This document was generated in response to a request from Frank Coperich for additional technical information in regards to the Part22 type approval of the QSec 800 (fcc ID: J9CQSEC800). This document includes the email received by Mr. Coperich and the response to each question.

<u>Email received August 11, 2000</u>:

Date: Fri, 11 Aug 2000 15:17:06 -0400
From: oetech@fccsun07w.fcc.gov (OET)
To: jforrester
Subject:

To: John Forrester, Qualcomm Incorporated
From: Frank Coperich
                fcoperic@fcc.gov
                FCC Application Processing Branch

Re: FCC ID J9CQSEC800
Applicant: Qualcomm Incorporated
Correspondence Reference Number: 15567
731 Confirmation Number: EA98117
Date of Original E-Mail: 08/11/2000

1. Right side head SAR plots have been clipped and do not include the entire peak SAR locations on those plots. Please clarify and repeat the SAR measurement if necessary. Note: DASY system has updated software that allows scanning in low cheek and jaw regions of that phantom.

2. Please clarify the knob or button shaped feature on the upper left corner, towards the top of the device.

3. Manual describes device has a thin and a thick battery option. Please clarify which battery was used during body-worn SAR tests and confirm that worst-case SAR has been considered with respect to battery options and the belt-clip tested. Please also verify that any variations in device performance due to battery options are insignificant and will not affect head SAR compliance; highest measured AMPS mode SAR is 1.43 W/kg.

4. FYI - There is an unknown e-mail included in the EMC report describing 1610 MHZ operations. This portion of the report has been ignored.

5. FYI - Muscle-equivalent tissue parameters should be to test body-worn SAR for future filings. Body-worn SAR values for this filing are not high, therefore, additional measurements are not requested.

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 60 days of the original e-mail date may result in application dismissal pursuant to Section 2.917 (c) and forfeiture of the filing fee pursuant to section 1.1108.

DO NOT reply to this e-mail by using the Reply button. In order for your response to be processed expeditiously, you must upload your response via the Internet at www.fcc.gov, Electronic Filing, OET Equipment Authorization Electronic Filing. If the response is submitted through Add Attachments, in order to expedite processing, a message which informs the processing staff that a new exhibit has been submitted must also be submitted via Submit Correspondence. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the e-mail address listed below the name of the sender.

Question:

1. Right side head SAR plots have been clipped and do not include the entire peak SAR locations on those plots. Please clarify and repeat the SAR measurement if necessary. Note: DASY system has updated software that allows scanning in low cheek and jaw regions of that phantom.

Response:

The SAR plots were clipped due to an incorrect software parameter for the graphical results. The right head SAR, however, was re-tested with the correct parameters, and the results can be found at the end of the section. The DASY system is scheduled for a software upgrade in the near future to accommodate future filings.

Question:

2. Please clarify the knob or button shaped feature on the upper left corner, towards the top of the device.

Response:

At the upper left corner of the phone is the headset jack used for the "hand's free" mode of operation. There is a plastic insert attached to the housing that fits into the head jack when the headset is not used. There is also a mute button used in the push-to-talk mode of operation located in the middle section of the top of the phone. Please see the photo for precise location.

Question:

3. Manual describes device has a thin and a thick battery option. Please clarify which battery was used during body-worn SAR tests and confirm that worst-case SAR has been considered with respect to battery options and the belt-clip tested. Please also verify that any variations in device performance due to battery options are insignificant and will not affect head SAR compliance; highest measured AMPS mode SAR is 1.43 W/kg.

Response:
As mentioned on page 12 of the SAR report, it was determined that the smallest battery results in the worst case SAR. When external batteries are added, the current density decreases due to the physical volume added to the unit and therefore a reduction in SAR. For this reason, the SAR results submitted were performed with the internal battery only.

Question:
4. FYI - There is an unknown e-mail included in the EMC report describing 1610 MHZ operations. This portion of the report has been ignored.

Response:
Thank you for the observation, mention of 1610 MHz was a clerical error.

Question:
5. FYI - Muscle-equivalent tissue parameters should be to test body-worn SAR for future filings. Body-worn SAR values for this filing are not high, therefore, additional measurements are not requested.

Response:

Results with muscle equivalent tissue parameters can be found on page 22 of the SAR report. In future filings, only muscle-equivalent tissue parameters will used for body-worn SAR measurements unless other tissue parameters are requested.

