Description Information

Subsection		Description
2.983 (a)	Applicant	: SANYO ELECTRIC CO., LTD. 1-1 Keihan hondori 2-chome, Moriguchi City Osaka, Japan
	Manufacture	: SANYO ELECTRIC CO., LTD.
2.983 (b)	FCC ID	: AEZSCP3000
2.983 (c)	Quantity	: Quantity production is planned.
2.983 (d)	Technical Description: See Exhibit xx	
2.983 (d)(I)	Emission Type : AMPS wide band mode:	40KF8W and 40K0F1D
	PCS wide band CDMA mode:	1M25F9W
2.983 (d)(2)	Frequency Range: AMPS wide band mode:	824.04 to 848.97 MHz
	PCS wide band CDMA mode:	1851.25 to 1908.75 MHz

2.983 (d)(3) Range of Operating Power:

AMPS wide band mode: +7.8dBm to +26.0dBm with the Capacity of reducing the maximum power in five steps of 4 dB each on command from a land station. Each power level is maintained with in +2/-4dB of its normal level over the temperature range of -30 to +60 degrees Centigrade and -0.5 V/+0.5 V change of the Battery voltage.

PCS wide band CDMA mode: -50dBm to +23dBm with the capacity of reducing the maximum power in 73 steps of 1dB each on command from land station. A Transmitter transmits a power in two (2) state. One is an access state, another is a traffic channel state. In an access state, a power level is in proportion to an estimated receiving signal strength and is maintained with –8dB/+7dB of it normal level. In traffic channel state, a power level is determined by a 1 dB up or down command from a land station, that is , a power level of next transmit timing is a current power level added or submitted 1 dB according to a command. Each power level is maintained over the temperature range of -30 to +60 degrees Centigrade and -0.5 V/+0.5 V change of the Battery voltage.

Description Information (Continued)

Subsection	Description
2.983 (d)(4)	Maximum Power Rating: 0.4 Watts (AMPS wide band mode) 0.2 Watts (PCS wide band CDMA mode)
2.983 (d)(5) AMPS	DC Voltage and Current to the Final Amplifier Module: Supply Voltage : 5.0 V Drain Voltage : 5.0 V Drain Current : 430 mA
CDMA	Supply Voltage : 5.0 V Drain Voltage : 5.0 V Drain Current : 450 mA
2.983 (d)(6)	Function of Active Devices: See Exhibit 7.

Reference No.	Function	Part No.
	Base Band Circuit	
	MSM (Mobile Station Modem)	
IC401	MSM	MSM2300
	FLASH/SRAM	
IC402	□MFLASH,2MSRAM	M6MFB
	EEPROM	
IC403	16K×8bit EEPROM	×84129
	RESET	
IC404	Power Observation (3.1V)	S-80831
	REGULATOR	
IC405	Regulator (3.0V)	TK11230
IC412	Regulator (3.0V)	TK11230
	CODEC	
IC411	CODEC	MB86437
	CODEC CLK/SYNC I/F	
IC413	D-Flip Flop	TC7W74FC

Description Information (Continued)

Subsection	Description	
	A/D CONVERTER SELECT CIRCUIT	
IC416	2CH-MPX	TC4W53FU
IC417	2CH-MPX	TC4W53FU
Q4011	Switch	DTC 124XE
Q4012	Switch	DTC 124XE
Q4013	Switch	DTC 124XE
	AUTOMATIC POWER ON	
IC418	Power Observation (3.2V)	S-80832
IC420	Single 2-AND	TC7SQ8FU
	INVERTER	
IC413	Schmit Trigger Inverter	TC7S14FU
	RINGER BUZZER DRIVER	
IC424	Schmit Trigger Inverter	TC7S14FU
IC425	Dual 2-AND	TC7WQ8FU
Q4006		2SC4555
Q4017		2SC4555
	PA-ON CONTROL	
IC426	Schmit Trigger Inverter	TC7S14FU
IC427	Dual 2-AND	TC7WQ8FU
	CHARGE CURRENT DETECTOR	
IC901	OP Amplifier	LMC 71Q1
	REGULATOR AND QUICK CHARGE CIRCUIT	
IC902	Li-ion Battery Control	MM1333
Q903	Switch	2SB1386
Q904	Switch	2SA1774
Q905	Switch	2SA1774
Q907	Switch	DTC124XE
Q908	Switch	DTC124XE
Q909	Switch	DTC124XE
	REGULATOR AND CHARGE CONTROL	
IC903	Regulator (4.1V)	TK11241
Q901	Switch	2SB1424
Q902	Switch	2SA1774
Q903	Switch	2SC4617
IC904	DC-DC Converter	SI9161BQ
Q912	P-ch, N-ch Dual MOS FET	SI68Q1DQ

Description Information (Continued)

Subsection		Description	
		DC-DC CONVERTER 2	
	IC905	DC-DC Converter	SI9161BQ
	Q913	P-ch, N-ch Dual MOS FET	SI68Q1DQ
		DC-DC CONVERTER CONTROL	
	IC907	Single 2-NAND	TC7SQQFU
	IC908	Single 2-NAND	TC7SQQFU
	Q915	Switch	DTC124XE
	Q916	Switch	DTC124XE
		POWER KEY IN	
	Q4002	Switch	DTC124XE
		CALL LED SWITCH	
	Q4003	Switch	2SC4555
		VOLTAGE SWITCH	
	Q4007	Switch	DTC124XE
	Q4026	Switch	DTC124XE
		CALL LED DRIVER	
	Q4019	Driver	DTC124XE
		VIBRATOR DRIVER	
	Q4021	Driver	2SB815
	Q4022	Driver	2SC4984
	Q4023	Driver	DTC124XE
		POWER SWITCH	
	Q910	Switch	DTC124XE
	Q911	P-ch MOS FET	SI6433DQ
	Q914	Switch	DTC124XE
		LED POWER, BACK LIGHT CONTROL	
	Q4004	Driver	2SC4555
	Q4005	Driver	2SC4555
	Q4024	Driver	DTC124XE
	Q4025	Driver	2SB815

Description Information (Continued)

Subsection Description

RF Module

TCXO Block		
CM1	TCXO	VC-TCXO-205CT (19.68MHz)
PLL Synthesizer		
IC23	Synthesizer	MB15S93
IC24	DUAL Synthesizer	MB15F03PV-G-EF
D5	Switch	DAN235E
CM4	PCS VCO	URAA8X423A
CM5	AMPS VCO	UCVA3X122A
	RF Power Amplifier	
IC1	PCS Power Amplifier	R121007
IC5	Switch	uPG153TB
IC6	Switch	uPG153TB
TR2	Driver	AT-32011
TR3	Driver	AT-32011
RT6	Temperature Sensor	NTCCM10054LH683J
D1	HDET	B30K03WS
IC7	AMPS Power Amplifier	RF2132
IC21	Driver	uPC2710T
IC22	Buffer Amp.	UPC2726T-E3
IC12	Buffer Amp.	HN2C12FU
TR4	LNA	BFP420
IC11	Mixer	GN2011
TR5	IF Amp.	2SC5015
TR6	LNA	2SC5015
IC13	Mixer	GN02023B
Base Band Circuit for RF		
IC15 (Filters, D/A converters A/D converters)	Base Band IC	ALP215D

Description Information (Continued)

Subsection	Description	
	AGC Circuit	
IC20	TXAGC IC (AGC, QPSK Modulation UP Mixer)	ALP230
IC16	RX AC IC (AGC, QPSK Demodulation)	RF2667
	Antenna Switching Circuit	
IC25	Switch	CXG1028

Description Information (Continued)

Subsection	Description	
2.983 (d)(7)	Circuit Diagrams :	
	Transceiver Block Diagram:	See Exhibit (Block.tif)
	Transceiver schematic Diagram:	See Exhibit (Circuitbb.tif and Circuitrf.tif)
2.983 (d)(8)	Operating Instruction Book:	See Exhibit (SCP-3000_US.pdf)
2.983 (d)(9)	Tune-Up Procedure:	See Exhibit (Alighment&Tuneup.doc)

2.983 (d)(10) Description of Frequency Stabilization System:
(TCXO System)

The TCXO System consists of VCXO Circuit (CM1) and Mobile station modem (IC401) included uprocessor, DAC and AFC block.

