

# Communications Electronics, Inc. and Watkins Johnson Spectrum Display Units Guide

09/19/04

This is an ongoing project. I'm always looking for more information, particularly on the variants denoted by the -x suffixes.  
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All units are rack mount  
3.5" high unless noted.

| Model     | IF       | Bandwidths             | Notes                                                                                                     |
|-----------|----------|------------------------|-----------------------------------------------------------------------------------------------------------|
| 605       | 21.4 MHz | variable               | solid-state, 1"x3" CRT                                                                                    |
| IP-751    |          |                        | military version of SM-9310A                                                                              |
| IP-1059   | 21.4MHz  | 30/100/500kHz/<br>3MHz | solid-state, 8cm x 10cm CRT,<br>linear/log, full rack<br>width 5.25" high, military<br>version of SM-7301 |
| IP-1355   | 10MHz    | 0-1MHz                 | military version of WJ-9180-1                                                                             |
| PD-102    |          |                        | remote SDU for RS-112<br>microwave Pan-Man receiving<br>system                                            |
| PD-201    |          |                        | remote SDU same as PD-102<br>except 1/2 rack width                                                        |
| PD-602    | 160MHz   | 1MHz                   | solid-state, 8cm x 10cm CRT,<br>component of RS-112, half<br>rack 5.25" high, mount in<br>EF-602          |
| SM-1622   | 160 MHz  | 20MHz max              | nuvistors or solid-state,<br>1"x3" CRT, 200kHz resolution,<br>1/2 rack width                              |
| SM-1622-1 | 160MHz   | 20MHz max              | same as SM-1622 except with<br>1MHz resolution                                                            |
| SM-1662   | 160MHz   | 20MHz                  | solid-state, 1"x3" CRT,<br>250kHz resolution, half<br>rack width 3.5" high, 11lbs                         |
| SM-1662-1 | 160MHz   | 20MHz                  | same as SM-1662 except with<br>1MHz resolution                                                            |
| SM-4300   | 21.4MHz  | 3MHz                   | solid-state, 1"x3" CRT,<br>21.4MHz marker, 1/3 rack<br>width, 5" high                                     |

|          |         |                        |                                                                                                                                                                                               |
|----------|---------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SM-4301A | 21.4MHz | 3MHz                   | solid-state, 1"x3" CRT, 21.4MHz marker, 1/4 rack width, 6.75" high, 7.5lbs, cost \$850 (1967)                                                                                                 |
| SM-6108  | 84kHz   | 44kHz                  | solid-state, 1"x3" CRT, designed for displaying 64-108kHz subcarriers, 1/2 rack width, 3.5" high                                                                                              |
| SM-7301  | 21.4MHz | 30/100/500kHz/<br>3MHz | solid-state, 8cm x 10cm CRT, linear/log, part of RS-160 receiving system, full rack width 5.25" high, SM-7301 occupies half of rack w/ provisions for DRO-308 in the other half               |
| SM-8421  | 2MHz    | 3/15/50kHz             | solid-state, 1" x 3" CRT, marker generator, sweep disable, H&V outputs, (internally converts 2MHz to 455MHz), for use with VLF receivers like the 354, 355 and 357, 12lbs, cost \$2500 (1968) |
| SM-8510  | 500kHz  | 5/20/50kHz             | nuvistors & solid-state, 1"x3" CRT, lin/log display, 15lbs, cost \$1400 (1967) mod kit for pairing w/ Collins 51J-4 or 51S-1 was included                                                     |
| SM-8511  | 500kHz  | 5/20/50/200kHz         | same specs as SM-8510 except wider sweep width, cost \$1600 (1967)                                                                                                                            |
| SM-8512  | 455kHz  | 5/20/50kHz             | same specs as SM-8510 except for IF input freq, cost \$1400 (1967) mod kit for pairing with R-390 or R-390A was included                                                                      |
| SM-8513  | 455kHz  | 5/20/50kHz             | two SM-8512 units in 5.25" high side by side rack mount, cost \$2900 (1967)                                                                                                                   |
| SM-9188  | 455kHz  | 5/15/30 kHz            | for use with 8718 series                                                                                                                                                                      |
| SM-9205  | 21.4MHz | variable to 5MHz       | SDU for use w/up to three receivers, displays three traces simultaneously, digitally refreshed LCD display, common adjustments like sweep rate and centering are automatic, all               |

three traces can be adjusted independently via manual or IEEE-488 remote control, 1/2 rack width 3.5" high.

