANSM 1H 500 MHz 1kW 19"	1	03/06/92	**/**/**
20	P2157	1.000	ST	MSL HP HOCHSPANNUNG	1	03/06/92	**/**/**
25	P2809	1.000	ST	HP SERVICE SPARE PARTS	1	11/11/93	**/**/**
30	O0293	1.000	ST	MAS BB AMPL 6-220 MHz 100W	4	03/06/92	**/**/**
35	H5556	1.000	ST	HP POWER ROUTER DIGITAL	1	**/**/**	**/**/**
40	H5557	1.000	ST	HP CABLE SET SOLIDS DIGITAL	1	**/**/**	**/**/**
45	H5553	1.000	ST	HP 500-600 CABINET WIRED DIGIT	1	**/**/**	**/**/**

Baugruppe:  
Bezeichnung:  
Zeichnung:

**H002604**  
**HIGH POWER ACCESSORY 600 MHz**

Gruppe: PB  
Dispo.: 4000  
Letzte Aenderung:

Typ: 1  
19/10/92

L	Pos	Teil	Menge	ME	Bezeichnung	TP	Einlauf	Auslauf
	5	H5148	1.000	ST	B-HPCU HIGH POWER CONTROL KPL	0	03/06/92	**/**/**
	10	H5366	1.000	ST	ATTENUATOREN SET HP 600 MHz	1	20/10/92	**/**/**
	15	H3700	1.000	ST	BRTS POWER ROUTER SOLIDS	1	19/10/92	**/**/**
	20	H5230	1.000	ST	HP 500-600 CABINET WIRED 19"	1	03/06/92	**/**/**
	25	H5381	1.000	ST	HP CABLE SET HR + SOLIDS	1	24/09/93	**/**/**
	30	H5162	1.000	ST	HP POWER SENSOR	1	03/06/92	**/**/**
	35	H5238	1.000	ST	HP TRANSM 1H 600 MHz 1kW 19"	1	03/06/92	**/**/**
	40	P2157	1.000	ST	MSL HP HOCHSPANNUNG	1	03/06/92	**/**/**
	45	P2809	1.000	ST	HP SERVICE SPARE PARTS	1	11/11/93	**/**/**
	50	O0293	1.000	ST	MAS BB AMPL 6-220 MHz 100W	4	03/06/92	**/**/**



# DMX, DSX HPC 100 - 400

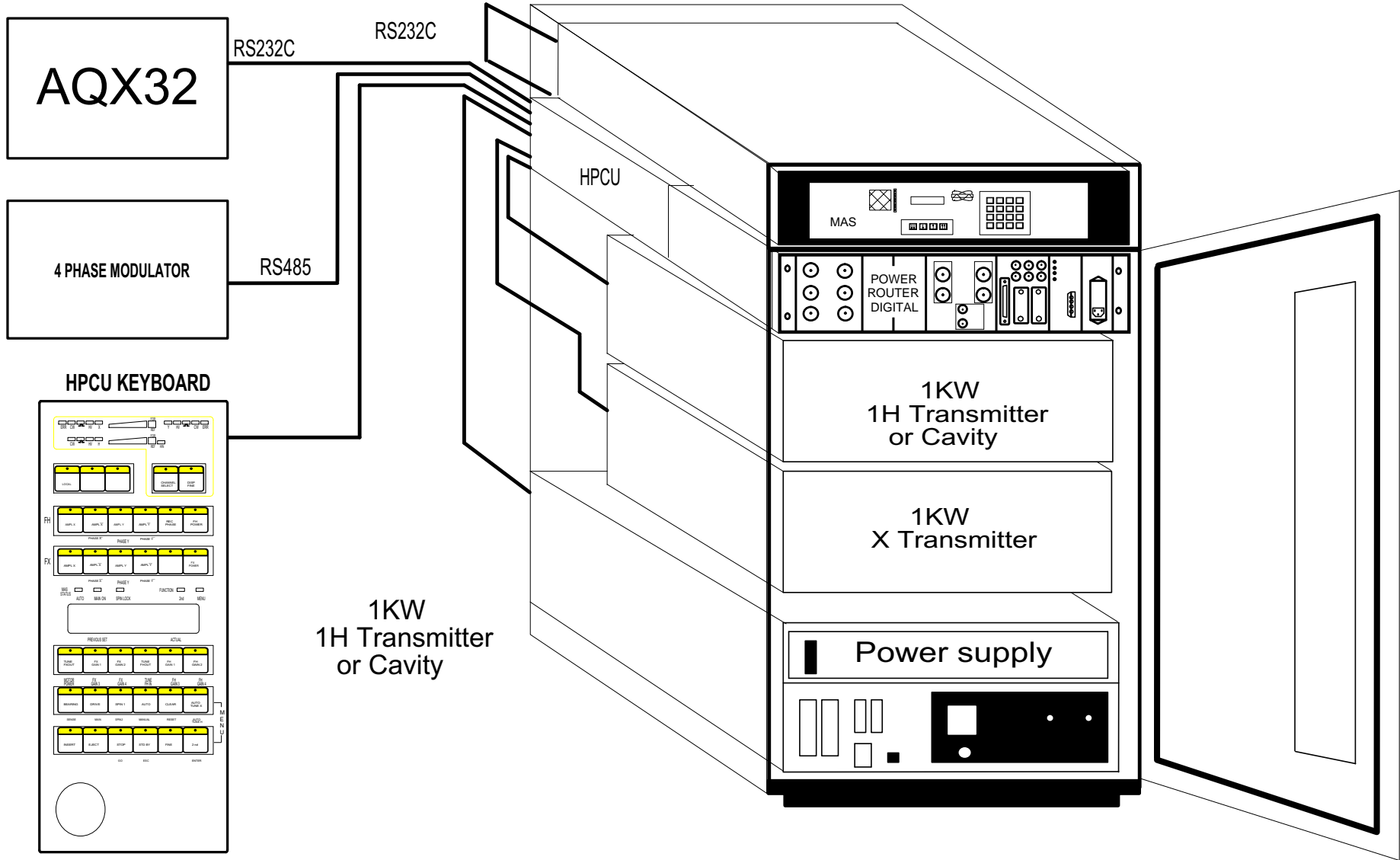


Figure 1.3. DMX, DSX HPC 100-400

# DMX 200, 300, 360, 400 High Power

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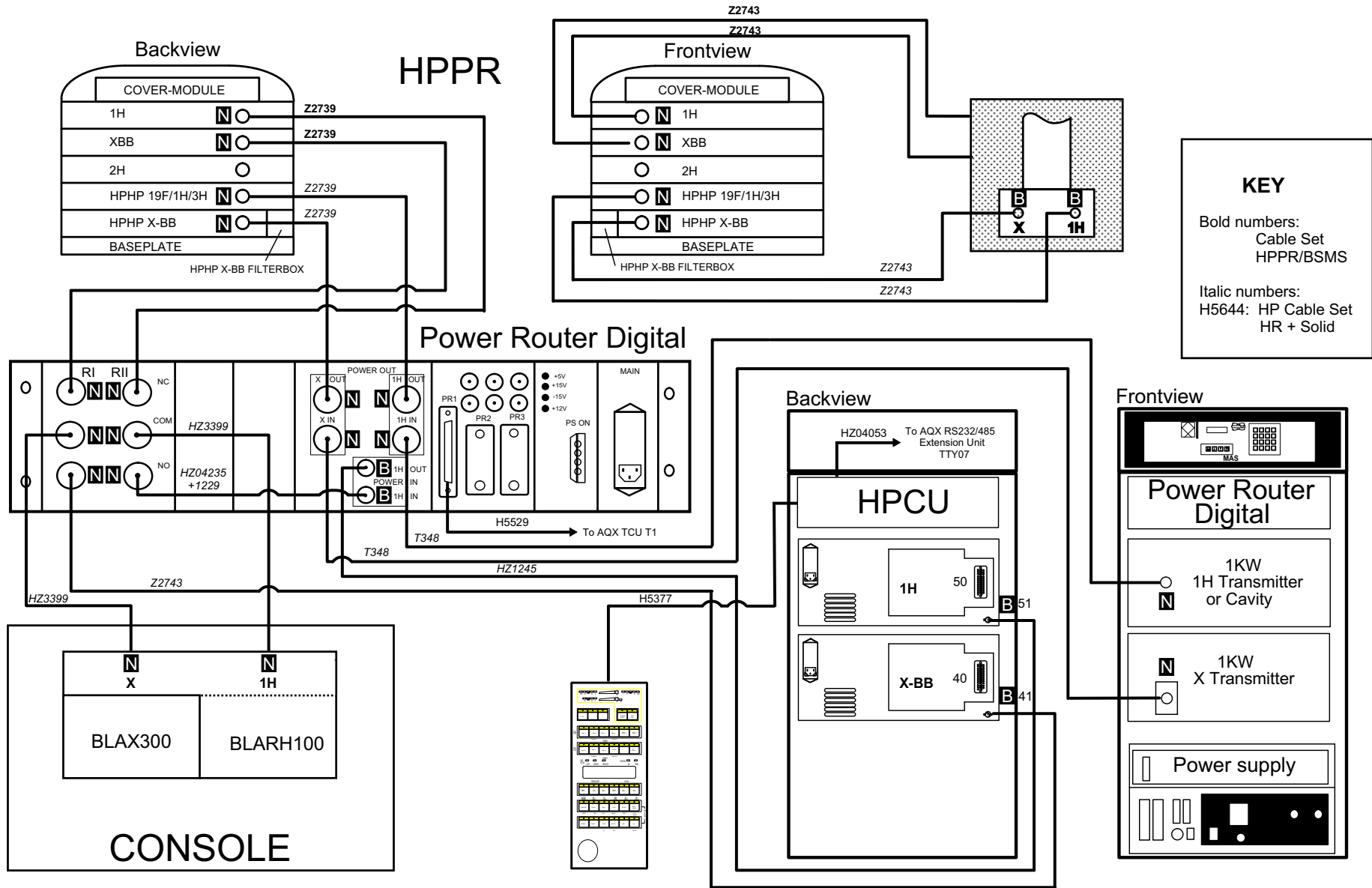