With regard to the Frequency Stability:
The frequency of the TCXO module (CM1) is 19.68 MHz with stability less than ±2ppm over the temperature range of –30 to +80 degrees Centigrade.
The frequency of TCXO module can be controlled by AFC (Auto Frequency Control) circuit block which Mobile station Modem (IC401) includes, so that the receiving frequency agrees with the base station transmit frequency. The frequency stability of TCXO system is maintained within ± 150 Hz over the temperature range of –30 to +60 degrees Centigrade.

Description Information (Continued)

Subsection	Description
2.983 (d)(11)	Description of Circuits for Suppression of Spurious Radiation, for Limiting Modulation, and for Limiting Power:

AMPS mode

Means for Attenuation of Spurious Emissions:
Spurious and Harmonic Suppression is obtained by proper shielding techniques and the use of filters.

Means of Limiting Modulation:
This transmitter is equipped with a device, which automatically prevents Modulation in excess of 100%. This device an instantaneous deviation control circuit precedes the modulation of the transmitter. It is instantaneous in action for controlling the modulating wave introduced into the transmitter's frequency modulator. The modulation limiter is incorporated in the Mobil Station Modem LSI (IC401). IC401 includes DSP (Digital Signal Processor) and modulation signals, voice, WBD, SAT and ST is shaped by Digital Filter which DSP performs and DSP calculates modulation signals to limit modulation.
The deviation limit can be set to the Channel width Requirement of ±12KHz with DSP incorporated in IC401. The deviation of wide Band Data and Signaling Tone can be set to a maximum of ±8KHz in IC401.

Means for Limiting Power
Power limiting is obtained via the Automatic Power Control (APC) Circuit. APC Circuit contains HDET, IC20, IC401 and EEPROM. The adjustment of the transmitter's power for each of the 6 levels is made according to data stored in EEPROM IC403.

CDMA Mode

Means for Attenuation of Spurious Emissions:
Spurious and Harmonic Suppression is obtained by proper shielding techniques and the use of filters.

Means of Limiting Modulation:
Modulation signals are voice signal and signaling message. CODEC IC411 digitalizes voice signal and uprocessor which MSM IC401 includes generates signaling message. Each signal is a digital signal. IC401 generates the CDMA modulation signal. Digital Filter in iC401 shapes the CDMA modulation signal to limit modulation.

Means for Limiting Power
Maximum power limiting is obtained via the Automatic Power Control (APC) Circuit. APC Circuit contains HDET, IC20, IC401 and EEPROM. The adjustment of the transmitter's power for maximum power level is made according to data stored in EEPROM IC403.

Description Information (Continued)

Subsection	Description
2.983 (d)(12)	Not applicable
2.983 (e)	Standard Test Conditions: The following conditions and procedures were followed during testing of this transmitter: Room temperature: 23 - 27 Degrees Celsius Room Humidity: 30 - 50% Supply Voltage: 3.6 V DC (Normal Battery Voltage) Prior to testing, the unit was tuned-up according to the manufacture's alignment procedure. Test procedures were according to EIA/TIA specification IS 98A (AMPS) and ANSI/EIA/TIA specification JSTD-018 (CDMA). The following equipments were used for testing: Equipment Manufacture Type No.
2.983 (f)	Equipment Identification: Equipment's Identification Label and its intended Location are shown in Exhibit (rating.gif)(FCC Label), and in Exhibit mm (Photograph of Back View of Transceiver showing FCC Label).
2.983 (g)	Photographs: A complete set of the photographs showing external and internal views of circuit details and construction are provided. See Exhibit xx to xx.
2.983 (h)	Not Applicable
2.983 (i)	Not Applicable
2.983 (j)	Not Applicable
2.985 (a)(c)	RF Power Output: The test set-up for RF Power Output is as per Page x of Exhibit xx. The Power Output was then measured. Supply Voltage: 3.6 V DC Modulation: None

AMPS wide band
Results:

Channel No.	Nominal Frequency (MHz)	Power Output (Watts) Hi	Low
991	824.04		
383	836.49		
799	848.97		

Note: Channel capacity = 832

Description Information (Continued)

Subsection	Description

2.985 (a)(c) (Continued)

PCS wide band CDMA mode:

Channel No.	Nominal Frequency (MHz)	Power Output (Watts) Hi	Low
25	1851.25		
600	1880.00		
1175	1908.75		

Note: Channel capacity = 1151 (Channel No. 0 to 24 and 1176 to 1200 are not available.)

Description Information (Continued)

Subsection	Description
2.987 (a)	Transmitter Audio Frequency Response:
2.987 (b)	Modulation Limiting: The results are shown in Exhibit xx.
2.987 (d)	Other types of equipment:
2.989 (c)(1)	Occupied Band width: The set-up for thee Occupied bandwidth is as per Page xx of Exhibit xx.
22.915	Modulation Requirement
22.915 (a)	Non-voice modulation signals The results are shown in Exhibit xx.
22.915 (b)	Modulation levels The results are shown in Exhibit xx.
22.915 (c)	Deviatio limitation circuitry The results are shown in Exhibit xx.
22.915 (d)	Audio filter characteristics The results are shown in Exhibit xx.

Description Information (Continued)

Subsection	Description
22.917	Spurious Emission at Antenna Terminal: The test set-up for the Spurious Emission at the Antenna terminal is as per Page xx of Exhibit xx. The level of the carrier and the various conducted spurious and harmonic frequencies were measured by means of a calibrated Spectrum analyzer. The spectrum was scanned from the lowest frequency generated in the equipment to 10 GHz. (AMPS wide band CDMA) Out put Power: 0.4 Watts Modulation Condition: Audio Plus SAT Audio: Frequency: 2,500 Hz Input level: 16 dB greater than the level to produced 6 kHz deviation. SAT: Frequency: 6,000 Hz Deviation: 2 kHz Harmonics Spurious Level below Carrier (dBc) (Normal Frequency in MHz) 824.04 836.49 848.97 2^{nd} 3^{rd} to 6^{th} 7^{th} to 11^{th} All other Spurious Readings were below –xx dBc. Limit: - (43 + 10 log 0.6) dBc = -40.8 dBc. The graphs measured by the spectrum analyzer are show in Exhibit xx .
22.917 (f)	Spurious emission at Antenna TERMINAL: The test set-up for the spurious emission in the receiving frequency band is as per the following figure. The mean power of any emissions appearing in the base station frequency range from the transmitter was measured by means of a calibrated spectrum analyzer.

Description Information (Continued)

Subsection	Description
24.238	The test set-up for the Spurious Emission at the Antenna terminal is as per Page xx of Exhibit xx. The level of the carrier and the various conducted spurious and harmonic frequencies were measured by means of a calibrated Spectrum analyzer. The spectrum was scanned from the lowest frequency generated in the equipment to 20 GHz. (PCS wide band CDMA)

Harmonics	Spurious Level below Carrier (dBc) (Normal Frequency in MHz)		
	1851.25	1880.00	1908.75
2nd			
3rd to 6th			
7th to 11th			

All other Spurious Readings were below –xx dBc.
Limit: - (43 + 10 log 0.2) dBc = -36.0 dBc.

