

# 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  | 2EA                 | NUT                    |                                                               |            | DSMB      |       | ANH-A60-030000 | N     |              |
| 2          |                                                                                                                                                            | ASP-C60-030080  | 2EA                 | SCREW (STAINLESS TYPE) |                                                               |            | DSMB      |       | ASP-C60-030080 | N     |              |
| 3          |                                                                                                                                                            | ASP-W60-030060  | 2EA                 | SCREW (P.W+S.W)        |                                                               |            | DSMB      |       | ASP-W60-030060 | N     |              |
| 4          |                                                                                                                                                            | ASP-W60-030240  | 25EA                | SCREW (P.W+S.W)        |                                                               |            | DSMB      | F/W   | ASP-W60-030240 | N     |              |
| 5          |                                                                                                                                                            | CB 938          | 1EA                 | DCN MICRO BTS(MCC)     |                                                               |            | LGIC      |       | BUDD           | N     |              |
| 6          |                                                                                                                                                            | CB 937          | 1EA                 | DCN MICRO BTS(MCC)     |                                                               |            | LGIC      |       | BUPD-D         | N     |              |
| 7          | C76,158,185,197,214,299,310,292,262,268,247,159,216,215,191,199,136,137,114,123,113,77,157,184,198,207,297,306,290,260,248,269,160,209,208,192,200,138,139 | CM21X7R103K50AT | 39EA                |                        | CAP,CERAMIC,HIGH-DIELECTRIC,0.01uF,10%,50V,0805(SMD),X7R      | 표준         | AVKY      | SMD   | ECC-H1H-103K5J | N     |              |
| 8          | C116,124,115,313,86,99,100,87,95,97,101,41,122,131,146,148,149,102,108,109,107,126,106,104,105,103,120,117,127,121,118,82,98,368,417,418,393,29,396        | CM21X7R103K50AT | 39EA                |                        | 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 | 43EA                |                        | CAP,CERAMIC,HIGH-DIELECTRIC,0.01uF,10%,50V,0805(SMD),X7R      | 표준         | AVKY      | SMD   | ECC-H1H-103K5J | N     |              |
| 10         | C6,128,129,171,172,186,187,253,57,304,333,344,349,356,376,378,379,374,363,370,364,346,359,245,246,472,473,474,475,476,466,458,460,453,455,394,401,319      | CM21X7R104J50AT | 38EA                |                        | 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  | 8EA                 |                        | 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  | 6EA                 |                        | CAP,CERAMIC,HIGH-DIELECTRIC,0.047uF,5%,50V,0805(SMD),X7R      | 비표준        | AVKY      | SMD   | ECC-H1H-473J5A | N     |              |
| 13         | C155                                                                                                                                                       | CM21CG100D50AT  | 1EA                 |                        | CAP,CERAMIC,TEMP-COMPENSATE,10pF,0.5pF,50V,0805(SMD),C0G(NP0) | 비표준        | AVKY      | SMD   | ECC-T1H-100D56 | N     |              |
| 14         | C112,119,130,125,406,470,94,81,85,91,78,70,75,69,68,67,59,56,481,480,7,8,20,22,30,31,33,34,65,66,454,456,457,459,490                                       | CM21CG101J50AT  | 35EA                |                        | CAP,CERAMIC,TEMP-COMPENSATE,100pF,5%,50V,0805(SMD),C0G        | 표준         | AVKY      | SMD   | ECC-T1H-101J5F | N     |              |
| 15         | C288,271,241,229,227,177,142,163,72,80,387,166,183,175,204,311,287,270,240,230,228,176,164,143,43,244,254,258,266,267,272,273,274,275,277,279,280          | CM21CG102J50AT  | 37EA                |                        | CAP,CERAMIC,TEMP-COMPENSATE,1000pF,5%,50V,0805(SMD),C0G(NP0)  | 표준         | AVKY      | SMD   | ECC-T1H-102J5E | 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 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),COG(NP0)             |         | 표준   | AVKY   | SMD          | ECC-T1H-102J5E | N    |       |
| 17       | C278,73,79,384,167,181,174,203,314,357,369,381,419,415,416                                                                                                             |            | CM21CG102J50AT      |            | 15     | EA         | CAP,CERAMIC,TEMP-COMPENSATE,1000pF,5%,50V,0805(SMD),COG(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),COG(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),COG(NP0)               |         | 표준   | AVKY   | SMD          | ECC-T1H-120J5B | N    |       |
