Component List

PRO.Name	수출형 BSS	DOC.Name	수출형800MHZ PICO CELL	DOC.No.	CB1041	Item No.	BUDA-DP

Assy Brf .	Drawn	Date	Chkd.	Date	Appr.	Date	Ref. Name	Mgnt.	Date	Issue	Sheet 1 of 9
BUDA-DP	김중섭	2000.03.03	김용기	2000.03.13	김우식	2000.03.13	1			1.0	

No	Desig. No.	Component Name	Qty	Unit	Desc./Remark	등급	*	Maker	Shop	Item No.	Repl	Apply
1		ANH-A60-030000	2	EA	NUT			DSMB		ANH-A60-030000	N	
2		ASP-C60-030080	2	EA	SCREW (STAINLESS TYPE)			DSMB		ASP-C60-030080	N	
3		ASP-W60-030060	2	EA	SCREW (P.W+S.W)			DSMB		ASP-W60-030060	N	
4		ASP-W60-030240	25	EA	SCREW (P.W+S.W)			DSMB	F/W	ASP-W60-030240	N	
5		CB 938	1	EA	DCN MICRO BTS(MCC)			LGIC		BUDD	N	
6		CB 937	1	EA	DCN MICRO BTS(MCC)			LGIC		BUPD-D	N	
7	C76,158,185,197,214,299,310,292, 262,268,247,159,216,215,191,199, 136,137,114,123,113,77,157,184, 1 98,207,297,306,290,260,248,269, 1 60,209,208,192,200,138,139	CM21X7R103K50AT	39	EA	CAP,CERAMIC,HIGH-DIELECTRIC, 0.01uF,10%,50V,0805(SMD),X7R	표준		AVKY	SMD	ECC-H1H-103K5J	N	
8	C116,124,115,313,86,99,100,87, 95 ,97,101,41,122,131,146,148, 149,1 02,108,109,107,126,106,104, 105,1 03,120,117,127,121,118,82, 98,368 ,417,418,393,29,396	CM21X7R103K50AT	39	EA	CAP,CERAMIC,HIGH-DIELECTRIC, 0.01uF,10%,50V,0805(SMD),X7R	표준		AVKY	SMD	ECC-H1H-103K5J	N	
9	BC7,32,5,30,13,31,3,8,25,22, 19,9 ,37,34,4,36,24,15,16,23, 10,12,17 ,33,14,21,6,11,42, 2,41,38,40,35, 39,26,29,1,18, 43,44,45,27	CM21X7R103K50AT	43	EA	CAP,CERAMIC,HIGH-DIELECTRIC, 0.01uF,10%,50V,0805(SMD),X7R	표준		AVKY	SMD	ECC-H1H-103K5J	N	
10	C6,128,129,171,172,186,187,253, 2 57,304,333,344,349,356,376,378, 3 79,374,363,370,364,346,359,245, 2 46,472,473,474,475,476,466,458, 4 60,453,455,394,401,319	CM21X7R104J50AT	38	EA	CAP,CERAMIC,HIGH-DIELECTRIC, 0.1uF,5%,50V,0805(SMD),X7R	비표준		AVKY	SMD	ECC-H1H-104J5D	N	
11	C194,196,201,206,218,220,221, 222	C0805C332K5RAC	8	EA	CAP,CERAMIC,HIGH-DIELECTRIC, 3300pF,10%,50V,0805(SMD),X7R	표준		KEMT	SMD	ECC-H1H-332K56	N	
12	C190,386,293,294,249,250	08055C473JAT2A	6	EA	CAP,CERAMIC,HIGH-DIELECTRIC, 0.047uF,5%,50V,0805(SMD),X7R	비표준		AVKY	SMD	ECC-H1H-473J5A	N	
13	C155	CM21CG100D50AT	1	EA	CAP,CERAMIC,TEMP-COMPENSATE, 10pF,0.5pF,50V,0805(SMD),C0G(NP0)	비표준		AVKY	SMD	ECC-T1H-100D56	N	
14	C112,119,130,125,406,470,94, 81,8 5,91,78,70,75,69,68,67, 59,56,481 ,480,7,8,20,22,30, 31,33,34,65,66 ,454,456,457, 459,490	CM21CG101J50AT	35	EA	CAP,CERAMIC,TEMP-COMPENSATE, 100pF,5%,50V,0805(SMD),C0G	표준		AVKY	SMD	ECC-T1H-101J5F	N	
15	C288,271,241,229,227,177,142,163, 72,80,387,166,183,175,204,311, 2 87,270,240,230,228,176,164,143, 2 43,244,254,258,266,267,272,273, 2 74,275,277,279,280	CM21CG102J50AT	37	EA	CAP,CERAMIC,TEMP-COMPENSATE, 1000pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-102J5E	N	

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2.TX IF OUT용 Inner Cable 1EA 추가 예정.

Component List

PRO.Name	수출형 BSS	DOC.Name	수출형800MHZ PICO CELL	DOC.No.	CB1041	Item No.	BUDA-DP

Assy Brf .	Drawn	Date	Chkd.	Date	Appr.	Date	Ref. Name	Mgnt.	Date	Issue	Sheet 2 of 9
BUDA-DP	김중섭	2000.03.03	김용기	2000.03.13	김우식	2000.03.13	1			1.0	

No	Desig. No.	Component Name	Qty	Unit	Desc./Remark	등급	*	Maker	Shop	Item No.	Repl	Apply
16	C389,390,391,392,395,263,242, 420 ,219,382,321,180,251, 478,289,285 ,467,303,483,318, 317,325,316,276 ,255,239,264, 252,236,225,226,188 ,189, 140,88,71,74,479,482,23,13, 471, 40	CM21CG102J50AT	43	EA	CAP,CERAMIC,TEMP-COMPENSATE, 1000pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-102J5E	N	
17	C278,73,79,384, 167,181,174,203,3 14,357,369, 381,419,415,416	CM21CG102J50AT	15	EA	CAP,CERAMIC,TEMP-COMPENSATE, 1000pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-102J5E	N	
18	C301,302,305,320,327, 328,329,330 ,331,332,338,343,345, 351,355,375 ,377,380,354,435, 448,360,461,462 ,465,484,485, 486,487,488,489	CM21CG102J50AT	31	EA	CAP,CERAMIC,TEMP-COMPENSATE, 1000pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-102J5E	N	
19	C156,90,154,231,342,89,153,232,339	CM21CG120J50AT	9	EA	CAP,CERAMIC,TEMP-COMPENSATE, 12pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-120J5B	N	
20	C9,10,15,16,32,35,43,45, 48,50,17 3,340,353	CM21CG180J50AT	13	EA	CAP,CERAMIC,TEMP-COMPENSATE, 18pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-180J5C	N	
21	C322,323,324,341,352,96,366 ,367, 436,443,423,441,334,335, 223,224	08055A181JAT2A	16	EA	CAP,CERAMIC,TEMP-COMPENSATE, 180pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-181J55	N	
22	C182,92,151,234,347,93,152,235, 3 48,426,430,422,442,438,450,110, 1 11,134,135	08055A220JAT2A	19	EA	CAP,CERAMIC,TEMP-COMPENSATE, 22pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-220J55	N	
23	C428,445,425,444,424,429,421, 440 ,433,447,437,449,434,451, 439,452	CM21CG471J50AT	16	EA	CAP,CERAMIC,TEMP-COMPENSATE, 470pF,5%,50V,0805(SMD),C0G	표준		AVKY	SMD	ECC-T1H-471J5B	N	
24	C193,195,202,205,210,211, 212,213	C0805N621F5GPC	8	EA	CAP,CERAMIC,TEMP-COMPENSATE, 620pF,1%,50V,0805(SMD),C0G	비표준		KEMT	SMD	ECC-T1H-621F51	N	
25	C217	08055A680JAT2A	1	EA	CAP,CERAMIC,TEMP-COMPENSATE, 68pF,5%,50V,0805(SMD),C0G(NP0)	표준		AVKY	SMD	ECC-T1H-680J55	N	
26	C169,170,178,179,312,358,361,362, 477,336,265,397,405,491,492	T491B106K020AS	15	EA	CAP,ELECTROLYTIC,TANTALUM, 10UF,10%,20V,3528mm(SMD)	표준		KEMT	SMD	ECE-T1D-106K01	N	
27	C1,4,5,371,365,373,372,144,145, B C20,BC28	T491D106K035AS	11	EA	CAP,ELECTROLYTIC,TANTALUM, 10uF,10%,35V,7343mm(SMD)	표준		KEMT	SMD	ECE-T1V-106K05	N	
28	C83,84,161,162,233,237,296,298 ,2 59,261,165,168	CM21CH272J25AT	12	EA	CAP,CHIP, 2700pF,5%,25V,0805(SMD),C0G(NP0)	비표준		AVKY	SMD	ECK-J43-2701B5	N	
29	LED1	551-0607	1	EA	DIODE,LED,MODULE, Green,1개,Round,3mm Black Case	비표준		DIAT		EDL-MG1-0607DA	N	
30	LED2	551-0507	1	EA	DIODE,LED,MODULE, Red,1개,Round,3mm Black Case	비표준		DIAT		EDL-MR1-0507DA	N	
31	ZD1,ZD2	MZ4625RL	2	EA	DIODE,ZENER(AVALANCHE), 5.1V,250uA,DO-35(DO-204AH),ETC Izm=55mA	비표준		MOT		EDN-Y00-4625AA	N	
32	D13,U158,U161,U162	MMBZ5230BLT1	4	EA	DIODE,ZENER(AVALANCHE), 4.7V,20mA,SOT-23,SMD	비표준		MOT	SMD	EDN-Y00-5230SA	N	
33	D14	HSMS-2815-TR1	1	EA	DIODE,SWITCHING(SCHOTTKY), 20V,1A,SOT-23/143,SMD Unconnected Pair/Barrier	비표준		HEPA	SMD	EDS-Y00-2815SA	N	

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Component List

PRO.Name	수출형 BSS	DOC.Name	수출형800MHZ PICO CELL	DOC.No.	CB1041	Item No.	BUDA-DP

Assy Brf .	Drawn	Date	Chkd.	Date	Appr.	Date	Ref. Name	Mgnt.	Date	Issue	Sheet 4 of 9
BUDA-DP	김중섭	2000.03.03	김용기	2000.03.13	김우식	2000.03.13	1			1.0	