SN#41 Right Head, Channel 991, 8-14-00
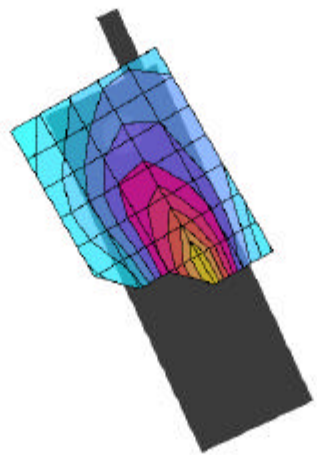
Conducted Pwr = 27.0 dBm
SAR (1g): 1.20 [mW/g] ± 0.16 dB, SAR (10g): 0.825 [mW/g] ± 0.06 dB
Generic Twin Phantom; Right Hand Section
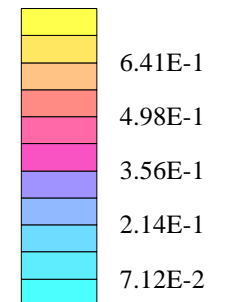Probe: ET3DV5 - SN1348; ConvF(5.90,5.90,5.90)
Brain 900Mhz: $\sigma = 0.85$ [mho/m] $\varepsilon_r = 42.6$ $\rho = 1.00$ [g/cm^3]
File Name: sn41 ch991 right head 8-14-00.DA3

SAR$_{Tot}$ [mW/g]

6.41E-1
4.98E-1
3.56E-1
2.14E-1
7.12E-2

SN#41 Right Head, Channel 383, 8-14-00

Conducted Pwr = 27.12 dBm
SAR (1g): 0.718 [mW/g] ± 0.11 dB, SAR (10g): 0.509 [mW/g] ± 0.02 dB
Generic Twin Phantom; Right Hand Section
Probe: ET3DV5 - SN1348; ConvF(5.90,5.90,5.90)
Brain 900Mhz: σ = 0.85 [mho/m] ε_r = 42.6 ρ = 1.00 [g/cm^3]
File Name: sn41 ch383 right head 8-14-00.DA3
Powerdrift: 0.09 dB

SAR_{Tot} [mW/g]

4.06E-1

3.16E-1

2.26E-1

1.35E-1

4.51E-2

SN#41 Right Head, Channel 799, 8-14-00

Conducted Pwr = 27.2 dBm
SAR (1g): 0.661 [mW/g] ± 0.13 dB, SAR (10g): 0.475 [mW/g] ± 0.07 dB
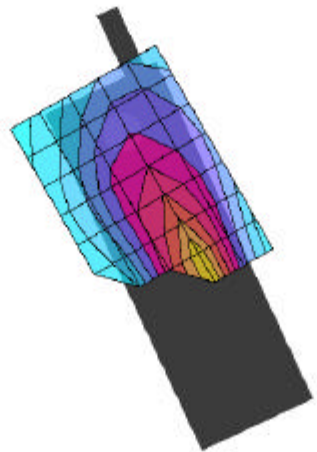Generic Twin Phantom; Right Hand Section
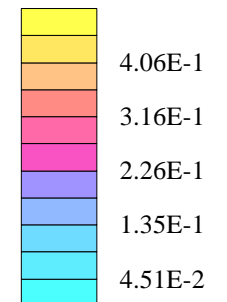Probe: ET3DV5 - SN1348; ConvF(5.90,5.90,5.90)
Brain 900Mhz: σ = 0.85 [mho/m] ε_r = 42.6 ρ = 1.00 [g/cm³]
File Name: sn41 ch799right head 8-14-00.DA3
Powerdrift: 0.01 dB

SAR_{Tot} [mW/g]

3.74E-1

2.91E-1

2.08E-1

1.25E-1

4.15E-2

900 MHz validation 8-14-00

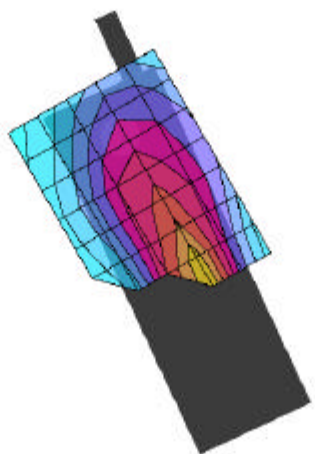SAR (1g): 0.0931 [mW/g] ± 0.14 dB, SAR (10g): 0.0613 [mW/g] ± 0.13 dB
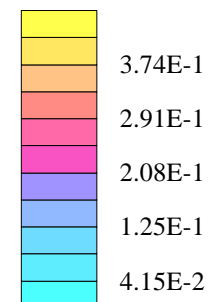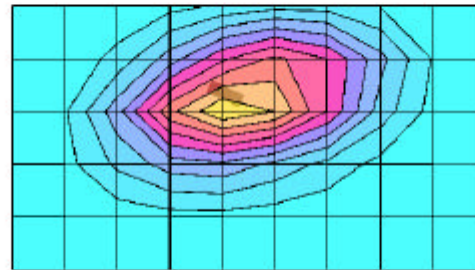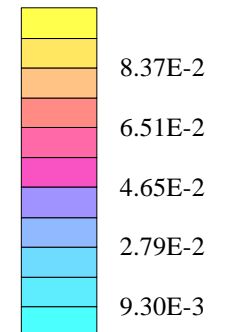Generic Twin Phantom; Flat Section
Probe: ET3DV5 - SN1348; ConvF(5.90,5.90,5.90)
Brain 900Mhz: $\sigma = 0.85$ [mho/m] $\varepsilon_r = 42.6$ $\rho = 1.00$ [g/cm³]
File Name: val 900 8-14-00.DA3
Powerdrift: -0.04 dB