| 20       | C9,10,15,16,32,35,43,45,48,50,173,340,353                                                                                                                              |            | CM21CG180J50AT      |            | 13     | EA         | CAP,CERAMIC,TEMP-COMPENSATE,18pF,5%,50V,0805(SMD),COG(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),COG(NP0)              |         | 표준   | AVKY   | SMD          | ECC-T1H-181J55 | N    |       |
| 22       | C182,92,151,234,347,93,152,235,348,426,430,422,442,438,450,110,111,134,135                                                                                             |            | 08055A220JAT2A      |            | 19     | EA         | CAP,CERAMIC,TEMP-COMPENSATE,22pF,5%,50V,0805(SMD),COG(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),COG                   |         | 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),COG                   |         | 비표준  | KEMT   | SMD          | ECC-T1H-621F51 | N    |       |
| 25       | C217                                                                                                                                                                   |            | 08055A680JAT2A      |            | 1      | EA         | CAP,CERAMIC,TEMP-COMPENSATE,68pF,5%,50V,0805(SMD),COG(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       | C83,84,161,162,233,237,296,298,259,261,165,168                                                                                                                         |            | CM21CH272J25AT      |            | 12     | EA         | CAP,CHIP,2700pF,5%,25V,0805(SMD),COG(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.       | Rep   | 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                                                                                                                                     | MCR10EZHW333   | 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                               | MCR10EZHJ1001  | 28                  | EA         | RES,CHIP, 1 KOHM,1/8W,1%,0805(SMD)                                       | 표준         | ROHM SMD  |       | ERS-YBF-10015A | N     |              |
| 75         | R1,191,226,218,200,208,203,224,223,204,217,199,214,220,209,219,122,518,188,189,373,369,44,63,364,146,149,525,529,532                     | MCR10EZHJ1002  | 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                                                                                         | MCR10EZHJ1471  | 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                                                                                       | MCR10EZHJ1503  | 16                  | EA         | RES,CHIP, 150 KOHM,1/8W,1%,0805(SMD)                                     | 표준         | ROHM SMD  |       | ERS-YBF-15035A | N     |              |
| 78         | R175,177                                                                                                                                 | MCR10EZHJ1871  | 2                   | EA         | RES,CHIP, 1.87 KOHM,1/8W,1%,0805(SMD)                                    | 표준         | ROHM SMD  |       | ERS-YBF-18715A | N     |              |
| 79         | R253,254,404,405,22,74,106,119,164,165,168,170,495,519,535                                                                               | MCR10EZHJ4701  | 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                                                                              | MCR10EZHJ51R0  | 16                  | EA         | RES,CHIP, 51 OHM,1/8W,1%,0805(SMD)                                       | 표준         | ROHM SMD  |       | ERS-YBF-510A5A | 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 5 of 9 |      |                |      |       |
| BUDA-DP    |                                                                                                                                                                     | 김중섭        |  | 2000.03.03     |  | 김용기                 |      | 2000.03.13                            |  | 김우식        |  | 2000.03.13 |   | 1            |      |                |      |       |
| No         | Desig. No.                                                                                                                                                          |            |  | Component Name |  | Qty                 | Unit | Desc./Remark                          |  |            |  | 등급         | * | Maker        | Shop | Item No.       | Repl | Apply |
| 81         | R232,233,243,244,186,187                                                                                                                                            |            |  | MCR10EZH6192   |  | 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         | R124,125,130,131,283,285,293,294,383,388,393,394,426,427,433,434,480,488,482,489,470,471,473,474,483,486,490,491,458,459,95,98,102,104                              |            |  | 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. 3.