No	Desig. No.	Component Name	Qty	Unit	Desc./Remark	등급	*	Maker	Shop	Item No.	Repl	Apply
60	P3	53014-1010	1	EA	CONN,HEADER,PIN, 1*10P,Straight,2.00mm,22.00mm|	비표준		MOLX		ENH-P14-1010TA	N	
61	JP11,12	DL2220-SS03G	2	EA	CONN,HEADER,PIN, 1*3P,Straight,2.0mm,1.5/3.7mm|	비표준		DREC		ENH-P22-2003T1	N	
62	J1,2	DL2220-DS64G	2	EA	CONN,HEADER,PIN, 2*32P,Straight,2.0mm,1.5/3.7mm|	비표준		DREC		ENH-P22-2064T1	N	
63		SHT-5A	19	EA	CONN,HEADER,SHUNT, 2P|Pitch 2.54mm	표준		WYC		ENH-S00-00050A	N	
64	P56	352069-1	1	EA	CONN,PCB,RECEPTACLE, 5*25P,Right Angle,2mm|B-type	비표준		AMP		ENP-R52-0691RA	N	
65	U1	WSDIF-08T	1	EA	CONN,SOCKET, 8P,DIP,ETC,2.54mm|0.3"	표준		WYC		ENS-Y00-0008DB	N	
66	P2,P55	223961-1	2	EA	CONN,ETC,PIN, Power Connector,Right Angle,2mm|	비표준		AMP		ENZ-P23-9611RA	N	
67	P1	223974-1	1	EA	CONN,ETC,PIN, Power Connector,Right Angle,2mm|Level I	비표준		AMP		ENZ-P23-9741RA	N	
68	P50	223993-1	1	EA	CONN,ETC,PIN, Power Connector,3P,Right Angle|Pin Length 13mm/Level 2-2-2	비표준		AMP		ENZ-P23-9931R1	N	
69	U165,166	TO220S(0315)	2	EA	HEAT SINK	비표준		SAMK		ENZ-Z99-900154	N	
70	RP1,2,RA1	MHR8A472G	3	EA	RES,ARRAY,R, 4.7 KOHM,9P,2%,SIP,Bussed(1형)|	표준		HRUK		ERN-R9G-4701P1	N	
71	R530	MCR10EZHJW333	1	EA	CHIP 1/10W 33K	비표준		ROHM	SMD	ERS-W52-0333D4	N	
72	R135,157,251,513,514	MCR25JZHJ201	5	EA	RES,CHIP, 200 OHM,1/4W,5%,1210(SMD)	비표준		ROHM	SMD	ERS-YAJ-2000ZB	N	
73	R309,304,139,140,444, 445,136,141 ,229,235,292,295, 353,361,325,331 ,230,240,137, 142,228,234,291,296 ,352,360, 321,330,231,241,420,421 ,382,387	MCR25JZHJ510	34	EA	RES,CHIP, 51 OHM,1/4W,5%,1210(SMD)	비표준		ROHM	SMD	ERS-YAJ-510AZC	N	
74	R245,227,263,174,181,262,176,182, 256,257,246,248,260,261,270,271, 138,73,20,68,19,410,97, 506,17,4 11,21,414	MCR10EZHF1001	28	EA	RES,CHIP, 1 KOHM,1/8W,1%,0805(SMD)	표준		ROHM	SMD	ERS-YBF-10015A	N	
75	R1,191,226,218,200,208,203,224, 2 23,204,217,199,214,220,209,219, 1 22,518,188,189,373,369,44,63, 364 ,146,149,525,529,532	MCR10EZHF1002	30	EA	RES,CHIP, 10 KOHM,1/8W,1%,0805(SMD)	표준		ROHM	SMD	ERS-YBF-10025A	N	
76	R265,272,264,273,343,349,342, 348 ,314,318,313,317	MCR10EZHF1471	12	EA	RES,CHIP, 1.47 KOHM,1/8W,1%,0805(SMD)	표준		ROHM	SMD	ERS-YBF-14715A	N	
77	R23,32,39,9,4,25,15,8,49,64,56, 6 6,526,527,528,533	MCR10EZHF1503	16	EA	RES,CHIP, 150 KOHM,1/8W,1%,0805(SMD)	표준		ROHM	SMD	ERS-YBF-15035A	N	
78	R175,177	MCR10EZHF1871	2	EA	RES,CHIP, 1.87 KOHM,1/8W,1%,0805(SMD)	표준		ROHM	SMD	ERS-YBF-18715A	N	
79	R253,254,404,405,22,74,106, 119,1 64,165,168,170,495,519, 535	MCR10EZHF4701	15	EA	RES,CHIP, 4.7 KOHM,1/8W,1%,0805(SMD)	표준		ROHM	SMD	ERS-YBF-47015A	N	
80	R276,277,280,281,531, 7,11,12,14, 206,207,284,286, 310,365,363	MCR10EZHF51R0	16	EA	RES,CHIP, 51 OHM,1/8W,1%,0805(SMD)	표준		ROHM	SMD	ERS-YBF-510A5A	N	

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PRO.Name	수출형 BSS	DOC.Name	수출형800MHZ PICO CELL	DOC.No.	CB1041	Item No.	BUDA-DP

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BUDA-DP	김중섭	2000.03.03	김용기	2000.03.13	김우식	2000.03.13	1			1.0	

No	Desig. No.	Component Name	Qty	Unit	Desc./Remark	등급	*	Maker	Shop	Item No.	Repl	Apply
81	R232,233,243,244,186,187	MCR10EZHF6192	6	EA	RES,CHIP, 61.9 KOHM,1/8W,1%,0805(SMD)	표준		ROHM	SMD	ERS-YBF-61925A	N	
82	R346,392,154,51,475,478,515, 212, 464,501,503,504,502,509	MCR10EZHJ000	14	EA	RES,CHIP, 0 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-00005A	N	
83	R150,159,96,158,169,163,162, 178, 179,403,143,134,406, 505,522,523, 477,476,370,371, 372,520,500,498, 126,123,415, 407,412,408,413,409, 507,496, 497,499,524,336,337,538, 537	MCR10EZHJ101	41	EA	RES,CHIP, 100 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-10005A	N	
84	R161	MCR10EZHJ104	1	EA	RES,CHIP, 100 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-10035A	N	
85	R160	MCR10EZHJ106	1	EA	RES,CHIP, 10 MOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-10055A	N	
86	R376,450,194,195	MCR10EZHJ100	4	EA	RES,CHIP, 10 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-100A5A	N	
87	R144,145	MCR10EZHJ114	2	EA	RES,CHIP, 110 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-11035A	N	
88	R247,249	MCR10EZHJ152	2	EA	RES,CHIP, 1.5 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-15015A	N	
89	R333,386,395,521	MCR10EZHJ153	4	EA	RES,CHIP, 15 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-15025A	N	
90	R236,242,282,288,356, 357,398,399	MCR10EZHJ182	8	EA	RES,CHIP, 1.8 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-18015A	N	
91	R127,128,289,290,384,385,425, 432 ,479,481,469,472,487,493, 460,99, 101	MCR10EZHJ180	17	EA	RES,CHIP, 18 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-180A5A	N	
92	R367,377,418,419	MCR10EZHJ201	4	EA	RES,CHIP, 200 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-20005A	N	
93	R180,196,213,221,225,447,534	MCR10EZHJ202	7	EA	RES,CHIP, 2 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-20015A	N	
94	R129,151,152,	MCR10EZHJ205	3	EA	RES,CHIP, 2 MOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-20045A	N	
95	R312,319,374,375,237,287,350, 400	MCR10EZHJ2R2	8	EA	RES,CHIP, 2.2 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-220B5A	N	
96	R366,381	MCR10EZHJ243	2	EA	RES,CHIP, 24 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-24025A	N	
97	R417,416,347,344	MCR10EZHJ271	4	EA	RES,CHIP, 270 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-27005A	N	
98	R166,167,184,185,238,239, 258,259 ,397,401	MCR10EZHJ270	10	EA	RES,CHIP, 27 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-270A5A	N	
99	R124,125,130,131,283,285,293, 294 ,383,388,393,394,426,427, 433,434 ,480,488,482,489,470, 471,473,474 ,483,486,490,491, 458,459,95,98,1 02,104	MCR10EZHJ301	34	EA	RES,CHIP, 300 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-30005A	N	
100	R266,316,269,315,378,379,380	MCR10EZHJ331	7	EA	RES,CHIP, 330 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-33005A	N	
101	R132,133,156,147,148,391,396	MCR10EZHJ363	7	EA	RES,CHIP, 36 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-36025A	N	
102	R311,368	MCR10EZHJ511	2	EA	RES,CHIP, 510 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-51005A	N	
103	R446	MCR10EZHJ513	1	EA	RES,CHIP, 51 KOHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-51025A	N	

Contents 1.일부 기구물의 미등록으로 추후 일부 기구물 추가 예정.♪ 2.TX IF OUT용 Inner Cable 1EA 추가 예정.♪

Component List

PRO.Name	수출형 BSS	DOC.Name	수출형800MHZ PICO CELL	DOC.No.	CB1041	Item No.	BUDA-DP

Assy Brf .	Drawn	Date	Chkd.	Date	Appr.	Date	Ref. Name	Mgnt.	Date	Issue	Sheet 6 of 9
BUDA-DP	김중섭	2000.03.03	김용기	2000.03.13	김우식	2000.03.13	1			1.0	

No	Desig. No.	Component Name	Qty	Unit	Desc./Remark	등급	*	Maker	Shop	Item No.	Repl	Apply
104	R252,274,359,339,329,307,255,275,358,338,328,306	MCR10EZHJ561	12	EA	RES,CHIP, 560 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-56005A	N	
105	R267,354,320,268,351,322	MCR10EZHJ681	6	EA	RES,CHIP, 680 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-68005A	N	
106	R334	MCR10EZHJ680	1	EA	RES,CHIP, 68 OHM,1/8W,5%,0805(SMD)	표준		ROHM	SMD	ERS-YBJ-680A5A	N	
107	R183,192,323,324,326,327,332,335,278,279,118,121	MCR50JZHF51R0	12	EA	RES,CHIP, 51 OHM,1/2W,1%,2010(SMD)	표준		ROHM	SMD	ERS-YEF-510AZY	N	
108	VR9,10	64WR10K	2	EA	RES,VARIABLE,CERMET, 10 KOHM,1/4W,10%,Through-Hole,Multi-Turn	비표준		BITE		ERV-EAK-1002ZA	N	
109	VR2,13,16,17	64WR5K	4	EA	RES,VARIABLE,CERMET, 5 KOHM,1/4W,10%,Through-Hole,Multi-Turn	비표준		BITE		ERV-EAK-5001ZA	N	
110	VR18	64XR5K	1	EA	RES,VARIABLE,CERMET, 5 KOHM,1/4W,10%,Through-Hole,Multi-Turn	비표준		BITE		ERV-EAK-5001ZB	N	
111	VR11,12,7,3,5,8,4,6	64WR50K	8	EA	RES,VARIABLE,CERMET, 50 KOHM,1/4W,10%,Through-Hole,Multi-Turn	비표준		BITE		ERV-EAK-5002ZA	N	
112	SW1	SP-22SH	1	EA	SWITCH,PUSH BUTTON, DPDT,Right Angle|ON-<ON>	비표준		SUEL		ESP-Y02-00220A	N	
113	TR1	AH1	1	EA	IC MM1C AMP	비표준		WHAN	SMD	EUC-K00-0001Z1	N	
114	U47	XC5204-5PQ100I	1	EA	IC,PLD,FPGA, 100P,PQFP,SMD,83MHz|Industrial Temp.	비표준		XILX	SMD	EUD-F04-5100QB	N	
115	U52	MACH445-15YCT/R	1	EA	IC,PLD(습기3), 100P,PQFP,SMD,50MHz|128macrocell	비표준		VATS	SMD	EUD-P04-4515QA	N	
116	U61,U62,U69,U70	AD667KP-REEL	4	EA	IC,INTERFACE,CONVERTER, 28P,PLCC,SMD|12-bit DAC	비표준		ANDE	SMD	EUF-C00-0667LA	N	
117	U59,U65	AD7828LP-REEL	2	EA	IC,INTERFACE,CONVERTER, 28P,PLCC,SMD|4-&-8 channel 8-bit ADC	비표준		ANDE	SMD	EUF-C00-7828LA	N	
118	U30	BDG1A16G-TR	1	EA	IC,INTERFACE,DRIVER/RECEIVER, 16P,SOP,SMD|Quad differential Line driver	비표준		LUCE	SMD	EUF-D00-0116SA	N	
119	U33	BRS2A16G-TR	1	EA	IC,INTERFACE,DRIVER/RECEIVER, 16P,SOP,SMD|ECL Receiver	비표준		LUCE	SMD	EUF-D00-0216S1	N	
120	U10,11,12,13	CY7B923-JCT	4	EA	IC,TELECOMM,DIGITAL SWITCH, 28P,PLCC,SMD|Hot link transmitter	비표준		CYPS	SMD	EUG-D00-7923LA	N	
121	U29	CY7B933-JCT	1	EA	IC,TELECOMM,DIGITAL SWITCH, 28P,PLCC,SMD|Hot link receiver	비표준		CYPS	SMD	EUG-D00-7933LA	N	
122	U142	LMX2337TMX	1	EA	IC,TELECOMM,PLL, 16P,TSSOP,SMD|1.1GHz Dual freq. Synthesizer	비표준		NSC	SMD	EUG-P00-2337SA	N	
123	U25	DS1233DZ-5/T&R	1	EA	IC,TELECOMM,RESET IC, 3P,SOT-223,SMD|5V Econo Reset	비표준		DALS	SMD	EUG-R01-2335AB	N	
124	U134,66,67	OP27GS-REEL	3	EA	IC,LINEAR,AMPLIFIER, 8P,SOP,SMD,Single|precision OP Amp	비표준		ANDE	SMD	EUL-A00-0027SA	N	
125	U92,93,95,96,4,17,163	EL2244CS	7	EA	IC,LINEAR,AMPLIFIER, 8P,SOP,SMD,Dual|low power 60MHz unity-gain stable OP Amp	비표준		ELAC	SMD	EUL-A00-2244SA	N	
126	U136,100,101,72,73	AD8307AR	5	EA	IC,LINEAR,AMPLIFIER, 8P,SOP,SMD,Single|Logarithmic Amp/500MHz 92dB/150Mil	비표준		ANDE	SMD	EUL-A00-8307AA	N	
127	U74,U75	LM2901MX	2	EA	IC,LINEAR,VOLTAGE COMPARATOR, 14 P,SOP ,SMD ,Quad ,00.08.12 Assembuly/test Location/Qualification	비표준		NSC	SMD	EUL-C00-2901SA	N	
128	U42,U57,58	ICL7665SIBA	3	EA	IC,LINEAR,GENERATOR/DETECTOR, 8P,SOP,SMD,2IN|CMOS u-power over/under voltage Detector	비표준		HARS	SMD	EUL-G00-7665SB	N	

