

UTiFLEX® Flexible Cable Assemblies



POWER HANDLING

Background

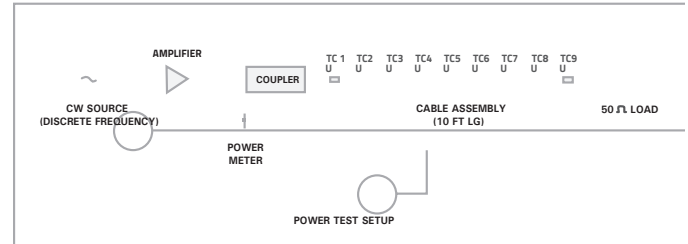
UTiFLEX cable assemblies were tested for CW high power handling capability. The primary purpose of the test was to ensure the ability of the selected cable assemblies to withstand exposure to high power levels and still function per specification. The secondary purpose of the test was to determine external cable and connector temperature relative to power input.

Process

The following UTiFLEX cable assemblies were selected for test:

Serial Number	Description
96H1761 UFA	210B-0-0600-300300
96H1758 UFA	147A-0-0600-504504
96H1755 UFB	311A-0-0600-504504
96H1762 UFA	210B-0-0600-504504
96H1760 UFA	210B-0-0600-504504
96H1763 UFA	210B-0-0600-504504
96H1765 UFA	210A-0-0600-504504
96H1764 UFA	210B-0-0600-300300
96H1766 UFA	210B-0-0120-300300
96H1757 UFB	311A-0-0600-603603

Figure 1



All nine thermocouple temperature readings were measured prior to power input. Then 100 watts of CW power at 18 GHz was injected into the test specimen. The power was maintained $\pm 2\%$ until all thermocouples attached to the cable had reached a steady state. Steady state was defined as temperature change less than $\pm 1^\circ$ within 5 minutes. After steady state was reached, the temperature on each thermocouple was recorded and the injected power was increased.

Additional power levels included 150 watts for all test specimens and 200 watts for some samples. After each power increment, all thermocouple temperatures were allowed to obtain steady state before measurements were recorded. The maximum temperature recorded on the cable assembly at each input power level is indicated below. After completion of the power handling test, all test specimens were tested for insertion loss and VSWR performance and were determined to meet CarlisleIT specifications.

Serial Number	Description	Temp (° C) @		
		100 watts	150 watts	200 watts
96H1761	210B-0-0600-300300	43.1	56.0	66.0
96H1758	147A-0-0600-504504	48.6	61.4	56.9
96H1755	311A-0-0600-504504	30.0	37.0	42.7
96H1762	210B-0-0600-504504	36.4	49.3	Not tested
96H1760	210B-0-0600-504504	41.6	53.3	Not tested
96H1763	210B-0-0600-504504	37.1	47.6	Not tested
96H1765	210A-0-0600-504504	49.2	67.4	Not tested
96H1764	210B-0-0600-300300	33.9	46.7	Not tested
96H1766	210B-0-0120-300300	37.7	43.4	Not tested
96H1757 UFB	311A-0-0600-603603	34.3	42.3	51.2

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