# 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.       | Rep | Apply |
| 104R       | 252,274,359,339,329,307,255,275,358,338,328,306 |            | MCR10EZJH561        |            | 12     | EA         | RES,CHIP, 560 OHM,1/8W,5%,0805(SMD)                                                              |         |      |       | 표준           | ROHM SMD | ERS-YBJ-56005A | N   |       |
| 105R       | 267,354,320,268,351,322                         |            | MCR10EZJH681        |            | 6      | EA         | RES,CHIP, 680 OHM,1/8W,5%,0805(SMD)                                                              |         |      |       | 표준           | ROHM SMD | ERS-YBJ-68005A | N   |       |
| 106R       | 334                                             |            | MCR10EZJH680        |            | 1      | EA         | RES,CHIP, 68 OHM,1/8W,5%,0805(SMD)                                                               |         |      |       | 표준           | ROHM SMD | ERS-YBJ-680A5A | N   |       |
| 107R       | 183,192,323,324,326,327,332,335,278,279,118,121 |            | MCR50JZHF51R0       |            | 12     | EA         | RES,CHIP, 51 OHM,1/2W,1%,2010(SMD)                                                               |         |      |       | 표준           | ROHM SMD | ERS-YEF-510AZY | N   |       |
| 108VR      | 9,10                                            |            | 64WR10K             |            | 2      | EA         | RES,VARIABLE,CERMET, 10 KOHM,1/4W,10%,Through-Hole,Multi-Turn                                    |         |      |       | 비표준          | BITE     | ERV-EAK-1002ZA | N   |       |
| 109VR      | 2,13,16,17                                      |            | 64WR5K              |            | 4      | EA         | RES,VARIABLE,CERMET, 5 KOHM,1/4W,10%,Through-Hole,Multi-Turn                                     |         |      |       | 비표준          | BITE     | ERV-EAK-5001ZA | N   |       |
| 110VR      | 18                                              |            | 64XR5K              |            | 1      | EA         | RES,VARIABLE,CERMET, 5 KOHM,1/4W,10%,Through-Hole,Multi-Turn                                     |         |      |       | 비표준          | BITE     | ERV-EAK-5001ZB | N   |       |
| 111VR      | 11,12,7,3,5,8,4,6                               |            | 64WR50K             |            | 8      | EA         | RES,VARIABLE,CERMET, 50 KOHM,1/4W,10%,Through-Hole,Multi-Turn                                    |         |      |       | 비표준          | BITE     | ERV-EAK-5002ZA | N   |       |
| 112SW      | 1                                               |            | SP-22SH             |            | 1      | EA         | SWITCH,PUSH BUTTON, DPDT,Right Angle ON-<ON>                                                     |         |      |       | 비표준          | SUEL     | ESP-Y02-00220A | N   |       |
| 113TR      | 1                                               |            | AH1                 |            | 1      | EA         | IC MM1C AMP                                                                                      |         |      |       | 비표준          | WHAN SMD | EUC-K00-0001Z1 | N   |       |
| 114U       | 47                                              |            | XC5204-5PQ100I      |            | 1      | EA         | IC,PLD,FPGA, 100P,PQFP,SMD,83MHz Industrial Temp.                                                |         |      |       | 비표준          | XILX SMD | EUD-F04-5100QB | N   |       |
| 115U       | 52                                              |            | MACH445-15YCT/R     |            | 1      | EA         | IC,PLD(습기3), 100P,PQFP,SMD,50MHz 128macrocell                                                    |         |      |       | 비표준          | VATS SMD | EUD-P04-4515QA | N   |       |
| 116U       | 61,U62,U69,U70                                  |            | AD667KP-REEL        |            | 4      | EA         | IC,INTERFACE,CONVERTER, 28P,PLCC,SMD 12-bit DAC                                                  |         |      |       | 비표준          | ANDE SMD | EUF-C00-0667LA | N   |       |
| 117U       | 59,U65                                          |            | AD7828LP-REEL       |            | 2      | EA         | IC,INTERFACE,CONVERTER, 28P,PLCC,SMD 4-&-8 channel 8-bit ADC                                     |         |      |       | 비표준          | ANDE SMD | EUF-C00-7828LA | N   |       |
| 118U       | 30                                              |            | BDG1A16G-TR         |            | 1      | EA         | IC,INTERFACE,DRIVER/RECEIVER, 16P,SOP,SMD Quad differential Line driver                          |         |      |       | 비표준          | LUCE SMD | EUF-D00-0116SA | N   |       |
| 119U       | 33                                              |            | BRS2A16G-TR         |            | 1      | EA         | IC,INTERFACE,DRIVER/RECEIVER, 16P,SOP,SMD ECL Receiver                                           |         |      |       | 비표준          | LUCE SMD | EUF-D00-0216S1 | N   |       |
| 120U       | 10,11,12,13                                     |            | CY7B923-JCT         |            | 4      | EA         | IC,TELECOMM,DIGITAL SWITCH, 28P,PLCC,SMD Hot link transmitter                                    |         |      |       | 비표준          | CYPS SMD | EUG-D00-7923LA | N   |       |
| 121U       | 29                                              |            | CY7B933-JCT         |            | 1      | EA         | IC,TELECOMM,DIGITAL SWITCH, 28P,PLCC,SMD Hot link receiver                                       |         |      |       | 비표준          | CYPS SMD | EUG-D00-7933LA | N   |       |
| 122U       | 142                                             |            | LMX2337TMX          |            | 1      | EA         | IC,TELECOMM,PLL, 16P,TSSOP,SMD 1.1GHz Dual freq. Synthesizer                                     |         |      |       | 비표준          | NSC SMD  | EUG-P00-2337SA | N   |       |
| 123U       | 25                                              |            | DS1233DZ-5/T&R      |            | 1      | EA         | IC,TELECOMM,RESET IC, 3P,SOT-223,SMD 5V Econo Reset                                              |         |      |       | 비표준          | DALS SMD | EUG-R01-2335AB | N   |       |
| 124U       | 134,66,67                                       |            | OP27GS-REEL         |            | 3      | EA         | IC,LINEAR,AMPLIFIER, 8P,SOP,SMD,Single precision OP Amp                                          |         |      |       | 비표준          | ANDE SMD | EUL-A00-0027SA | N   |       |
| 125U       | 92,93,95,96,4,17,163                            |            | 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   |       |
| 126U       | 136,100,101,72,73                               |            | AD8307AR            |            | 5      | EA         | IC,LINEAR,AMPLIFIER, 8P,SOP,SMD,Single Logarithmic Amp/500MHz 92dB/150Mil                        |         |      |       | 비표준          | ANDE SMD | EUL-A00-8307AA | N   |       |
| 127U       | 74,U75                                          |            | LM2901MX            |            | 2      | EA         | IC,LINEAR,VOLTAGE COMPARATOR, 14 P,SOP ,SMD ,Quad ,00.08.12 Assembly/test Location/Qualification |         |      |       | 비표준          | NSC SMD  | EUL-C00-2901SA | N   |       |
| 128U       | 42,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   |       |