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Component List

PRO.Name	수출형 BSS	DOC.Name	수출형800MHZ PICO CELL	DOC.No.	CB1041	Item No.	BUDA-DP

Assy Brf .	Drawn	Date	Chkd.	Date	Appr.	Date	Ref. Name	Mgnt.	Date	Issue	Sheet 7 of 9
BUDA-DP	김중섭	2000.03.03	김용기	2000.03.13	김우식	2000.03.13	1			1.0	

No	Desig. No.	Component Name	Qty	Unit	Desc./Remark	등급	*	Maker	Shop	Item No.	Repl	Apply
129	U164	AD8313ARM-REEL	1	EA	IC,LINEAR,GENERATOR/DETECTOR, 8P,MSOP,SMD,2Pin|0.1-2.5GHz 70dB logarithmic Detector/Controller	비표준		ANDE	SMD	EUL-G00-8313S1	N	
130	U86,102,137,97,85,103,138,98	MSA-0886TR1	8	EA	IC,AMPLIFIER, -	비표준		HEPA	SMD	EUL-K00-0886P1	N	
131	U165,166	MC7805ACT	2	EA	IC,LINEAR,VOLTAGE REGULATOR, 3P,CASE-221A,Single|3-terminal positive voltage Regulator	비표준		MOT		EUL-R00-7805AC	N	
132	U149,150	CSI24WC128JI-TE13	2	EA	IC,MEMORY,EEPROM, 8P,SOP,SMD,16K*8bit,1000ns|	비표준		CATA	SMD	EUM-B02-4128SA	N	
133	U1	XC17128E-PD8I	1	EA	IC,MEMORY,PROM/ROM, 8P,DIP,ETC,131K*1bit,45ns|	비표준		XILX	F/W	EUM-P17-1288DC	N	
134	U157	CY7B991-2JCT	1	EA	IC,MOS LOGIC,BUFFER/DRIVER, 32P,PLCC,SMD,Quad|programmable skew clock buffer/TTL output	비표준		CYPS	SMD	EUS-B07-9912LA	N	
135	U40	IDT74FCT16244ATPV	1	EA	IC,MOS LOGIC,BUFFER/DRIVER, 48P,SSOP,SMD,Quad|16-bit non-inverting 3-state	비표준		IDT	SMD	EUS-B41-6244SE	N	
136	U71	74HC138D	1	EA	IC,MOS LOGIC,CODER/MUX, 16P,SOP,SMD,Single|1-of-8 DEMUX	표준		PHLP	SMD	EUS-C07-4138SA	N	
137	U63	74F07D	1	EA	IC,TTL LOGIC,BUFFER/DRIVER, 14P,SOP,SMD,Hex|Open-Collector	표준		PHLP	SMD	EUT-B00-7407S1	N	
138	U78,79,80,81	DM74LS125AMX	4	EA	IC,TTL LOGIC,BUFFER/DRIVER, 14P,SOP,SMD,Quad|3-State Buffers	표준		FACH	SMD	EUT-B07-4125S1	N	
139	U55	74F244SCX	1	EA	IC,TTL LOGIC,BUFFER/DRIVER, 20P,SOP,SMD,Octal|3-State output Buffer/Line Driver	표준		FACH	SMD	EUT-B07-4244S1	N	
140	U56	74F245SCX	1	EA	IC,TTL LOGIC,BUFFER/DRIVER, 20P,SOP,SMD,Octal|	표준		FACH	SMD	EUT-B07-4245S1	N	
141	U37,38,46	N74F273AD	3	EA	IC,TTL LOGIC,FLIP-FLOP/LATCH, 20P,SOP,SMD,Octal,D-type|F/F	비표준		PHLP	SMD	EUT-F07-4273SA	N	
142	U31,32,39	N74F373D	3	EA	IC,TTL LOGIC,FLIP-FLOP/LATCH, 20P,SOP,SMD,Octal,D-type|transparent Latch	비표준		PHLP	SMD	EUT-F07-4373SA	N	
143	U53	74F04SCX	1	EA	IC,TTL LOGIC,GATE, 14P,SOP,SMD,Hex,1IN,Inv|150Mil	표준		FACH	SMD	EUT-G00-7404SA	N	
144	U169	JPS-3-1	1	EA	IC,THREE WAY DEVIDER(10MHZ)	비표준		MICI	SMD	EUZ-P00-0031S1	N	
145	U51	DS1620S/T&R	1	EA	IC,ETC, 8P,SOP,SMD,Digital thermometer|208Mil	비표준		DALS	SMD	EUZ-Y00-1620SA	N	
146	U139	KSV-12H115	1	EA	VCO, 115MHz,12V,SMD|	비표준		SAS	SMD	EXC-Y11-50040A	N	
147	U144	KSV-12H70	1	EA	VCO, 70MHz,12V,SMD|	비표준		SAS	SMD	EXC-Y70-00030A	N	
148	U132	TVA0300N09	1	EA	THERMOPAD	비표준		EMC	SMD	EZZ-ZTP-AD300N	N	
149	U117,28	TVA0600N09	2	EA	THERMOPAD	비표준		EMC	SMD	EZZ-ZTP-AD600N	N	
150		MERK-AC0100-00	1	EA	IN/EJECTOR, 하TYPE			LGPR		MERK-AC0100-00	N	
151		MERK-AC0200-00	1	EA	IN/EJECTOR, 상TYPE			LGPR		MERK-AC0200-00	N	
152		MERK-EC0001-00	4	EA	IN/EJECTOR SCREW(SKT용)			DONM		MERK-EC0001-00	N	
153		MERK-EC0003-00	4	EA	SCREW, ISOLATOR			DONM		MERK-EC0003-00	N	
154		MERK-EC0004-00	4	EA	NUT, ISOLATOR			DONM		MERK-EC0004-00	N	

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Component List

PRO.Name	수출형 BSS	DOC.Name	수출형800MHZ PICO CELL	DOC.No.	CB1041	Item No.	BUDA-DP

Assy Brf .	Drawn	Date	Chkd.	Date	Appr.	Date	Ref. Name	Mgnt.	Date	Issue	Sheet 8 of 9
BUDA-DP	김중섭	2000.03.03	김용기	2000.03.13	김우식	2000.03.13	1			1.0	

No	Desig. No.	Component Name	Qty	Unit	Desc./Remark	등급	*	Maker	Shop	Item No.	Repl	Apply
155		MERK-EL0003-01	2	EA	STANDOFF(DABS 6R, DONG A)			BUPR		MERK-EL0003-01	N	
156		MERK-EL0005-00	1	EA	FEMALE GUIDE MODULE, 상TYPE			YJT		MERK-EL0005-00	N	
157		MERK-EL0006-00	1	EA	FEMALE GUIDE MODULE, 하TYPE			YJT		MERK-EL0006-00	N	
158		MERK-FP0008-00	1	EA	BUDA-DP STIFFENER			DONM		MERK-FP0008-00	N	
159		MERK-UT0902-00	1	EA	BASE			JINS	F/W	MERK-UT0902-00	N	
160		MERK-UT0904-00 ISS:1.1	1	EA	COVER			JINS	F/W	MERK-UT0904-00	N	
161		MERK-UT0905-00	1	EA	SHIELD CASE, IF PLL			BUPR		MERK-UT0905-00	N	
162		MERK-UT0906-00	1	EA	SHIELD COVER, IF PLL			BUPR	F/W	MERK-UT0906-00	N	
163		MERK-UT0909-00	1	EA	SHIELD CASE, RX IF AMP A			BUPR		MERK-UT0909-00	N	
164		MERK-UT0910-00	1	EA	SHIELD CASE, RX IF AMP B			BUPR		MERK-UT0910-00	N	
165		MERK-UT0911-00	1	EA	SHIELD CASE, RX RF A			BUPR		MERK-UT0911-00	N	
166		MERK-UT0913-00	1	EA	SHIELD CASE, RX IF A			BUPR		MERK-UT0913-00	N	
167		MERK-UT0919-00 ISS:1.1	1	EA	SHIELD CASE, RF PLL			BUPR		MERK-UT0919-00	N	
168		MERK-UT0921-00	1	EA	SHIELD CASE, OUT DET			BUPR		MERK-UT0921-00	N	
169		MERK-UT0922-00	1	EA	SHIELD CASE, RX RF B			BUPR		MERK-UT0922-00	N	
170		MERK-UT0923-00	1	EA	SHIELD COVER, RX RF B			BUPR	F/W	MERK-UT0923-00	N	
171	BNC3->J35	BUD01C	1	EA	COAXIAL CABLE ASS'Y, RCA22_IF_LO_A|1671A	비표준		YUSU		SCX-S24-014001	N	
172	BNC1->J36	BUD02C	1	EA	COAXIAL CABLE ASS'Y, RCA22_IF_LO_B|1671A	비표준		YUSU		SCX-S24-014002	N	
173	J27->J33	BUD05C	1	EA	COAXIAL CABLE ASS'Y, RCA22_RX_IF_A_SAMPLE|UT085	비표준		YUSU		SCX-S24-014005	N	
174	J30->J34	BUD06C	1	EA	COAXIAL CABLE ASS'Y, RCA22_RX_IF_B_SAMPLE|UT085	비표준		YUSU		SCX-S24-014006	N	
175	J28->J31	BUD07C	1	EA	COAXIAL CABLE ASS'Y, RCA23/RCA24 ,RX_IF_A	비표준		YUSU		SCX-S24-141007	N	
176	J29->J32	BUD08C	1	EA	COAXIAL CABLE ASS'Y, RCA23/RCA24 ,RX_IF_B	비표준		YUSU		SCX-S24-141008	N	
177	U26	BP33R881S03A	1	EA	FILTER,BPF,DR, 881.8MHz,30MHz,2.5dB,1.8,1.0dB,SMD|ATT 53dB at 754~779MHz	비표준		SAS	SMD	SFB-D00-000401	N	
178	U64	BP32R766S03A	1	EA	FILTER,BPF,DR, 766MHz,25MHz,2.5dB,1.8,SMD|	비표준		SAS	SMD	SFB-D00-101001	N	
179	U54	BP64R881P03A	1	EA	FILTER,BPF,DR, 881.5MHz,50MHz,3.0dB,1.5,ETC|	비표준		SAS		SFB-D00-101501	N	
180	U128,129,135	BPF70MSA	3	EA	FILTER,BPF,LC, 70MHz,5MHz,4.5dB,1.5,SMD|	비표준		SAS	SMD	SFB-L00-100001	N	
181	U114,120	BPF115MSA	2	EA	FILTER,BPF,LC, 115MHz,5MHz,4.5dB,1.5,SMD|	비표준		SAS	SMD	SFB-L00-100101	N	
182	U77,140,76,141	854550-1	4	EA	FILTER,BPF,SAW, 69.99MHz,1.26MHz,22dB,DIP|	비표준		SAWT		SFB-S00-100701	N	
183	U87	854733	1	EA	FILTER,BPF,SAW, 114.99MHz,1.23MHz,25dB,DIP|	비표준		SAWT		SFB-S00-101601	N	
184	BEAD1,2,3	NFM60R10T471	3	EA	FILTER,EMI/POWER, EMI,6A,ETC|	비표준		MURA	SMD	SFE-Y00-102501	N	

