

27 July 1962

ERRATA

Change all rererences to "RAK-13" to read "RAK-12Bt

Change all reference to page "iii" to read "ii". (part I only)

Change all reference to page "iv" to read "iii". (part I only)

FOREWORD

TMC's models DDR-6 consist of various combinations of modular equipment units; in this way various customer needs may be satisfied. For example, in model DDR-6B (see following figure 1-1) the equipment units comprise (see following figure 1-2): LSP-7, two GPR-90RXD, CFA-1, SFP-2, VOX-5, DCP, PSP-1 and RAK-13.

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FOR
DUAL DIVERSITY RECEIVER
MODEL DDR-6B

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III	Instruction Book for Frequency Shift Converter Model CFA-1
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V	Technical Manual for Power Supply Model PSP-1 and PSP-2
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PART I

SYSTEM DESCRIPTION AND OPERATION

for

DUAL DIVERSITY RECEIVER, DDR-6B

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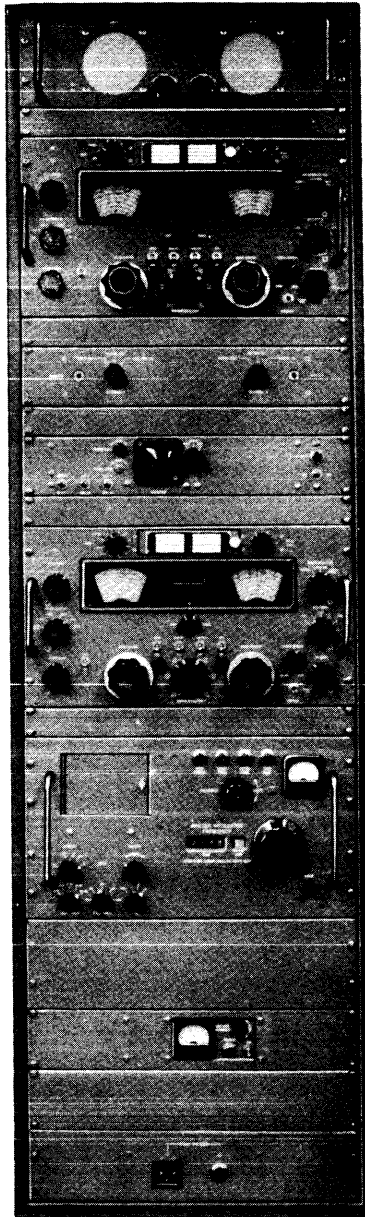