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 |  | Mgmt. |  | 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        |  |
| 129U164                         |  |            |  | 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            |  |
| 130U86,102,137,97,85,103,138,98 |  |            |  | MSA-0886TR1       |  | 8                   |  | EA         |  | IC, AMPLIFIER, -                                                                                    |  | 비표준        |  | HEPA      |  | SMD   |  | EUL-K00-0886P1 |  |       |  | N            |  |
| 131U165,166                     |  |            |  | MC7805ACT         |  | 2                   |  | EA         |  | IC, LINEAR, VOLTAGE REGULATOR, 3P, CASE-221A, Single 3-terminal positive voltage Regulator          |  | 비표준        |  | MOT       |  |       |  | EUL-R00-7805AC |  |       |  | N            |  |
| 132U149,150                     |  |            |  | CSI24WC128JI-TE13 |  | 2                   |  | EA         |  | IC, MEMORY, EEPROM, 8P, SOP, SMD, 16K*8bit, 1000ns                                                  |  | 비표준        |  | CATA      |  | SMD   |  | EUM-B02-4128SA |  |       |  | N            |  |
| 133U1                           |  |            |  | XC17128E-PD8I     |  | 1                   |  | EA         |  | IC, MEMORY, PROM/ROM, 8P, DIP, ETC, 131K*1bit, 45ns                                                 |  | 비표준        |  | XILX      |  | F/W   |  | EUM-P17-1288DC |  |       |  | N            |  |
| 134U157                         |  |            |  | 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            |  |
| 135U40                          |  |            |  | 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            |  |
| 136U71                          |  |            |  | 74HC138D          |  | 1                   |  | EA         |  | IC, MOS LOGIC, CODER/MUX, 16P, SOP, SMD, Single 1-of-8 DEMUX                                        |  | 표준         |  | PHLP      |  | SMD   |  | EUS-C07-4138SA |  |       |  | N            |  |
| 137U63                          |  |            |  | 74F07D            |  | 1                   |  | EA         |  | IC, TTL LOGIC, BUFFER/DRIVER, 14P, SOP, SMD, Hex Open-Collector                                     |  | 표준         |  | PHLP      |  | SMD   |  | EUT-B00-7407S1 |  |       |  | N            |  |
| 138U78,79,80,81                 |  |            |  | DM74LS125AMX      |  | 4                   |  | EA         |  | IC, TTL LOGIC, BUFFER/DRIVER, 14P, SOP, SMD, Quad 3-State Buffers                                   |  | 표준         |  | FACH      |  | SMD   |  | EUT-B07-4125S1 |  |       |  | N            |  |
| 139U55                          |  |            |  | 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            |  |
| 140U56                          |  |            |  | 74F245SCX         |  | 1                   |  | EA         |  | IC, TTL LOGIC, BUFFER/DRIVER, 20P, SOP, SMD, Octal                                                  |  | 표준         |  | FACH      |  | SMD   |  | EUT-B07-4245S1 |  |       |  | N            |  |
| 141U37,38,46                    |  |            |  | N74F273AD         |  | 3                   |  | EA         |  | IC, TTL LOGIC, FLIP-FLOP/LATCH, 20P, SOP, SMD, Octal, D-type F/F                                    |  | 비표준        |  | PHLP      |  | SMD   |  | EUT-F07-4273SA |  |       |  | N            |  |
| 142U31,32,39                    |  |            |  | N74F373D          |  | 3                   |  | EA         |  | IC, TTL LOGIC, FLIP-FLOP/LATCH, 20P, SOP, SMD, Octal, D-type transparent Latch                      |  | 비표준        |  | PHLP      |  | SMD   |  | EUT-F07-4373SA |  |       |  | N            |  |
| 143U53                          |  |            |  | 74F04SCX          |  | 1                   |  | EA         |  | IC, TTL LOGIC, GATE, 14P, SOP, SMD, Hex, 1IN, Inv 150Mil                                            |  | 표준         |  | FACH      |  | SMD   |  | EUT-G00-7404SA |  |       |  | N            |  |
| 144U169                         |  |            |  | JPS-3-1           |  | 1                   |  | EA         |  | IC, THREE WAY DEVIDER(10MHZ)                                                                        |  | 비표준        |  | MICI      |  | SMD   |  | EUZ-P00-0031S1 |  |       |  | N            |  |
| 145U51                          |  |            |  | DS1620S/T&R       |  | 1                   |  | EA         |  | IC, ETC, 8P, SOP, SMD, Digital thermometer 208Mil                                                   |  | 비표준        |  | DALS      |  | SMD   |  | EUZ-Y00-1620SA |  |       |  | N            |  |
| 146U139                         |  |            |  | KSV-12H115        |  | 1                   |  | EA         |  | VCO, 115MHz, 12V, SMD                                                                               |  | 비표준        |  | SAS       |  | SMD   |  | EXC-Y11-50040A |  |       |  | N            |  |
| 147U144                         |  |            |  | KSV-12H70         |  | 1                   |  | EA         |  | VCO, 70MHz, 12V, SMD                                                                                |  | 비표준        |  | SAS       |  | SMD   |  | EXC-Y70-00030A |  |       |  | N            |  |
| 148U132                         |  |            |  | TVA0300N09        |  | 1                   |  | EA         |  | THERMOPAD                                                                                           |  | 비표준        |  | EMC       |  | SMD   |  | EZZ-ZTP-AD300N |  |       |  | N            |  |
| 149U117,28                      |  |            |  | 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            |  |