The graphs measured by the spectrum analyzer are show in Exhibit xx.

24.238 Spurious emission at Antenna TERMINAL:
The test set-up for the spurious emission in the receiving frequency band is as per the following figure.
The mean power of any emissions appearing in the base station frequency range from the transmitter was measured by means of a calibrated spectrum analyzer.

DESCRIPTIVE INFORMATION (Continued)

Subsection	Description

22.919 (a)(b)(c) Electronic Serial Number:

The transceiver FCC ID: AEZSCP3000 has an Electronic Serial Number (ESN) of 32 bit, which is uniquely written at the factory. The host component of ESN (EEPROM) is soldered to the main circuit board of the transceiver and contains encoded information of memory.

The memory includes ESN (32 bit), checksum, and an additional information. The additional information includes a random data, which depends on an individual transceiver unit.

The checksum will be used for checking whether the written ESN is correct or not. The ESN is encoded by particular method. And encoded ESN, checksum and additional information are written into the host component (EEPROM) in the transceiver unit at the factory.

The method of encoding ESN is a kind of cyclic code. The operating software within the transceiver decodes the encoded ESN and check whether the decoded ESN is correct or not. If the ESN is not correct, the software make the transceiver inoperative. Therefore, the ESN is not alterable in the field without the information of encoding method performed in the factory and the checking method. And any attempt to remove, tamper with or change ESN will render the transceiver inoperative.

FCC 96-326

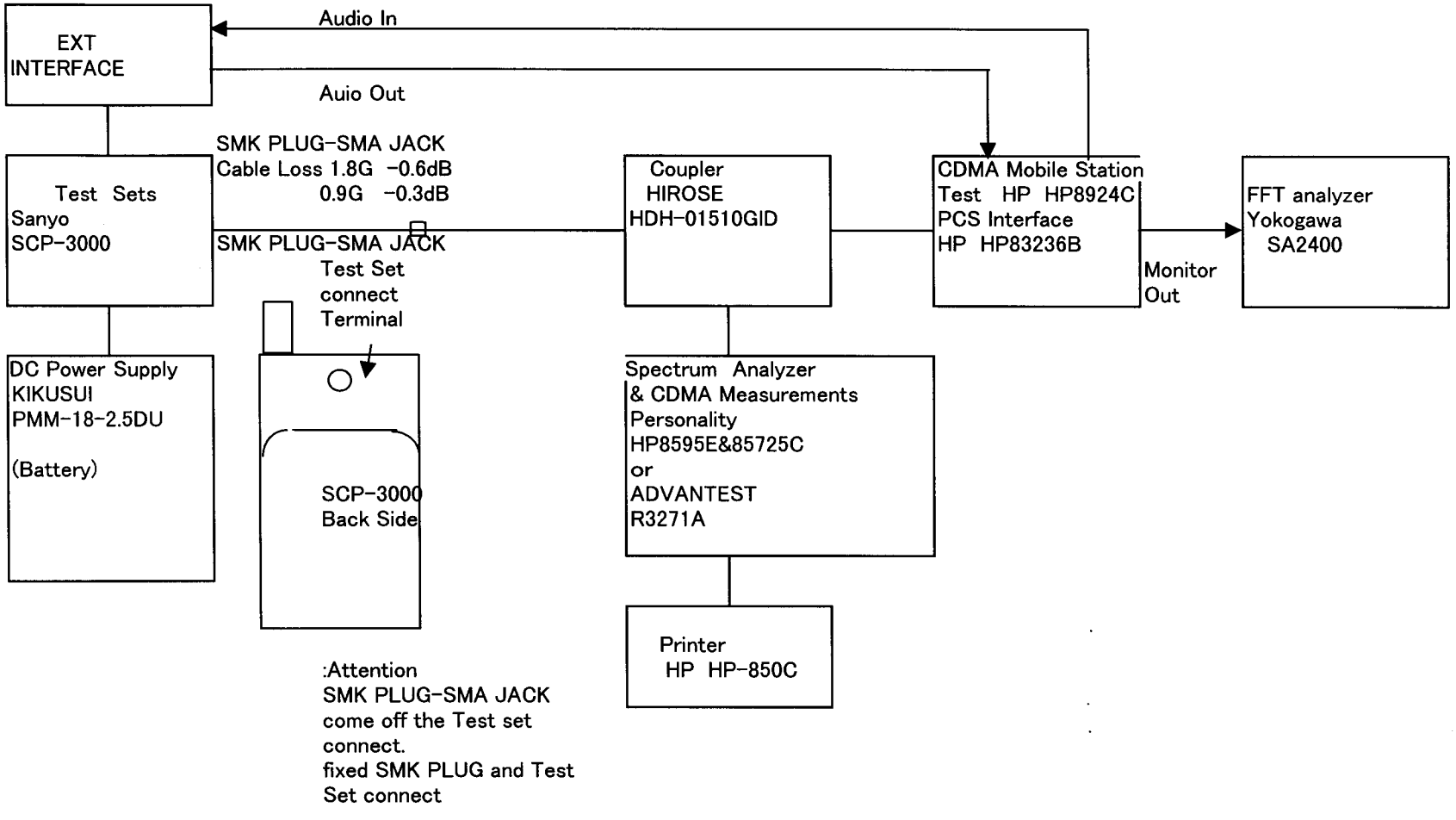
The SAR (Specific Absorption Rate) measurement was performed by IDX EMC Laboratory.

The report of measurement by IDX EMC Laboratory is attached as Exhibit xx.

Measurement Item 2.985(a)	PCS				AMPS			
Test Condition	Chan Std USPCS Protocol J-STD-008				TEST Mode			
RF OUTPUT	Std / Ch No / Frequency (MHz)	Ch 25 / 1851.25	Ch 600 / 1880.00	Ch 1175 / 1908.75	Std / Ch No / Frequency(MHz)	Ch 991 / 824.04	Ch 383 / 836.49	Ch 799 / 848.97
Maximum RF Output	Maxmum Rf Output Power(-104dBm) Class 2 Standard 30dBm>X>23dBm 1W>X>0.2W				Maxmum Rf Output Power Class 3 PL=0 Standard 30dBm>X>24dBm 1W>X>0.25W			
Minimum RF Output	Minimum Controlled Output Power (-25dBm) Standard <-50dBm <0.01uW				Minimum Controlled Output Power PL=7 Standard 10dBm>X>4dBm 0.1W>X>0.004W			
Measurement Channel Std & protocol Measurement order	Chan Std USPCS Protocol J-STD-008 A)Maximum Output Measurement Order(HP8924C) 1.Setup Measurement RF Channel 2.Test Set Power On 3.Setup Service Option 2 4.Setup Traffic Ec/Ior (-7.4dB) 5.Measurement ch Ior Set up(-104dBm) 6. Make a call 7.Postion the cursor at the Closed Loop Pwr Control field and select Always Up. (Send continuos '0' power Control bits) 8.Measure average power 9.Repetedly other RF Channel measure				TEST Mode A)Maximum Output Measurement Order(HP8924C) 1. Setup Measurement RF Voice Channel (ex. Ch. No. 383) 2. Setup Control Channel (ex. Ch No. 383) 3. Set to DPX Mode 4. Control ch SG Level Set up(-50dBm) 5. Test Set Power On (Push "Power" Key and "7" key simultaneously) 6. Push "2" Key and right side "^up" Key. Into AMPS TEST Mode 7. Push "TALK" Key. Into Tx/Rx Mode. 8. To set Channel Number, Push "*" Key. 9. To set a Power level, push Vol. "up" or "down" Key. 10. Repetedly step 8 and 9, measure the output power each channel and each power level.			