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Component List

PRO.Name	수출형 BSS	DOC.Name	수출형800MHZ PICO CELL	DOC.No.	CB1041	Item No.	BUDA-DP

Assy Brf .	Drawn	Date	Chkd.	Date	Appr.	Date	Ref. Name	Mgnt.	Date	Issue	Sheet 9 of 9
BUDA-DP	김중섭	2000.03.03	김용기	2000.03.13	김우식	2000.03.13	1			1.0	

No	Desig. No.	Component Name	Qty	Unit	Desc./Remark	등급	*	Maker	Shop	Item No.	Repl	Apply
185	U8,9	MBP43R836SOIC	2	EA	BPF CF=836 3POLE	비표준		SAS	SMD	SFH-S03-836R51	N	
186		BUDA-DP BARE PCB	1	EA	PCB, 수출형 800MHz PICOCELL ,BUDA-DP ,1.0 ,8 ,	비표준		KCKT	SMD	SPY-Y08-000010	N	
187	L40,41,42,43	1008LS-103XKBC	4	EA	INDUCTOR, 10uH,10%,2.95ohm,SMD|	비표준		COCR	SMD	STL-S10-103010	N	
188	L1,2	LL1608-FH8N2K	2	EA	INDUCTOR, 8.2NH 10%	비표준		TOKO	SMD	STL-S16-8N2K10	N	
189	U19,20,21,22,48,41	AT-108TR	6	EA	IC, 0.5-2 GHz,Variable,40dB,3.5dB,SMD	비표준		MAC	SMD	SZA-R00-10000A	N	
190	U113,115,116,123,124,159	AT-250TR	6	EA	IC#, DC-2 GHz,Variable,12dB,3.8dB,SMD	비표준		MAC	SMD	SZA-R00-10060A	N	
191	U60	SME1400B-13	1	EA	기타전자,MIXER, 1-2200 MHz,13dBm,8dB,25dB,22dB,SMD	비표준		WHAN	SMD	SZM-Y00-10050A	N	
192	U34,35	SME900-17	2	EA	기타전자,MIXER, 720-940 MHz/820-960 MHz,17dBm,6.2dB,34dB,26dB,SMD	비표준		WHAN	SMD	SZM-Y00-10070A	N	
193	U152,147,122,44,45	MSA-1105-TR1	5	EA	기타전자,RF AMP,MMIC, 50 MHz-1.3 GHz,56.2mW,5.5V,12dB,SMD	비표준		HEPA	SMD	SZP-M00-10040A	N	
194	U68,126,127,118,119,160, 153,104, 36	ERA-5SM	9	EA	기타전자,RF AMP,MMIC, DC-4 GHz,69.2mW,4.9V,16dB,SMD	비표준		MICI	SMD	SZP-M00-10050A	N	
195	U2,3,43	MGA-82563	3	EA	IC#, 0.1-6 GHz,53.7mW,3V,13.5dB,SMD	비표준		HEPA	SMD	SZP-M00-10140A	N	
196	U99	SCA-2	1	EA	기타전자,RF AMP,MMIC, DC~3GHz,0.1W,6V,11dB,SMD|P(1dB):20dBm 3:IP3:39.5dBm	비표준		SFMI	SMD	SZP-M00-586201	N	
197	U7	EU145SMT	1	EA	기타전자,ISOLATOR,RF, 869-894 MHz,20dB,0.45dB,1.25,Drop-In	비표준		CMC		SZR-S00-10060A	N	
198	U154,91,107,90,108,109,143	JDPS-2-2	7	EA	기타전자,SPLITTER/COMBINER, Splitter,2-0,1-650MHz,1dB,SMD|SM6	비표준		MPC	SMD	SZS-Y00-10030B	N	
199	U110,111	QMS-A23	2	EA	IC#, I & Q DEMODULATOR	비표준		SNEG	SMD	SZZ-Y00-10110A	N	
200	U94	SMS-A36	1	EA	IC#, I & Q MODULATOR	비표준		SNEG	SMD	SZZ-Y00-10150A	N	

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Purpose

As a standard plan for works upon setup of the early system of Export 800 PICOCELL BTS or installation of the BTS, it was designed for BTS RF Path Checkup.

Contents

1. Receiving-end standards
2. Sending-end standards

Test Device

1. Spectrum Analyzer : HP8595E or equivalent
2. Signal Generator : HP8648C or equivalent
3. Power Meter : HP438A or equivalent
4. 50ohm Termination : More than 200Watt
5. 50dB Attenuator : More than 200Watt

▶ Specified values may change into initial values to be used for RF system verification.

The final plan of the specifications by all matters of future change and improvement may be modified at the point that the final system test ends, and KITECH can modify and report it.

1. Receiving-end standards

1.1 Receiving-end Path and Test Point

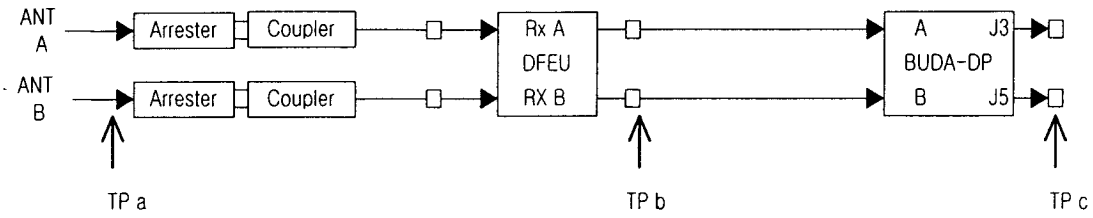


Fig. 1. BTS's Receiving-end Test Path

a) As BTS is 1FA/Omni, test frequency shall be designated frequency of the system.

Ex.) Test Frequency : CH# 382(1FA) : 836.46MHz(RX)

(Subject to change at the request of providers later.)

b) The positio nof Test Point is a, b, c.

TP a: PCDR의 Ant Port (RXA, B)

TP b: DFEU RX OUTPUT Port at the nottom of external PCDR (RXA, B)

TP c: Rx IF Sample Port of BUDA-DP in PCDR (A, B)

▶ *All measured values must compensate for Cable Loss.*

1.2 Rx path test method and measurement level

1.2.1 Rx path test method

① By using S.G(Signal Generator) of RX ANT A port (TP a), couple up 881.46MHz that is RxA Band Test Signal to receiving input port of Ant A path (TP a) with the level of -80dBm.(No CDMA Signal)

☞ Note) At this time, the power of HPA must be OFF to couple up S.G.

▶ If using Cell Site Test Set in place of S.G., you must couple up CDMA Cellular Adapter with 10MHz REF of Cell Site Test Set, switch OFF *"REF UNLOCK"* LED and use it.

② Check whether output level reaches *-52.3dBm Typ, -55.3dBm min* at output port (TP b) of DFEU.

- *DFEU Rx_A Path GAIN = 26.7 dB min (including 6dB pad)*
- *DFEU Rx_B Path GAIN = 26.7 dB min (including 6dB pad)*
- *Cable Loss = 2 dB max*

- Use Spectrum Analyzer(8595E) for measurement.

Ref.Level	:	-40 dBm	Log Scale	:	10 dB
RBW	:	AUTO	VBW	:	AUTO
Span	:	50 kHz	ATT	:	AUTO
Center Freq	:	*CH# 382(1FA) : 836.46MHz(RX)*			

③ Couple up S.G(Signal Generator) to ANT B port and then repeatedly measure ①~②.

☞ Note) At this time, the power of HPA must be OFF to couple up S.G.

1.2.2 Measurement Level

- ANT Port Input Level : -80dBm (@ TP a)

TEST POINT	RX Measurement LEVEL RX A/B PATH(dBm)		PASS / FAIL
	RX A	RX B	
B	-52.3dBm Type, -55.3dBm min	-52.3dBm Type, -55.3dBm min	

1.3 Rx path performance checking method

① Couple up S.G to ANT port (TP a) of PCDR and apply signals of -117dBm. At this time, it must compensate for Cable Loss.

- Switch OFF the power of HPAU.
- Couple up Spectrum Analyzer to IF_Auxiliary INPUT(TP c) of BUDA-DP(J3).
- Set up test frequency.(Ex., CH#382 = 836.46MHz)

▶ *If using Cell Site Test Set in place of S.G., you must couple up CDMA Cellular Adapter with 10MHz REF of Cell Site Test Set, switch OFF "REF UNLOCK" LED and use it.*

② Set up IF Sample Output Port(TP C) Measurement Conditions of BUDA-DP as below.

Ref.Level	: -20 dBm	Log Scale	: 10 dB
RBW	: 30 KHz	VBW	: 30 KHz
Span	: 2 MHz	ATT	: 10 dB
Center Freq	: 69.99 MHz	AVG	: 50

③ Upon application of Input Level check whether *C/N* is outputted more than *6dBc* from TP c at *f_o±300KHz.* (Upon no application of input signal only Noise Floor is generated.)

④ Repeat the above process as to B path.