Contents 1. 일부 기구물의 미등록으로 추후 일부 기구물 추가 예정. 2. TX IF OUT용 Inner Cable 1EA 추가 예정. 3.

# 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 | Mgmt. | 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     |  |
| 171BNC3->J35      |                                                                         | BUD01C         |                     | 1          | EA                         | COAXIAL CABLE ASS'Y, RCA22_IF_LO_A 1671A                                 |           |       |      | 비표준    | YUSU         |                | SCX-S24-014001 | N     |  |
| 172BNC1->J36      |                                                                         | BUD02C         |                     | 1          | EA                         | COAXIAL CABLE ASS'Y, RCA22_IF_LO_B 1671A                                 |           |       |      | 비표준    | YUSU         |                | SCX-S24-014002 | N     |  |
| 173J27->J33       |                                                                         | BUD05C         |                     | 1          | EA                         | COAXIAL CABLE ASS'Y, RCA22_RX_IF_A_SAMPLE UT085                          |           |       |      | 비표준    | YUSU         |                | SCX-S24-014005 | N     |  |
| 174J30->J34       |                                                                         | BUD06C         |                     | 1          | EA                         | COAXIAL CABLE ASS'Y, RCA22_RX_IF_B_SAMPLE UT085                          |           |       |      | 비표준    | YUSU         |                | SCX-S24-014006 | N     |  |
| 175J28->J31       |                                                                         | BUD07C         |                     | 1          | EA                         | COAXIAL CABLE ASS'Y, RCA23/RCA24 ,RX_IF_A                                |           |       |      | 비표준    | YUSU         |                | SCX-S24-141007 | N     |  |
| 176J29->J32       |                                                                         | BUD08C         |                     | 1          | EA                         | COAXIAL CABLE ASS'Y, RCA23/RCA24 ,RX_IF_B                                |           |       |      | 비표준    | YUSU         |                | SCX-S24-141008 | N     |  |
| 177U26            |                                                                         | 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     |  |
| 178U64            |                                                                         | BP32R766S03A   |                     | 1          | EA                         | FILTER,BPF,DR, 766MHz,25MHz,2.5dB,1.8,SMD                                |           |       |      | 비표준    | SAS          | SMD            | SFB-D00-101001 | N     |  |
| 179U54            |                                                                         | BP64R881P03A   |                     | 1          | EA                         | FILTER,BPF,DR, 881.5MHz,50MHz,3.0dB,1.5,ETC                              |           |       |      | 비표준    | SAS          |                | SFB-D00-101501 | N     |  |
| 180U128,129,135   |                                                                         | BPF70MSA       |                     | 3          | EA                         | FILTER,BPF,LC, 70MHz,5MHz,4.5dB,1.5,SMD                                  |           |       |      | 비표준    | SAS          | SMD            | SFB-L00-100001 | N     |  |
| 181U114,120       |                                                                         | BPF115MSA      |                     | 2          | EA                         | FILTER,BPF,LC, 115MHz,5MHz,4.5dB,1.5,SMD                                 |           |       |      | 비표준    | SAS          | SMD            | SFB-L00-100101 | N     |  |
| 182U77,140,76,141 |                                                                         | 854550-1       |                     | 4          | EA                         | FILTER,BPF,SAW, 69.99MHz,1.26MHz,22dB,DIP                                |           |       |      | 비표준    | SAWT         |                | SFB-S00-100701 | N     |  |
| 183U87            |                                                                         | 854733         |                     | 1          | EA                         | FILTER,BPF,SAW, 114.99MHz,1.23MHz,25dB,DIP                               |           |       |      | 비표준    | SAWT         |                | SFB-S00-101601 | N     |  |
| 184BEAD1,2,3      |                                                                         | NFM60R10T471   |                     | 3          | EA                         | FILTER,EMI/POWER, EMI,6A,ETC                                             |           |       |      | 비표준    | MURA         | SMD            | SFE-Y00-102501 | N     |  |
| Contents          | 1.일부 기구물의 미등복으로 추후 일부 기구물 추가 예정. 2.TX IF OUT용 Inner Cable 1EA 추가 예정. 3. |                |                     |            |                            |                                                                          |           |       |      |        |              |                |                |       |  |

# 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(IdB):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    |       |

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

## 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

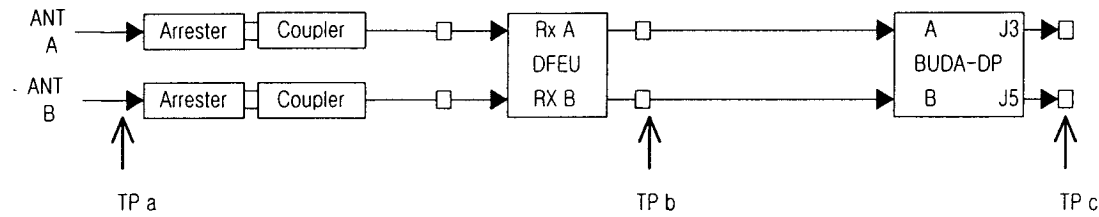


Fig. 1. BTS's Receiving-end Test Path

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 position of Test Point is a, b, c.