Measurement Item 2.985(a)	PCS	AMPS
Test Condition	Chan Std USPCS Protocol J-STD-008	
Measurement Channel Std & protocol Measurement order	B)Minimum Controled Output Measurement Order(HP8924C) 1.Setup Measurement RF Channel 2.Test Set Power On 3.Setup Service Option 2 4.Setup Traffic Ec/Ior (-7.4dB) 5. Measurement ch Ior Set up(-25dBm) 6.Drop timer field select off 7.Make a call 8.Postion the cursor at the Closed Loop Pwr Control field and select Always down. (Send continuos '1' power Control bits) 9.Measure chan power 10.Repetedly other RF Channel measure	

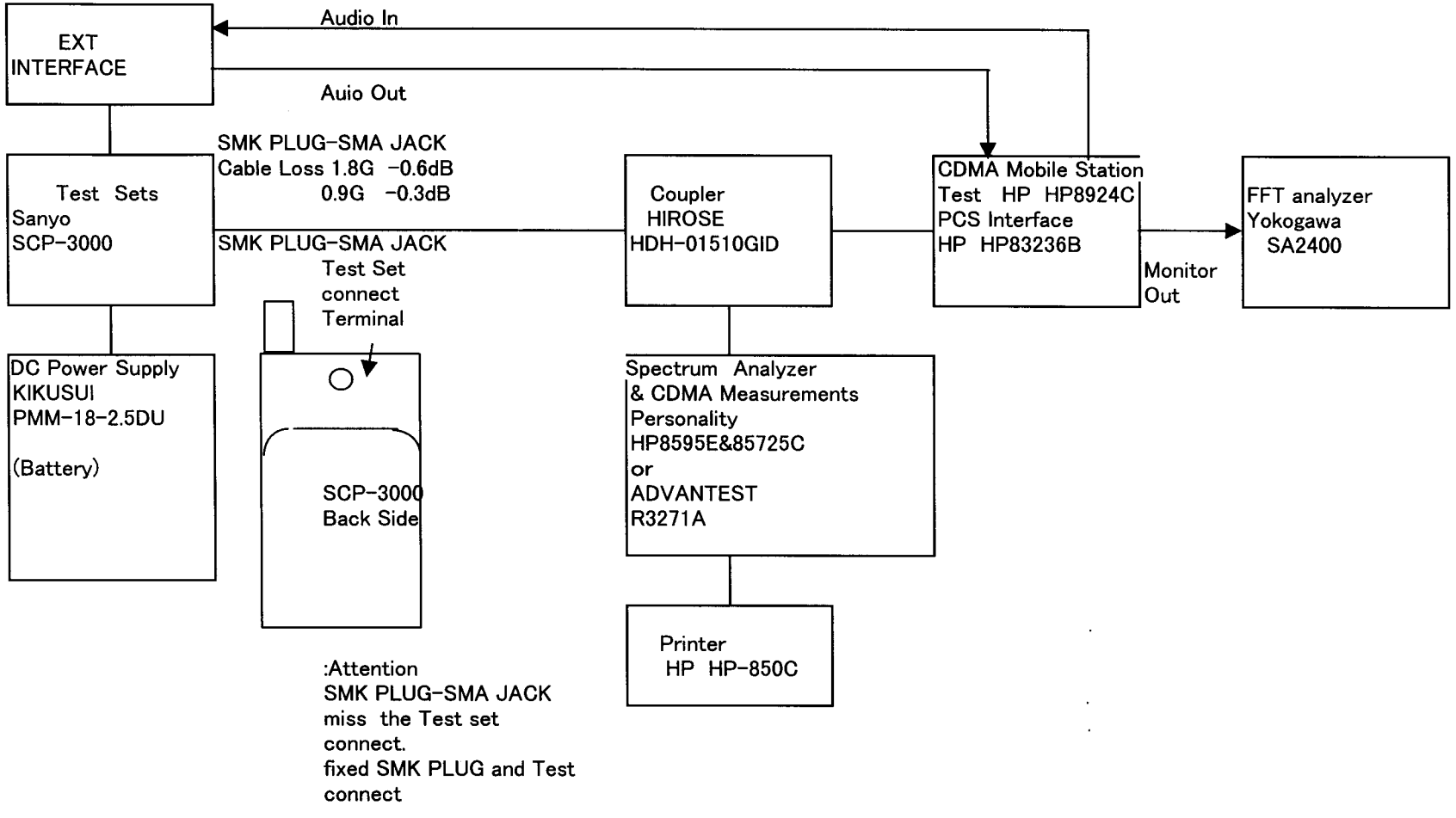
Measurement Block Diagram
Measurement Item
2.985(a)



Measurement Item 2.987 Modulation Characteristics	PCS	AMPS
Test Condition	Chan Std USPCS Protocol J-STD-008	FCC TEST Mode
	2.987(d) Modulation Characteristics STD J-STD-018 Minimum Std: Ch 600 1880.00 A)4.3.1 Time Reference <1us B)4.3.2 Waveform Quality >0.944 C)4.3.2 Frequency Accuracy <150Hz	RF Voice Channel 383, 799 and 991 A) 2.987(a)Transmit Electrical Audio Response -See Exhibit** 1)Minimum Std 0.3 to 3kHz 6dB/oct +1,-3dB 2)Minimum Std Attenuation Relative to 3KHz 3.0 to 5.9KHz >40log(f/3000)dB 5.9 to 6.1KHz >35dB 6.1 to 15KHz >40log(f/3000)dB 15 to 30KHz >28dB B) 2.987(b) Modulation Limit voice(audioinVSdevGraph)-See Exhibit** 1)Minimum Std <12KHz permit10%
Measurement Channel Std & protocol Measurement order	ChanStd USPCS protocol J-STD-008 A)Time Reference Measurement Order(HP8924C) 1.Setup Measurement RF Channel 600 2. Test Set Power On 3. Setup Service Option 2 4. Setup Traffic Ec/Ior (-14dB) 5. Measurement ch Ior Set up(-75dBm) 6. Make a call 7. Measure Time Reference 8. Repetedly other RF Channel measure B)Waveform Quality Measurement Order(HP8924C) C)Frequency Accuracy Measurement Order(HP8924C) 1. Setup Measurement RF Channel 2. Test Set Power On 3. Setup Service Option 2 4. Setup Traffic Ec/Ior(-7.4dB) 5. Measurement ch Ior Set up(-75dBm) 6. Make a call 7. Measure Waveform Quality & Frequency Accuracy	A.1)Frequency Response of Audio Modulation Measurement Order 1. Setup Measurement RF Voice Channel (ex. 383) 2. Setup Control Channel (ex. Ch No. 383) 3. Set Hp8924C to DPX Mode 4. Control ch SG Level Set up(-50dBm) 5. Test Set Power On (Push "Power" Key and "7" key simultaneously) 6. Push "2" Key and right side "^up" Key. Into AMPS TEST Mode 7. Push "TALK" Key. Into Tx/Rx Mode. 8. To set modulation to VOICE, push "INFO" Key and "CLR" Key and to set COMP OFF, push "CLR" Key. Push "#" Key, CODEC Path FREE 9. audio input 0.3～3.0KHz 1KHz ±2.9Kdev REF +6dB/oct Measure Frequency Response of Audio Modulation HP8924C Setup 1)750μs de-emphasis off Setup 2)C-Meassage Filter off Setup 3)Expander disabled A.2) 8. Next 1KHz ±8KHzdev level setup 9. increase 20dBUP 10. Repetedly other audio Frequency (3K～30K)

Measurement Item 2.987 Modulation Characteristics	PCS	AMPS
Test Condition	Chan Std USPCS Protocol J-STD-008	FCC TEST Mode
Measurement Channel Std & protocol Measurement order		B)Modulation Deviation Limiting Measurement Order 1. Setup Measurement RF Voice Channel 383 2. Setup Control Channel (ex. Ch No. 383) 3. Set Hp8924C to DPX Mode 4. Control ch SG Level Set up(-50dBm) 5. Test Set Power On (Push "Power" Key and "7" key simultaneously) 6. Push "2" Key and right side "^up" Key. Into AMPS TEST Mode 7. Push "TALK" Key. Into Tx/Rx Mode. 8. To set modulation to VOICE, push "INFO" Key and "CLR" Key and to set COMP OFF, push "CLR" Key. Push "#" Key, CODEC Path FREE 9. audio input 1KHz ±8KHzdev Setup HP8924C Setup 1)750us de-emphasis on Setup 2)C-Meassage Filter off Setup 3)Expander enabled 10. increase Audio Input Level. 11. Measure Modulation deviation Limiting 12. Repetedly measure other audio Frequency (0.3K~3K) 13. Push "*" Key to change the frequency, and repeat step 9 to 11.