|           |          |                      |                                                                                                                  |
|-----------|----------|----------------------|------------------------------------------------------------------------------------------------------------------|
| SM-9205-1 | 21.4MHz  | variable to 5MHz     | same as SM-9205 except 28 VDC                                                                                    |
| SM-9206   | 21.4MHz  | 0.1/0.2/0.4/1/2/5MHz | simplified 9205, single trace, 3 selectable inputs, CRT display, 1/2 rack width 3.5" high.                       |
| SM-9301   | 21.4MHz  | 3MHz                 | solid-state, 1"x3" CRT, 21.4MHz marker, 8lbs, cost \$850 (1967)                                                  |
| SM-9302   | 21.4MHz  | 3MHz                 | half rack version of SM-9301, 7lbs, cost \$800 (1967)                                                            |
| SM-9303A  | 21.4MHz  | 3MHz                 | solid-state, 1"x3" CRT, input bandpass filtering, MOS FET first mixer, 21.4MHz marker, 11lbs, cost \$1000 (1967) |
| SM-9304A  | 21.4MHz  | 3MHz                 | half rack version of SM-9303, 10lbs, cost \$950 (1967)                                                           |
| SM-9310A  | 21.4 MHz | variable 3MHz max    | nuvistors, 1"x3" CRT (mil IP-751)                                                                                |
| SM-9310-1 | 21.4 MHz | variable 3MHz max    | nuvistors, 1"x3" CRT, coaxial switch added for mult sources                                                      |
| SM-9401B  | 21.4MHz  | 4MHz                 | solid-state, 1"x3" CRT, 21.4MHz marker, 8lbs                                                                     |
| SM-9402A  | 21.4MHz  | 4MHz                 | half rack version of SM-9401B, 7lbs                                                                              |
| SM-9403A  | 21.4MHz  | 4MHz                 | same specs as SM-9303A except wider sweep width                                                                  |
| SM-9404A  | 21.4MHz  | 4MHz                 | half rack version of SM-9403A                                                                                    |
| SM-9801   | 21.4MHz  | 8MHz                 | same specs as SM-9301, cost \$950 (1967)                                                                         |
| SM-9802A  | 21.4MHz  | 8MHz                 | half rack version of SM-9801A, cost \$900 (1967)                                                                 |
| SM-9803A  | 21.4MHz  | 8MHz                 | same specs as SM-9303A except wider sweep width                                                                  |
| SM-9804A  | 21.4MHz  | 8MHz                 | half rack version of SM-9803A                                                                                    |
| SM-9805A  | 21.4MHz  | 8MHz                 | solid-state, 2.625" x 4.625"                                                                                     |

|             |         |            |                                                                                                                                                                                                                |
|-------------|---------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |         |            | CRT, avail with P1 or P7<br>phosphor                                                                                                                                                                           |
| SM-9831     | 30MHz   | 8MHz       | solid-state, 1"x3" CRT, 30MHz<br>marker, 8lbs, cost \$950<br>(1967)                                                                                                                                            |
| SM-9832     | 30MHz   | 8MHz       | half rack version of SM-9831                                                                                                                                                                                   |
| SPD-214     | 21.4MHz | 3MHz max   | nuvistors, 1/2 rack width                                                                                                                                                                                      |
| WJ-9180-1   | 10MHz   | 0-1MHz     | 5-25Hz sweep rate, 10uV input<br>sensitivity, battery powered<br>(10 D-cell or magnesium<br>BA-4386 pack) or 24VDC<br>vehicular supply, designed<br>to accompany WJ8640-1<br>receiver (mil IP-1355/GRR-8V)     |
| WJ-9188A    | 455kHz  | 5/30kHz    | solid-state, 1'x3" CRT,<br>marker, half rack width                                                                                                                                                             |
| WJ-9188A-18 | 455kHz  | 5/15/30kHz | 2.5" x 3" CRT, used with<br>WJ-8888B or WJ-8718 w/ SMO<br>option, full rack width                                                                                                                              |
| WJ-9205     | 21.4MHz | 5kHz-5MHz  | 4" CRT, displays 3<br>simultaneous traces, auto<br>sweep and centering, IEEE-488<br>interface, 3.5"h x 8.5"w x<br>22"d, 18lbs                                                                                  |
| WJ-9205-1   | 21.4MHz | 5kHz-5MHz  | same as WJ-9205 except 28 VDC                                                                                                                                                                                  |
| WJ-9206     | 21.4MHz | 0-5MHz     | 4" CRT, single trace, 3.5"h<br>x 8.5"w x 22"d, 17lbs                                                                                                                                                           |
| WJ-9207     |         |            | RF panoramic display unit,<br>digitally refreshed EL flat<br>panel display, display 4<br>simultaneous scans, companion<br>to WJ-8607 miniceptors (req<br>WJ-8607/DSO option), 5.25"h<br>x 8.75"w x 22"d, 13lbs |
| WJ-9209     | 455kHz  | 5/15/30kHz | combination SDU and speaker<br>unit, 2.5" x 3" CRT, five<br>input selector for speaker,<br>half rack width 5.25" high                                                                                          |

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