## 5. ELECTRICAL SPECIFICATION

### 5.1 FREQUENCY BANDS

| Band Name | Frequency Band |
|---|---|
| CDMA/AMPS | 824 - 894 MHz |

### 5.2 IMPEDANCE

Nominal impedance (including matching circuit) : 50Ω

### 5.3 MATCHING REQUIREMENTS

In order to assure the best performance of the antenna, the matching will be evaluated in free space and in talk position for both extended and retracted position.
The antenna will comply with the Electrical Specification requirements , as set out below, while mounted on the handset containing the PCB. The handset with PCB are to be supplied by the customer and should be representative of the latest design version of all parts. Any modifications in the handset or PCB can affect the performance of the antenna and should be discussed with Galtronics to determine the affect of such changes on antenna performance and delivery requirements.

### 5.4 VSWR

#### 5.4.1 Requirements in free space

| Mode | Tx | Rx |
|---|---|---|
| Extended | 2.0 :1 | 2.0 :1 |
| Retracted | 2.0 :1 | 2.0 :1 |

Transmit Band (Herein designated as Tx) -the frequencies of operation for the Band transmit function shall be 824 to 849 MHz.

Receive Band (Herein designated as Rx) -the frequencies of operation for the Band receive function shall be 869 to 894 MHz.

#### 5.4.2 Test Method (Engineering)

The antenna is tested while mounted to the handset. The handset is set up with a 50Ω coaxial cable connected to the 50Ω point. Calibration is done at this 50Ω point. The other end of the 50Ω coaxial cable is connected to a network analyzer. The handset is positioned on a non-conductive table for free space measurements. VSWR is also evaluated in talk position on a phantom head for reference only.

#### 5.4.3 Test Method (Production)

In mass production it is not practical to use the handset supplied by the customer. A production test fixture will be designed by Galtronics for use on processes requiring electrical testing. The results on the test fixture will be correlated to the results obtained on the customer handset. Testing in final inspection is done on a statistical basis.