Measurement Block Diagram	
Measurement Item	Modulation
2.987	Characteristics

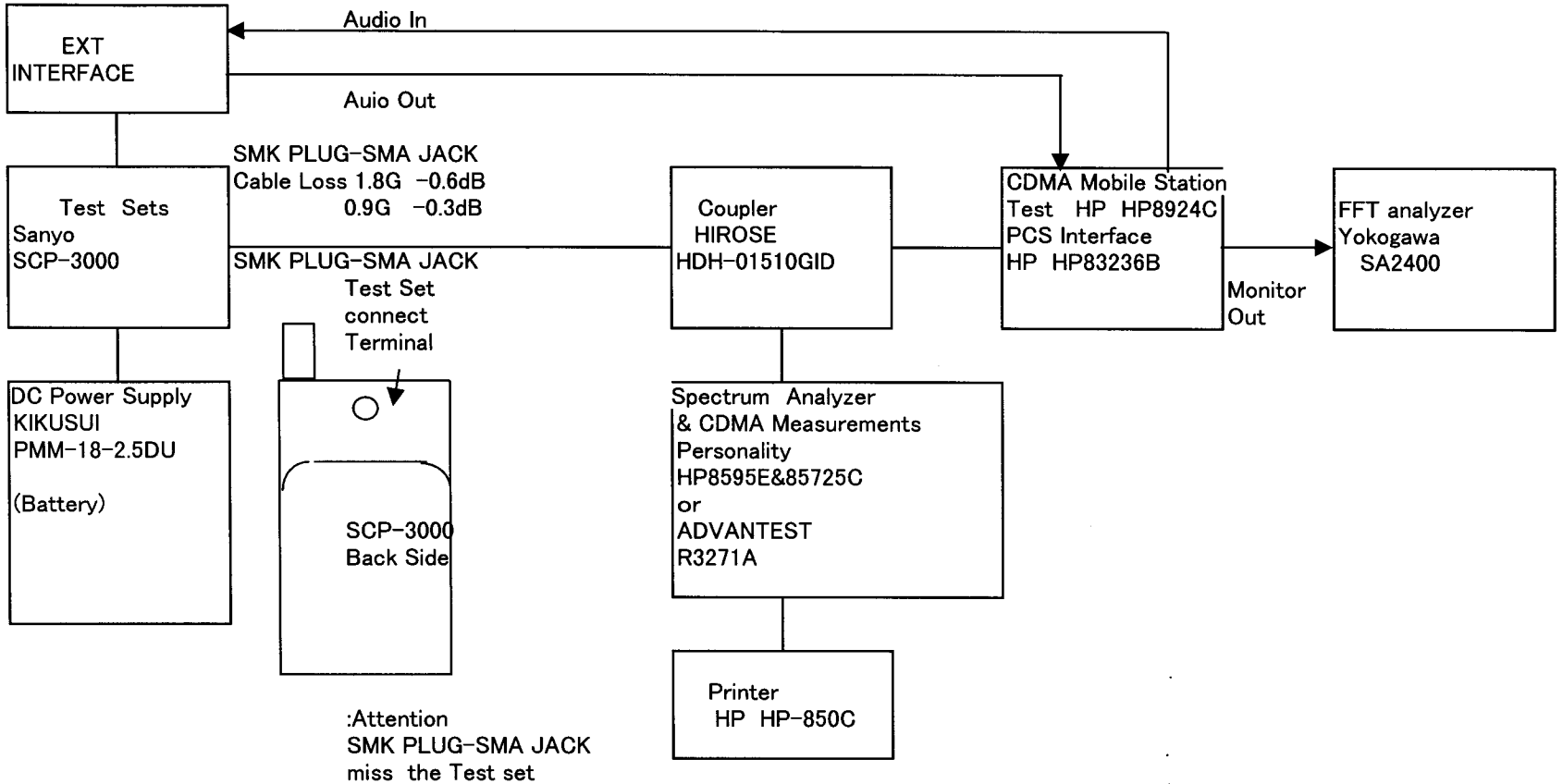


Measurement Item 2.989 OBW	PCS	AMPS
Test condition	ChanStd USPCS protocol J-STD-008	FCC Test Mode
Measurement Channel Std & protocol Measurement order	2.989(h) 1)Measurement OBW of Maximum RF Outp See--Exhibit **	2.989 Occupied Band Width(OBW) Measurement Order··PL=0 1. Setup Measurement RF Voice Channel 383 2. Setup Control Channel (ex. Ch No. 383) 3. Set Hp8924C to DPX Mode 4. Control ch SG Level Set up(-50dBm) 5. Test Set Power On (Push "Power" Key and "7" key simultaneously) 6. Push "2" Key and right side "^up" Key. Into AMPS TEST Mode 7. Push "TALK" Key. Into Tx/Rx Mode. 8. Push "INFO" Key, selected Modulation. and push "MUTE" Key, set COMP ON. 9. Push "#" Key,CODEC PATH "FREE". 10. audio input 1KHz ±6KHzdev Setup HP8924C Setup 1)750μs de-emphasis on Setup 2)C-Meassage Filter off Setup 3)Expander enabled 11. increase 16dBUP when audio modulation only audio Input frequency 2.5 KHz. 12. Measure Modulation deviation Limiting(PL=0) 13. Printout OBW ···(spectrum Analyzer) 14. Repetedly measure OBW other Test Mode
	The same measurement as that 2.985(a) Measurement OBW with HP8595E CDMA Measurement Personality HP85725C 1)Measurement OBW of Maximum RF Output	

		devlimit
1)audio+SAT	Normal Mode	<14K permit10%
2)SAT(6K)	Setup Testmode	<2K permit10%
3)WBD	Setup Testmode	<8K permit10%
4)ST(10K)	Setup Testmode	<8K permit10%
5)DTMF+SAT	Setup Testmode	<14K permit10%
6)ST+SAT	Setup Testmode	<10K permit10%
7)audio	Setup Testmode	<12K permit10%
8)NoModulation	Setup Testmode	<12K permit10%

