DETAIL SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL,
50 OHMS, M17/128-RG400

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for acquiring the product described herein shall consist of this specification sheet and MIL-C-17.

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**TABLE I. Description.**

<table>
<thead>
<tr>
<th>Components</th>
<th>Construction details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner conductor</td>
<td>Nineteen strands of silver-coated copper wire at .008 inch each. Overall diameter: .0384 inch ± .0010.</td>
</tr>
<tr>
<td>Dielectric core</td>
<td>Type F-1: Solid extruded PTFE. Diameter: .116 inch ± .005.</td>
</tr>
<tr>
<td>Outer conductor</td>
<td>Double braid of AWG size 36 silver-coated copper wire. Diameter: .171 inch maximum.</td>
</tr>
<tr>
<td>Inner braid</td>
<td>Coverage: 94.8% nominal Carriers: 16 Ends: 7 Picks/inch: 11.5 ± 10%</td>
</tr>
<tr>
<td>Outer braid</td>
<td>Coverage: 93.6% nominal Carriers: 16 Ends: 7 Picks/inch: 14.5 ± 10%</td>
</tr>
<tr>
<td>Jacket</td>
<td>Type IX: Diameter: .195 inch ± .005.</td>
</tr>
</tbody>
</table>

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**FIGURE 1. Configuration.**
ENGINEERING INFORMATION

Continuous working voltage: 1,400 V rms, maximum.

Operating frequency: 12.4 GHz, maximum.

Velocity of propagation: 69.5 percent, nominal.

Power rating: See figure 2.

Operating temperature range: -55°C to +200°C.

Inner conductor properties:

DC resistance (maximum at 20°C): 0.91 ohm per 100 feet.

Elongation: 10 percent, minimum.

Tensile strength: Not applicable.

Engineering notes: This cable is useful in general purpose, high temperature applications (see connector series “TNC”, “BNC”, and “SMA” in accordance with MIL-PRF-39012).

REQUIREMENTS:

Dimensions, configuration, and descriptions: See figure 1 and table I.

Environmental and mechanical:

Adhesion of conductors:

Inner conductor to core: 4 pounds, minimum; 30 pounds, maximum.

Aging stability: Not applicable.

Stress crack resistance: +230° ± 5°C; mandrel size seven times the jacket diameter.

Outer conductor integrity: Not applicable.

Cold bend: -55° C ±2° C.

Dimensional stability: +200°C ± 5°C.

Inner conductor from core: .187 inch, maximum.

Inner conductor from jacket: .312 inch, maximum.

Bendability: Not applicable.

Weight: 5 pounds per 100 feet, maximum.
FIGURE 2. Power rating and attenuation.
**FIGURE 3. Structural return loss.**

<table>
<thead>
<tr>
<th>MHz</th>
<th>dB</th>
<th>SWR</th>
<th>REJECTION COEFFICIENT</th>
<th>RETURN LOSS Db</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>25.5</td>
<td>1.4985</td>
<td>.1995</td>
<td>14</td>
</tr>
<tr>
<td>400</td>
<td>23.8</td>
<td>1.4326</td>
<td>.1778</td>
<td>15</td>
</tr>
<tr>
<td>1000</td>
<td>22</td>
<td>1.3767</td>
<td>.1585</td>
<td>16</td>
</tr>
<tr>
<td>2000</td>
<td>20</td>
<td>1.3290</td>
<td>.1413</td>
<td>17</td>
</tr>
<tr>
<td>3000</td>
<td>17</td>
<td>1.2880</td>
<td>.1259</td>
<td>18</td>
</tr>
<tr>
<td>8000</td>
<td>17</td>
<td>1.2528</td>
<td>.1122</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2222</td>
<td>.1000</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1957</td>
<td>.0891</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1726</td>
<td>.0794</td>
<td>22</td>
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<td>1.1524</td>
<td>.0708</td>
<td>23</td>
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<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1055</td>
<td>.0501</td>
<td>26</td>
</tr>
</tbody>
</table>
Electrical:

Test frequency: 50 MHz to 12.4 GHz.

Spark test: 2,000 V rms, +10 percent, -0 percent.

Voltage withstanding: 3,000 V rms, +10, -0 percent.

Insulation resistance: Not applicable.

Corona extinction voltage: 1,900 V rms, minimum.

Characteristic impedance: 50 ± 2 ohms.

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32 pF per foot, maximum.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Contamination: Not applicable.

Part or Identifying Number (PIN): M17/128-RG400.

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Referenced documents. In addition to MIL-C-17, this document references the following:

MIL-PRF-39012
CONCLUDING MATERIAL

Custodians:  Preparing activity:
Army – CR  DLA - CC
Navy – EC
Air Force – 11
DLA - CC

Review activities:
Army – AR, AT, CR4, MI  (Project 6145-2391-000)
Navy – AS, MC, OS, SH
Air Force – 19, 99

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