2. Sending-end Standards

2.1 Sending-end path test method and test point

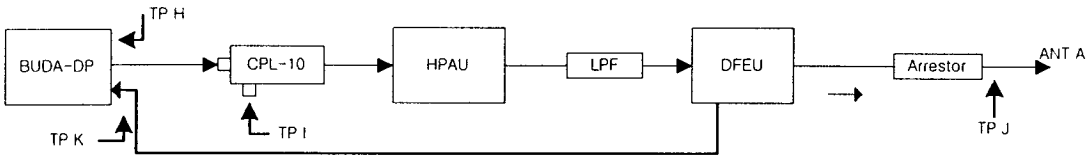


Fig. 2. Sending-end Test Path

(Ref.) ANT A : TX – 1.23 MHz, RX – 25MHz

ANT B : RX – 25MHz

- Tx path of BTS RF and analog part is as in the Fig. 2.
- Frequency for Tx test is frequency used by the system.

  Ex.) CH# 382 : 881.46 MHz(TX) (Subject to change at the request of providers later.)
- The position of Test Point includes TP H, TP I, TP J, TP K.

  TP H: BUDA-DP TX IF Sample Port

  TP I: BUDA-DP Output Coupling Port

  TP J : Antenna Output Port

TP K : BUDA-DP AGC Input Port

▶ *All measured values must compensate for Cable Loss.*

▶ *The measurement of the power of all Tx paths is basically made by measuring it with Power Meter and upon measurement with Spectrum Analyzer you shall compensate for an error with Power Meter and measure Tx path level.*

2.1.1 Tx Path Test Method

① Couple up Spectrum Analyzer to BUDA-DP output port(TP H).

- Change the frequency of BUDA-DP to measure into test frequency below by using command of RCPA.
  TX A Port Test Frequency : System CF (ex. 881.46 MHz at CH#=382)

- Only apply Pilot, Sync, Paging (9600bps) channels to measure output level.

Overhead channel Gain	*Digital gain value*
Pilot Gain	*80*
Sync Gain	*105*
Paging Gain	*77*

- Check TX IF Sample(TP H) Output Level and tune it, by using S/A, from the front (ADJ) so that it reaches *-23.5 ± 1 dBm*. (See Appendix.)

(Setup environment upon measurement with S/A)
RBW : 30 KHz VBW : 300 KHz
Channel BW : 1.23 MHz SPAN : 5 MHz
Center Freq : 114.99 MHz

② By using *"rfcpac -c" command* or *"rfcbud -t" command of RCPA,* make the output of final ANT output (TP J-A) reach *31.5 ± 2 dBm (upon use of S/A, 29. 5 ±2 dBm)* through the use of P/M. At this time, check whether the value of BUDA-DP gain is

between C0 ~ D0.

** Note : S/A is outputted lower by a margin of about 2dB than P/M.

(See Appendix.)

- *DFEU Loss : 2 dB Max*
- *HPAU Gain : 50 ± 1 dB*
- *Directional Coupler Loss : 0.7 dB Max*

(Setup environment upon measurement with S/A)

RBW : 30 KHz		VBW : 300 KHz
Channel BW	: 1.23 MHz	SPAN : 5 MHz
Center Freq	: 114.99MHz	AVG : 50

③ Check through the use of S/A whether the value of Coupling Port (TP I) of CPL-10 is *-28 ± 3.5 dBm*.

- *CPL-10 Coupling Port : 10 ± 1.5 dB*
- *BUDA-DP Output Port real Level: -18 ± 2 dBm*

(Setup method upon measurement with S/A)

- Set up Mode Menu from Spectrum Analyzer.
- Select Mode=>CDMA Analyzer=>Channel Power=>CHAN Power and measure the power.(Measure cable loss for compensation.)
- RBW,VBW,CH BW,SPAN, etc. are automatically set up as below.

Note) All measuring instruments in use shall be used after enough aging for more than 30 minutes and calibration.

RBW : 30 KHz		VBW : 300 KHz
Channel BW	: 1.23 MHz	SPAN : 5 MHz
Center Freq	: System CF(881.46 MHz at CH#=382)	

- If not suitable for conditions ①~③, dismount BUDA-DP and then apply power to HPAU. Apply signals of *-30dBm* to CPL-10 Input Port(TP L) by using SG and then check whether ANT port (TP J) output reaches *17 ± 2 dBm*, and BUDA-DP AGC INPUT Port(TP K) reaches -

26.5 ± 3.0dBm by using S/A.

- DFEU Sample Port : 42.2 ± 0.7 dB
- DFEU A-path I/L : 2 dB Max
- Cable Loss : 1.5 dB Max

(Setup environment upon measurement with S/A)

Ref.Level : +30 dBm Log Scale : 10 dB

RBW : 30 KHz VBW : 300 KHz

ATT : 10dB

Center Freq : System CF (ex. 881.46MHz at CH#=382)

The coupling level of DFEU Sample Port in the above conditions shall be directly measured and must be **recorded and managed in TX Sample Port of DFEU.**

▶ *Upon measurement of ANT Port(TP J), you must couple up 30dB attenuator and then compensate for Loss.*

2.1.2 Tx Path Measurement Level

TEST POINT	TX Measurement LEVEL	PASS / FAIL
H	-23.5 ± 1.0 dBm	
I	-28 ± 3.5 dBm @c0	
J	31.5 ± 1 dBm (based on P/M)	
J	17 ± 2 dBm @TP L = -30dBm	
K	-26.5 ± 1 dBm @TP L = -30dBm	

2.2 Tx Path Performance Checking Test

① In accordance with TIA/EIA-97-C, use *3383 command* of SCPA to operate call simulator.

	Digital gain value
Pilot Gain	80
Sync Gain	105

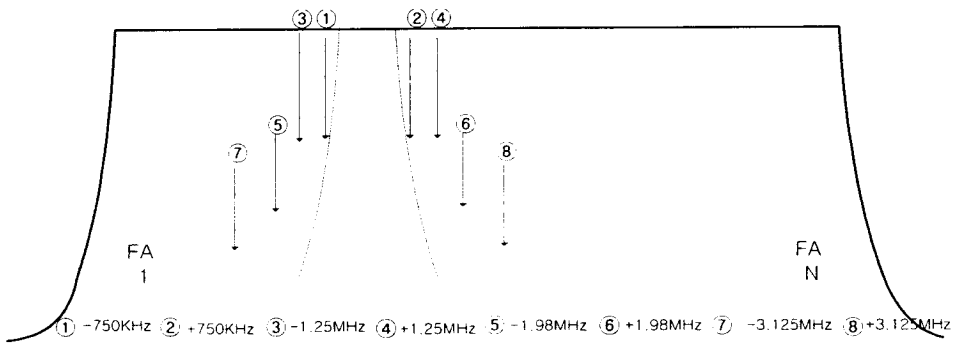
Paging Gain	77
Traffic Gain	53

② Couple up Power Meter to ANT output port (TP J) through 30dB Attenuator and adjust the output by using *rfcbud -t * * command of RCPA* so that it reaches 10Watts(40dBm) in the state where 6 calls were hung on.

③ Check whether Spurious Level, from output port (TP J) of ANT A, meets

- **45dBc(RBW:30KHz)** at $f_c \pm 750KHz$,
- **60dBc(RBW:30KHz)** at $f_c \pm 1.98MHz$,
- **13dBm(RBW:100KHz)** at $fc \pm 3.125MHz$.

- Upon measurement of marker, Delta Marker(RBW:30KHz) is **29dBc** at ±750KHz, and **44dBc** at ±1.98MHz.
- Method of measuring spurious features
  - On [MEAS/ USER] MENU of Spectrum Analyzer, select [User Menus] item.
  - With "CENTER FREQ"=881.46MHz, "VIDEO AVERAGE"=50 set, measure the output with "MEASURE DSIORTN" MENU.
  - In reference to the value measured with Spectrum Analyzer, adjust the value of "REF LEV OFFSET", measure the output again with "MEASURE DSTORTN" MENU and adjust it to the same value as one read with Power Meter.
  - Measure spurious features with "CONTINUE" MENU.



Transmitter Test and Measurement Results

Section 2.985 Measurement of Radio Frequency Power Output

Test Method

1) The modulation scheme is configured as per the Table below for the power output measurement. As recommended by PN3383 (refer to PN3383 Table 6.5.2-1. Base Station Test Model, Nominal).

Type	Number of Channels	Fraction of Power(linear)	Fraction of Power (dB)	Comments
Pilot	1	0.2000	-7.0	Code channel 0
Sync	1	0.0471	-13.3	Code channel 32,always 1/8 rate
Paging	1	0.1882	-7.3	Code channel 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable code channel assignments; full rate only

2) Set *Test Frequency* to 869.7MHz(CH#1013).

- *Refer to APPENDIX 4.(Carrier Frequency setting Method)*

2) Set *Digital Gain* of each channel to make the modulation scheme, which is configured as above table.

- *Refer to APPENDIX 2. (CDMA Code Channel Gain Adjusting Method)*

Pilot Gain	***= 80***
Sync Gain	***= 105***
Paging Gain	***= 77***
Traffic Gain	***= 53***

4) Set up *6 Traffic Calls* using PN3383 command at SCPA.

- *Refer to APPENDIX 3. (CDMA Test Call Setting Method)*

5) Measure the RF Output Power at DFEU using a calibrated Power Meter.
Adjust BUDA TX ATTEN with ***RFCBUD -T Command at RCPA*** to be 40dBm at DFEU Tx output port.

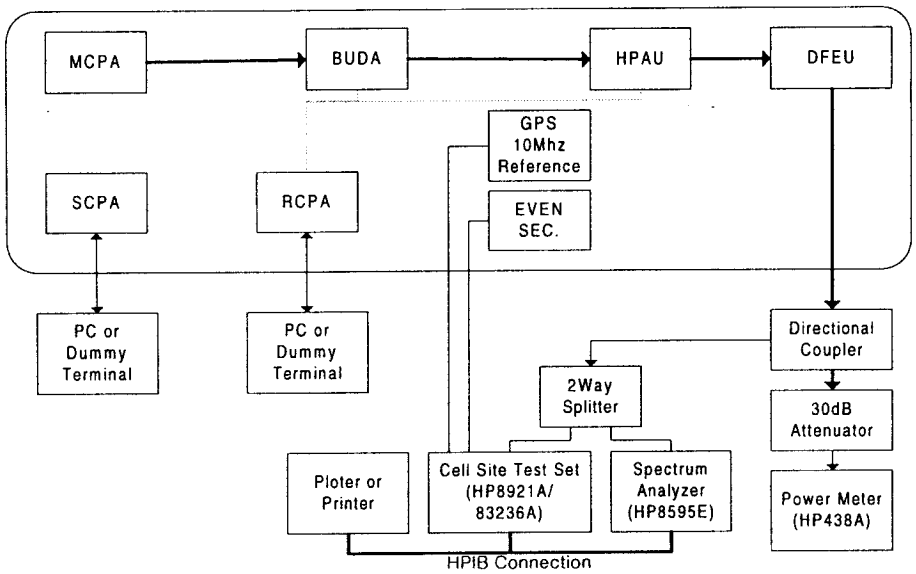
- Refer to *APPENDIX 5.(TX Power Output Level Control)*

6) Repeat step 2) through Step 5) to measure RF power output at 881.49MHz and 893.31MHz.

Test Equipment

- Spectrum Analyzer(HP8595E or similar equipment)
- Cell Site Test Set with CDMA Adapter (HP8921A,83236A)
- PC or Dummy Terminal
- Printer or Plotter
- Power Meter (HP438A)
- 30dB Attenuator
- Directional Coupler
- 2Way Splitter

Test Setup Configuration



MCPA : Multi Channel Processing Board Assembly
BUDA : Base Station Up-Down Conversion Board Assembly
HPAU : High Power Amplifier Unit
DFEU : Pico-Cell BTS Front End Unit
SCPA : System Control Processor board Assembly
RCPA : Radio & Channel Processing Board Assembly

Minimum Standard

The Power output shall not exceed 10Watt(40dBm) at DFEU output port.