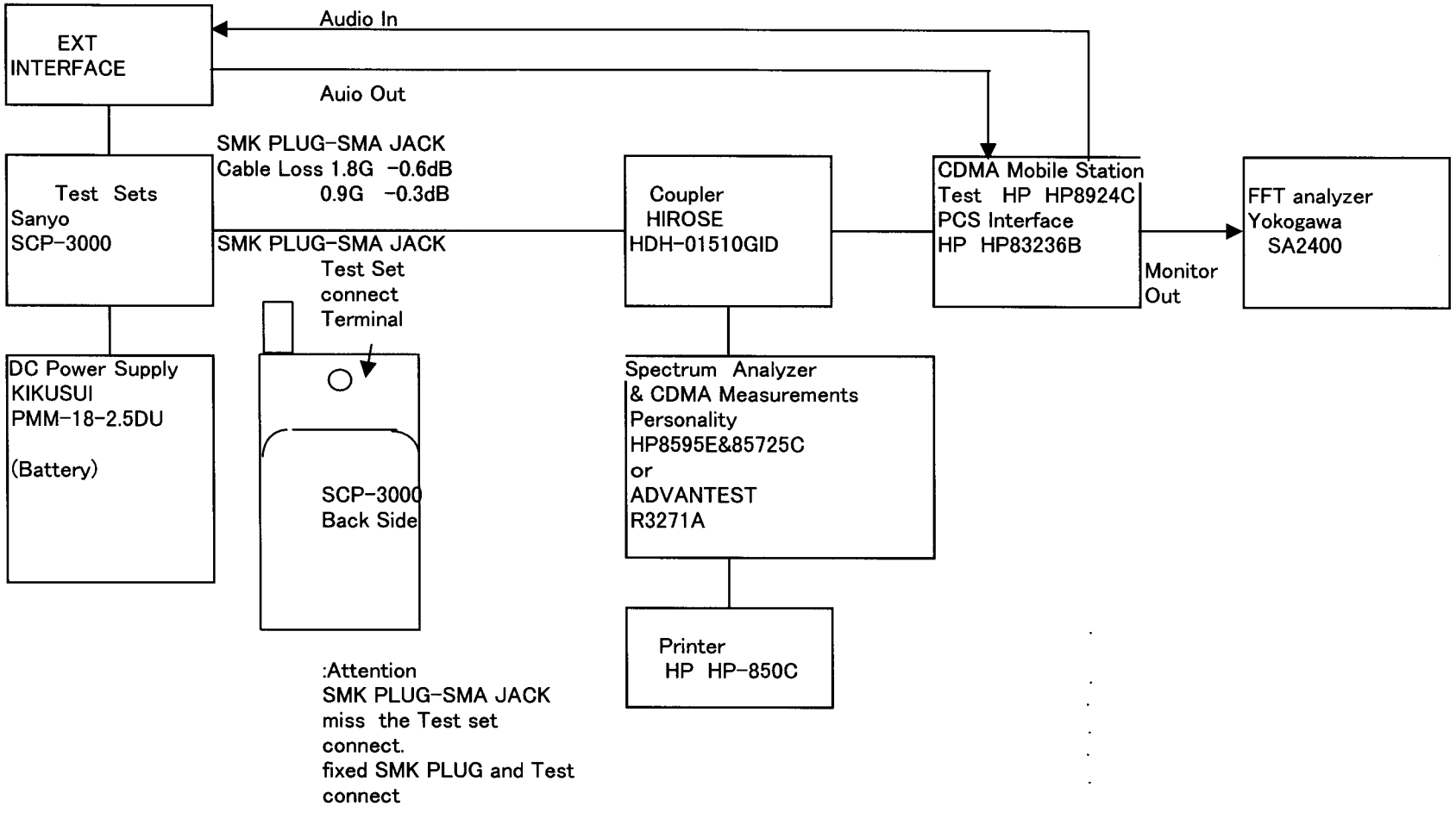
Measurement Item 2.989 OBW	PCS	AMPS
Test condition		Test Mode

Measurement Block Diagram
Measurement Item
2.989 OBW



Measurement Item 2.991 Sprious Emission at Ant Terminal	PCS	AMPS
Test Condition	Chan Std USPCS Protocol J-STD-008	Chan Std AMPS Protocol IS-95A
	24.238 Emission Limit 24.238(a)Outband Sprious minimum Std >43+10log(P)dB 24.238(b)Inband Sprious of max power minimum Std >42dBc Sprious Measurement outband and inband Inband Sprious / Outband Sprious 1)RFChannel 25 See··Fig** / See··Fig** 2)RFChannel 600 See··Fig** / See··Fig** 3)RFChannel 1175 See··Fig** / See··Fig**	Sprious Minimum Std 22.917(b)(1)/22.917(h)(1)(I) Fo+20K to +45K >26dB 22.917(b)(1)/22.917(h)(1)(ii) Fo+45K to +90k >43+10Log(P)dB 22.917(e)/22.917(h)(1)(ii) Fo+45K to 2nd >43+10Log(P)dB 22.917(e) Outband >43+10Log(P)dB 22.917(f)Mobile emissions in base frequency range <-80dBm Sprious Measurement outband and inband Inband Sprious / Outband Sprious 1)RFChannel 991(PL=0/7) See··Fig** / See··Fig** 2)RFChannel 383(PL=0/7) See··Fig** / See··Fig** 3)RFChannel 799(PL=0/7) See··Fig** / See··Fig**
Measurement Channel Std & protocol Measurement order	Sprious Measurement outband and inband A)Sprious Emission at Ant Terminal Measurement Order(HP8924C) 1. Setup Measurement RF Channel 2. Test Set Power On 3. Setup Service Option 2 4. Setup Traffic Ec/Ior (-7.4dB) 5. Measurement ch Ior Set up(-104dBm) 6. Make a call 7. Closed Loop Pwr Control field and select always up. 8.Spectrum analyzer measure the Test Set Sprious Emission 9.Sweep the spectrum analyzer over a frequency range from the lowest Intermediate frequency or lowest oscillator frequency used In the perso station , to the tenth harmonic of the carrier frequency 10.Repetedly measurement other RF Channel	Sprious Measurement outband and inband A) Sprious Emission at Ant Terminal Measurement Order(HP8924C) 1. Setup Measurement RF Voice Channel 2. Setup Control Channel (ex. Ch No. 383) 3. Set to DPX Mode 4. Setup RF Voice Channed Power Level (PL=0) 5. Setup Control Channel (ex. 383) 6. Control ch SG Level Set up(-90dBm) 7. Test Set Power On (Push "Power" Key and "7" key simultaneously) 8. Push "2" Key and right side "^up" Key. Into AMPS TEST Mode 9. Push "TALK" Key. Into Tx/Rx Mode. 10. Push "INFO" Key, selected Modulation. and push "MUTE" Key, set COMP ON. 11. Push "#" Key,CODEC PATH "FREE". 12. Push Vol "up" or "down" key, to set a output power level. 13. Audio input 1KHz ±6KHzdev Setup 14. Change an input frequency 2.5 KHz. 15. Increase audio input 16 dB. 16. Spectrum analyzer measure the Test Set Sprious Emission 17. Sweep the spectrum analyzer over a frequency range from the lowest Intermediate frequency or lowest oscillator frequency used In the personal station , to the tenth harmonic of the carrier frequency 18. Push "#" Key, change the channel Repeat stage 13 to 17 and measurement other RF Channels.