TP a: PCDR의 Ant Port (RXA, B)

TP b: DFEU RX OUTPUT Port at the bottom 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<br>POINT | RX Measurement LEVEL        |                             | PASS<br>/<br>FAIL |
|---------------|-----------------------------|-----------------------------|-------------------|
|               | RX A/B PATH(dBm)            |                             |                   |
|               | 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  $f_c \pm 300\text{KHz}$ . (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

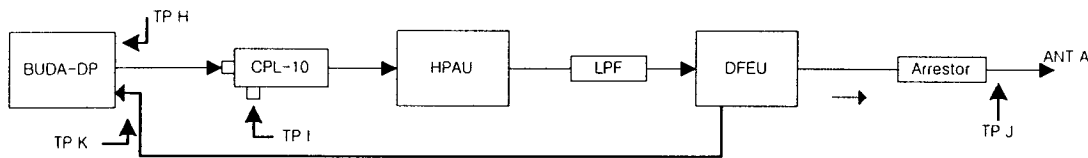


Fig. 2. Sending-end Test Path

(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.

| <i>Overhead channel Gain</i> | <i>Digital gain value</i> |
|------------------------------|---------------------------|
| <i>Pilot Gain</i>            | <i>80</i>                 |
| <i>Sync Gain</i>             | <i>105</i>                |
| <i>Paging Gain</i>           | <i>77</i>                 |

- Check TX IF Sample(TP H) Output Level and tune it, by using S/A, from the front (ADJ) so that it reaches  $-23.5 \pm 1$  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  $31.5 \pm 2$  dBm (upon use of S/A,  $29.5 \pm 2$  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 :  $50 \pm 1$  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  $-28 \pm 3.5$  dBm.

- *CPL-10 Coupling Port :  $10 \pm 1.5$  dB*
- *BUDA-DP Output Port real Level:  $-18 \pm 2$  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  $-30$  dBm to CPL-10 Input Port(TP L) by using SG and then check whether ANT port (TP J) output reaches  $17 \pm 2$  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.

|                   | <i>Digital gain value</i> |
|-------------------|---------------------------|
| <i>Pilot Gain</i> | 80                        |
| <i>Sync Gain</i>  | 105                       |

|              |    |
|--------------|----|
| Paging Gain  | 77 |
| Traffic Gain | 53 |

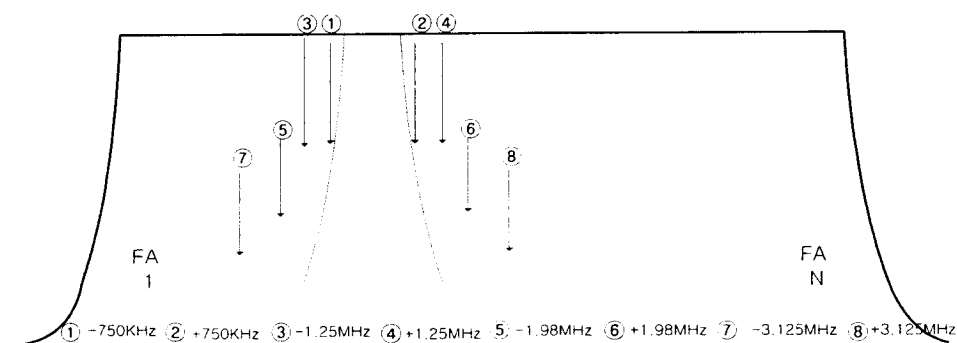
② Couple up Power Meter to ANT output port (TP J) through 30dB Attenuator and adjust the output by using *rfcbud -t \* \* command of RCPA* so that it reaches 10Watts(40dBm) in the state where 6 calls were hung on.

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

- 45dBc(RBW:30KHz) at  $f_c \pm 750\text{KHz}$ ,
- 60dBc(RBW:30KHz) at  $f_c \pm 1.98\text{MHz}$ ,
- 13dBm(RBW:100KHz) at  $f_c \pm 3.125\text{MHz}$ .
- Upon measurement of marker, Delta Marker(RBW:30KHz) is 29dBc at  $\pm 750\text{KHz}$ , and 44dBc at  $\pm 1.98\text{MHz}$ .

- 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 DSORTN" 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 |