Figure 1.4. DMX 200, 300, 360, 400 High Power Standard Wiring

# DMX 500, 600 High Power

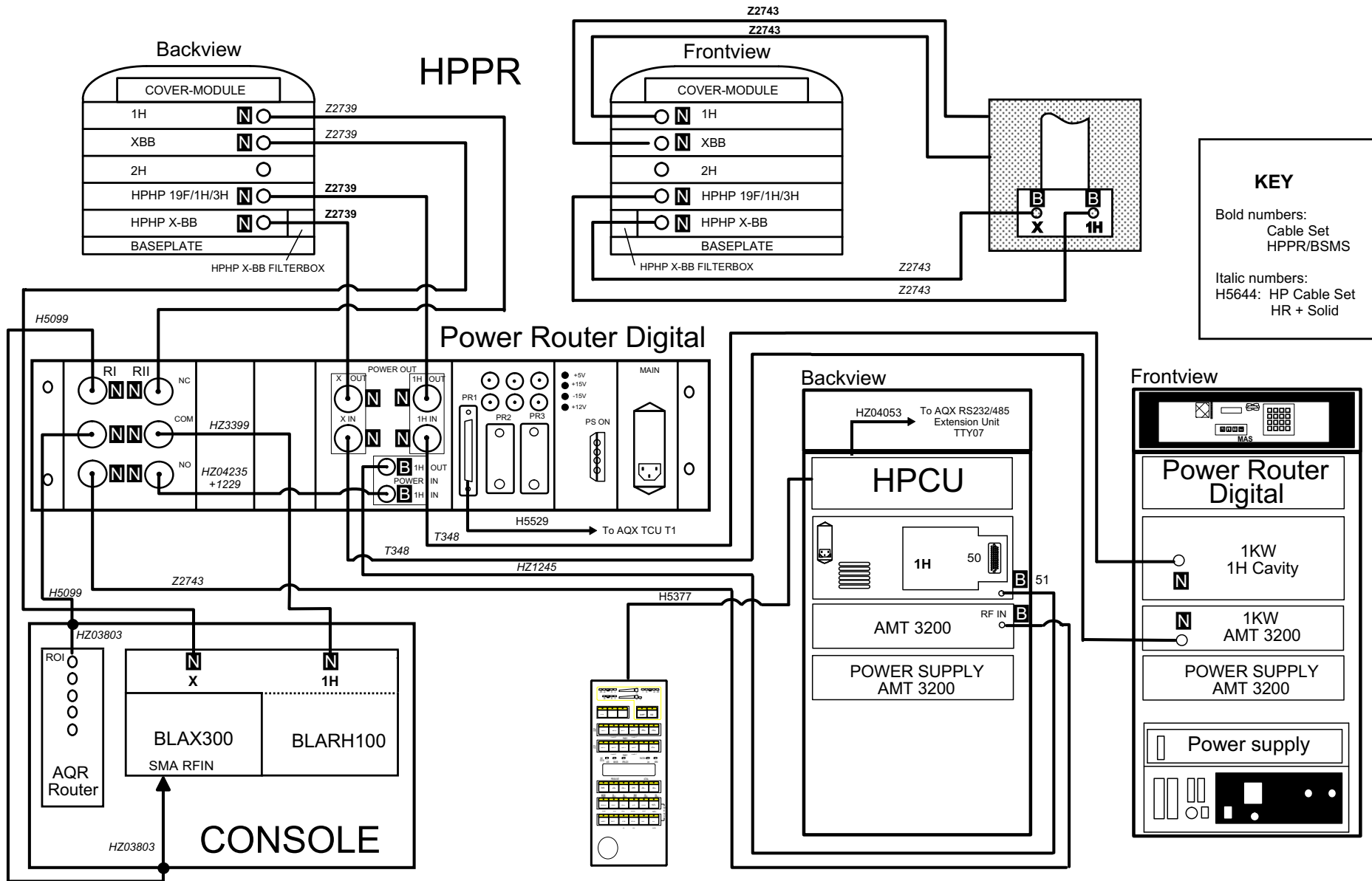


Figure 1.5. DMX 500, 600 High Power Standard Wiring

# DSX 100, 200, 300, 360, 400 High Power

## HPPR

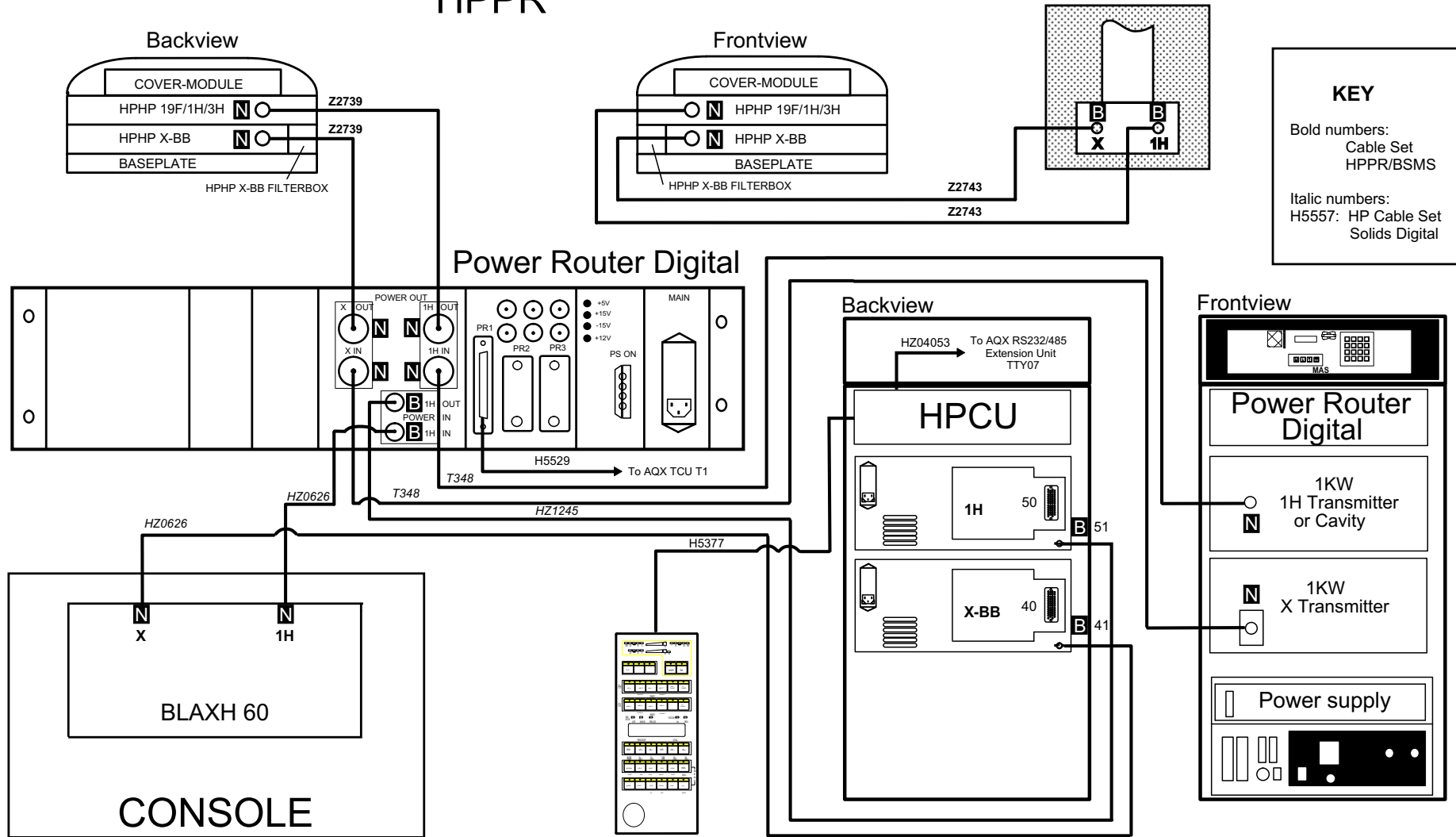


Figure 1.6. DSX 100, 200, 300, 360, 400 High Power Standard Wiring

# DSX 500 High Power

## HPPR

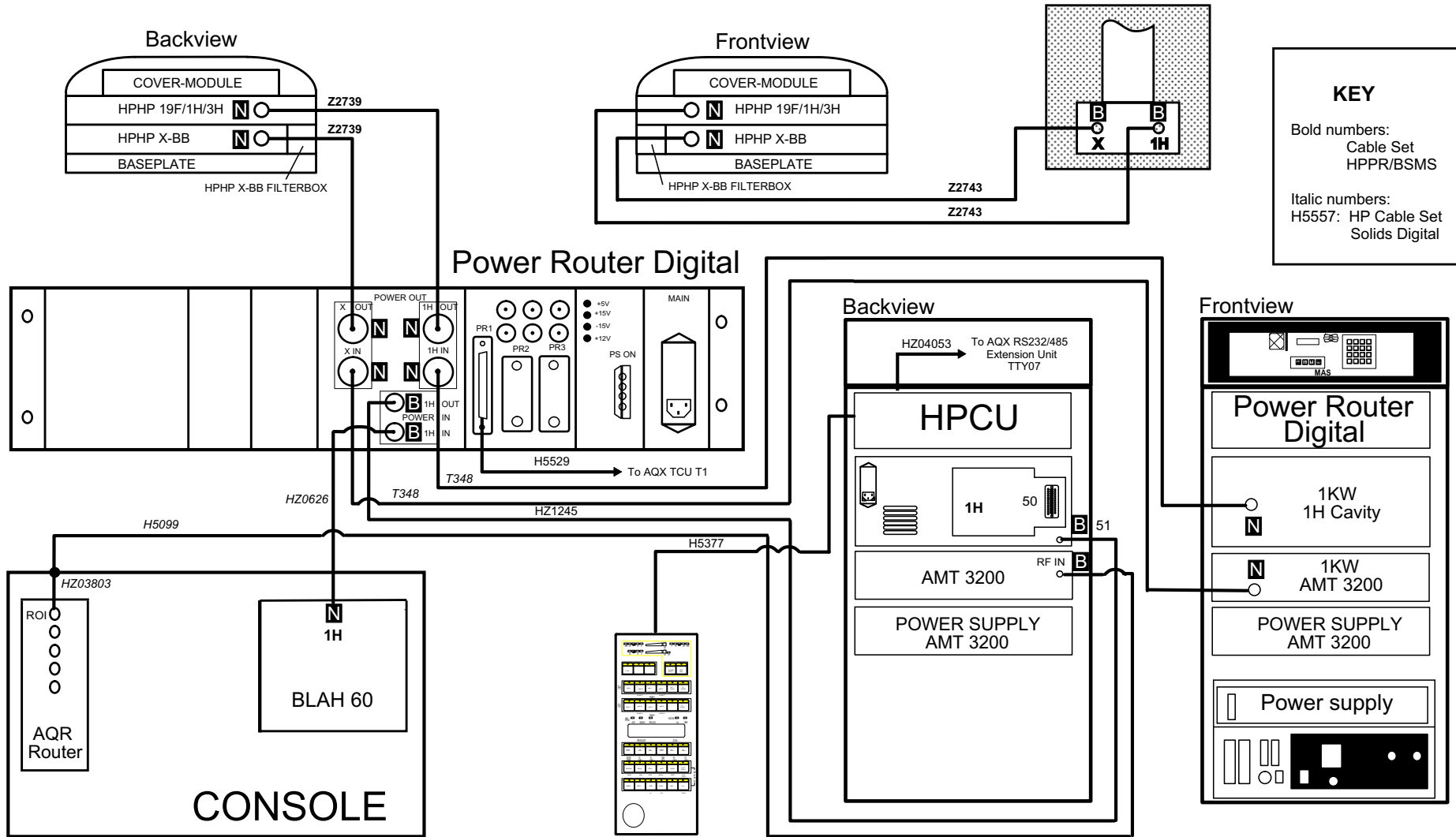


Figure 1.7. DSX 500 High Power Standard Wiring



# Transmitters

# 2

## TRANSMITTER TECHNICAL DATA: 1H and 19F Amplifiers

## 2.1

### 200, 300 and 360 MHz

H5342 HP TRANSM 1H 200 MHZ 1KW 19"  
 H5343 HP TRANSM 1H 300 MHZ 1KW 19"  
 H5344 HP TRANSM 1H 360 MHZ 1KW 19"

Table 2.1. Transmitter Technical Data: 200, 300, and 360 MHz

	200 and 300 MHz	360 MHz
Frequency Range:	200 MHz: 187,5 to 200,5 MHz 300 MHz: 281,5 to 300,5 MHz	338,4 to 360,5 MHz
	tunable with the tuning stepper motors on B-HPCU keyboard	
Tube Type Used:	2X4CX350A	2X4CX350A
Input rf Connector:	BNC	BNC
Input Impedance:	50Ω	50Ω
Input Power:	35W maximum	56W maximum
Output rf Connector:	Type N	Type N
Output Power:	1000W maximum in class C	900W in class C
Required Power Supply:	2,5KV 1A +6V 6A -48V 0,5A 12V 0,2A Gate voltage 0-400V	2,5KV 1A +6V 6A -48V 0,5A 12V 0,2A Gate voltage 0-400V
Connectors:	Burndy 50 pin's for 2,5 KV special type N	Burndy 50 pin's for 2,5 KV special type N
Pulse Length:	0,2s at 1KW duty cycle 2% 1s at 250W duty cycle 5%	0,2s at 900W duty cycle 2 1s at 250W duty cycle 5%
Pulse Droop:	2% 200ms at 1KW max.	2% 200ms at 900W max.
Rise and Fall Time:	200ns max.	200ns max.

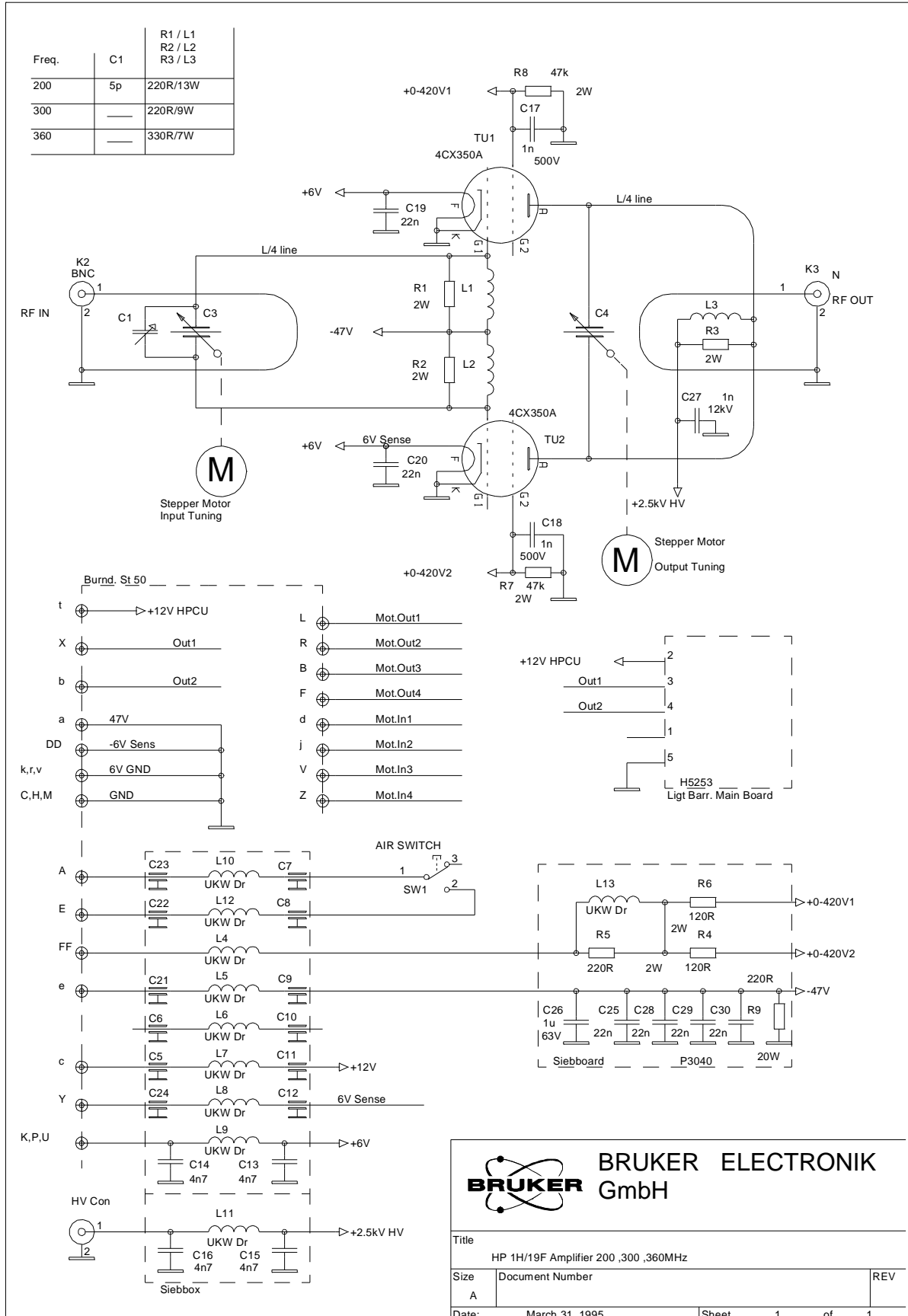
# Transmitters

Table 2.1. Transmitter Technical Data: 200, 300, and 360 MHz

	200 and 300 MHz	360 MHz
Gain:	15dB	13dB
Overheat Protection:	Airflow detection switch	Airflow detection switch
Cooling System:	Fan ENG1-2,6B 220V 37W 2,6m <sup>3</sup> /min. 165Pa 2320 rev./min. 55dBA	Fan ENG1-2,6B 220V 37W 2,6m <sup>3</sup> /min. 165Pa 2320 rev./min. 55dBA
Overall Dimensions(nominal):		
Height:	180 mm (4U)	180 mm (4U)
Width:	485 mm (19")	485 mm (19")
Depth:	470 mm	470 mm
Net Weight, approx.:	15kg	15kg



Figure 2.1. HP 1H/19F Amplifier 200, 360 MHz



### **Cavities 400, 500 and 600 MHz**

H5345 HP TRANSM 1H 400 MHZ 1KW 19" CAVITY

H5237 HP TRANSM 1H 500 MHZ 1KW 19" CAVITY

H5238 HP TRANSM 1H 600 MHZ 1KW 19" CAVITY

Table 2.2. Transmitter Technical Data: 200, 300, and 360 MHz

Frequency Range:	400 MHz: 375,5 to 400,5 MHz 500 MHz: 469,5 to 500,5 MHz 600 MHz: 592 to 600,5 MHz tunable with the tuning stepper motors on B-HPCU keyboard
Cavity Used	CV2402 (400MHz), CV2404 (500MHz), CV2408 (600 MHz)
Tube Type Used:	1X3CXP800
Input rf Connector:	BNC
Input Impedance:	50Ω
Input Power:	56W maximum
Output rf Connector:	Type N
Output Power:	900W maximum in class C
Required Power Supply:	2,5KV 1A +6V 3A 12V 0,2A
Connectors:	Burndy 50 pin's for 2,5 KV special type N
Pulse Length:	0,2s at 1KW duty cycle 2% 1s at 250W duty cycle 5%
Pulse Droop:	200ms at 900W max. 2%
Rise and Fall Time:	200ns max.
Gain:	13dB
Overheat Protection:	Airflow detection switch
Cooling System:	Fan ENG1-2,6B 220V 37W 2,6m <sup>3</sup> /min. 165Pa 2320 rev./min. 55dBA
Overall Dimensions(nominal):	
Height:	180 mm (4U)
Width:	485 mm (19")
Depth:	380 mm
Net Weight, approx.:	16kg

# TRANSMITTER TECHNICAL DATA: 1H and 19F Amplifiers

Figure 2.2. Cavity Tube Circuit (400 MHz)