SAR_{Tot} [mW/g]

8.37E-2

6.51E-2

4.65E-2

2.79E-2

9.30E-3

Reference math : OFF   Title:

Pt#	Frequency (GHz)	Data real	Data imag
1	0.100000000	58.43	29.00
2	0.114500000	57.91	26.88
3	0.129000000	57.09	25.16
4	0.143500000	56.71	23.91
5	0.158000000	55.99	22.74
6	0.172500000	55.65	21.68
7	0.187000000	55.18	21.31
8	0.201500000	54.57	20.60
9	0.216000000	54.26	19.94
10	0.230500000	53.69	19.33
11	0.245000000	53.48	19.07
12	0.259500000	53.20	18.86
13	0.274000000	52.74	18.57
14	0.288500000	52.27	18.23
15	0.303000000	52.07	18.13
16	0.317500000	51.73	17.94
17	0.332000000	51.37	17.83
18	0.346500000	50.99	17.67
19	0.361000000	50.76	17.59
20	0.375500000	50.46	17.61
21	0.390000000	50.17	17.55
22	0.404500000	49.93	17.39
23	0.419000000	49.60	17.34
24	0.433500000	49.32	17.26
25	0.448000000	49.09	17.15
26	0.462500000	48.79	17.13
27	0.477000000	48.59	17.15
28	0.491500000	48.23	17.02
29	0.506000000	48.05	16.99
30	0.520500000	47.79	16.90
31	0.535000000	47.57	16.93
32	0.549500000	47.35	16.99
33	0.564000000	47.12	16.97
34	0.578500000	46.94	16.98
35	0.593000000	46.64	16.97
36	0.607500000	46.44	16.94
37	0.622000000	46.28	16.92
38	0.636500000	46.04	16.88
39	0.651000000	45.88	16.88
40	0.665500000	45.64	16.91
41	0.680000000	45.47	16.95
42	0.694500000	45.22	16.92
43	0.709000000	45.04	16.98
44	0.723500000	44.84	16.93
45	0.738000000	44.65	16.96
46	0.752500000	44.46	16.94
47	0.767000000	44.29	16.92
48	0.781500000	44.09	16.93
49	0.796000000	43.92	16.93
50	0.810500000	43.74	16.95
51	0.825000000	43.56	16.96
52	0.839500000	43.38	16.95
53	0.854000000	43.19	16.97

54	0.868500000	43.02	17.01
55	0.883000000	42.88	16.96
56	0.897500000	42.73	16.96
57	0.912000000	42.59	16.99
58	0.926500000	42.43	17.01
59	0.941000000	42.27	17.03
60	0.955500000	42.10	17.02
61	0.970000000	41.91	17.03
62	0.984500000	41.73	17.05
63	0.999000000	41.64	17.04
64	1.013500000	41.46	17.05
65	1.028000000	41.32	17.03
66	1.042500000	41.16	17.03
67	1.057000000	40.99	17.07
68	1.071500000	40.85	17.06
69	1.086000000	40.71	17.07
70	1.100500000	40.57	17.12
71	1.115000000	40.41	17.06
72	1.129500000	40.30	17.08
73	1.144000000	40.15	17.12
74	1.158500000	40.01	17.09
75	1.173000000	39.91	17.11
76	1.187500000	39.73	17.11
77	1.202000000	39.63	17.15
78	1.216500000	39.47	17.14
79	1.231000000	39.40	17.11
80	1.245500000	39.22	17.11
81	1.260000000	39.06	17.14
82	1.274500000	38.95	17.13
83	1.289000000	38.82	17.14
84	1.303500000	38.67	17.09
85	1.318000000	38.61	17.12
86	1.332500000	38.51	17.13
87	1.347000000	38.39	17.13
88	1.361500000	38.26	17.13
89	1.376000000	38.16	17.16
90	1.390500000	38.04	17.20
91	1.405000000	37.92	17.16
92	1.419500000	37.80	17.20
93	1.434000000	37.66	17.20
94	1.448500000	37.55	17.20
95	1.463000000	37.40	17.19
96	1.477500000	37.29	17.18
97	1.492000000	37.17	17.17
98	1.506500000	37.03	17.18
99	1.521000000	37.00	17.15
100	1.535500000	36.85	17.14
101	1.550000000	36.77	17.13
102	1.564500000	36.65	17.13
103	1.579000000	36.56	17.14
104	1.593500000	36.46	17.14
105	1.608000000	36.37	17.15
106	1.622500000	36.25	17.14
107	1.637000000	36.16	17.16
108	1.651500000	36.06	17.15
109	1.666000000	35.95	17.13
110	1.680500000	35.86	17.14