Test Results

The Maximum power output is 10Watts.

Section 2.987 Measurement of Modulation Characteristics

Test Method

1) Set up *Test Frequency* to 869.7MHz(CH#1013).

- *Refer to APPENDIX 4. (Carrier Frequency setting Method)*

2) Configure the base station to transmit the Pilot Channel only. So set Digital Gain of each channel as followed table.

- *Refer to APPENDIX 2.(CDMA Code Channel Gain Adjusting Method).*

Pilot Gain	***= 80***
Sync Gain	***= 0***
Paging Gain	***= 0***
Traffic Gain	***= 0***

3) Set BUDA TX ATTEN to E0 with ***RFCBUD –T command in RCPA*** .

- *Refer to APPENDIX 5.(TX Power Output Level Control)*

4) Confirm the PN offset value.

- *Refer to APPENDIX 1.(PN Offset Checking Method)*

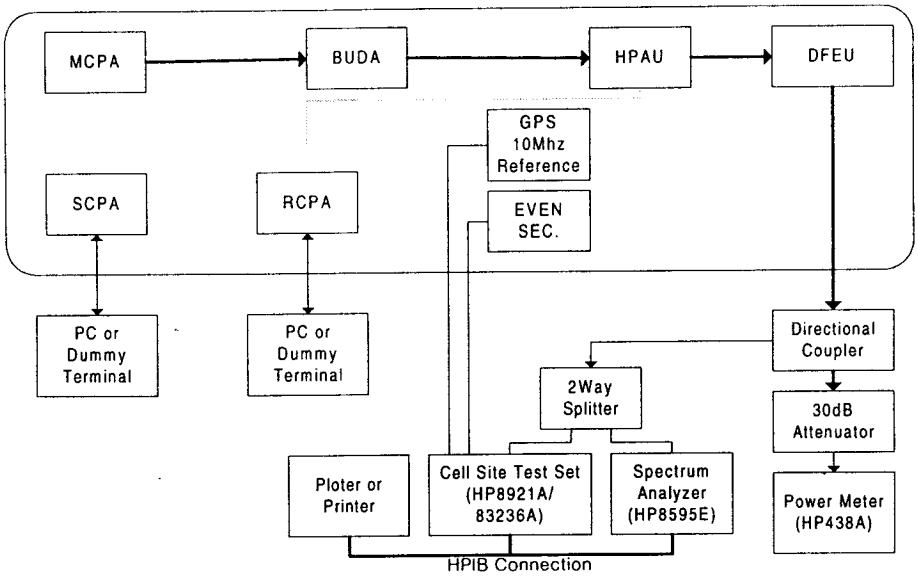
5) Measure the Waveform quality factor (Rho, ρ) using HP Cell Site Test Set.

6) Repeat step 2) through Step 5) to measure RF power output at 881.49MHz and 893.31MHz.

Test Equipment

- Spectrum Analyzer(HP8595E or similar equipment)
- Cell Site Test Set with CDMA Adapter (HP8921A,83236A)
- PC or Dummy Terminal
- Printer or Plotter
- Power Meter (HP438A)
- 30dB Attenuator
- Directional Coupler
- 2Way Splitter

Test Configuration



Test Setup for Measurement of Modulation Characterisics

Minimum Standard

The normalized cross correlation coefficient, "ρ" shall be greater than 0.912 (excess power < 0.4dB) .

Test Results

The normalized cross correlation coefficient, "ρ" is greater than 0.912. Please refer to test results.

Section 2.989 Measurement of Occupied Bandwidth

Test Method

1) The modulation scheme is configured as per the Table below for the power output measurement. As recommended by PN3383 (refer to PN3383 Table 6.5.2-1. Base Station Test Model, Nominal).

Type	Number of Channels	Fraction of Power(linear)	Fraction of Power (dB)	Comments
Pilot	1	0.2000	-7.0	Code channel 0
Sync	1	0.0471	-13.3	Code channel 32,always 1/8 rate
Paging	1	0.1882	-7.3	Code channel 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable code channel assignments; full rate only

2) Set *Test Frequency* to 869.7MHz(CH#1013).

- *Refer to APPENDIX 4.(Carrier Frequency setting Method)*

3) Set *Digital Gain* of each channel to make the modulation scheme, which is configured as above table.

- *Refer to APPENDIX 2. (CDMA Code Channel Gain Adjusting Method)*

Pilot Gain	***= 80***
Sync Gain	***= 105***
Paging Gain	***= 77***
Traffic Gain	***= 53***

4) Set up *6 Traffic Calls* using PN3383 command at SCPA.

- *Refer to APPENDIX 3. (CDMA Test Call Setting Method)*

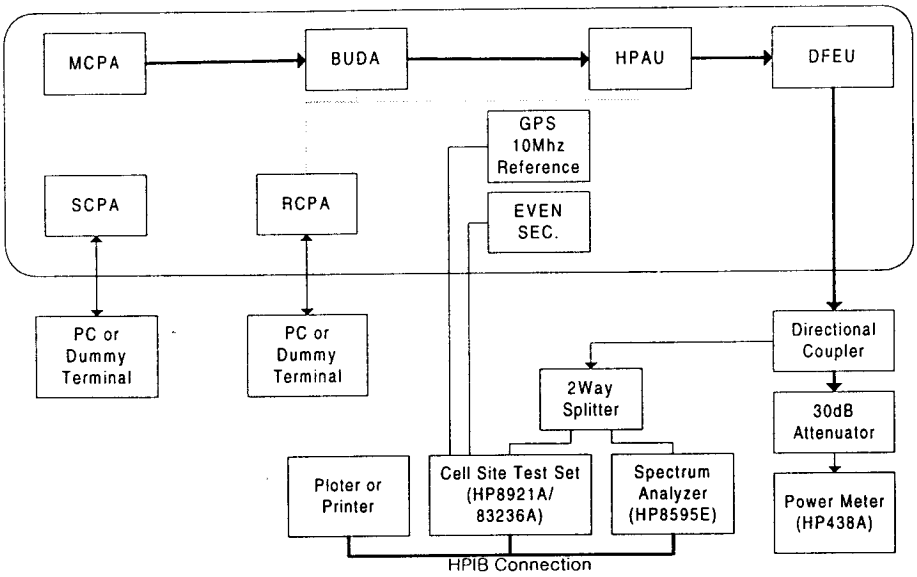
5) Measure the RF Output Power at DFEU using a calibrated Power Meter.
Adjust BUDA TX ATTEN with ***RFCBUD -T Command at RCPA*** to be 40dBm at DFEU Tx output port.

- *Refer to APPENDIX 5.(TX Power Output Level Control)*

Test Equipment

- Spectrum Analyzer(HP8595E or similar equipment)
- Cell Site Test Set with CDMA Adapter (HP8921A,83236A)
- PC or Dummy Terminal
- Printer or Plotter
- Power Meter (HP438A)
- 30dB Attenuator
- Directional Coupler
- 2Way Splitter

Test Configuration



Test Setup for Measurement of Modulation Characterisics

Minimum Standard

The transmit occupied bandwidth for a spread spectrum CDMA signal must be below the mean power by 45dB, when measured in any 30kHz resolution bandwidth greater than 750kHz offset, per PN3383 § 4.5.1.3.1 specification.

Test Results

The Spectrum Analyzer output plot shows the peak of the CDMA channel signal 16.1dB below the zero line of the Spectrum Analyzer for the following reason. For the CDMA system there is no carrier without modulation. This relationship was used to provide the correct level an unmodulated carrier vs. the modulated signal.

10 Log (Transmit Bandwidth / Resolution Bandwidth)

10 Log (1.23MHz/ 30kHz) = 16.1dB

ex) IF Marker to Marker is 29dBc at RBW 30kHz, actual Value is 45dBc at RBW 1.23MHz

Section 2.991 Measurement of Spurious & Harmonic Emissions at Antenna Terminals

Test Method

1) The modulation scheme is configured as per the Table below for the power output measurement

As recommended by PN3383 (refer to PN3383 Table 6.5.2-1. Base Station Test Model, Nominal).

	Number of Channels	Fraction of Power(linear)	Fraction of Power (dB)	Comments
Pilot	1	0.2000	-7.0	Code channel 0
Sync	1	0.0471	-13.3	Code channel 32,always 1/8 rate
Paging	1	0.1882	-7.3	Code channel 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable code channel assignments; full rate only

- Set Digital Gain of each channel as follows

Pilot Gain	***= 80***
Sync Gain	***= 105***
Paging Gain	***= 77***
Traffic Gain	***= 53***

2) Set up *6 Traffic Calls.*

- *Refer to APPENDIX 3.(CDMA Test Call Setting Method)*

3) Measure the RF Output Power at DFEU output using Calibrated Power Meter.
Adjust BUDA TX ATTEN with ***RFCBUD -T Command at RCPA*** to be 40dBm at DFEU Tx output port.

- *Refer to APPENDIX 5.(TX Power Output Level Control)*

4) Measure the Out of Band Emission using Spectrum Analyzer(**at Channel Power mode).**

Case 1) Fc -1.98MHz

Ref Level Offset Value	:	***Same as Power Meter display value***
Log Scale	:	***10dB***
RBW	:	***300Hz***
VBW	:	***3KHz***
Span	:	***39.6kHz***
AVG	:	***25***
Channel Spacing	:	***1.25MHz***
Channel B.W	:	***19.8kHz***
Center Freq.	:	***867.7101MHz*** *(at CH# 1013)*

Case 2) Fc +1.98MHz

Ref Level Offset Value	:	***Same as P.M. display value***
Log Scale	:	***10dB***
RBW	:	***300Hz***
VBW	:	***3KHz***
Span	:	***39.8kHz***
AVG	:	***25***

Channel Spacing	:	*1.25MHz*
Channel B.W	:	*19.8kHz*
Center Freq.	:	*871.6899MHz (at CH# 1013)*

5) Measure the Spurious of Center Frequency +/- 3.125MHz at Coupling Port of Directional Coupler(or RFEU-BW) using Spectrum Analyzer(**at Channel Power mode).**

Case 1) Fc -3.125MHz

Ref Level Offset Value	:	*Same as P.M. display value*
Log Scale	:	*10dB*
RBW	:	*30KHz*
VBW	:	*300KHz*
Span	:	*2MHz*
AVG	:	*25*
Channel Spacing	:	*1.25MHz*
Channel B.W	:	*1MHz*
Center Freq.	:	*866.075MHz (at CH# 1013)*

Case 2) Fc +3.125MHz

Ref Level Offset Value	:	*Same as P.M. display value*
Log Scale	:	*10dB*
RBW	:	*30KHz*
VBW	:	*300KHz*
Span	:	*2MHz*
AVG	:	*25*
Channel Spacing	:	*1.25MHz*
Channel B.W	:	*1MHz*
Center Freq.	:	*873.325MHz (at CH# 1013)*

6) For 881.49MHz, Repeat step 2) through Step 5). Center Frequency of Spectrum Analyzer are as follows.