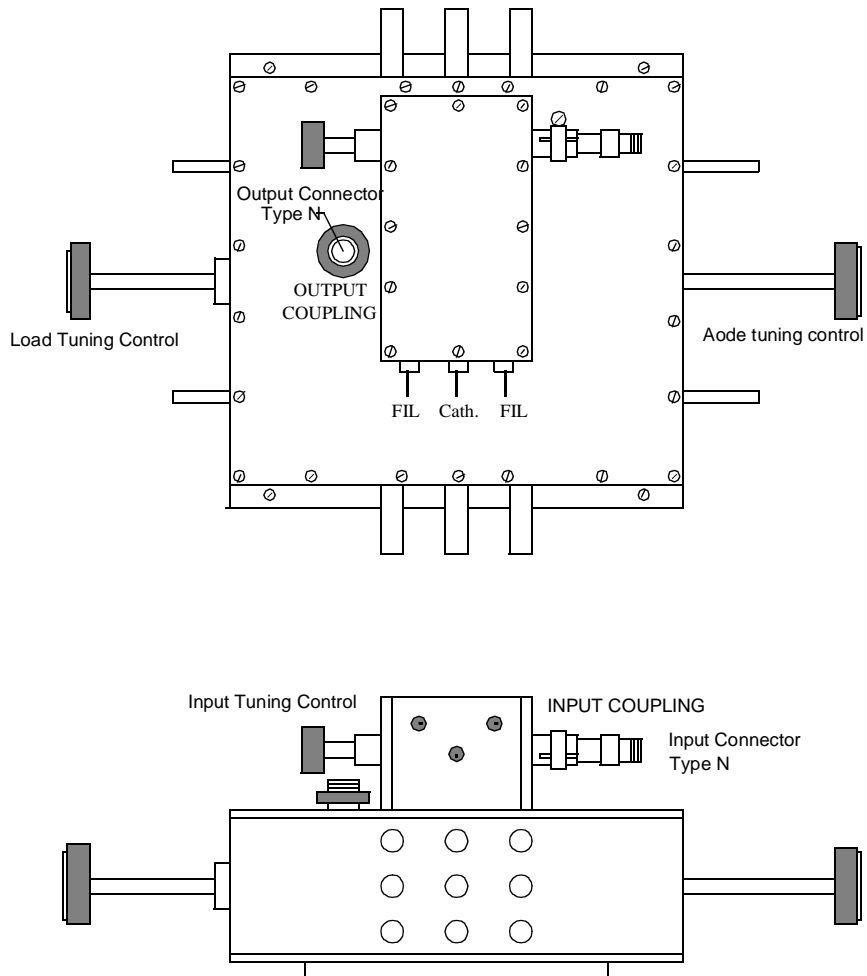


Figure 2.3. 1H Amplifier Cavity 400 MHz

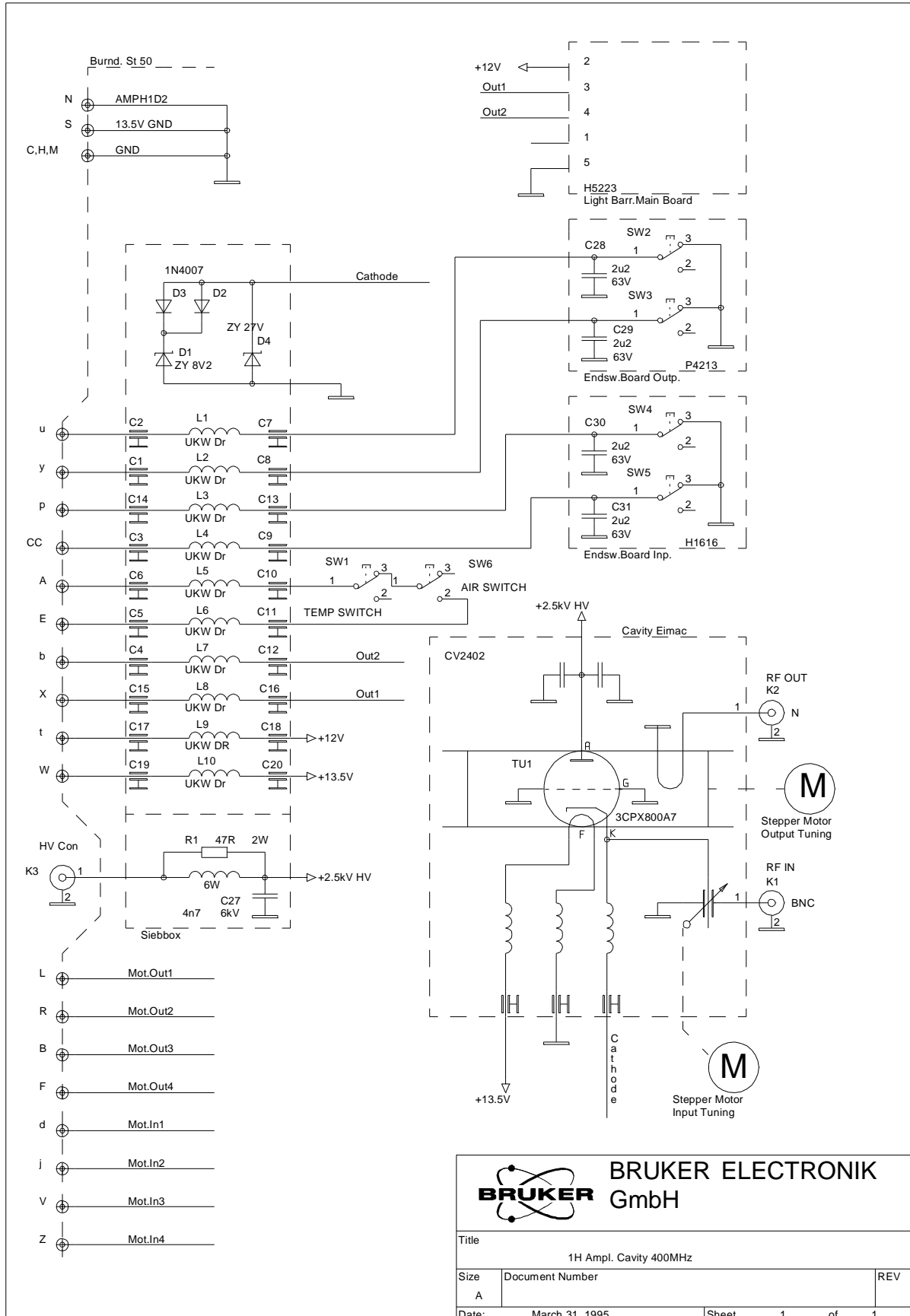
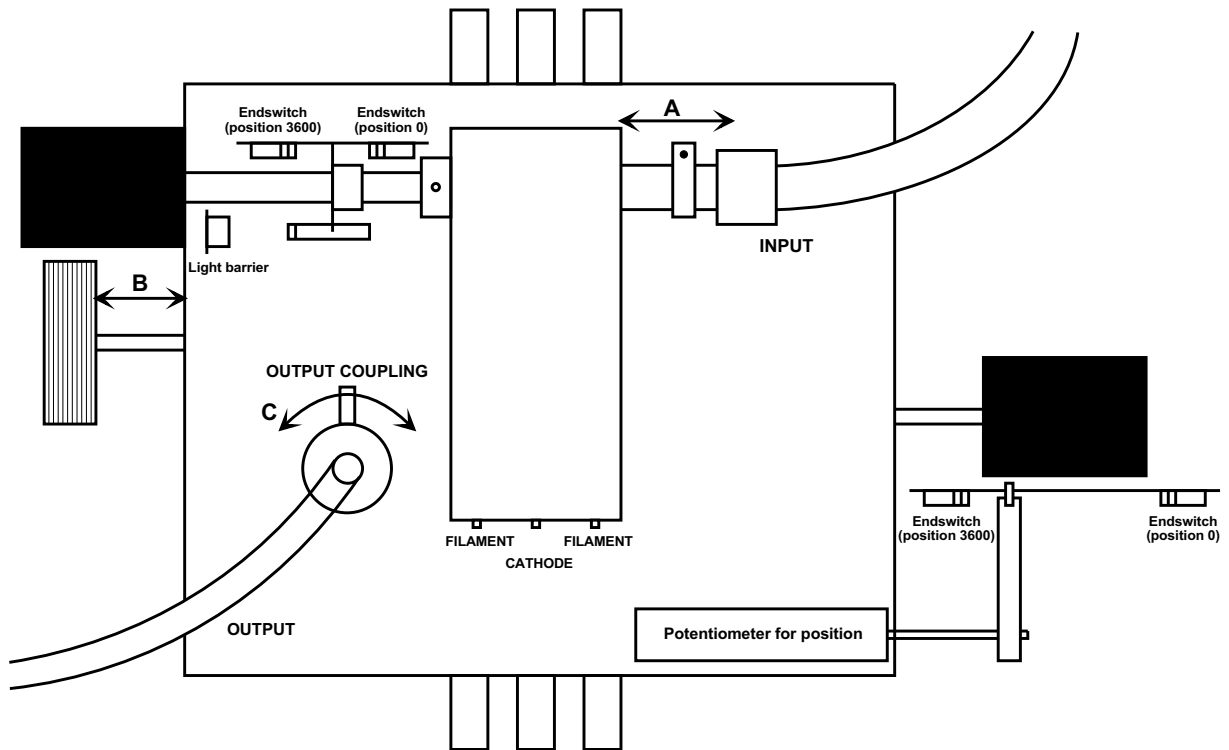


Figure 2.4. Top View of Cavity

# Top View of CAVITY



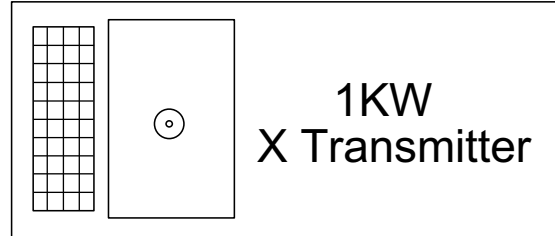
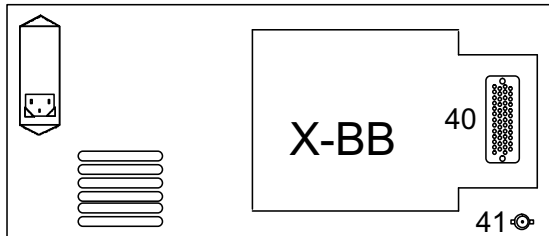
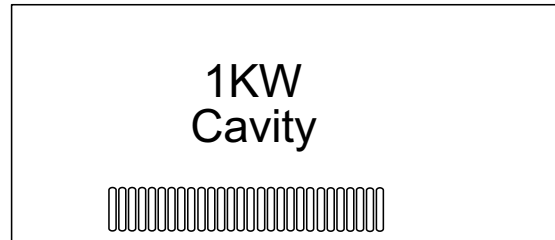
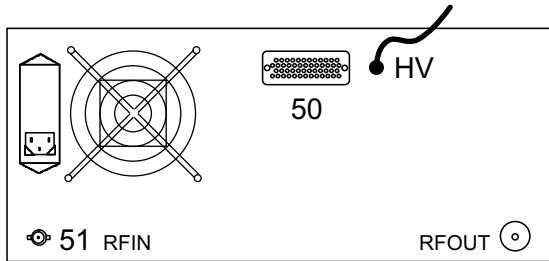
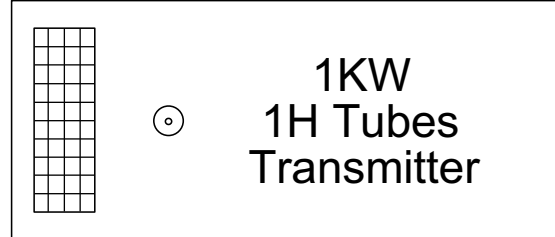
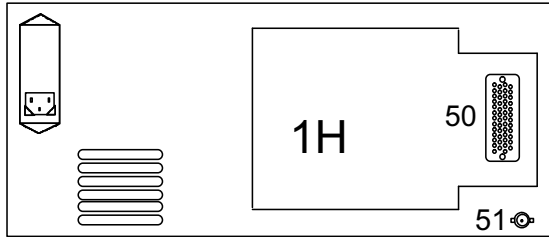
ESH 08.09.94 CAVITY.DS4

Figure 2.5. Transmitters

# TRANSMITTERS

Rearview

Frontview



	1H Transmitter	X-BB Transmitter
100MHZ	H5755	H5346
200MHZ	H5342	H5349
300MHZ	H5343	H5350
360MHZ	H5344	H5351
400MHZ	H5345	H5352
500MHZ	H5237	
600MHZ	H5238	

## TRANSMITTER TECHNICAL DATA

### X-BB AMPLIFIERS (109 Ag to 31P)

*Table 2.3. 1H and X-BB Transmitters*

	1H Transmitter	X-BB Transmitter
100 MHz	H5755	H5346
200 MHz		H5349
300 MHz		H5350
360 MHz		H5351
400 MHz		H5352

*Table 2.4. HP Transmitter Boxes*

HP transmitter boxes:	Part Number
HP transmitter Box 3,2-5 MHz 19"	HZ2796
HP transmitter Box 8-12 MHz 19"	HZ2755
HP transmitter Box 20-30 MHz 19"	HZ2654
HP transmitter Box 42-55 MHz 19"	HZ2656
HP transmitter Box 70-90 MHz 19"	HZ2658
HP transmitter Box 108-125 MHz 19"	HZ2660
HP transmitter Box 147-162,5 MHz 19"	HZ2662
HP transmitter Box 2-3,2 MHz 19"	HZ2798
HP transmitter Box 5-8 MHz 19"	HZ2797
HP transmitter Box 12-20 MHz 19"	HZ2653
HP transmitter Box 30-42 MHz 19"	HZ2655
HP transmitter Box 55-70 MHz 19"	HZ2657
HP transmitter Box 90-108 MHz 19"	HZ2659
HP transmitter Box 125-147 MHz 19"	HZ2661

# Transmitters

Table 2.5. Amplifiers

	H5346 100X-BB	H5349 200X-BB	H5350 300X-BB	H5351 360X-BB	H5352 400X-BB	H5755 100MHz 1H
HZ2798						
HZ2796	X					
HZ2797	X					
HZ2755	X	X				
HZ2653	X	X	X	X	X	
HZ2654	X	X	X	X	X	
HZ2655	X	X	X	X	X	
HZ2656		X	X	X	X	
HZ2657		X	X	X	X	
HZ2658		X	X	X	X	
HZ2659			X	X	X	X
HZ2660			X	X	X	
HZ2661				X	X	
HZ2662					X	

Table 2.6. Specifications

Frequency range	2,2-162,5MHz unable with the tuning stepper motor on B-HPCU keyboard
Tube Type used	2X 4CX350A
Input rf connector	BNC
Input impedance	50 $\Omega$
Input power	25W max.
Output rf connector	Type N
Output power	1000W max. in class C
Required power supply	2,5kV 1A +6V 6A 48V 0,5A 12V 0,2A Gate voltage 0-400V
Connectors	Burndy 50 pin's for 2,5KV special type N



## TRANSMITTER TECHNICAL DATA: 1H and 19F Amplifiers

Pulse length	100ms at 1KW duty cycle 2% 1s at 250W duty cycle 5%
Pulse droop	2% 100ms at 1KW max.
Rise and fall time	300ns (8-162,5MHz)
Gain	21,5dB
Overheat protection	Airflow detection switch
Cooling system	fan ENG1-2,6B 220V 37W 2,6m <sup>3</sup> /min. 165Pa 2320 rev./min. 55dBA
Overall dimensions (nominal)	
Height	180mm (4U)
Width	485mm (19")
Depth	380mm
Net Weight, approx.	16kg

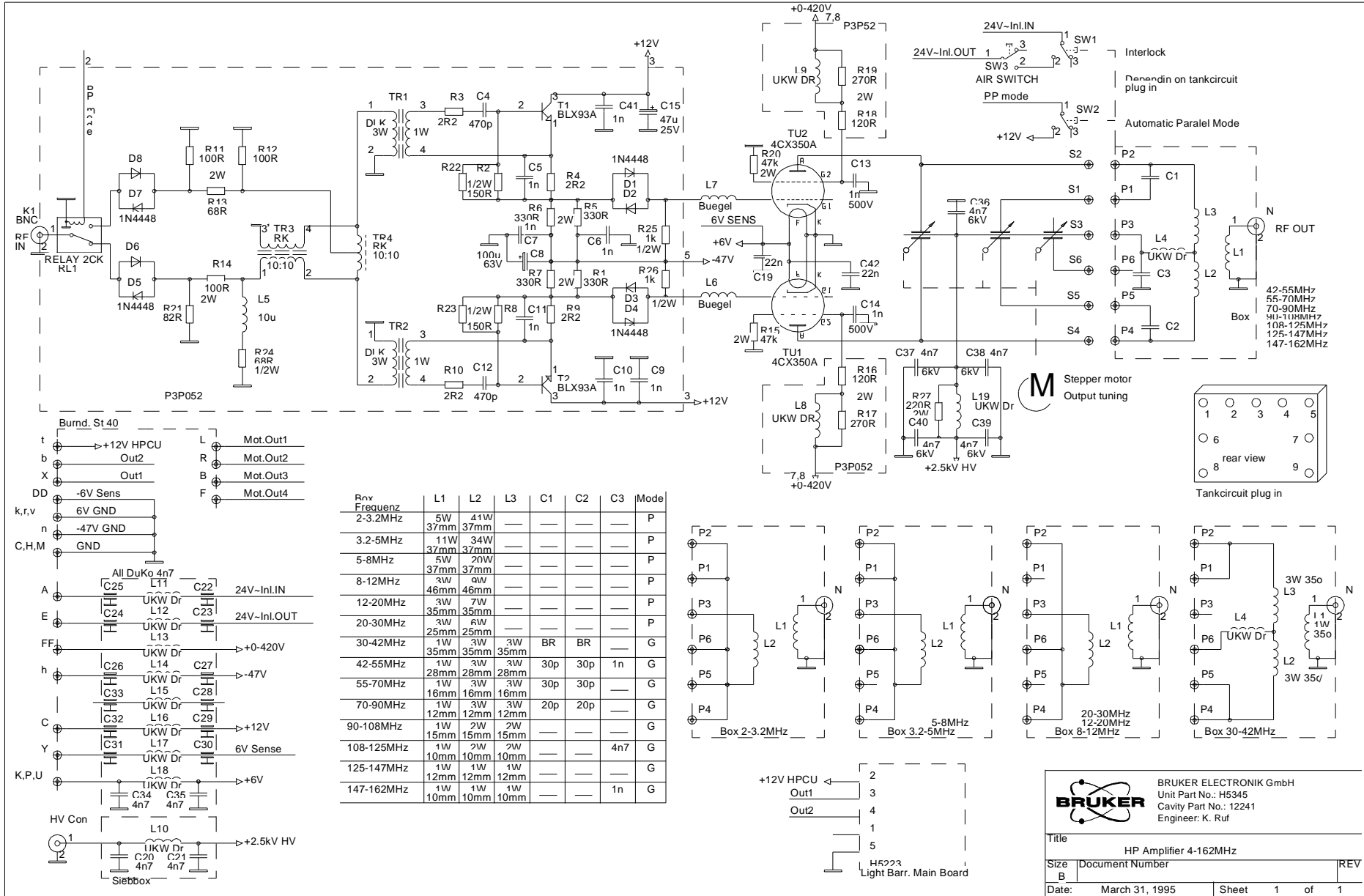


Figure 2.6. HP X-BB Amplifier 4-162 MHz

**BRUKER** BRUKER ELEKTRONIK GmbH  
 Unit Part No.: H5345  
 Cavity Part No.: 12241  
 Engineer: K. Ruf

Title: HP Amplifier 4-162MHz

Size: B Document Number: REV

Date: March 31, 1995 Sheet 1 of 1

Table 2.7. Pin Assignment

Pin	1H Transmitter Cavity 400/ 500 MHz Connector 50	1H Transmitter 200/ 300/360 MHz Connector 50	X-BB Transmitter Connector 40	Pin	1H Transmitter Cavity 400/500 MHz Connector 50	1H Transmitter 200/300/ 360 MHz Connector 50	X-BB Transmitter Connector 40
B	green/red 0,5 4	black (red/white)	black	A	orange 0,5 Air flow switch	orange 1,5 Interlock	orange 1,5 Interlock
F	white/grey 0,5 3	green (red)	green	E	orange 0,5 Air flow switch	orange 1,5 Interlock	orange 1,5 Interlock
L	pink/grey 0,5 1	red (green/white)	red	K		black/red 1,5 +6V	black/red 1,5 +6V
R	brown/blue 0,5 2	blue (green)	blue	P		black/red 1,5 +6V	black/red 1,5 +6V
V	yellow/blue 0,5 3	black (red/white)		U		black/red 1,5 +6V	black/red 1,5 +6V
Z	white/pink 0,5 4	green (red)		Y		black/red 0,5 +6V Sense	black/red 0,5 +6V Sense
d	green/grey 0,5 1	red (green/white)		c		pink/red 0,5 +12V	pink/red 0,5 +12V
j	brown/pink 0,5 2	blue (green)		h			blue/white 0,5 -48V (1)
p	white/brown 0,5 Matching (f max)			n			yellow 0,5 0V (1)
u	white/yellow 0,5 Tuning (f min)			t	HPCU +12V	HPCU +12V	HPCU +12V
y	yellow/pink 0,5 Tuning (f max)			x			
CC	yellow/red 0,5 Matching (f min)			BB			
HH	ID analog			FF		black/green 0,5	420V
D	D0	D0	D0	C	yellow 1,5 GND (Housing)	yellow 1,5 GND Housing	yellow 1,5 GND Housing
J	D1	D1	D1	H	yellow 1,5 GND (Housing)	yellow 1,5 GND Housing	yellow 1,5 GND Housing
N	D2	D2	D2	M	yellow 1,5 GND (Housing)	yellow 1,5 GND Housing	yellow 1,5 GND Housing
T	D3	D3	D3	S	yellow 0,5 GND (Housing)		
X	Sensor 2	Sensor 2	Sensor 2	W	brown 1,5 Heater		
b	Sensor 1	Sensor 1	Sensor 1	a		yellow 0,5 0V (2)	
f				e		blue/white 0,5 - 48V	
m				k		yellow 1,5 GND	yellow 1,5 GND
s				r		yellow 1,5 GND	yellow 1,5 GND
w				v		yellow 1,5 GND	yellow 1,5 GND
AA				z			
EE				DD		yellow 0,5 GND	yellow 0,5 GND