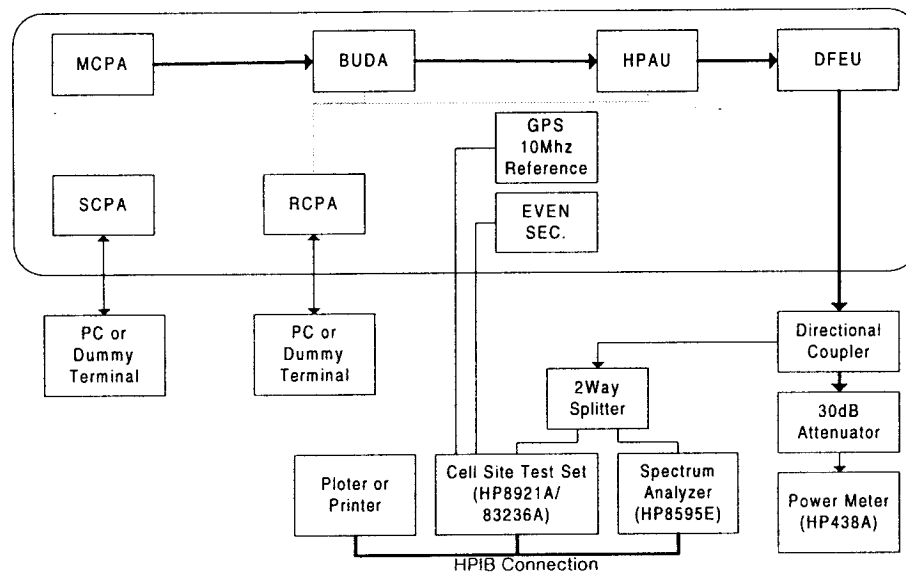
- 2) Set *Test Frequency* to 869.7MHz(CH#1013).
  - Refer to APPENDIX 4.( *Carrier Frequency setting Method*)
- 2) Set *Digital Gain* of each channel to make the modulation scheme, which is configured as above table.
  - Refer to APPENDIX 2. ( *CDMA Code Channel Gain Adjusting Method*)

|                     |       |
|---------------------|-------|
| <i>Pilot Gain</i>   | = 80  |
| <i>Sync Gain</i>    | = 105 |
| <i>Paging Gain</i>  | = 77  |
| <i>Traffic Gain</i> | = 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

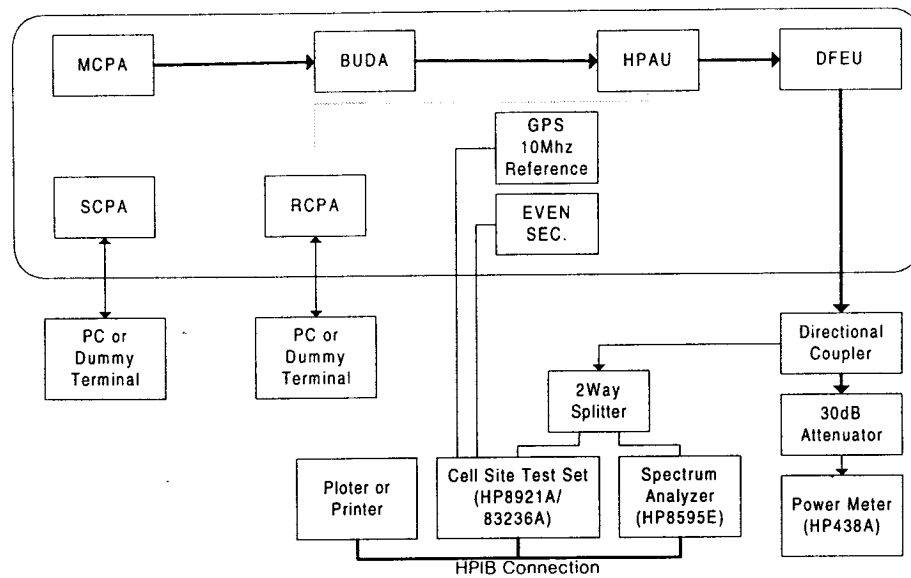
- 1) Set up *Test Frequency* to 869.7MHz(CH#1013).
  - Refer to APPENDIX 4. ( *Carrier Frequency setting Method* )
- 2) Configure the base station to transmit the Pilot Channel only. So set Digital Gain of each channel as followed table.
  - Refer to APPENDIX 2.( *CDMA Code Channel Gain Adjusting Method* ).

|                     |      |
|---------------------|------|
| <i>Pilot Gain</i>   | = 80 |
| <i>Sync Gain</i>    | = 0  |
| <i>Paging Gain</i>  | = 0  |
| <i>Traffic Gain</i> | = 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, p) 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 Characteristics

### Minimum Standard

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

### Test Results

The normalized cross correlation coefficient, " $\rho$ " 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*)

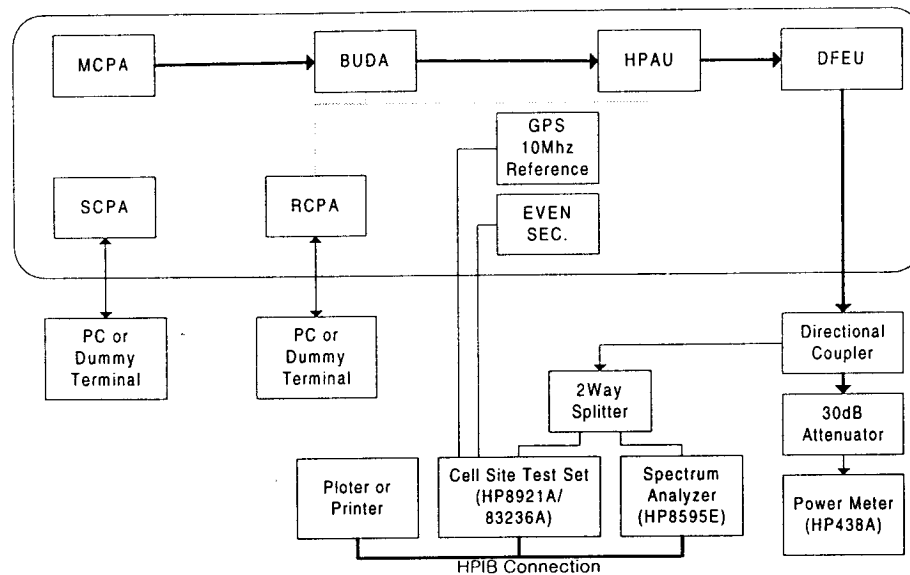
|                     |       |
|---------------------|-------|
| <i>Pilot Gain</i>   | = 80  |
| <i>Sync Gain</i>    | = 105 |
| <i>Paging Gain</i>  | = 77  |
| <i>Traffic Gain</i> | = 53  |