Center Frequency	Fc –1.98MHz	Fc + 1.98MHz	Fc-3.125MHz	Fc+3.125MHz
	879.5001MHz	883.4799MHz	877.865MHz	885.115MHz

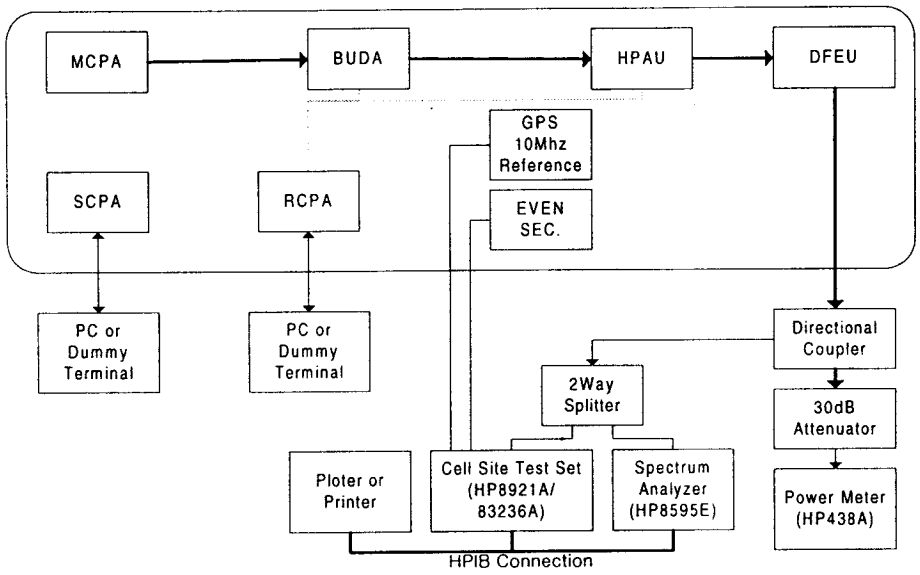
7) For 893.31MHz, Repeat step 2) through Step 5). Center Frequency of Spectrum Analyzer are as follows.

Center Frequency	Fc –1.98MHz	Fc + 1.98MHz	Fc-3.125MHz	Fc+3.125MHz
	891.3201MHz	895.2999MHz	889.685MHz	896.935MHz

Test Equipment

- Spectrum Analyzer(HP8595E or similar equipment)
- Cell Site Test Set with CDMA Adapter (HP8921A,83236A)
- PC or Dummy Terminal
- Printer or Plotter
- Power Meter (HP438A)
- 30dB Attenuator
- Directional Coupler
- 2Way Splitter

Test Configuration



Test Setup for Measurement of Occupied Bandwidth

Minimum Standard

Per PN3383, the minimum standards for Transmit Port Conducted Spurious Emissions are as follows:

Transmit Conducted Spurious

Outside the band, spurious emissions shall not exceed -13dBm or -80dBc, whichever is the larger power, when measured in a resolution bandwidth that is at least 1 percent of the emission bandwidth of the fundamental (19.8kHz) at offsets between 1.98MHz and 3.125MHz, and when measured in a 1 MHz resolution bandwidth at offsets greater than 3.125MHz(measurement centered at 3.625MHz offset and beyond).

Test Results

3. Stand Alone Test Configuration

3.1 Application/OS Loading Procedure

1) Use No. "3" menu of the "rcmd" command at OS Prompt of ECP to dump Application/OS Code loaded in the Flash Memory in ECP into DRAM of ECP.
(Use "Escape key" for the Prompt conversion of OS mode and Application mode.)
2) ECP decompresses the compressed Code and restarts it after Code Dump.

```
STAREX:USER >
<-ver_req (2)
->Timeout !!
STAREX:USER >ls↵
    ls        pr        rcmd      ver
STAREX:USER > rcmd↵
 --- Booter Commands ; Select number.
 1.Signal Print(0)
 2.Flash Information Display
 3.Offline Mode   3↵
 You wanna setup BTS without Loading?[y/N]   y↵
 Wait ...
STAREX:USER >
(OS)   Mine: T1.0.0   RCVD:
(APP) Mine: T1.0.0   RCVD:
Version Changed !
 RAM Info Copying -
 OS Decompress Start ..... End
 APP Decompress Start ..... End
 >>> HERE WE GO !!!
```

Figure 3.1 Application / OS Loading Procedure

3.2 PLD Loading Procedure

1) After Application/OS Code Download and Decompress, if ECP is restarted, it performs Block Version Request from CCP. At this time, use No. "3" menu of the "load" command to dump PLD loaded in the Flash Memory in ECP into DRAM of ECP.
2) ECP decompresses PLD after PLD Dump and then decompresses the detailed Application of ECP by block to create Task.
3) ECP performs Activation on all Tasks in ECP after PLD Loading and initializes BTS lower processor (RCP, MCP).
4) It takes about 2 minutes for all the processors of BTS to be initialized and activated.

```
ECP >
<- BLK_VER_REQ_SIG to CCP
->BLK_TBL_TMO_SIG(1)
ECP >ls↵
    ls        pr        his       dtst      load      nvm
ECP >load↵
* Load State Change Command *
 1. Loader Info. and DB Addr. Display.
 2. User Table Info. Display (nvm_info/ram_info & ecp_table)
 3. Stand-Alone Mode(Internal PLD Configuration Without Loading)
 4. BSP User Block Loading Test
 5. Set dis_loader flag(cur: 0)
 6. Set clean_tmp_area option(cur: 1)
 7. dbg_prt On/Off(cur:0)
 8. sleep_interval set(cur:20)
 9. unit_prt set(cur:0)
10. Checksum Check
11. Set Daisy_chain Field(cur:255)
12. See block_info

Enter the number : 3↵

* BTS Stand-alone Mode *
```

```
ECP >
 strt_addr[c60000] len[a5c0] sig[d40]
 Decompressing PLD ..... End
->PLDLoadEnd
 ## Block 0 Ver : Mine[T1.0.0], CCP's[T1.0.0]
 ## Block 1 Ver : Mine[T1.0.0], CCP's[T1.0.0] -> Version Same
 ## BKLD_REQ_MSG -> Version Same
 Decompressing EOM block..... End
 Decompressing ECF block..... End
 Decompressing EST block..... End
 Decompressing ECM block..... End
 Decompressing EPM block..... End
 .....
ECP NW R3.0.0>
```

Figure 3.2 PLD Loading Procedure

3.3 Overhead Channel Unblock Procedure

1) After each processor such as ECP, MCP, and ECP, etc. is activated and the initialization of the related Device is completed, confirm the BTS status. Use the "onblk" command to confirm whether there is a Block of the Overhead Channel and the Block Reason.
2) As there is no higher processor on Stand Alone Mode, Overhead Channel is blocked by IPC Fail. At this time, use the "blkctr" command to release the Block of the corresponding Sector/FA.

```
ECP NW R3.0.0>onblk↵
*----------> On-line Block Status Display <--------
     FA     |  Sector  |  Block?  |  Reason(s)
------------------------------------------------------------
     0      |    0     |     ?    |IPC
     0      |    1     |     ?    |IPC
     0      |    2     |     ?    |IPC
ECP NW R3.0.0>blkctr↵
Caution! This will halt/resume Online block process.
Current Online block process status    :
_________|__Alpha__|__Beta___|__Gamma__
   0 FA  |    On    |    On    |    On
   1 FA  |    On    |    On    |    On
   2 FA  |    On    |    On    |    On
   3 FA  |    On    |    On    |    On
   4 FA  |    On    |    On    |    On
   5 FA  |    On    |    On    |    On
   6 FA  |    On    |    On    |    On
   7 FA  |    On    |    On    |    On
Enter sector (9 for all)   : 9↵
Enter FA (9 for all)       : 0↵
Now choose action ('a' for activate, 'd' for deactivate)   : d↵
ECP NW R3.0.0>
```

Figure 3.3 Overhead Channel Unblock Procedure

4. Stand Alone Test Function

4.1 No CCP Mode

To set up Voice / Markov / Loop back Call by Mobile Station on BTS Stand Alone Mode, convert Call Control Mode of BTS into No CCP Mode. No CCP Mode should be enabled to simulate Call Setup procedures BSC performs in BTS itself.

```
ECP NW R3.0.0>noccp↵
Do you need a CCP(y/n) ? n↵
ECP:NO_CCP>
```

Figure 4.1 No CCP Mode

4.2 Stand Alone Mode BTS Call

As there is no BSC, Call Control controlled by BSC is simulated by ECP, and the Traffic Data is processed by Traffic Channel Element in the Loop back procedure. Therefore, Voice / Markov / Loop back Call on Stand Alone Mode must be performed on No CCP Mode (see 4.1). Use the "trace" command to trace Call Setup Procedure.

```
ECP:NO_CCP>trace all↵
 - all ---- ON
ECP:NO_CCP>
ACE->BSP : MOB_ORIG (S:0 FA:0 PC:0 rtd:396[396]) (019) 200-2200
[ERM] CDMA_CH[0] Normal Alloc. idle_tch[53]
PCE<-BSP :(J0) SND_MOB_ORDER(ord[10],ordq[00]) ADDR[8810121:237]
CCP<-BSP :(J0) MOB_ORIG_IND (timer 640)
CCP->BSP :(J0) assign_req (foi 255)
 RSC Alloc Tch Success (cdmach[0]dcp[0]chc[1]tc[0]f.o[1])
CCP<-BSP :(J0) ASSIGN_RSPS W/ NO_CCP (addr:9810121 tc:0 fo:1)
PCE->BSP :(J0) tx_ota(BTS_ONLY_CALL)
CCP->BSP :(J0) assign_ack
TCE<-BSP :(J0) TC_MOB_ASSIGN addr[9810121 138] Path_id[0]  (timer 1500)
TCE->BSP :(J0) tc_assign_ack
```

```
PCE<-BSP :(J0) PC_CH_ASSIGN (timer 3000)
PCE->BSP :(J0) tx_ota(BTS_ONLY_CALL)
TCE->BSP :(J0) sel_link_on w/ mob_acq (542ms)
```