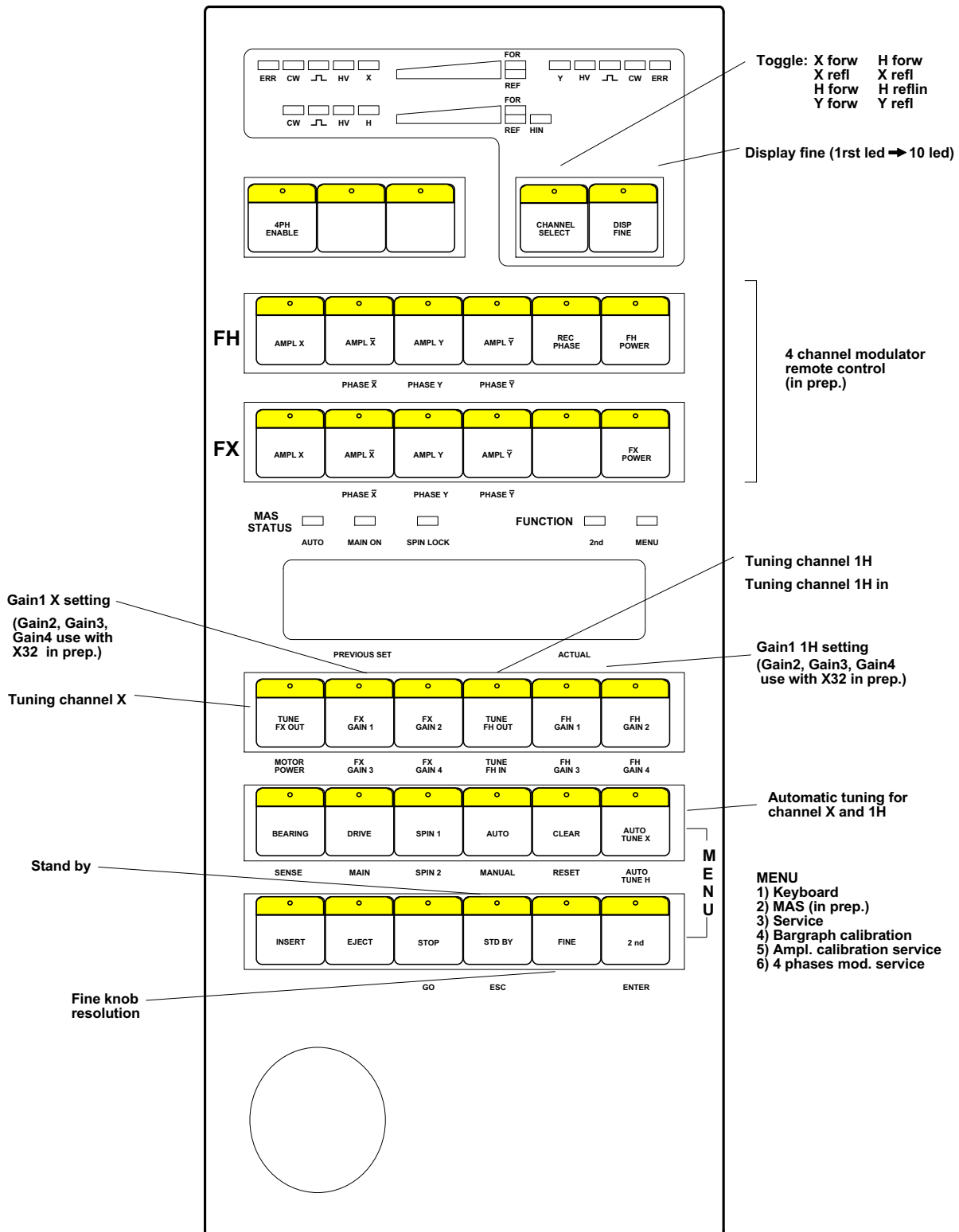


# ***B-HPCU Keyboard***

# **3**

Figure 3.1. HPCU Keyboard

## HPCU KEYBOARD



ESH 20.10.94 HPCUKEYB.DS4

# *Voltage Supply*

# **4**

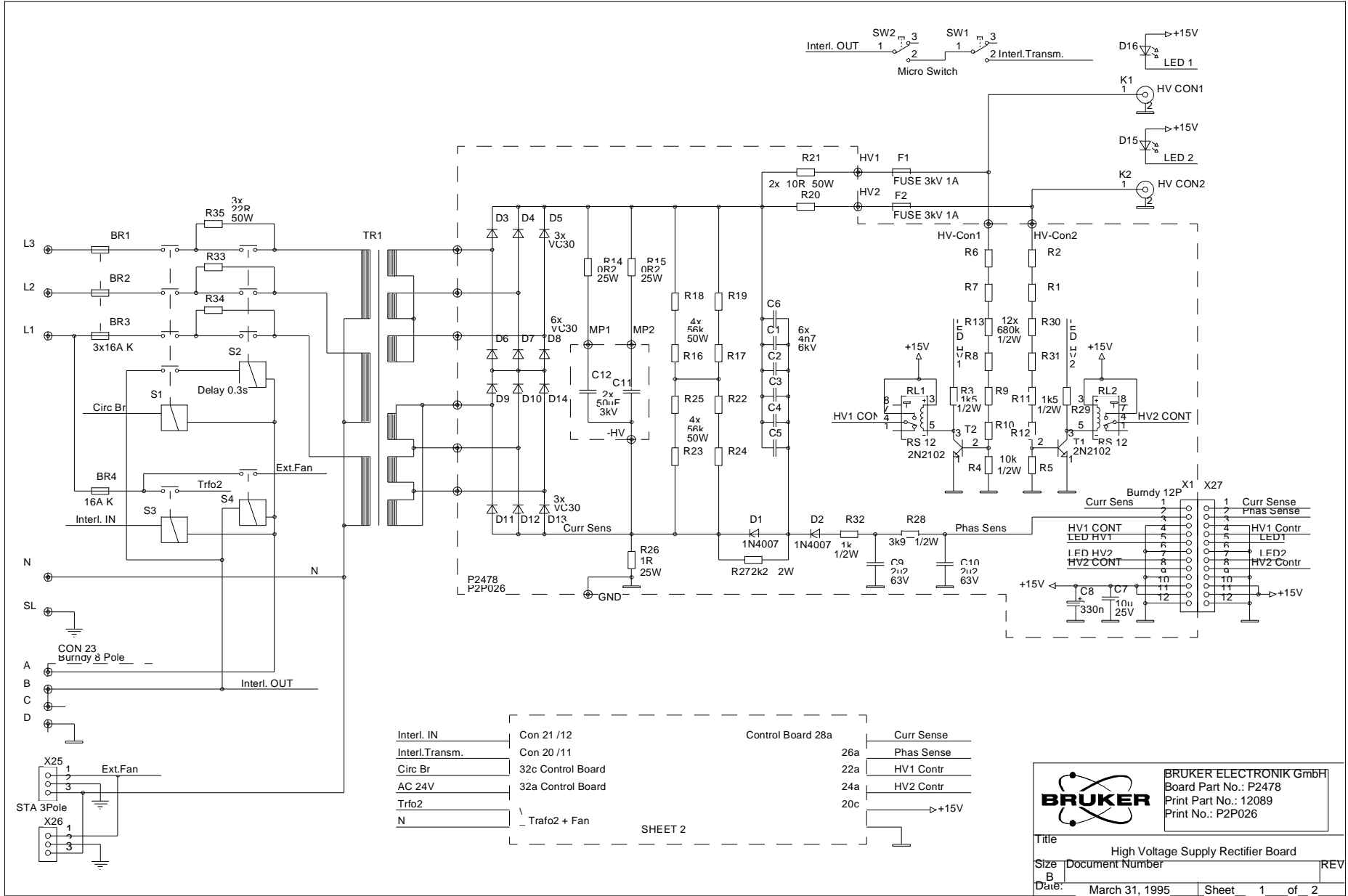


Figure 4.1. High Voltage Supply Rectifier Board

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		Title: High Voltage Supply Rectifier Board	
Size: B	Document Number:	REV:	
Date: March 31, 1995	Sheet: 1	of 2	



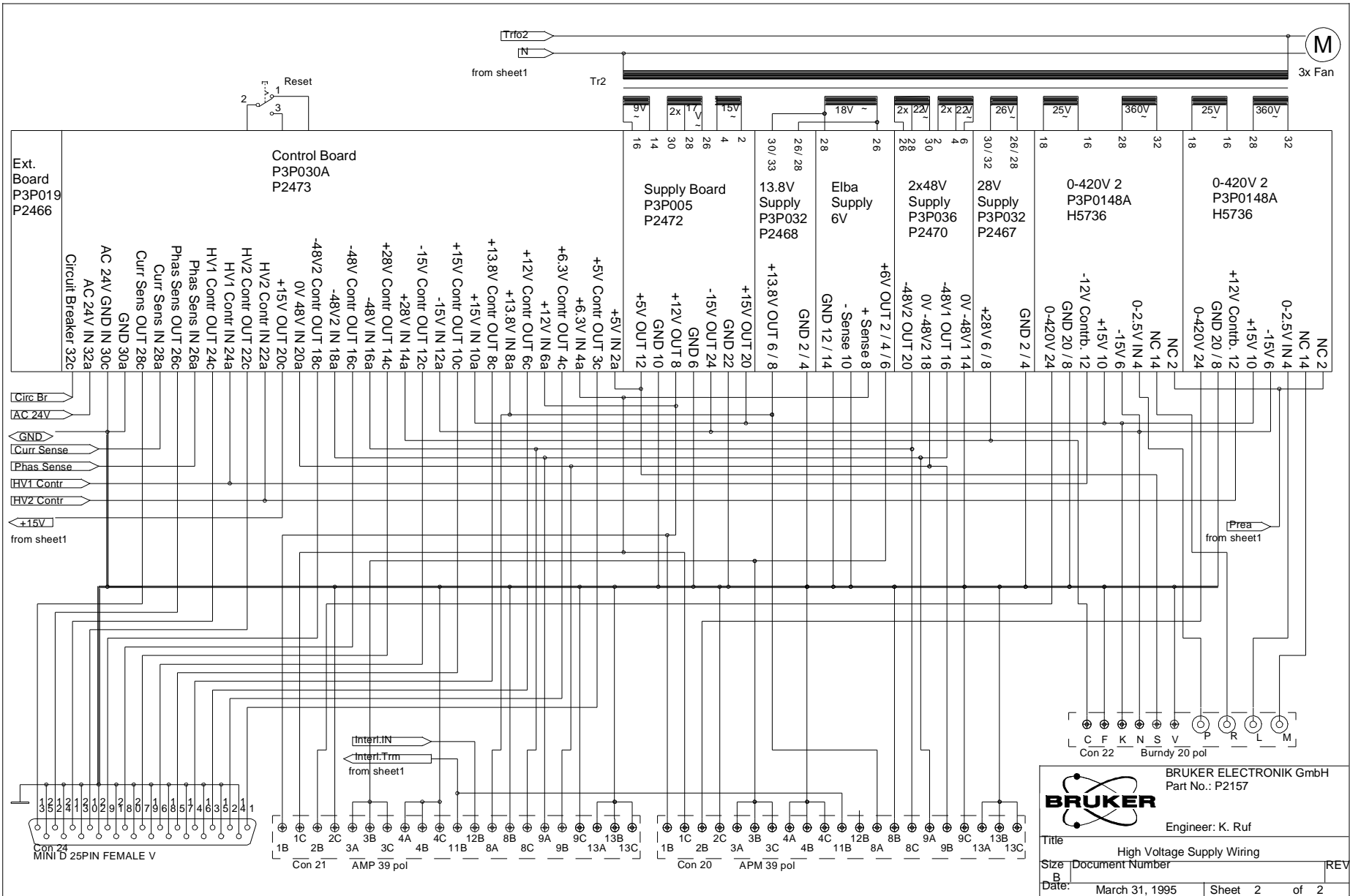


Figure 4.2. High Voltage Supply Wiring

**BRUKER** BRUKER ELECTRONIK GmbH  
Part No.: P2157  
Engineer: K. Ruf

Title	High Voltage Supply Wiring		REV
Size	Document Number		
Date:	March 31, 1995	Sheet 2	of 2

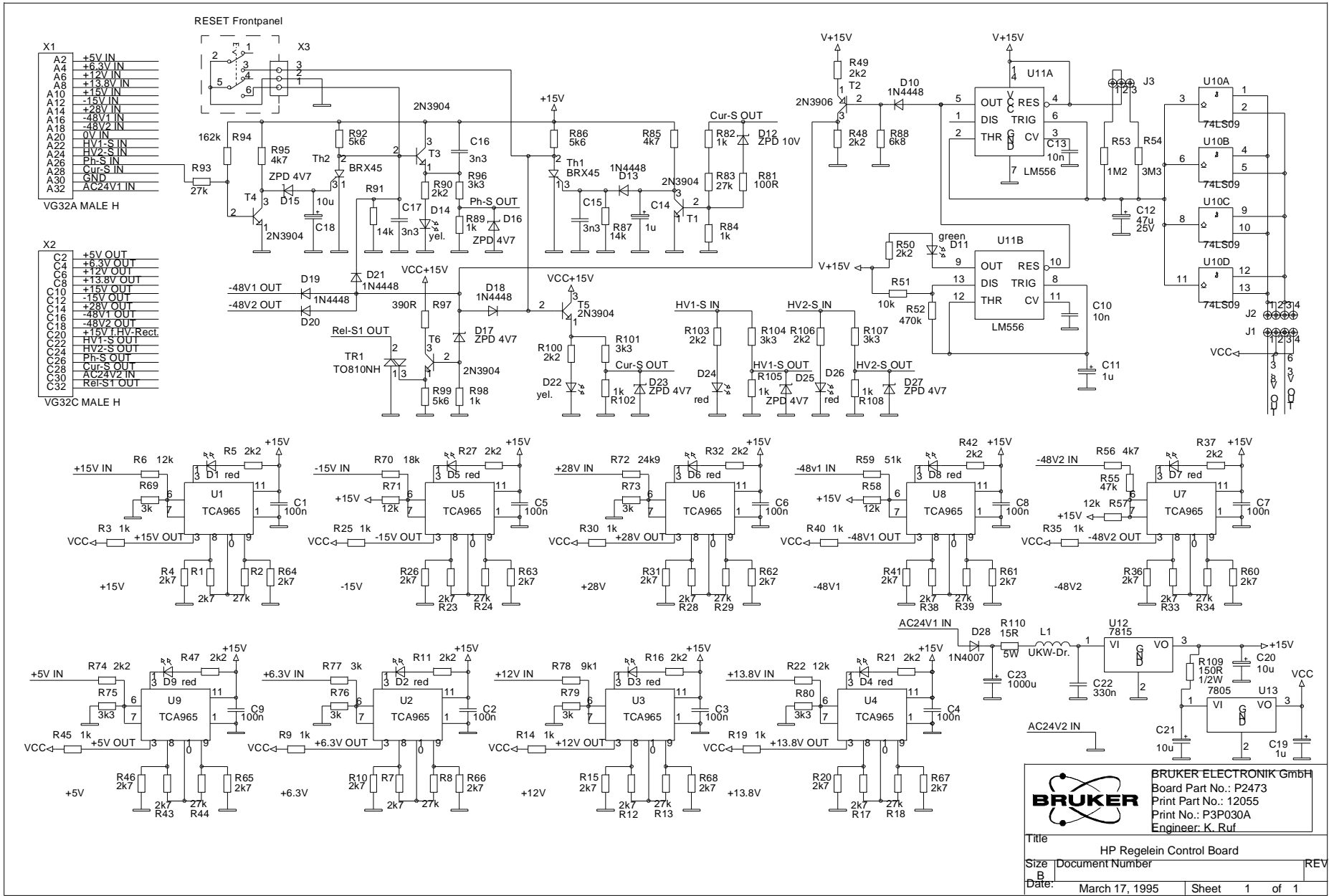
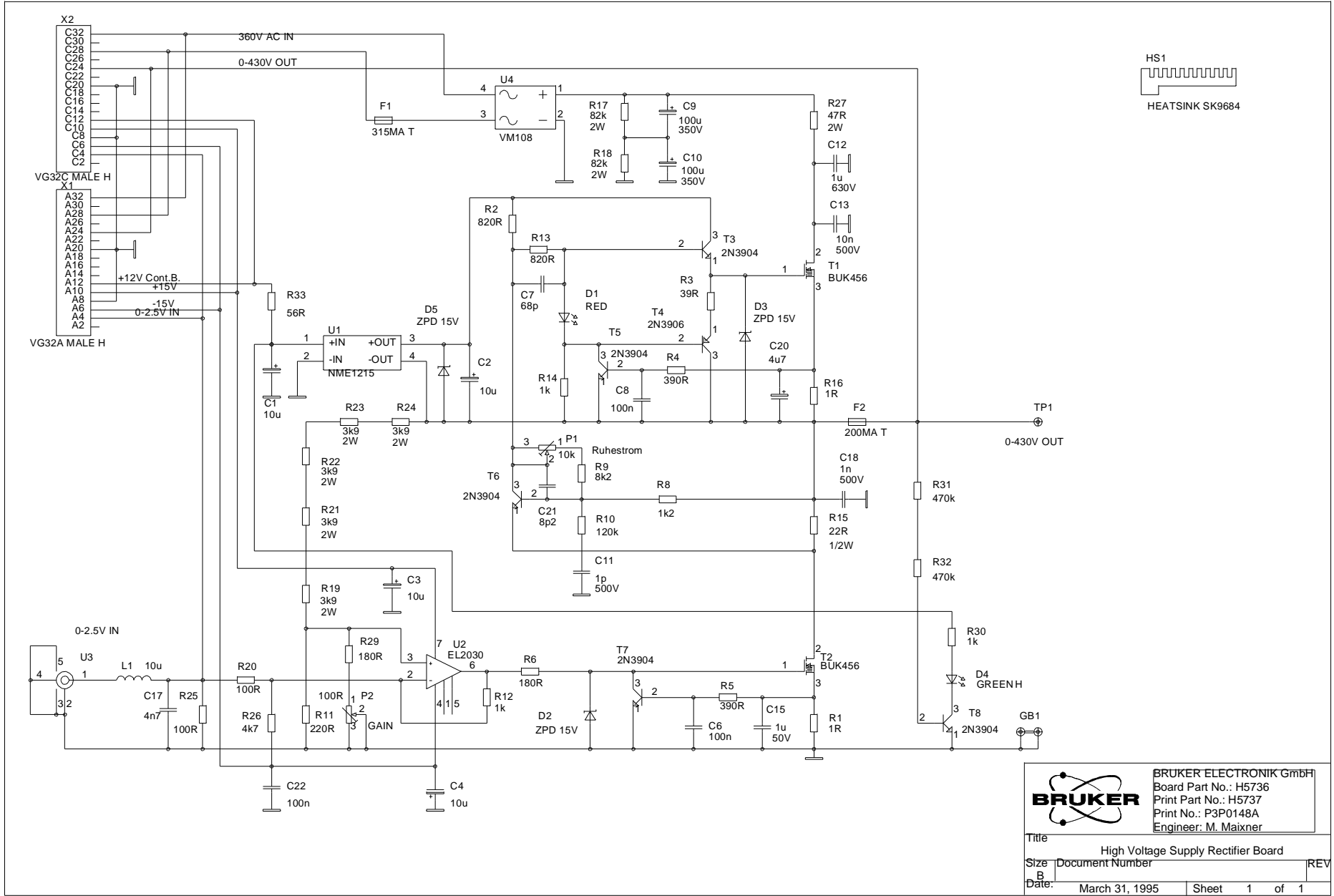