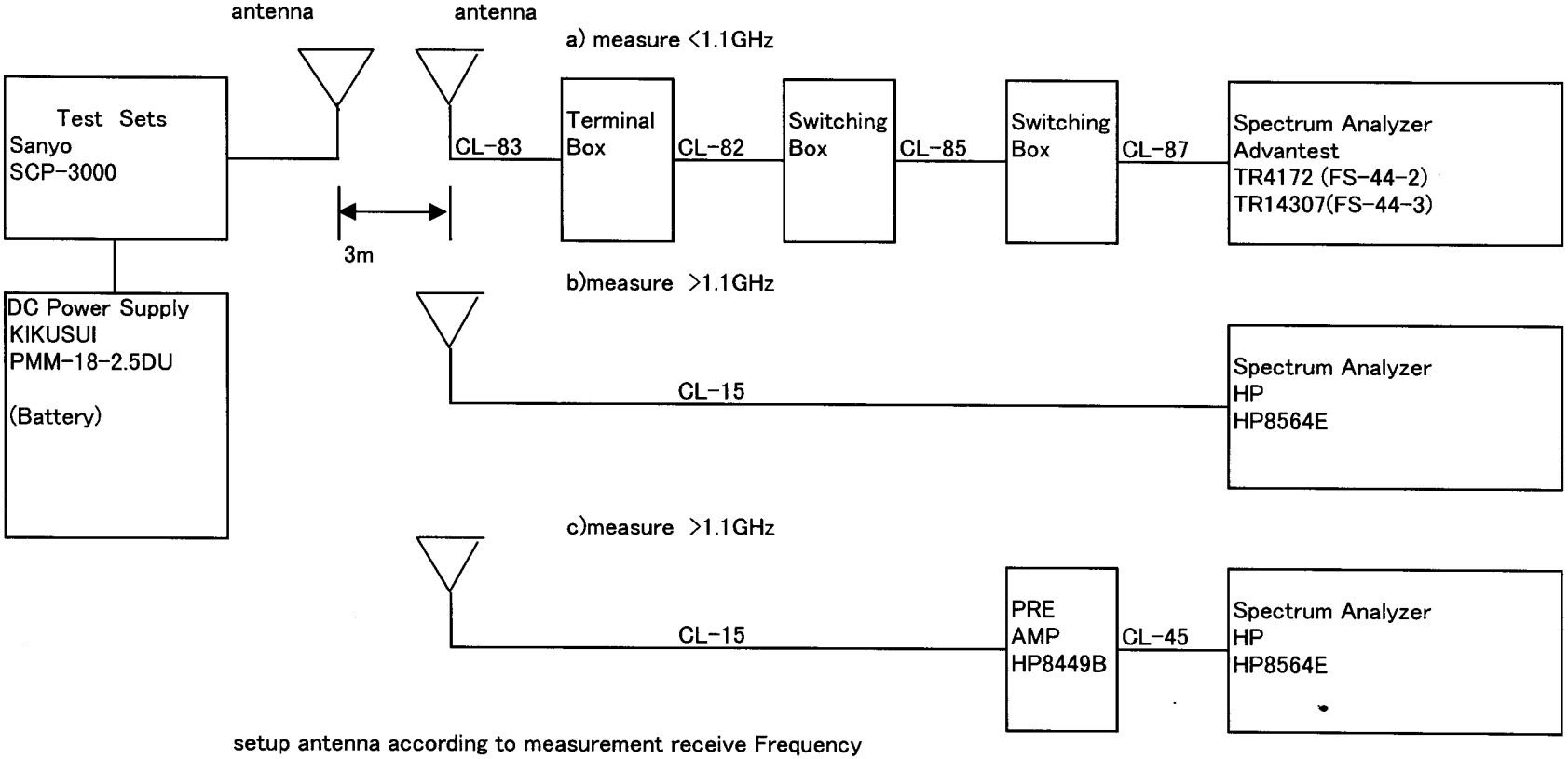
Measurement Block Diagram
2.991 Sprious Emission at Ant Terminal



Measurement Item 2.993 Field Strength of Sprious radiation	PCS	AMPS
Test Condition	Test Mode	Test Mode
	24.238 Emission Limit 24.238(a)Outband Sprious minimum Std >43+10log(P)dB Sprious Measurement outband and inband Inband Sprious Outband Sprious 1)PCS TXTestMode (CH 25) See··Fig** See··Fig** 2)PCS TXestMode (CH 600) See··Fig** See··Fig** 3)PCS TXTestMode (CH 1175) See··Fig** See··Fig**	Sprious Minimum Std 22.917(e) Outband >43+10Log(P)dB 22.917(f)Mobile emissions in base frequency range <-80dBm Sprious Measurement outband and inband Inband Sprious Outband Sprious 1)AMPS TestMode (CH 991) See··Fig** See··Fig** 2)AMPS TestMode (CH 383) See··Fig** See··Fig** 3)AMPS TestMode (CH 799) See··Fig** See··Fig**
Measurement Channel Std & protocol Measurement order	Sprious Radiation Measurement outband and inband 1. Test Set Power On (Push "Power" Key and "7" key simultaneously) 2. Push "2" Key and right side "^up" Key. Into AMPS TEST Mode 3. Push "INFO" Key, selected TX Mode 4. Push "*" Key, select Channel No. (defalt 25 Ch) 5. Spectrum Analyzer measure the Test Set Sprious Radiation 6. Sweep the Spectrum Analyzer over a frequency range from the lowest Intermediate frequency or lowest oscillator frequency used In the personal station , to the tenth harmonic of the carrier frequency 7. Repeatedly measurement other Ch	Sprious Radiation Measurement outband and inband 1. Test Set Power On (Push "Power" Key and "7" key simultaneously) 2. Push "2" Key and right side "^up" Key. Into AMPS TEST Mode 3. Push "TALK" Key. Into Tx/Rx Mode. 4. Push "INFO" Key, selected Modulation. and push "MUTE" Key, set COMP ON. 5. Push Vol "up" or "down" key, to set a output power level. 6. measure the Test Set Sprious Radiation over Spectrum analyzer. 7. Sweep the Spectrum Analyzer over a frequency range from the lowest Intermediate frequency or lowest oscillator frequency used In the personal station , to the tenth harmonic of the carrier frequency 8. Repeatedly measurement other Ch