Figure 4.2 Origination Call in Stand Alone Mode

4.3 Null Traffic Test Call

As to Null Traffic Test Call, BTS creates Virtual Call without Mobile Station. It may be set up through the use of the "3383" command, and Traffic Rate, Service Option, Sector/FA, and Number of Calls, etc. may be designated, based on the Parameter input.

```
ECP NW R3.0.0>3383↵
---------- PN-3383 SUPPORTING FUNCTION ----------
            1. Access Probe Acquisition Test
            2. BTS Test Call(Termination)
            3. Sector TX Gain Change
            4. FER Display Request
            5. Automatic Release Mode Set
Select the menu? 2↵
>> Test Start ? ('1'), Set mobile informations ? ('2') 2↵
>  Enter the Sector [0/1/2/fe(all sector)] ? 0↵
>  Enter the CDMA channel [0~7/fe(all cdma ch)] ? 0↵
>  Enter the PC id [0~6] ? 0↵
>  Enter the slot cycle index [0~7] ? 2↵
>  Enter the Call Type
   [0(Normal)/1(Markov)/2(Loopback)/3(BTU)/4(Null)/7(OCNS)] ? 4↵
>  Enter the Service Option [2(Loopback)/9(Loopback_13K)] ? 9↵
>  Enter the Test Data
   [0(Blank)/1(Eigth)/2(Quarter)/3(Half)/4(Full)/5(Variable)] ? 4↵
>  Enter the MCC [0x15d] ? 15d↵
>  Enter the imsi_11_12 [0x63] ? 63↵
>  Enter the Personal Station Number [(019) 100-0000] ? (019) 200-0000↵
>  Enter the call times ? 1↵
>  Enter the Call Period(0 sec) ? 1↵
```

```
CCP->BSP : general_page (019) 200-0000
PCE<-BSP :(J0) GENPAGE_CAI(S0,FA0) [8810121 237](J0:timer 12120)

ACE->BSP : page_response (S:0 FA:0 PC:0 rtd:41216[41216]) (019) 200-0000
[ERM] CDMA_CH[0] Normal Alloc. idle_tch[53]
PCE<-BSP :(J0) SND_MOB_ORDER(ord[10],ordq[00]) ADDR[8810121:237]
CCP<-BSP :(J0) PAGE_RSP_IND(NORMAL) W/ BTS_ONLY_CALL (timer 640)
CCP->BSP :(J0) assign_req (foi 255)
 RSC Alloc Tch Success (cdmach[0]dcp[0]chc[1]tc[0]f.o[1])
CCP<-BSP :(J0) ASSIGN_RSPS W/ NO_CCP (addr:9810121 tc:0 fo:1)
PCE->BSP :(J0) tx_ota(BTS_ONLY_CALL)
CCP->BSP :(J0) assign_ack
TCE<-BSP :(J0) TC_MOB_ASSIGN addr[9810121 138] Path_id[0]   (timer 1500)
TCE->BSP :(J0) tc_assign_ack
PCE<-BSP :(J0) PC_CH_ASSIGN (timer 3000)
PCE->BSP :(J0) tx_ota(BTS_ONLY_CALL)
TCE->BSP :(J0) sel_link_on w/ mob_acq (542ms)

ECP NW R3.0.0>call all↵
-------------------------------------------------------------------------------
JOB SCT  FA  FO  WAL  CH_TC  ESN      IMSI_S2_S1  TYP  STS  PHONE
  0   0   0   1    8    1_  0  c9000000  38c-31ebe7   TC   aa  (019) 200-0000
-------------------------------------------------------------------------------
 JOB : TOTAL(1), TC( 1/ 0/ 0), ORD( 0/ 0/ 0), BURST(0) OTHER(0)
-------------------------------------------------------------------------------
ECP NW R3.0.0>
```

Figure 4.3 Null Traffic Call in Stand Alone Mode

APPENDIX Tune up Procedure

1. PN Offset Checking Method

To check the feature of CDMA with measurement equipment, PN OFFEST value of BTS should be given. The following describes the prcedure for this. You can check PN OFFSET value through ECPA.

When you input DISPLD on ECPA, various MENUs will appear as follows;

ECP NW R3.0.0> displd

*** PLD Data Display Options ***
<< LGT MDR VERSION >>
0. PLD Data Address Display.
1. BTS Data Display.
2. Sector Data Display.
3. CDMA Channel Data Display.
4. Extended System Parametrs Display.
5. System Parameter Display.
6. Neighbor List Display.
7. BTS Configuration Display.
8. TIC Data Display.
9. TXMS Paramter Display.
10. Power Management Paramter Display.
11. Access Channel Configuration Display.
12. Access Parameter Display.
13. Paging Channel Configuration Display.
14. Global Redirection Message Display.
15. Pilot/Sync Channel Configuration Display.
16. Tcparam Configuration Display.
17. OCNS Paramter Display.
18. Tx Timing Display.

Among the MENUs above, select the second item to check PN OFFSET value.

Enter the number : 2

PN OFFSET of each sector appears as follows;

** Sector Configuration Display **

Sector #2 Configured : TRUE
Pilot_pn_offset : 200
num_of_cdma_ch : 1
sector_cai_rev : 1
sector_cai_min_rev : 1

You can check PN OFFSET from the value displayed above. This value is used in the equipment measuring MODULATION CHARACTERISTIC among test items.

2. CDMA Code Channel Gain Adjusting Method

The following describes how to set the distribution of CDMA signal that is displayed through BTS as the following table.

Type	Number of Channels	Fraction of Power(linear)	Fraction of Power (dB)	Comments
Pilot	1	0.2000	-7.0	Code channel 0
Sync	1	0.0471	-13.3	Code channel 32,always 1/8 rate
Paging	1	0.1882	-7.3	Code channel 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable code channel assignments; full rate only

The Power Level of each channel can be changed through ECPA and you can adjust Level by changing GAIN value of CODE. The proceudure is as follows;

ECP NW R3.0.0>3383

---------- PN-3383 SUPPORTING FUNCTION ----------
1. Access Probe Acquisition Test
2. BTS Test Call(Termination)
3. Sector TX Gain Change
4. FER Display Request
5. Automatic Release Mode Set

Select the third menu to change Power distribution of Pilot, Paging and Sync Channel.

Select the menu? 3
---- SECTOR TX Gain Change Function ----
1. Pilot Ch Gain
2. Pilot/Sync Ch Gain
3. Paging Ch Gain
4. Nominal TC Gain
5. Total Gain Display
6. Quit

Select 2 to change Pilot and Power Level of Sync Channel.

Select the menu? 2

> *Enter the Sector(0,1,2) ? 0* - **Enter 0 to select Alpha sector. (Beta : 1, Gamma : 2)**
> *Enter the CDMA channel ? 0* -
> *Enter the pilot gain(108) ? 80* - **Change Gain from 108 (Default Value) to 80.**
> *Enter the sync gain(34) ? 105* - - **Change Gain from 34 (Default Value) to 105.**
> *Do you want to change gain(y/n)? y*
Changed ok !

Input corresponding values as follows to change Power Level of Paging Channel.

---- SECTOR TX Gain Change Function ----
1. Pilot Ch Gain
2. Pilot/Sync Ch Gain
3. Paging Ch Gain
4. Nominal TC Gain
5. Total Gain Display
6. Quit
Select the menu? 3

> *Enter the Sector(0,1,2) ? 0*
> *Enter the CDMA channel ? 0*
> *Enter the PC id ?*
> *Enter the PC gain(65) ? 77*
> *Do you want to change gain(y/n)? y*
Changed ok !

To change Power Level for the virtual call, do the followings.

```
---- SECTOR TX Gain Change Function ----
  1. Pilot Ch Gain
  2. Pilot/Sync Ch Gain
  3. Paging Ch Gain
  4. Nominal TC Gain
  5. Total Gain Display
  6. Quit
Select the menu? 4

>  Enter the Sector(0,1,2) ? 0
>  Enter the CDMA channel ? 0
>  Enter the nominal tc gain(100) ? 53
>  Do you want to change 100 to 53 (y/n)? y
   Changed ok !
```

To check the changed value, select the fifth MENU and confirm if the work is properly done.

```
---- SECTOR TX Gain Change Function ----
  1. Pilot Ch Gain
  2. Pilot/Sync Ch Gain
  3. Paging Ch Gain
  4. Nominal TC Gain
  5. Total Gain Display
  6. Quit
Select the menu? 5

---------- Sector [0] Gain Config ------------
             PILOT      SYNC      PAGING     TRAFFIC
 FA[0]         80        105         77         53
-------------------------------------------------
```

As seen above, only Gain of Alpha Sector is changed into new value.
Lastly, select Menu No. 6 and finish.

```
---- SECTOR TX Gain Change Function ----
  1. Pilot Ch Gain
  2. Pilot/Sync Ch Gain
  3. Paging Ch Gain
  4. Nominal TC Gain
  5. Total Gain Display
  6. Quit
Select the menu? 6

ECP NW R3.0.0>
```

3. CDMA Test Call Setting Method

To make the distribution of CDMA that is displayed through BTS as the table suggested in APPENDIX 2, the following describes how to set virtual calls necessary for this job. The setting could be done through ECPA.

ECP NW R3.0.0>3383

---------- PN-3383 SUPPORTING FUNCTION ----------

1. Access Probe Acquisition Test
2. BTS Test Call(Termination)
3. Sector TX Gain Change
4. FER Display Request
5. Automatic Release Mode Set

Select the menu? 2

>> Test Start ? ('1'), Set mobile informations ? ('2')2 ↵
> Enter the Sector [0/1/2/fe(all sector)] ? 0 ↵
> Enter the CDMA channel [0~7/fe(all cdma ch)] ? 0 ↵
> Enter the PC id [0~6] ? ↵
> Enter the slot cycle index [0~7] ? 2 ↵
> Enter the Call Type [0(Normal)/1(Markov)/2(Loopback)/3(BTU)/4(Null)/7(OCNS)] ? 4 ↵
> Enter the Service Option [2(Loopback)/9(Loopback_13K)] ? 9 ↵
> Enter the Test Data [0(Blank)/1(Eigth)/2(Quarter)/3(Half)/4(Full)/5(Variable)] ? 4 ↵
> Enter the MCC [0x15d] ? 15d ↵
> Enter the imsi_11_12 [0x63] ? 63 ↵
> Enter the Personal Station Number [(019) 100-0000] ? (019) 200-0000 ↵
> Enter the call times ? 6 ↵
> Enter the Call Period(0 sec) ? 1 ↵

You can check if traffic is set through CODE DOMAIN ANALYZER of CELL SITE TEST equipment.

4. Carrier Frequency Setting Method

The following describes how to set CENTER FREQUENCY of CEMA CARRIER that is displayed through BTS. The frequency is changed through RCPA, and RCPA uses following COMMAND FORMAT.

[RCPA: T1.0.0][6]$ rfcbud

Display BUDA Commands & Status

usage: rfcbud [Options]
-t #fa #sector: Change Tx Atten
-i #fa #sector: Change Tx IF Atten
-r #fa #sector: Change Rx Atten
-c #fa #sector: Change Channel Number
-R : Reset High/Low
-s #fa #sector: SBUS Test

As seen above, you should use RFCBUD for changing work. For the changing work, choose proper option and perform the work.

To change the frequency, do the following procedure.

[RCPA: T1.0.0][3]$ rfcbud -c 0 0

OPTION –C is used to change the frequency. The first digit number 0 after –C is used to identify CARRIER No., and the second digit number is used to identify SECTOR.

*********** RCP[0] Channel Information For FA: 0, SECTOR: 0 **********
Current Channel Number : 25
Current Tx Frequency : 1931250KHz
Current Rx Frequency : 1851250KHz
Current Channel PLL Frequency : 1781250KHz
Want to Change the Channel Number ?(0: No 1: Yes)
>> 1
Enter Channel Number : 25
chNum[0][0] : 25
Want to re-PLL the IF ?(0: No 1: Yes)
>> 1
BUDA[0][0] PLL lock .. OK
[RCPA: T1.0.0][4]$

The frequency should be changed by the above procedure.

5. Tx Power Output Level Control

The following describe how to set CENTER FREQUENCY of CDMA CARRIER that is displayed through BTS. The frequency is changed through RCPA, and RCPA uses following COMMAND FORMAT.

[RCPA: T1.0.0][6]$ rfcbud

Display BUDA Commands & Status

usage: rfcbud [Options]
-t #fa #sector: Change Tx Atten
-i #fa #sector: Change Tx IF Atten
-r #fa #sector: Change Rx Atten
-c #fa #sector: Change Channel Number
-R : Reset High/Low
-s #fa #sector: SBUS Test

As seen above, you should use RFCBUD for changing. For changing, choose proper option and perform the work.

Use Change Tx ATTEN. among OPTIONs to change frequency, and do the following procedure.

[RCPA: T1.0.0][4]$ rfcbud -t 0 0
Current Tx Attenuation Value : 0xc00
Want to Change ?(0: No 1: Yes)
>> 1
Enter Tx Attenuation Value(Ex. b0) : 0xc0
Reading Tx Attenuation Value : 0xd5

The above example shows how to change attenuator of Tx path into c0.