Figure 4.3. HP Regelein Control Board



BRUKER ELECTRONIK GmbH  
 Board Part No.: P2473  
 Print Part No.: 12055  
 Print No.: P3P030A  
 Engineer: K. Ruf

Title		HP Regelein Control Board	
Size	Document Number	REV	
Date:	March 17, 1995	Sheet	1 of 1



BRUKER ELECTRONIK GmbH  
Board Part No.: H5736  
Print Part No.: H5737  
Print No.: P3P0148A  
Engineer: M. Maixner

Title	High Voltage Supply Rectifier Board		
Size	Document Number		REV
Date:	March 31, 1995	Sheet	1 of 1

Figure 4.4. 400V Control Board



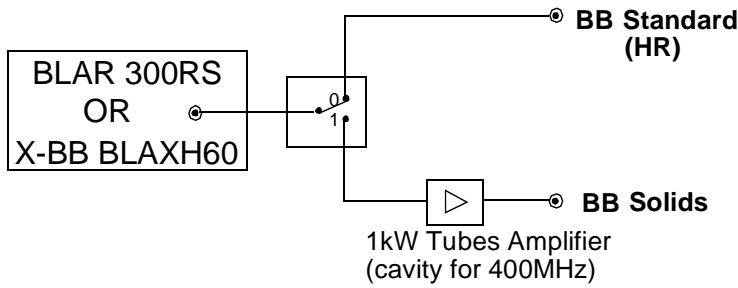
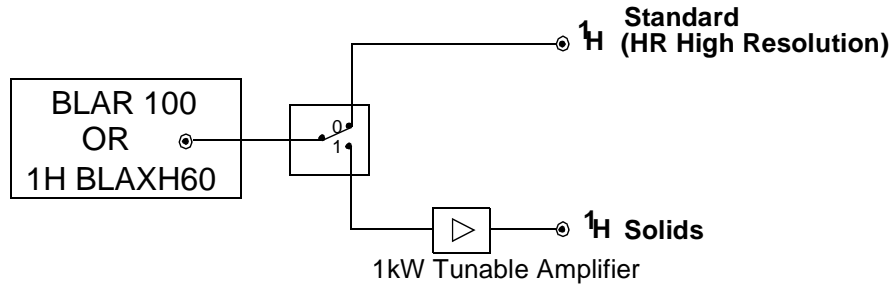
# ***Wiring: Standard Experiments***

# **5**

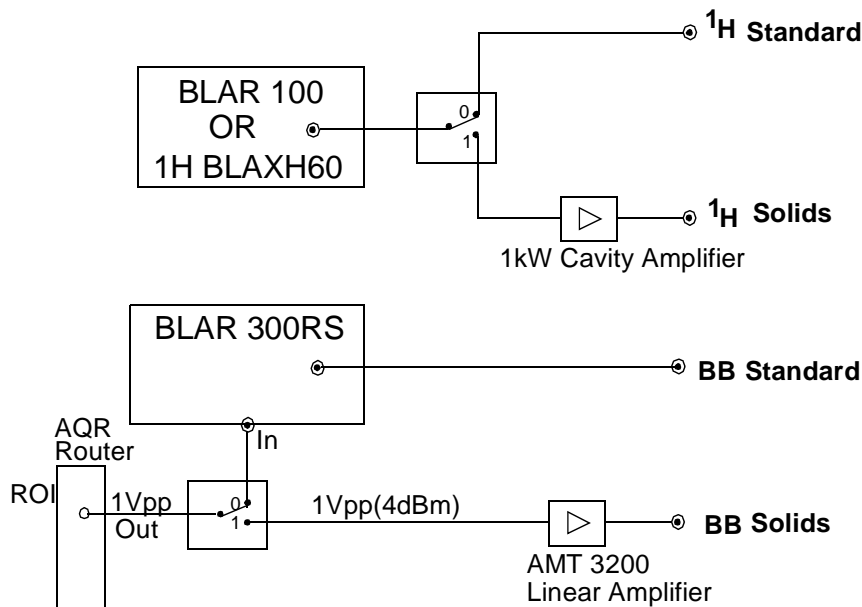
Figure 5.1. Connections of HP Amplifiers for Solids Measurement

# Typical Connections of High Power Amplifiers for Solids Measurement

100 to 400MHz



500 to 600MHz



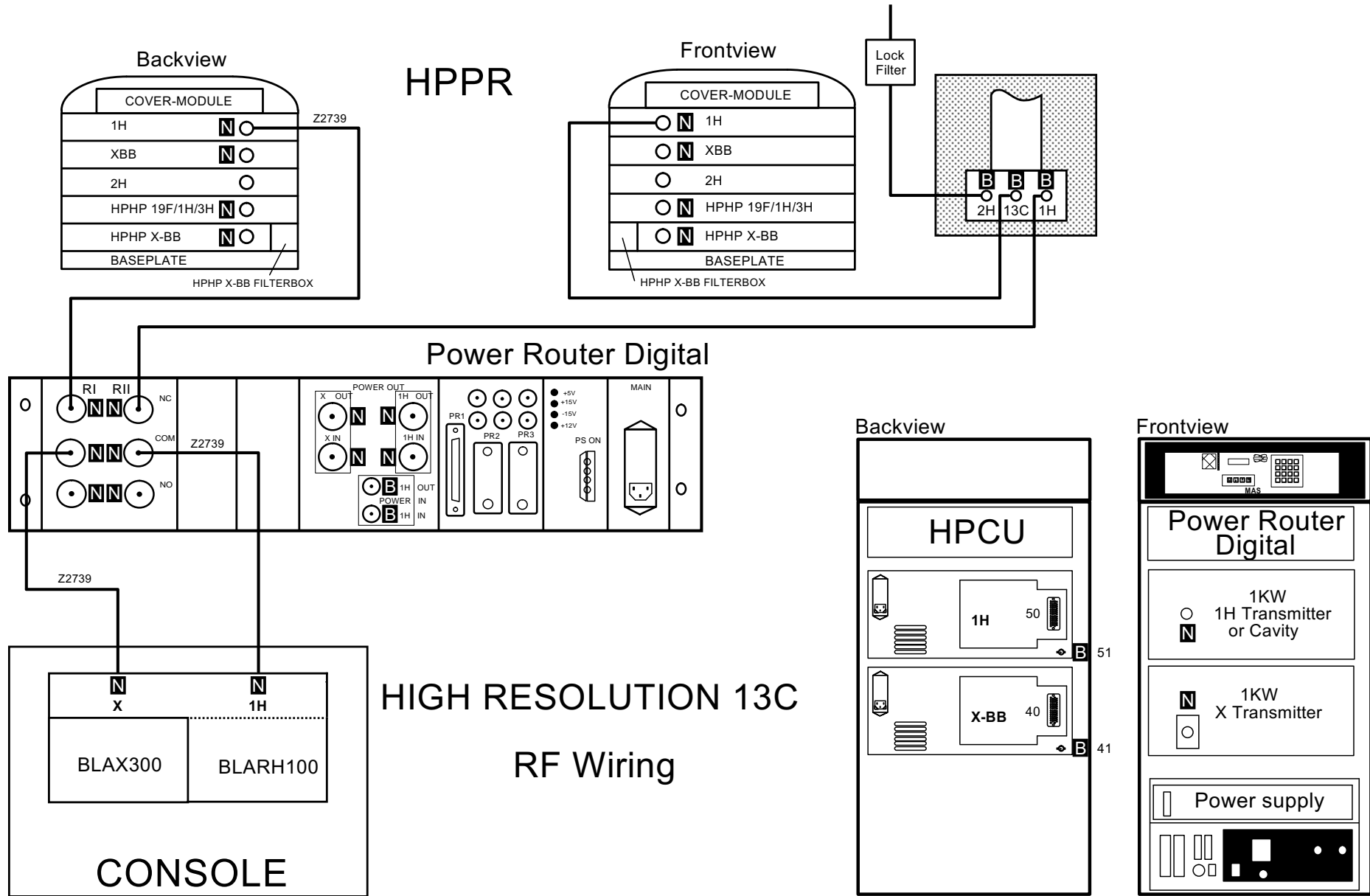
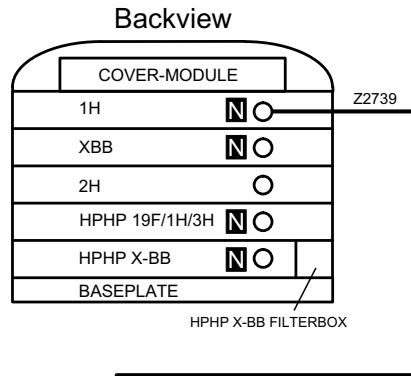
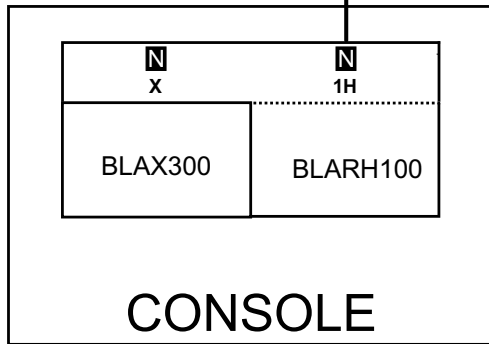
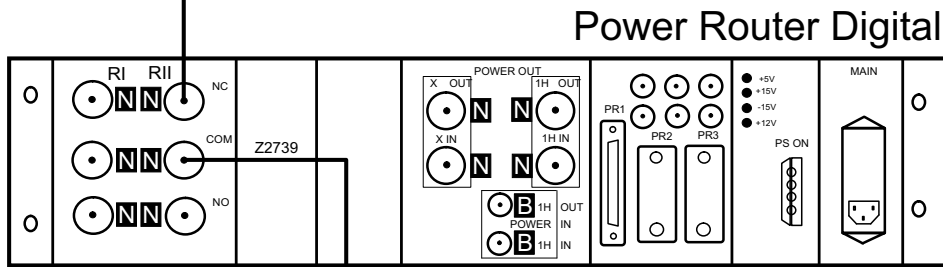
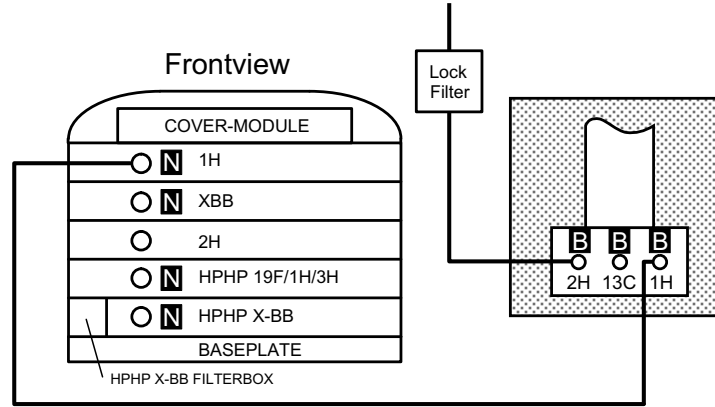


Figure 5.2. High Resolution 13C RF Wiring



### HPPR



### HIGH RESOLUTION 1H RF Wiring

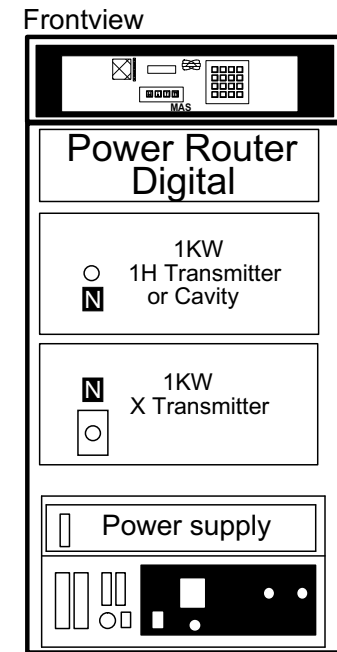
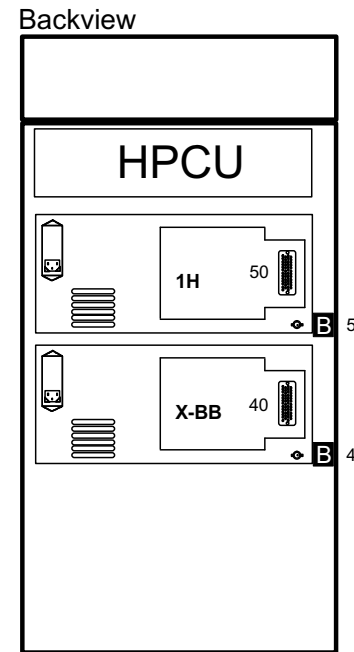


Figure 5.3. High Resolution 1H RF Wiring



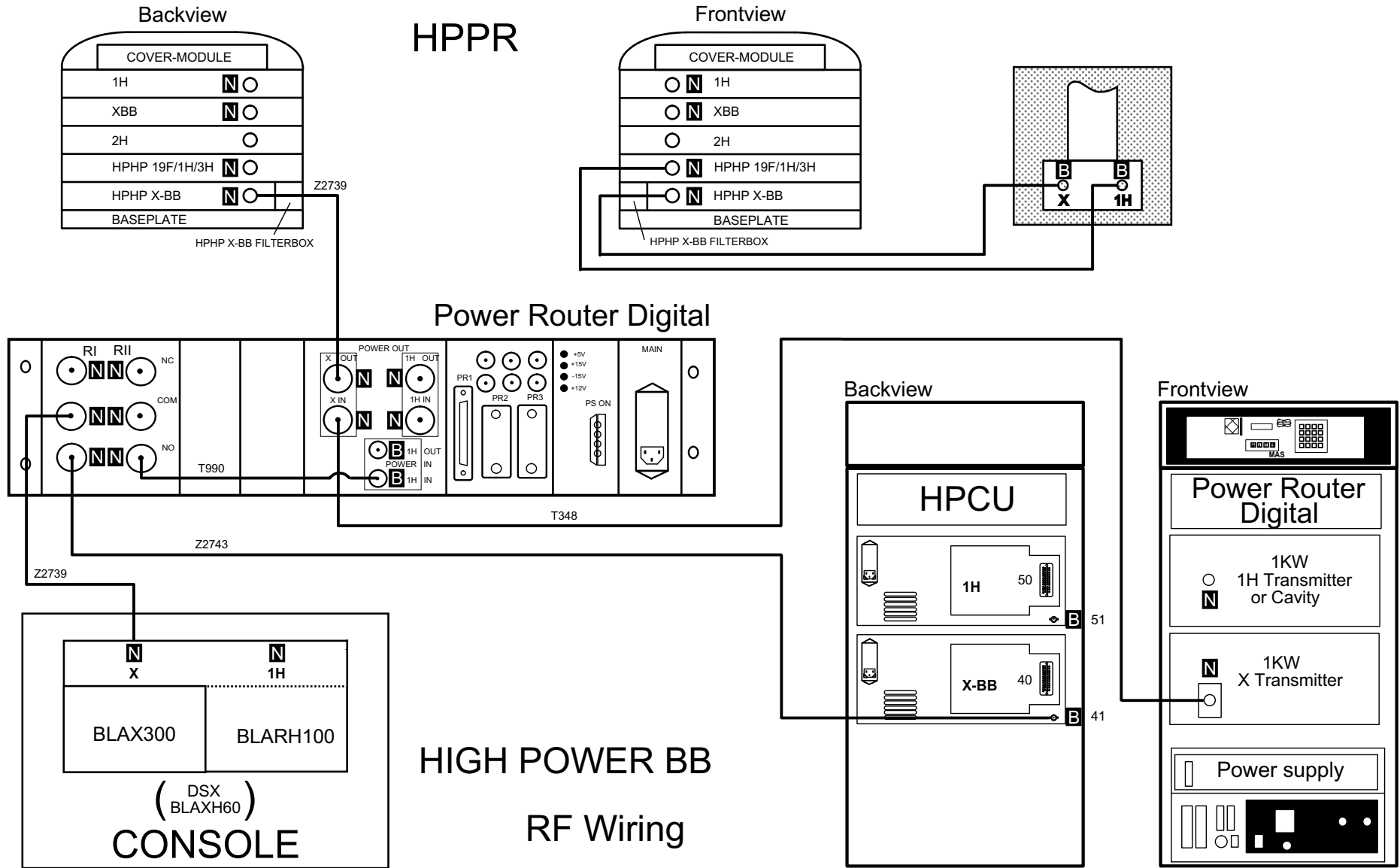
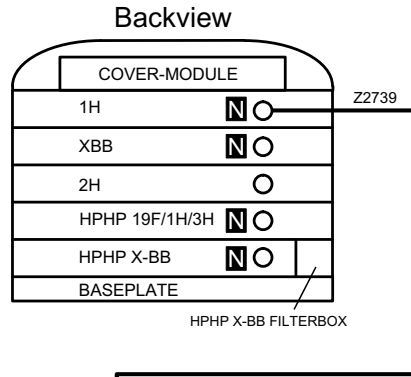
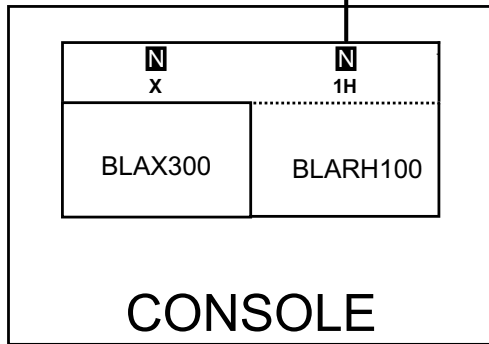
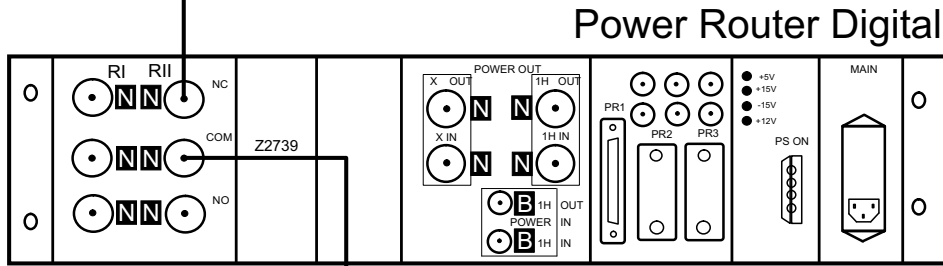
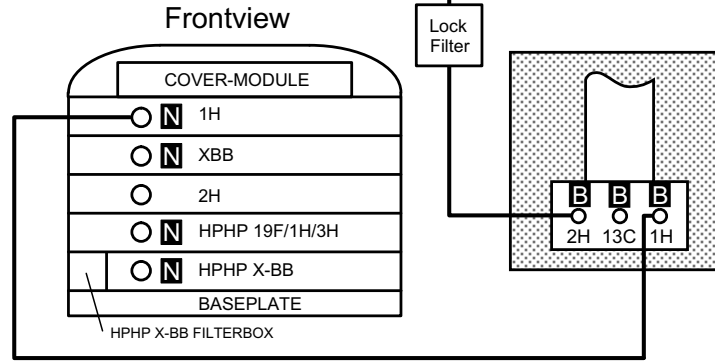