111	1.695000000	35.77	17.13
112	1.709500000	35.68	17.13
113	1.724000000	35.55	17.11
114	1.738500000	35.47	17.12
115	1.753000000	35.38	17.11
116	1.767500000	35.28	17.12
117	1.782000000	35.19	17.11
118	1.796500000	35.12	17.11
119	1.811000000	35.04	17.10
120	1.825500000	34.95	17.11
121	1.840000000	34.83	17.12
122	1.854500000	34.75	17.11
123	1.869000000	34.67	17.12
124	1.883500000	34.58	17.10
125	1.898000000	34.51	17.12
126	1.912500000	34.40	17.11
127	1.927000000	34.30	17.10
128	1.941500000	34.23	17.11
129	1.956000000	34.13	17.12
130	1.970500000	34.07	17.12
131	1.985000000	33.99	17.14
132	1.999500000	33.90	17.12
133	2.014000000	33.82	17.13
134	2.028500000	33.70	17.13
135	2.043000000	33.66	17.13
136	2.057500000	33.53	17.11
137	2.072000000	33.46	17.11
138	2.086500000	33.37	17.11
139	2.101000000	33.30	17.11
140	2.115500000	33.20	17.10
141	2.130000000	33.13	17.12
142	2.144500000	33.05	17.10
143	2.159000000	32.97	17.07
144	2.173500000	32.88	17.08
145	2.188000000	32.80	17.08
146	2.202500000	32.71	17.05
147	2.217000000	32.66	17.06
148	2.231500000	32.60	17.05
149	2.246000000	32.51	17.04
150	2.260500000	32.44	17.02
151	2.275000000	32.34	17.05
152	2.289500000	32.31	17.03
153	2.304000000	32.22	17.05
154	2.318500000	32.16	17.03
155	2.333000000	32.06	17.01
156	2.347500000	31.99	17.03
157	2.362000000	31.93	17.02
158	2.376500000	31.86	17.00
159	2.391000000	31.78	17.01
160	2.405500000	31.69	17.00
161	2.420000000	31.64	17.00
162	2.434500000	31.58	16.99
163	2.449000000	31.50	16.97
164	2.463500000	31.43	16.97
165	2.478000000	31.36	16.96
166	2.492500000	31.33	16.95
167	2.507000000	31.24	16.94

168	2.521500000	31.17	16.94
169	2.536000000	31.09	16.93
170	2.550500000	31.04	16.93
171	2.565000000	30.98	16.93
172	2.579500000	30.95	16.92
173	2.594000000	30.88	16.92
174	2.608500000	30.82	16.91
175	2.623000000	30.75	16.92
176	2.637500000	30.68	16.93
177	2.652000000	30.61	16.93
178	2.666500000	30.55	16.97
179	2.681000000	30.46	16.98
180	2.695500000	30.43	16.94
181	2.710000000	30.37	16.94
182	2.724500000	30.29	16.93
183	2.739000000	30.21	16.92
184	2.753500000	30.13	16.97
185	2.768000000	30.09	16.97
186	2.782500000	30.02	16.96
187	2.797000000	29.98	16.92
188	2.811500000	29.92	16.89
189	2.826000000	29.86	16.89
190	2.840500000	29.79	16.95
191	2.855000000	29.70	16.95
192	2.869500000	29.65	16.93
193	2.884000000	29.59	16.93
194	2.898500000	29.53	16.92
195	2.913000000	29.49	16.93
196	2.927500000	29.44	16.91
197	2.942000000	29.37	16.92
198	2.956500000	29.31	16.91
199	2.971000000	29.24	16.92
200	2.985500000	29.18	16.89
201	3.000000000	29.15	16.85