GALTRONICS

PART No.: 02-4258-46-950

REPORT FORM

PROJECT No.: RFQ 095000

TITLE: QUALIFICATION ELECTRICAL TEST RESULTS

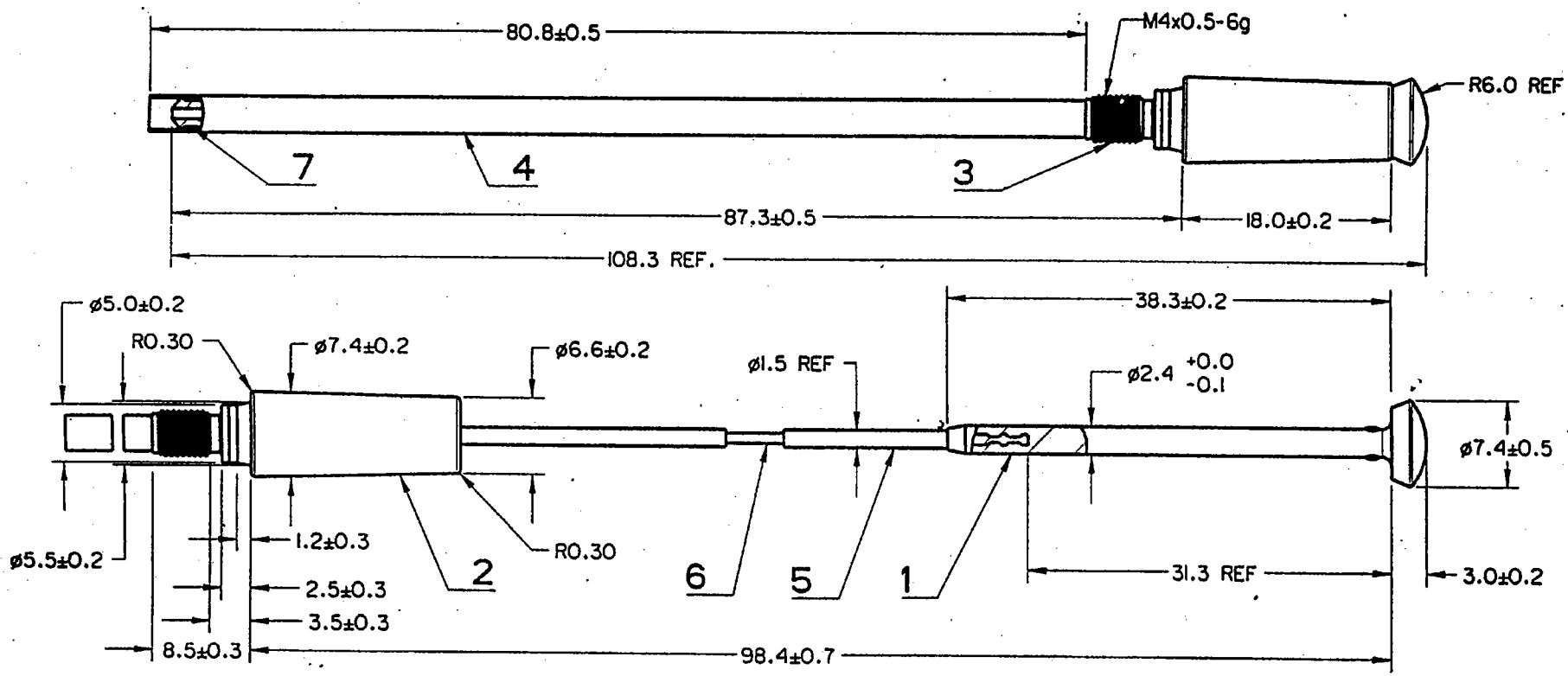
**AMPS/CDMA Band**

| Azimuth | | | GAIN TEST RESULTS (dBi), Free space | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Radio LGE DM120 Ref. 406 | | | Best | | | | AVG | | | |
| Measuring | Antenna | Position | 824MHz | 849MHz | 869MHz | 894MHz | 824MHz | 849MHz | 869MHz | 894MHz |
| Azimuth | Sample #31 | Ext. | 1.68 | 1.40 | 1.33 | 1.58 | 0.73 | 0.79 | 0.75 | 0.91 |
| Azimuth | Sample #31 | Ret. | 0.06 | 0.06 | 0.15 | 0.72 | -1.10 | -0.81 | -0.59 | -0.08 |
| Azimuth talking | Sample #31 | Ext. | 0.60 | 0.49 | 0.13 | 0.44 | -4.12 | -4.09 | -4.26 | -4.05 |
| Azimuth talking | Sample #31 | Ret. | -2.38 | -1.99 | -2.04 | -1.45 | -7.76 | -7.12 | -7.12 | -6.56 |
| Elevation S-S(E1) | Sample #31 | Ext. | 1.59 | 1.83 | 1.47 | 1.50 | -3.09 | -2.66 | -3.08 | -3.27 |
| Elevation S-S(E1) | Sample #31 | Ret. | -0.53 | 0.15 | 0.13 | 0.46 | -4.81 | -3.94 | -4.18 | -4.19 |
| Elevation F-B(E2) | Sample #31 | Ext. | 1.25 | 1.88 | 1.55 | 1.41 | -3.41 | -2.93 | -3.34 | -3.68 |
| Elevation F-B(E2) | Sample #31 | Ret. | -0.85 | 0.15 | 0.18 | 0.26 | -5.13 | -4.23 | -4.34 | -4.35 |

DWG. NO.:
A3 **02-4128-46-950**

ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.
DO NOT SCALE - IF IN DOUBT, ASK!!

THIRD ANGLE PROJECTION




| NO | MATERIAL | 02-4128-46-950 |
|---|---|---|
| 7 | Arcap APID | |
| 6 | Ni-Ti-Cr Super Elastic Alloy | |
| 5 | Plastic: Poliurethane-Shore 40D | |
| 4 | Plastic: PA12 | Color: Gray, Pantone 427C |
| 3 | Free Cutting Brass ISO CuZn39Pb9 (MS 58A) | Cu/Cu strike/Ni7b ISO 1458-1988 |
| 2 | Plastic: Polyurethane -Shore 64D | Color: Gray, Pantone 427C |
| 1 | Plastic: Zytel Compound 70% E101 L-30%801ST | Color: Gray, Pantone 427C |

CAD FILE: 02-4128-46-950

SEE COVER SHEET FOR PERTINENT INFORMATION



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| | | | | |
|---|---|---|---|---|
| ENGINEER | R.G. | CHECKED | | |
| DRAWN | MB | APPVD. | | |
| DATE | 28-12-00 | DATE | | |

**MOLDED NO NAME M4 STUD RETRACTABLE BH CDMA LGIC**

DWG. NO.: A3 **02-4128-46-950**

REV. S-1