Figure 5.4. High Power BB RF Wiring



# HPPR



# HIGH RESOLUTION 1H RF Wiring

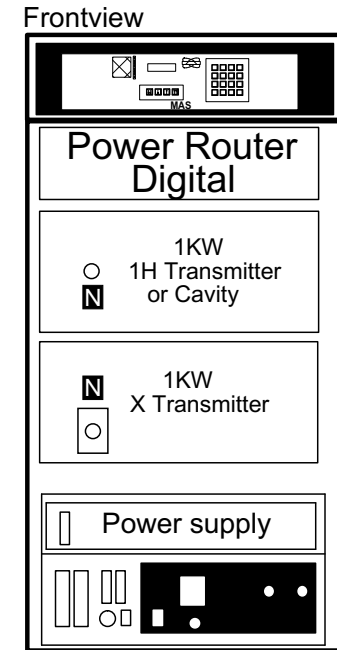
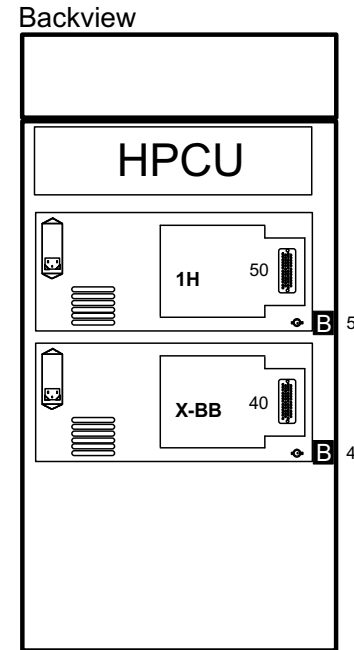


Figure 5.5. High Power 1H RF Wiring

# *Internal Wiring*

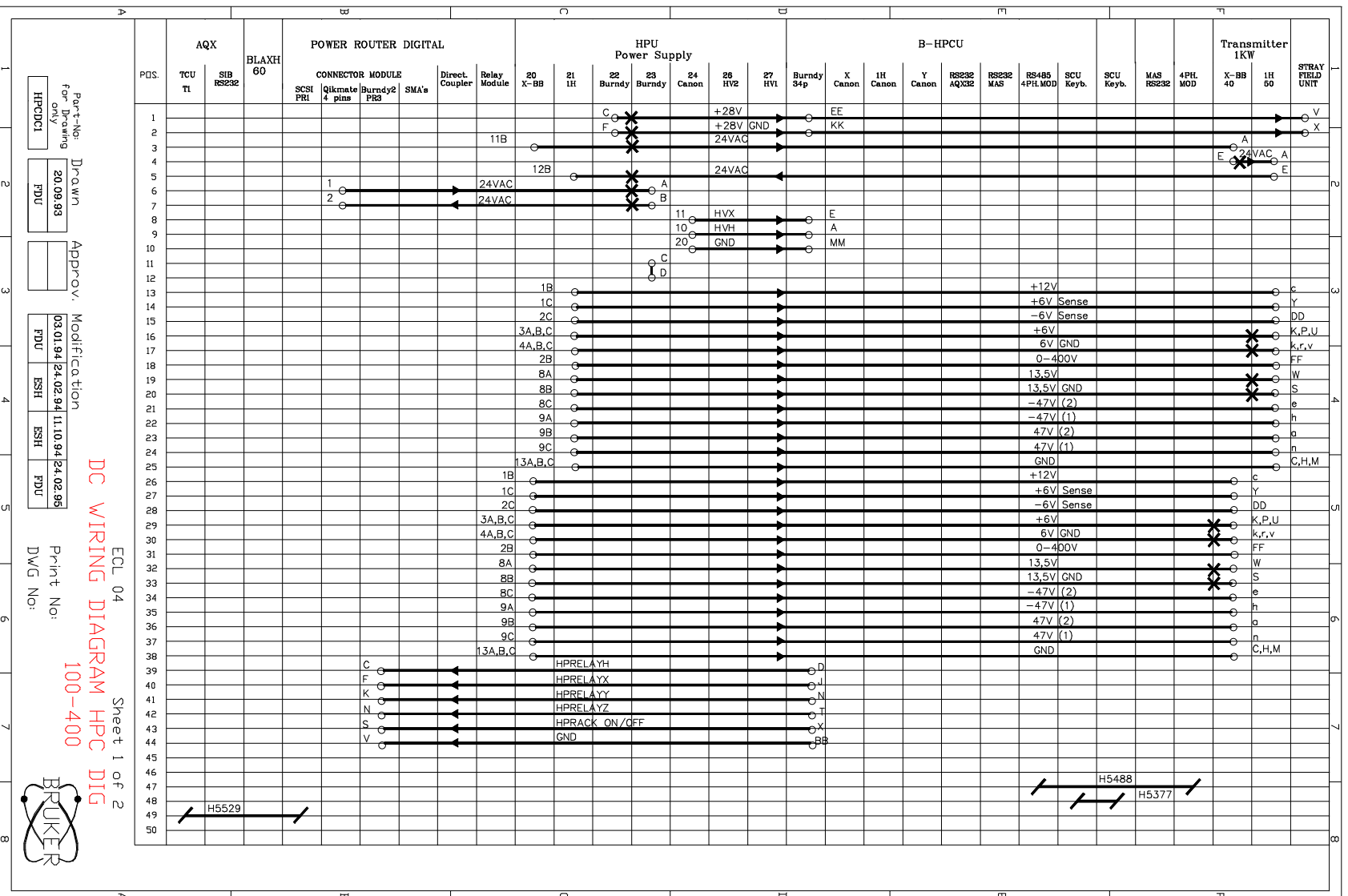
# 6

*DMX High Power 100-400*

*6.1*

---

Figure 6.1. DMX DC Wiring Diagram DIG 100-400 Page 1



Part-No. Drawn  
 for Drawing only 20.09.93  
 HPCDCI FDU

Approv. Modification  
 03.01.94 24.02.94 11.10.94 24.02.95  
 FDU ESH ESH FDU

ECL 04 Sheet 1 of 2  
 DC WIRING DIAGRAM HPC DIG  
 100-400

Print No:  
 DWG No:



Figure 6.2. DMX DC Wiring Diagram HPC DIG 100-400 Page 2

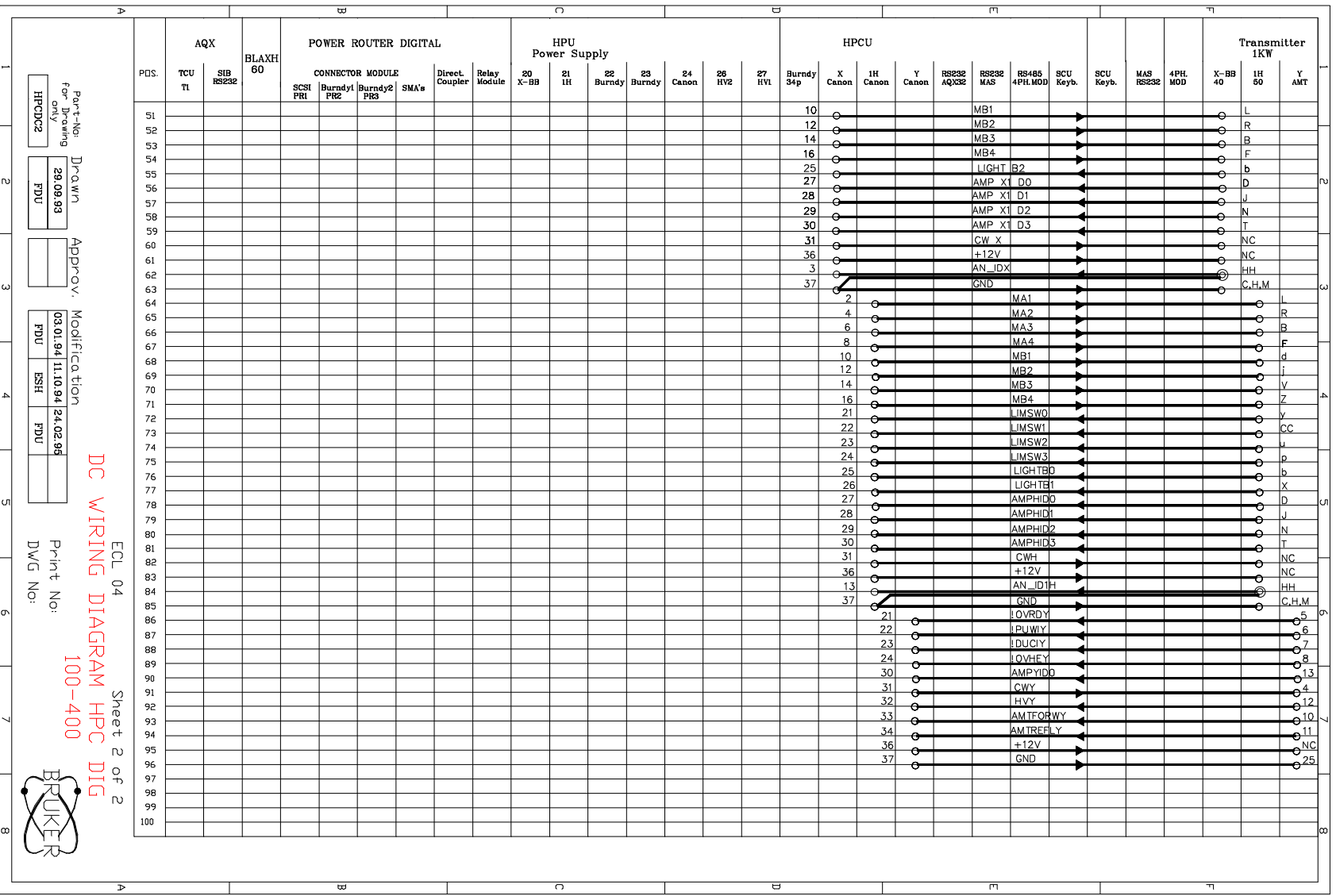
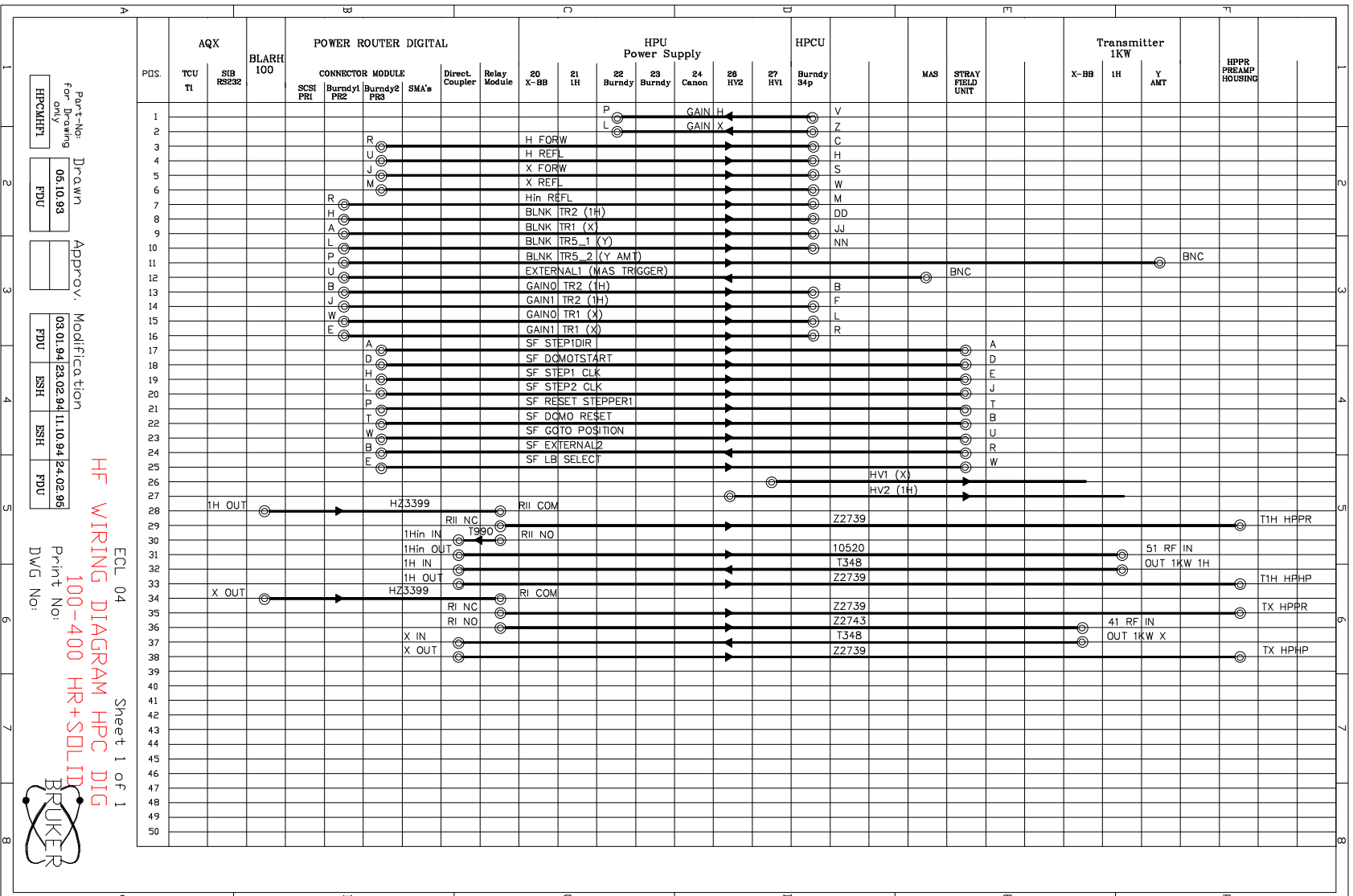