Figure 1-1. Front View of Dual Diversity Receiver, DDR-6B

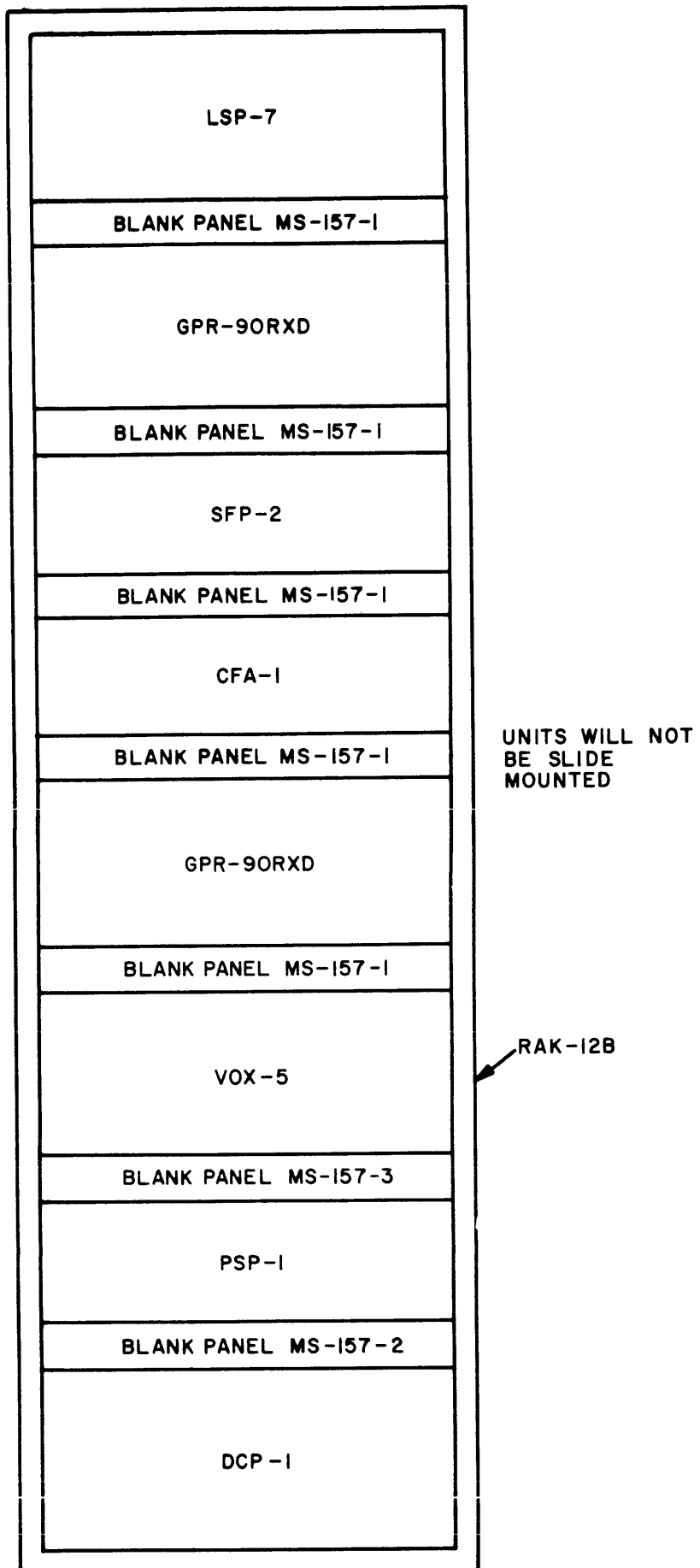


Figure 1-2. Equipment Configuration of Dual Diversity Receiver, DDR-6B

Section 1 - System Description

The TMC Models DDR-6(B and D) are dual diversity receiving systems providing continuous coverage from .54 to 31 megacycles. The Models DDR-6 feature the TMC Model GPR-90RXD, Communications Receivers, which provide for common HFO, IFO, BFO and AVC control. Oscillator injection voltages are supplied by a variable frequency oscillator, the TMC Model VOX-5, while diversity combining of AM, CW or MCW signals is accomplished by a common diode load which provides a common audio output of two receivers. Diversity combining of FS signals is accomplished in the TMC Model CFA, Frequency Shift Converter.

Two Basic configurations are available, DDR-6B providing AM, CW, MCW and FS; DDR-6D providing AM, CW, MCW, FS and SSB. Either configuration is available in a standard relay rack (RAK-13) for fixed station installation. RAK-13 is equipped with forced air ventilation.