Measurement Block Diagram
2.993 Field Strength of Sprious radiation

KEC No2.Site Measurement Independent Measurement

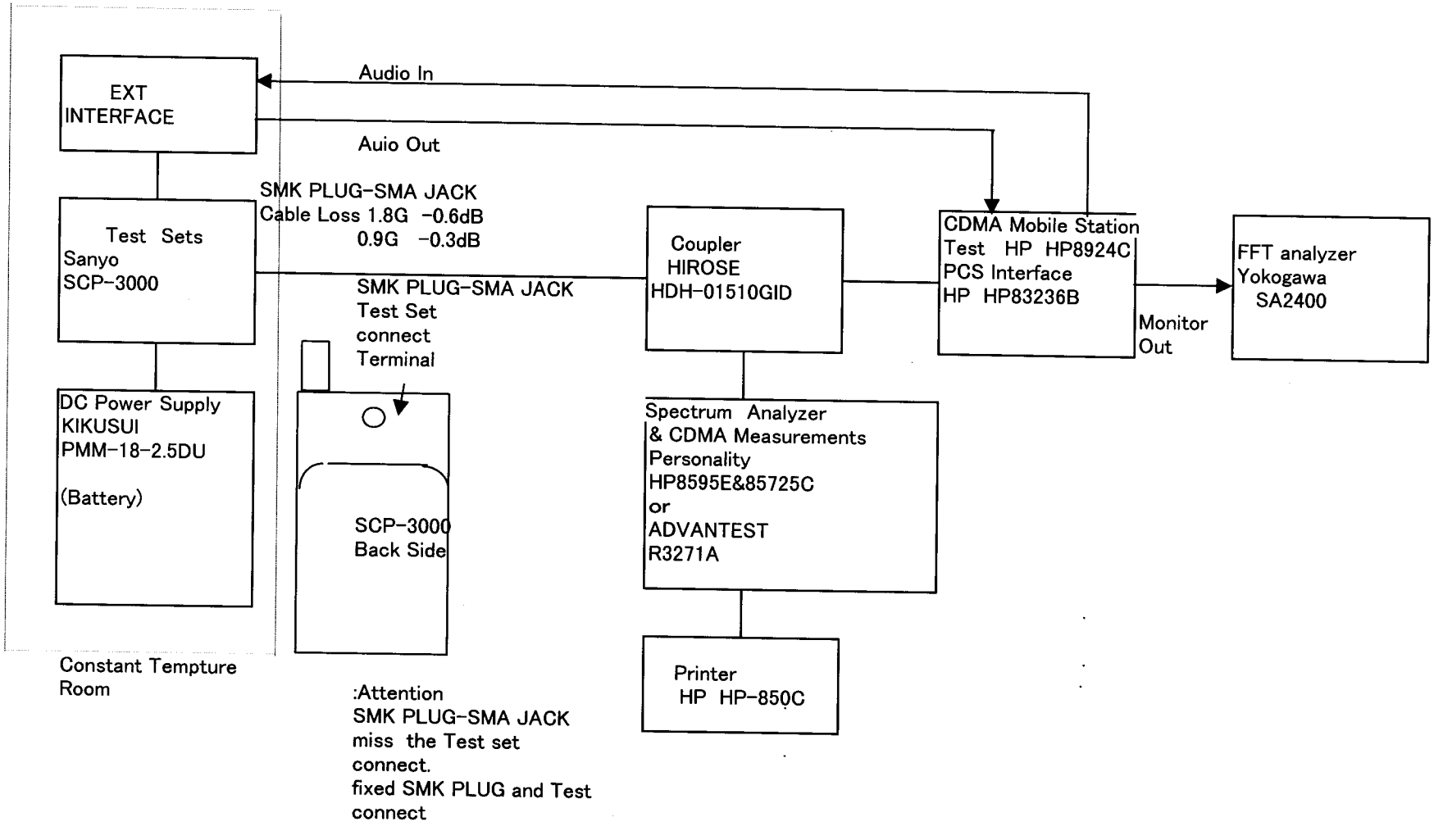


setup antenna according to measurement receive Frequency

1 to 26.5GHz :	horn	Scientific Atlanta	91888-2, 91889-2, 12-2.6, 12-3.9, 12-5.8, 12-8.2, 12-12.0 advantest TR17206
30 to 300MHz :	biconical	BBA9106(AN-80)	
300 to 1000MHz :	logperi	UHAL9107(AN-72)	
25 to 500 MHz :	dipole	KBA511S(AN-110)	
500 to 1000MHz :	dipole	KBA611S(AN-7-11)	

Measurement Item 2.995 Frequency Stability	PCS	AMPS
Test Condition	Chan Std USPCS protocol J-STD-008	Chan Std MSAMPS protocol IS-95A
	2.995(a) Frequency Stability-Temperature variation minimum Std(-30degree to 50degree) <150Hz 2.995(d)Frequency Stability-Voltage variation minimum Std(Vcc=3.1 to 4.1V) <150Hz Typical Vcc=3.6V	2.995(a) Frequency Stability-Temperature variation minimum Std(-30degree to 50degree) <2.5ppm 2.995(d)Frequency Stability-Voltage variation minimum Std(Vcc=3.1 to 4.1V) <2.5ppm Typical Vcc=3.6V
Measurement Channel Std & protocol Measurement order	A)Frequency Stability-Tempturpe variation Measurement Order(HP8924C) 1. Test Set Keep 3hours in the constant tempture Room(-30degree) 2. Setup Measurement RF Channel 600 3. Test Set Power On 4. Setup Service Option 2 5. Setup Traffic Ec/Ior(-7.4dB) 6. Measurement ch Ior Set up(-75dBm) 7. Make a call 8. Measure Frequency Error 9.Test Set Power Off 10. Repetedly 1 to 9 maeasurement Other Tempture Variation B)Frequency Stability-Voltage variation Measurement Order(HP8924C) 1. Test Set Keep in the constant tempture Room(20 to 30degree) 2. Setup Measurement RF Channel 600 3. Test Set Power On(Supply Voltage=3.6V) 4. Setup Service Option 2 5. Setup Traffic Ec/Ior(-7.4dB) 6. Measurement ch Ior Set up(-75dBm) 7. Make a call 8. Measure Frequency Error 9.Repetedly 1 to 8 measurement Other Voltage Variation (example1. 3.1V example2. 4.1V)	A)Frequency Stability-Tempturpe variation Measurement Order(HP8924C) 1. Test Set Keep 3hours in the constant tempture Room(-30degree) 2. Setup Measurement RF Voice Channel 383 3.Setup RF Voice Channed Power Level (PL=2) 4.Setup Control Channel 5. Control ch SG Level Set up(-50dBm) 6. Test Set Power On 7.Make a Registration 8.Make a page 9. Push Talk botton of Test Set after Sound Ringer 10. Measure Frequency Error 11. Repetedly 1 to 10 maeasurement Other Tempture Variation B)Frequency Stability-Voltage variation Measurement Order(HP8924C) 1. Test Set Keep in the constant tempture Room(20 to 30degree) 2. Setup Measurement RF Voice Channel 383 3.Setup RF Voice Channed Power Level (PL=0) 4.Setup Control Channel 5. Control ch SG Level Set up(-50dBm) 6. Test Set Power On(Supply Voltage=3.6V) 7.Make a Registration 8.Make a page 9. Push Talk button of Test Set after Sound Ringer 10. Measure Frequency Error 11. Repetedly 1 to 10 measurement Other Voltage varation (example1. 3.1V example2. 4.1V)

Measurement Block Diagram
2.995 Frequency
Stability



<table>
<tr><td>Measurement Item
24.51(d)SAR
24.52</td><td>PCS</td><td>AMPS</td></tr>
<tr><td>Test Condition</td><td>Test Mode
24.51(d)/24.52 SAR Measurement
<table><tr><td>Measurement Mode</td><td>Ch25</td><td>Ch600</td><td>Ch1175</td></tr><tr><td>1)Left Int(Out/In)</td><td></td><td></td><td></td></tr><tr><td>2)right Int(Out/In)</td><td></td><td></td><td></td></tr></table></td><td>Test Mode
24.51(d)/24.52 SAR Measurement
<table><tr><td>Measurement Mode</td><td>Ch991</td><td>Ch383</td><td>Ch799</td></tr><tr><td>1)Left Int(Out/In)</td><td></td><td></td><td></td></tr><tr><td>2)right Int(Out/In)</td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>Measurement
Channel Std
& protocol
Measurement order</td><td>24.51(d)/25.52 SAR Measurement
1. Test Set Power On (Push "Power" Key and "7" key simultaneously)
2. Push "2" Key and left side "^up" Key. Into PCS TEST Mode
3. Push "INFO" Key, selected Tx Mode.
4. Push "*" Key, selected Channel No.
5. PCS Test Set Set the SAR Measurement System
6. SAR Measurement System measure the Test Set
7. SAR Measurement System measure virious Mode
8. Repeatedly measurement other Ch
<table><tr><td>Measurement Mode</td><td>Ch25</td><td>Ch600</td><td>Ch1175</td></tr><tr><td>1)Left Int(Out/In)</td><td></td><td></td><td></td></tr><tr><td>2)right Int(Out/In)</td><td></td><td></td><td></td></tr></table></td><td>24.51(d)/25.52 SAR Measurement
1. Test Set Power On (Push "Power" Key and "7" key simultaneously)
2. Push "2" Key and right side "^up" Key. Into AMPS TEST Mode
3. Push "TALK" Key. Into Tx/Rx Mode.
4. Push "*" Key, selected Channel No.
5. AMPS Test Set Set the SAR Measurement System
6. SAR Measurement System measure the Test Set
7. SAR Measurement System measure virious Mode
8. Repeatedly measurement other Ch
<table><tr><td>Measurement Mode</td><td>Ch991</td><td>Ch383</td><td>Ch799</td></tr><tr><td>1)Left Int(Out/In)</td><td></td><td></td><td></td></tr><tr><td>2)right Int(Out/In)</td><td></td><td></td><td></td></tr></table></td></tr>
</table>

Measurement Block Diagram
Measurement Item 24.51(d)SAR 24.52