Figure 6.3. DMX HF Wiring Diagram HPC DIG 100-400 HR + Solid



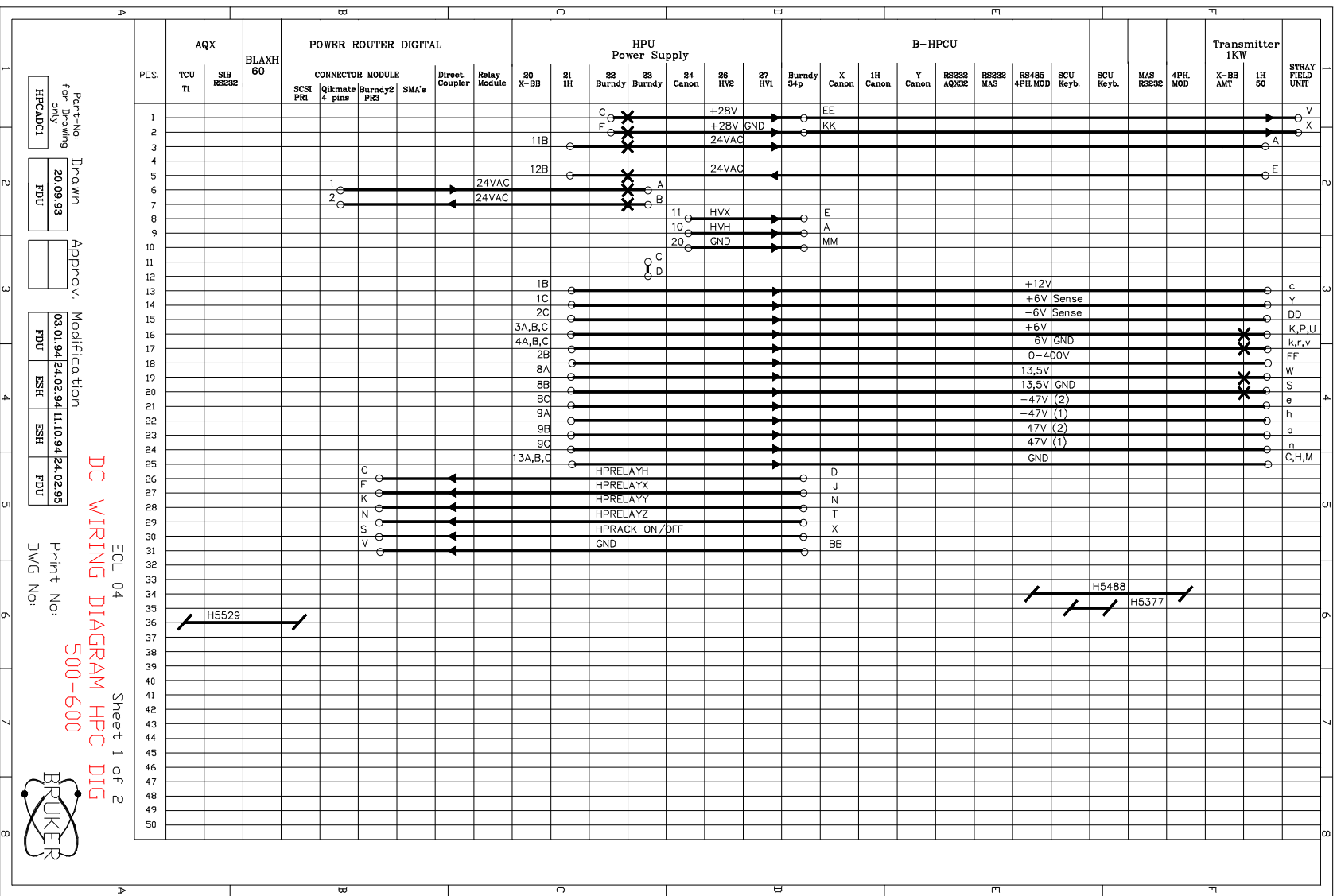
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ECL 04 Sheet 1 of 1  
 HF WIRING DIAGRAM HPC DIG  
 100-400 HR+SOLID  
 Print No:  
 DWG No:





Figure 6.4. DMX DC Wiring Diagram HPC DIG 500-600 Page 1



Part-No: Drawn  
for Drawing only  
20.09.93  
HPCADCI FDU

Approv. Modification  
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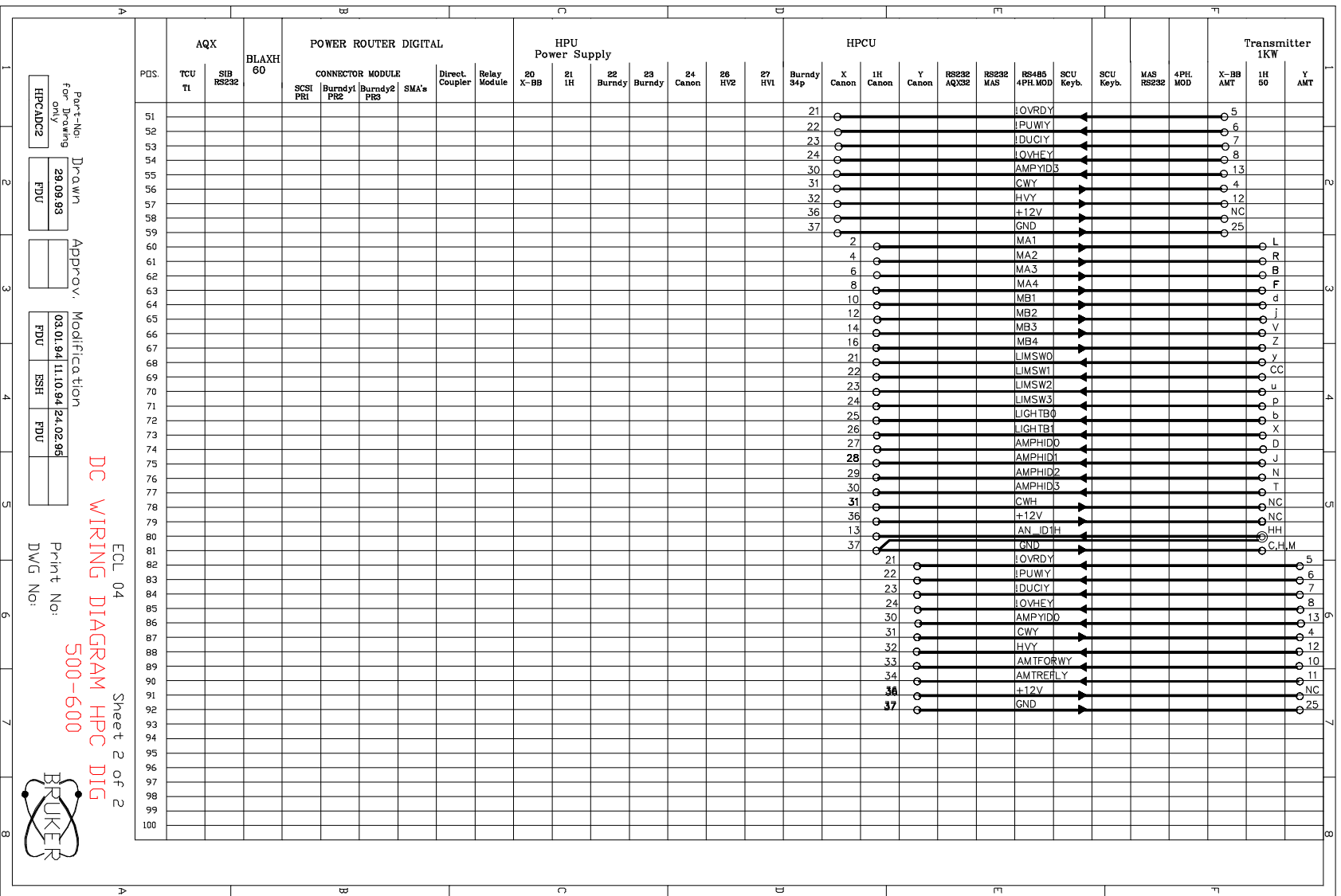
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DWG No:

ECL 04 Sheet 1 of 2  
DC WIRING DIAGRAM HPC DIG  
500-600





Figure 6.5. DMX DC Wiring Diagram HPC DIG 500-600 Page 2



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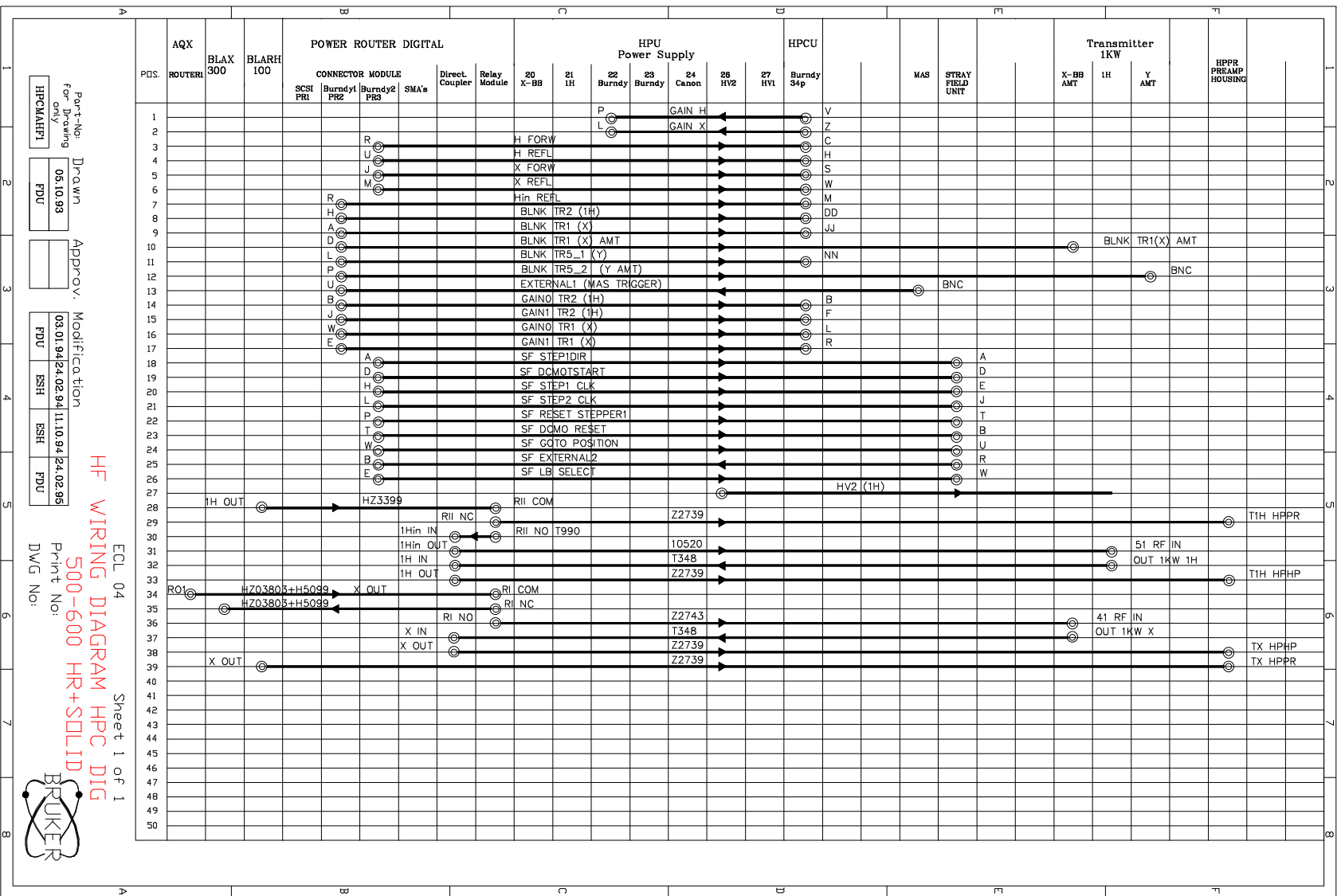
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 FDU BSH FDU

ECL 04 Sheet 2 of 2  
**DC WIRING DIAGRAM HPC DIG**  
**500-600**  
 Print No:   
 DWG No:



Figure 6.6. DMX HF Wiring Diagram HPC DIG 500-600 HR + Solid



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 for Drawing 05.10.93  
 only HPCMAHPI FDU

Approv. Modification  
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 FDU SSH SSH FDU

ECL 04 Sheet 1 of 1  
 HF WIRING DIAGRAM HPC DIG  
 500-600 HR+SDLID  
 Print No:  
 DWG No:





Figure 6.7. DSX DC Wiring Diagram HPC DIG 100-400 Page 1

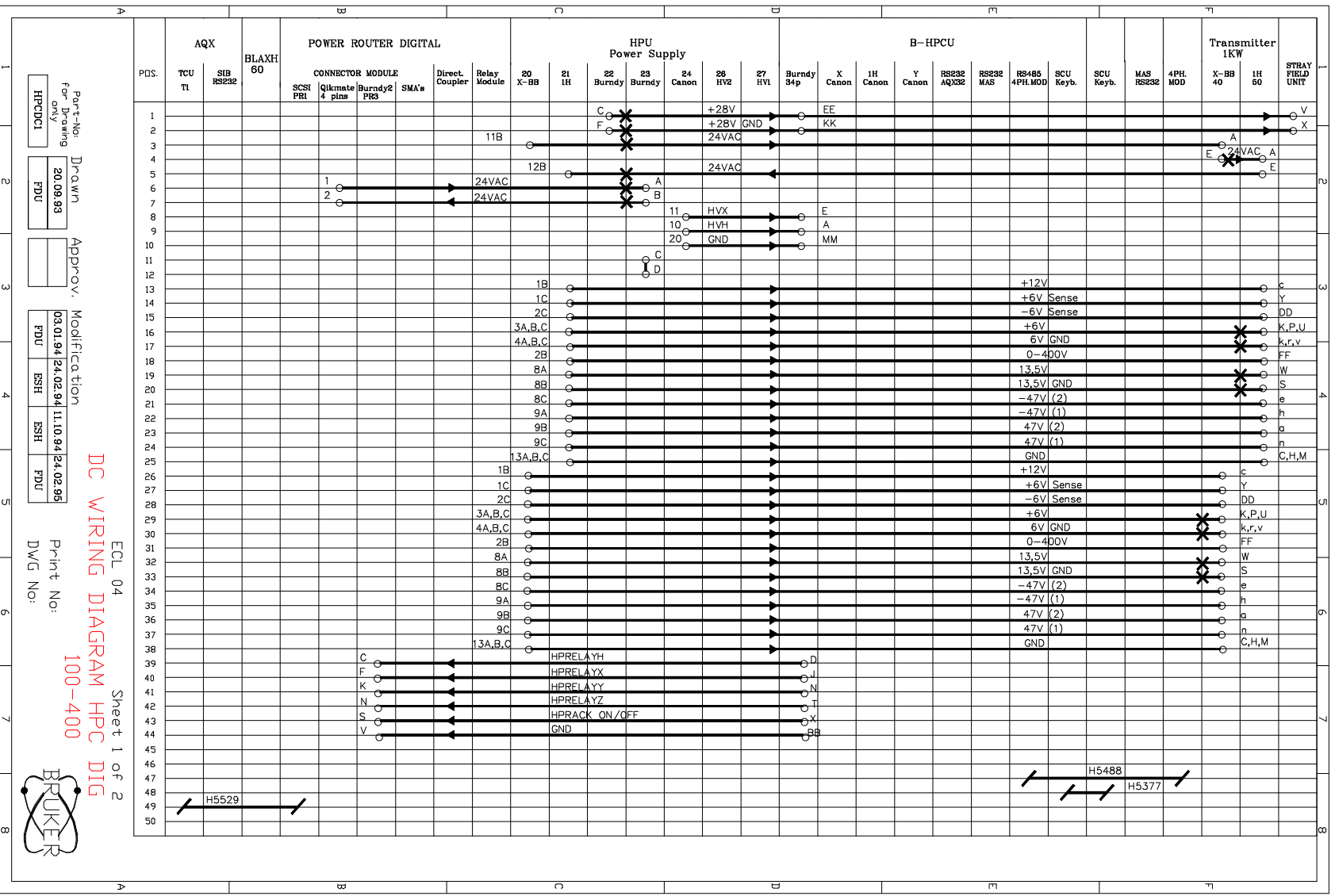
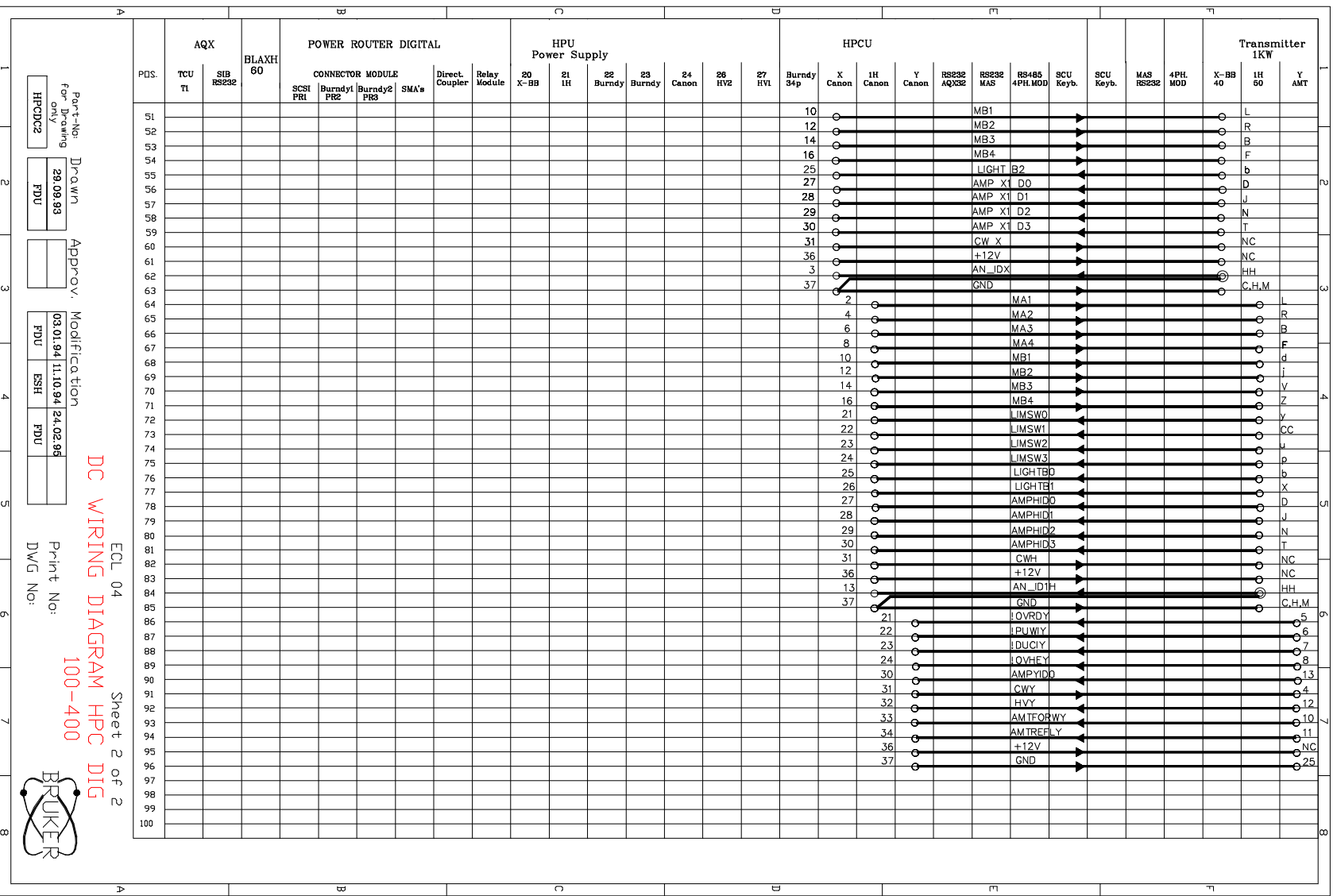