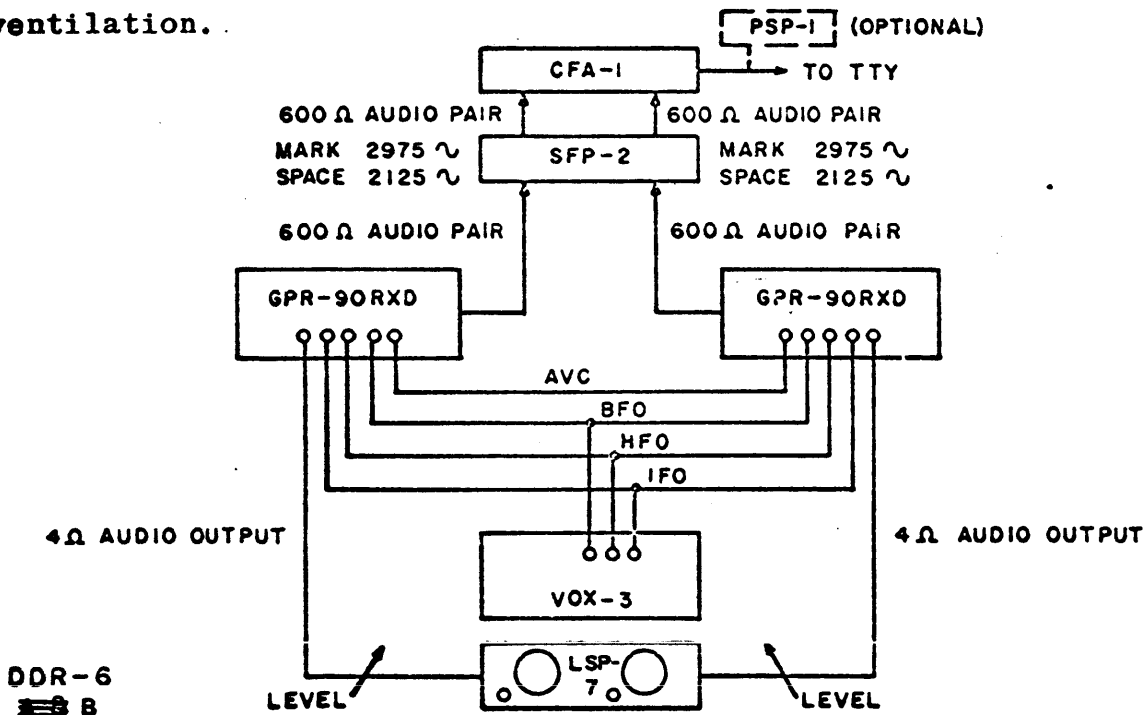


Figure 1-3. Block Diagram of DDR-6B

TECHNICAL SPECIFICATIONS

POWER REQUIREMENT:

115/230 volts
50-60 cps
single phase

SIZE:

DDR-6A, C

79 in. high
21 in. wide
23 in. deep

DDR-6B, D

79 in. high
21 in. wide
23 in. deep

WEIGHT:

APPROX. NET

DDR-6A 400 lbs.

DDR-6B 400 lbs.

DDR-6C 450 lbs.

DDR-6D 450 lbs.

COMPONENTS AND
CONSTRUCTION:

All equipment is manufactured
in accordance with JAN/MIL
specifications wherever prac-
ticable.