- 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 Characteristics

### 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.

$10 \log (\text{Transmit Bandwidth} / \text{Resolution Bandwidth})$

$10 \log (1.23\text{MHz} / 30\text{kHz}) = 16.1\text{dB}$

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

|                     |              |
|---------------------|--------------|
| <i>Pilot Gain</i>   | <i>= 80</i>  |
| <i>Sync Gain</i>    | <i>= 105</i> |
| <i>Paging Gain</i>  | <i>= 77</i>  |
| <i>Traffic Gain</i> | <i>= 53</i>  |

- 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

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

Case 2) Fc +1.98MHz

|                               |                                     |
|-------------------------------|-------------------------------------|
| <i>Ref Level Offset Value</i> | <i>: Same as P.M. display value</i> |
| <i>Log Scale</i>              | <i>: 10dB</i>                       |
| <i>RBW</i>                    | <i>: 300Hz</i>                      |
| <i>VBW</i>                    | <i>: 3KHz</i>                       |
| <i>Span</i>                   | <i>: 39.8kHz</i>                    |
| <i>AVG</i>                    | <i>: 25</i>                         |

|                        |                                    |
|------------------------|------------------------------------|
| <b>Channel Spacing</b> | <b>: 1.25MHz</b>                   |
| <b>Channel B.W</b>     | <b>: 19.8kHz</b>                   |
| <b>Center Freq.</b>    | <b>: 871.6899MHz (at CH# 1013)</b> |

- 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

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

Case 2) Fc +3.125MHz

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

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

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

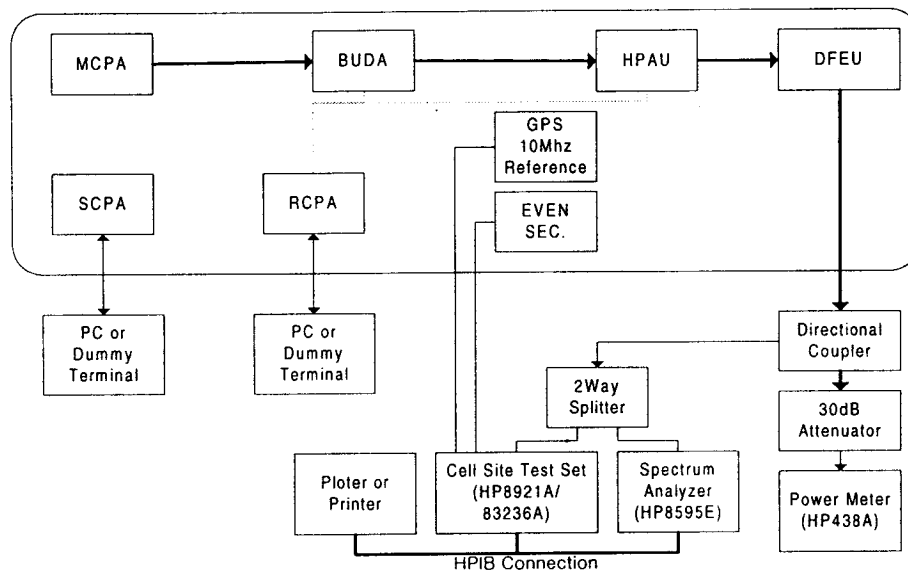
- 7) For 893.31MHz, Repeat step 2) through Step 5). Center Frequency of Spectrum Analyzer are as follows.

|           |             |              |             |             |
|-----------|-------------|--------------|-------------|-------------|
| Center    | Fc -1.98MHz | Fc + 1.98MHz | Fc-3.125MHz | Fc+3.125MHz |
| Frequency | 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

## ***BTS Description***

### **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

## ***BTS Description***

### **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 *
```

### ***BTS Description***

```
ECP >
str_t_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

## BTS Description

### 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

## **BTS Description**

### **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]fo[1])
CCP<-BSP :(J0) ASSIGN_RSPS W/ NO_CCP (addr:9810121 tc:0 foi: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
```

### **BTS Description**

```
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_
```

### BTS Description

```
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]fo[1])
CCP<-BSP :(J0) ASSIGN_RSP 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 OFFSET value of BTS should be given. The following describes the procedure 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 Parameters Display.

5. System Parameter Display.

6. Neighbor List Display.

7. BTS Configuration Display.

8. TIC Data Display.

9. TXMS Parameter Display.

10. Power Management Parameter 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 Parameter 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 procedure 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]

- i #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 -i 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.