Figure 6.8. DSX DC Wiring Diagram HPC DIG 100-400 Page 2



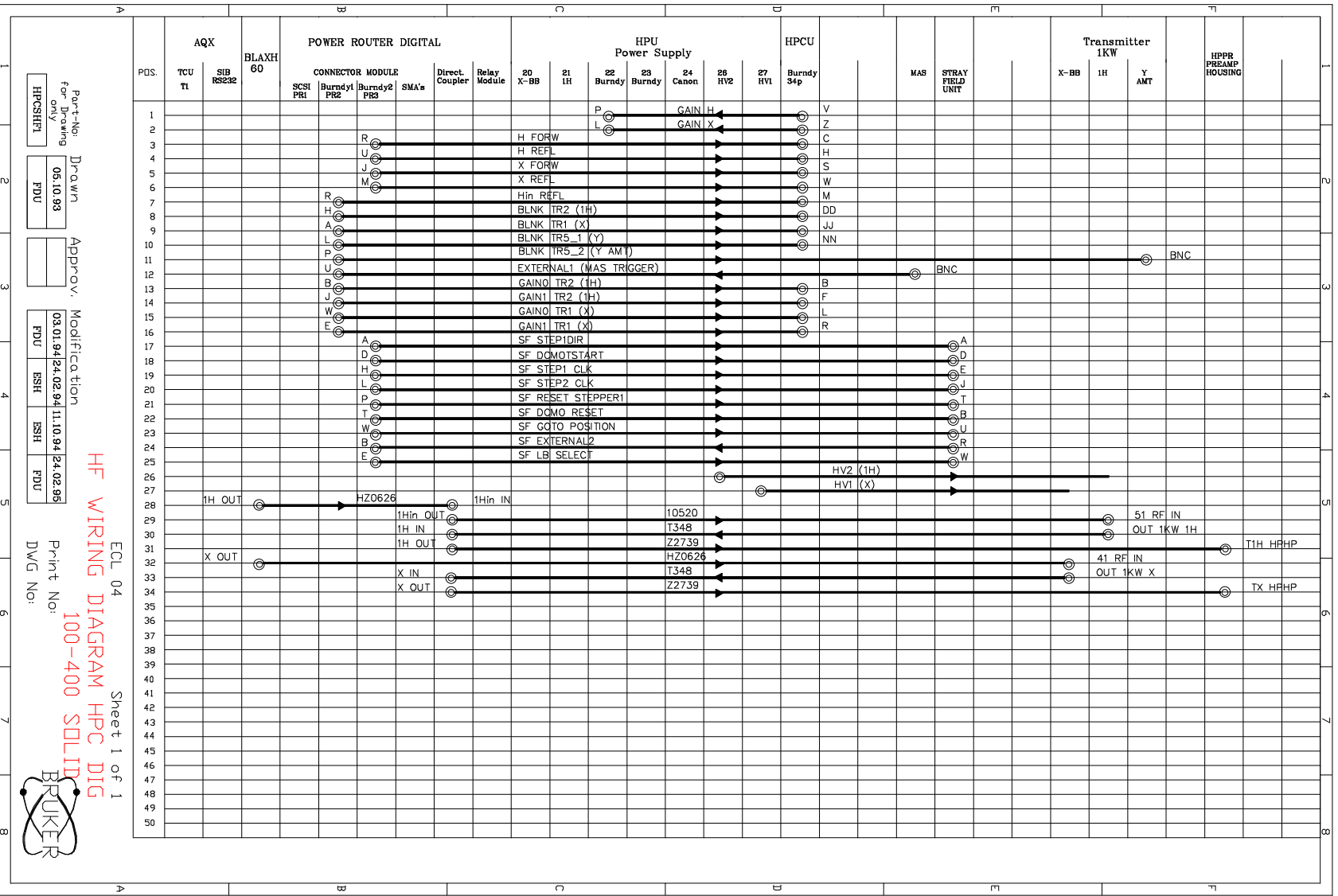
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Print No:  
DWG No:

ECL 04 Sheet 2 of 2  
DC WIRING DIAGRAM HPC DIG 100-400  
BRUKER

Figure 6.9. DSX HF Wiring Diagram HPC DIG 100-400 Solid



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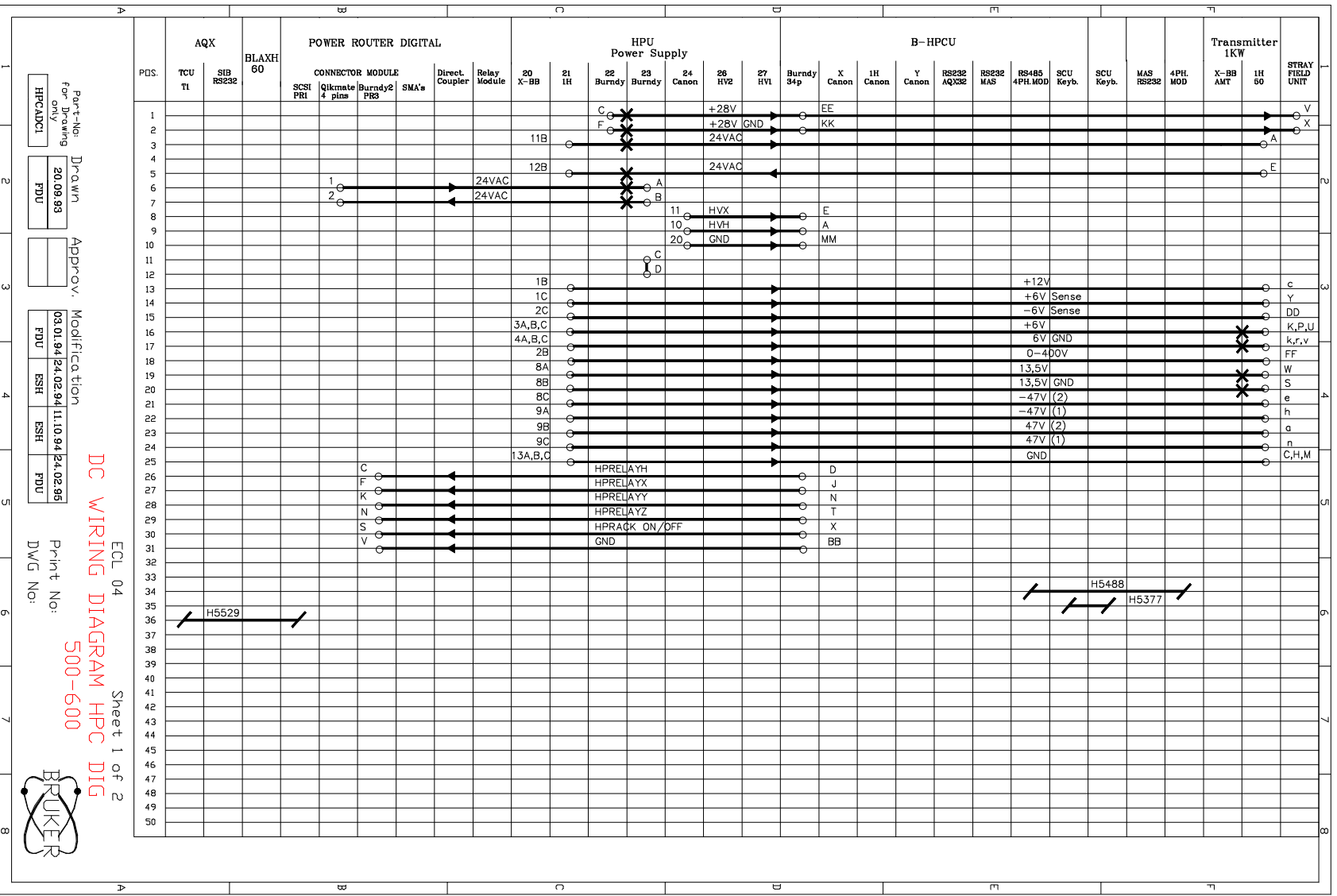
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**100-400 SOLID**  
 Print No:  
 DWG No:





Figure 6.10. DSX DC Wiring Diagram HPC DIG 500-600 Page 1



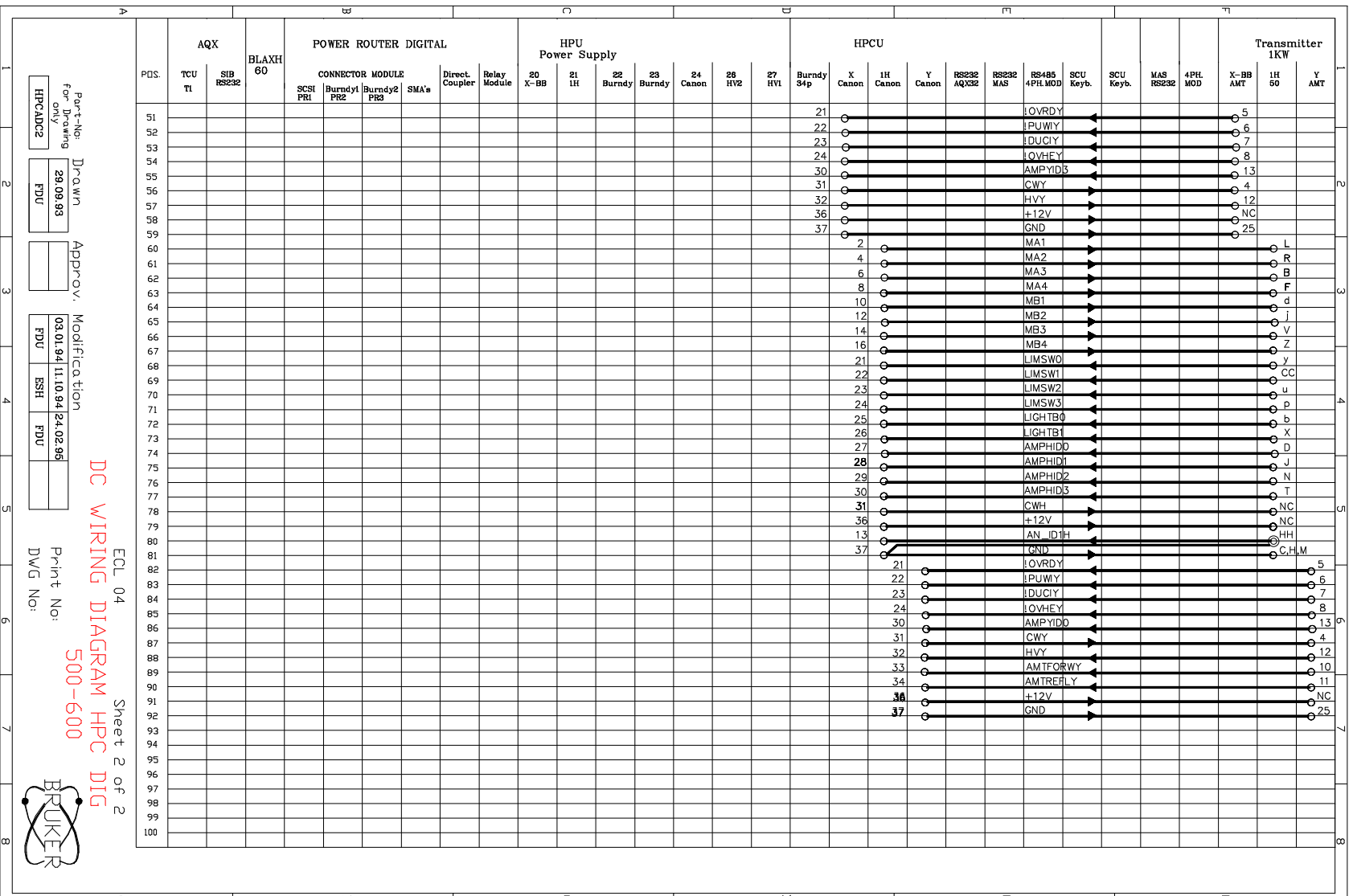
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ECL 04  
**DC WIRING DIAGRAM HPC DIG**  
 Sheet 1 of 2  
 Print No: **500-600**  
 DWG No:





Figure 6.11. DSX DC Wiring Diagram HPC DIG 500-600 Page 2



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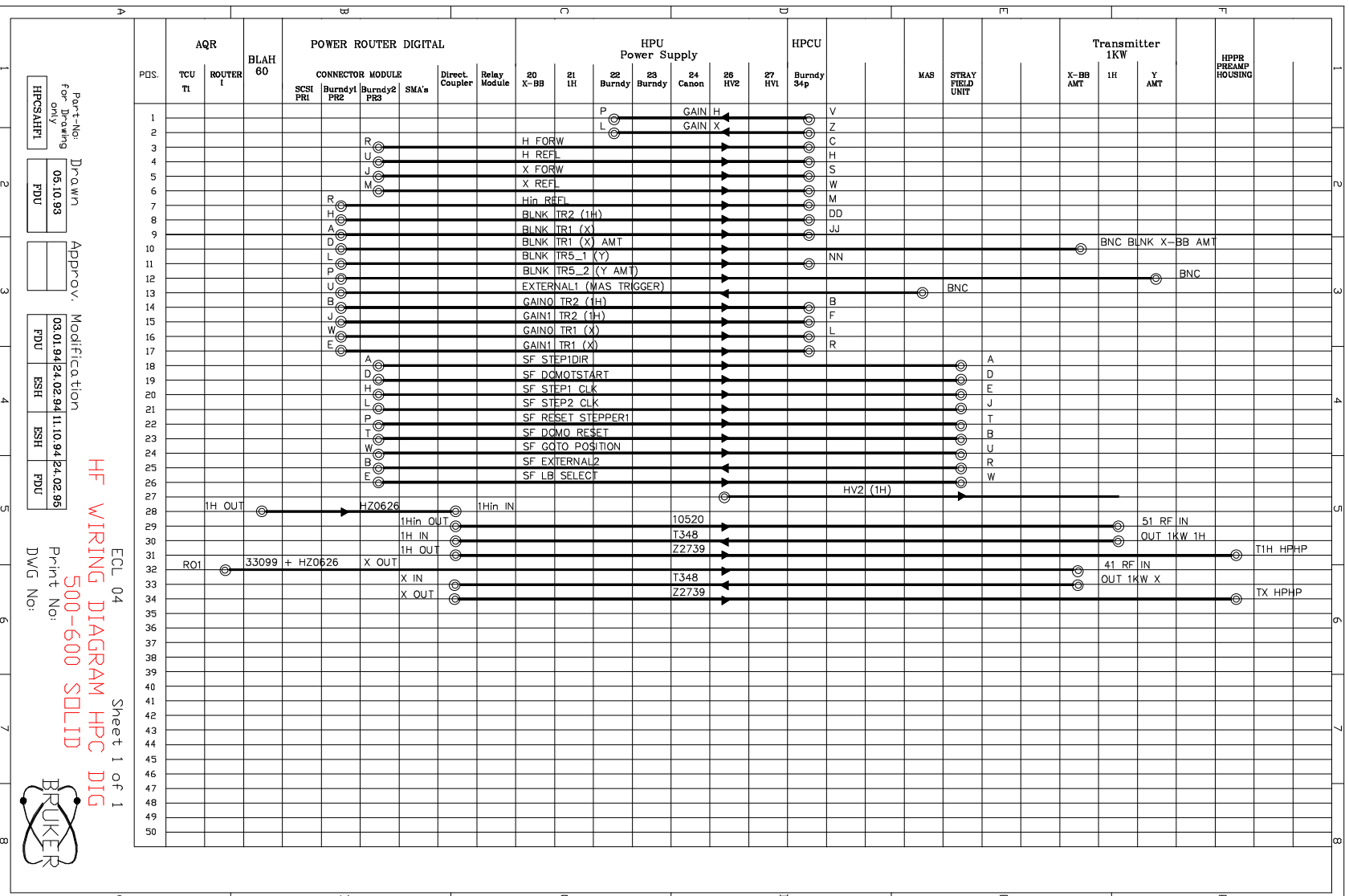
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Print No:  
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ECL 04 Sheet 2 of 2  
 DC WIRING DIAGRAM HPC DIG  
 500-600



Figure 6.12. DSX HF Wiring Diagram HPC DIG 500-600 Solid



Part-No:   
 for Drawing   
 only   
 HPCSAHFL

Drawn:   
 05.10.93   
 PDU

Approv:   
 [Signature]

Modification:   
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 FDU SSH SSH FDU

Print No:   
 DWG No:

ECL 04   
 Sheet 1 of 1   
 HF WIRING DIAGRAM HPC DIG   
 500-600 SOLID



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