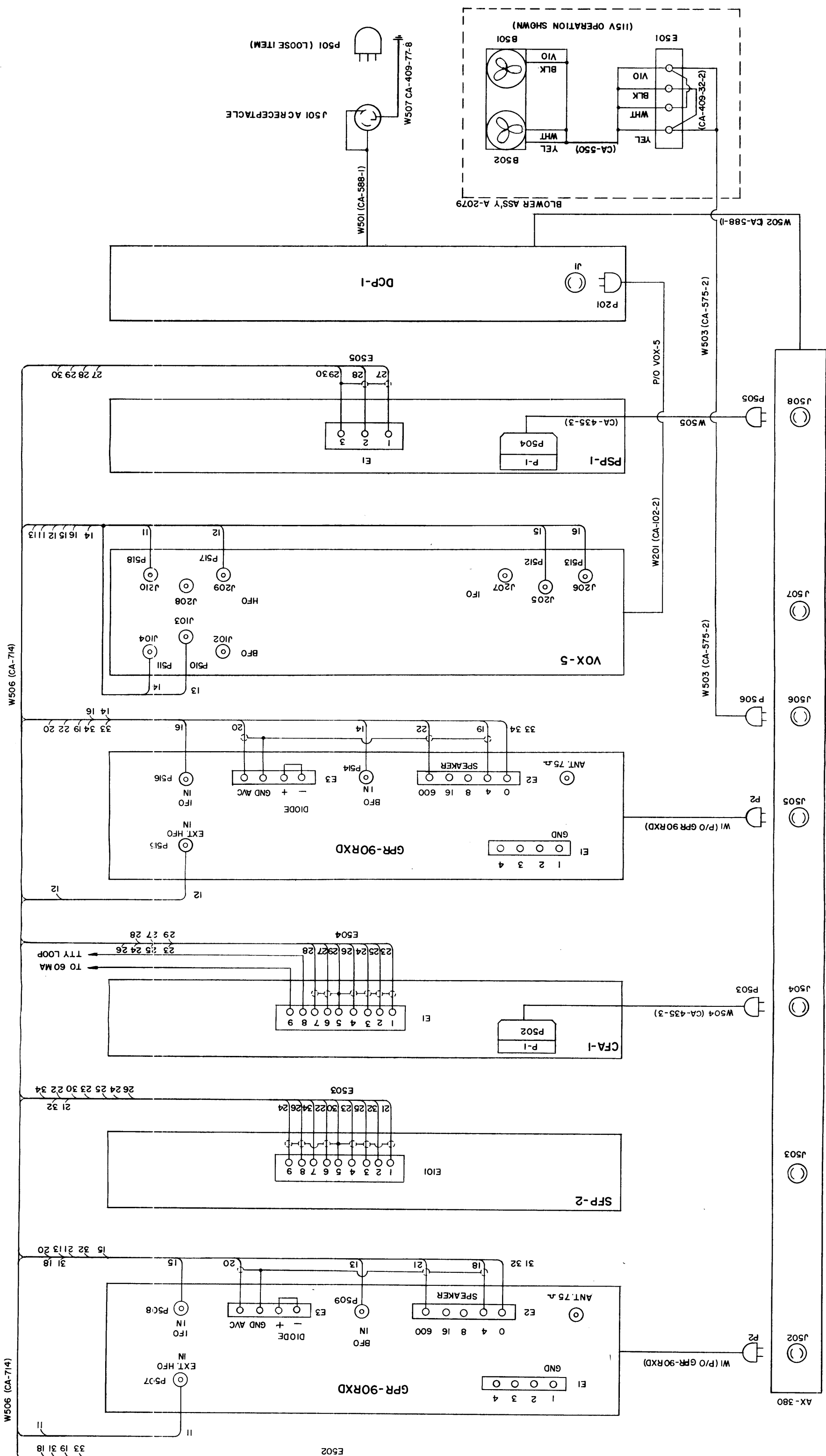
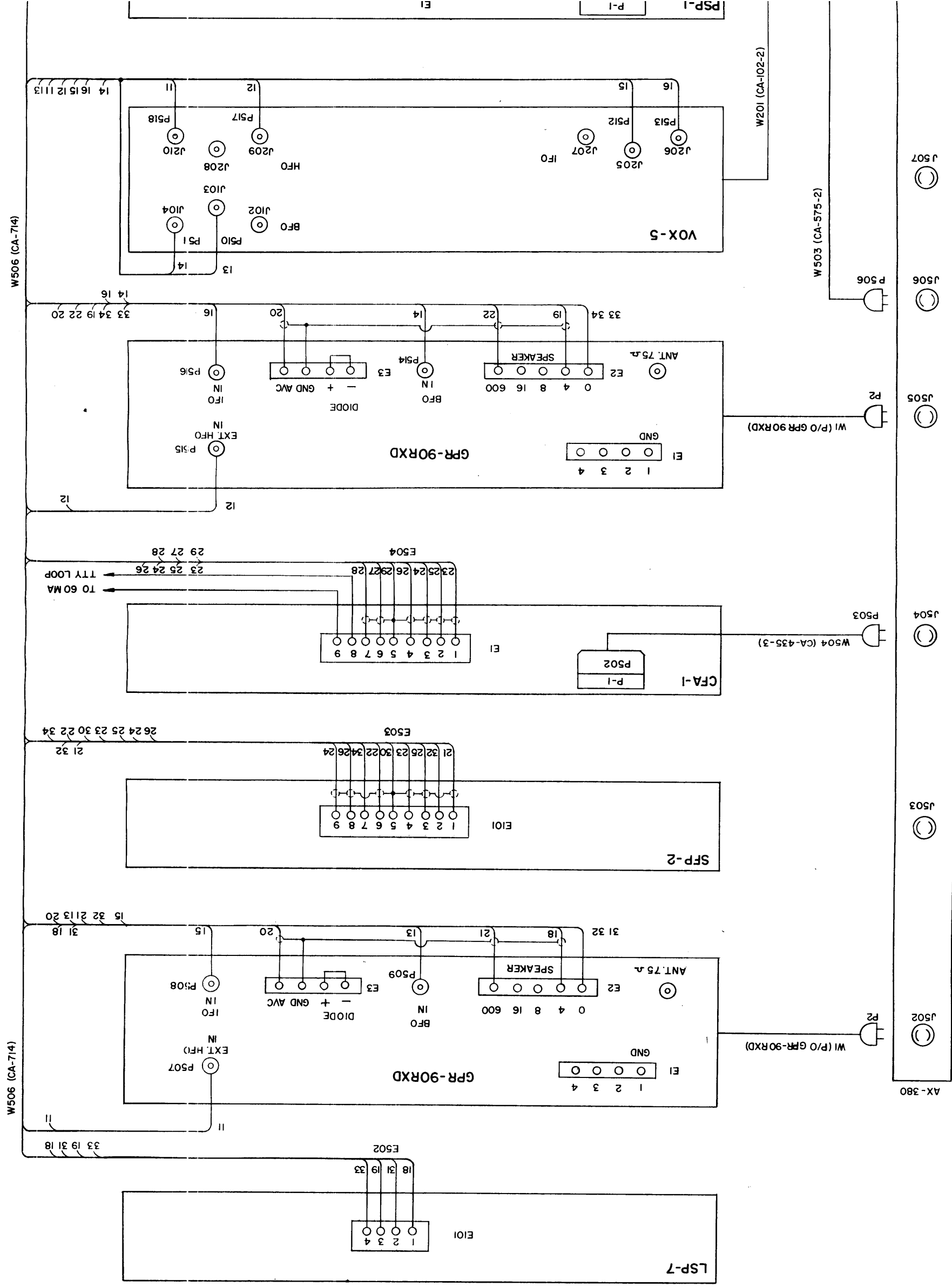


Figure 1-4. System Interconnection Diagram of DDR-6B



W506 (CA-714)

W201 (CA-102-2)

W503 (CA-575-2)

W504 (CA-435-3)

W506 (CA-714)

AX-380

Section 2 - System Operation

2-1. General

As there are several equally good procedures to "turn on" the DDR-6B, each operator will undoubtedly have his own preferred method. In section 3 of each detailed manual (GPR-90RXD, CFA-1, VOX-5, and PSP-1) there is a complete turn-on procedure on an individual equipment basis. The turn-on procedure given below is an abridged procedure on a system basis.

DUAL DIVERSITY RECEIVER MODEL DDR-6B, FRONT PANEL CONTROLS, OPERATING CHART

STEP	UNIT	OPERATIONAL DETAILS
1	DCP	Turn MAIN POWER switch on; INDICATOR should light.
2 (a)	VOX-5	Calibrate VOX-5.
(b)		Turn POWER to ON; HFO to ON; METER to VMO; XTAL to VMO; BAND MCS to proper band; MASTER FREQUENCY OSCILLATOR to desired frequency; OUTPUT to desired level; TUNING to maximize meter reading.
3	PSP-1	Turn toggle switch to ON; indicator should light; turn OUTPUT CURRENT knob to give 60 ma reading on meter (TTY or equivalent load connected).
4 (a)	Both GPR-90RXD's	Set HFO switch to EXT (Selects VOX-5 as the local oscillator).
(b)		Set RF SELECTIVITY switch to NON XTAL (selects widest IF response).
(c)		Adjust AUDIO GAIN control for desired output level.
(d)		Set CAL switch to OFF (disables 100-kc oscillator)
(e)		Set MANUAL - AVC switch to AVC (permits AVC operation).
(f)		Set LIMITER switch to OFF (disables noise limit r).

STEP	UNIT	OPERATIONAL DETAILS
(g)		Set BFO switch to OFF (disables BFO).
(h)		Set BAND SPREAD control to 100 (maintains main tuning dial calibration).
(i)		Set Send-Rec switch to REC (applies B+ power to unit).
(j)		Set XTAL PHASE control to 0 (sets crystal filter to nominal center frequency).
(k)		Set MAIN TUNING control to desired signal frequency (tunes receiver to desired signal frequency).
(l)		Set RANGE SELECTOR switch to band determined by step k (selects appropriate tuning range).
(m)		AUDIO SPREAD control, BFO PITCH control, AUDIO SELECTOR switch, and XTAL ADJ may be left in any position.
(n)		Adjust RF GAIN control fully clockwise (applies primary power to the receiver and adjusts RF gain to maximum).
(o)		Set ANT TUNE control to TUNE.
5	SFP-2	Set CHANNEL 1 and/or CHANNEL 2 to position PANEL OUT or FILTER OUT or FILTER IN as desired.

STEP	UNIT	OPERATIONAL DETAILS
6 (a)	CFA-1	Turn ON-OFF toggle switch to ON; POWER indicator should light.
(b)		TURN MARK-SPACE-LINE switch to LINE.
(c)		TURN CH 1 and/or CH 2 to positions desired.
(d)		Turn SENSE switch to enable receiving printer function properly.
(e)		Set MARK BIAS control to correct for fixed mark or space distortion in received signal or in teleprinter.
(f)		Set THRESHOLD control for the shift of the received signal.
(g)		Refer to CFA manual for pattern on meter.
7	LSP-7	Adjust gain controls for desirable output.