

GLENAYRE ELECTRONICS, INC. TEST REPORT

FOR THE WIRELESS MESSAGING MODULE, @CTIVELINK (TRANSMITTER PORTION ONLY)

FCC PARTS 2 AND 90 COMPLIANCE

DATE OF ISSUE: JUNE 13, 2000

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P.O. No: L7683	
W.O. No: 74365	Date of test: May 9-17, June 5 & 6, 2000
Report No: FC00-053	
DOCUMENTATION CONTROL:	APPROVED BY:
	Dennis Ward

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Dennis Ward

Director of Laboratories

CKC Laboratories, Inc.

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CKC Laboratories, Inc.

Documentation Control Supervisor

Report No: FC00-053

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ADMINISTRATIVE INFORMATION

DATE OF TEST: Date of test: May 9-17, June 5 & 6, 2000

DATE OF RECEIPT: May 9, 2000

PURPOSE OF TEST:To demonstrate the compliance of the

Wireless Messaging Module, @ctiveLink with the requirements for devices under

FCC Parts 2 and 90.

MANUFACTURER: Glenayre Electronics, Inc.

REPRESENTATIVE: Louie Sanguinetti

TEST LOCATION: CKC Laboratories, Inc.

1653 Los Viboras Road Hollister, CA 95023

TEST PERSONNEL: Art Rice

TEST METHOD: FCC Part 2 and Part 90

EQUIPMENT UNDER TEST: Wireless Messaging Module

Manuf: Glenayre Electronics, Inc.

Model: @ctiveLink

Serial: C8

FCC ID: K3N7000 (pending)

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SUMMARY OF RESULTS

The Wireless Messaging Module, @ctiveLink, was tested in accordance with FCC Part 2 and Part 90 for compliance with the transmitter characteristic requirements of the FCC Rules.

As received, the above equipment was found to be fully compliant with the limits of FCC Parts 2 and 90.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The Wireless Messaging Module, @ctiveLink for the Handspring Visor PDA.

MEASUREMENT UNCERTAINTY

Associated with data in this report is a $\pm 4dB$ measurement uncertainty.

PERIPHERAL DEVICES

The EUT was tested with the following peripheral devices:

Personal	<u>Data Assistant</u>	Laptop PC			
Manuf:	Handspring	Manuf:	Toshiba		
Model:	Visor	Model:	PA1205U X		
Serial:	WAI 0863 (asset #)	Serial:	12424214		
FCC ID:	DoC	FCC ID:	CJ6UK454		

AC adapter for PC Docking station

Manuf:	Toshiba	Manuf:	Handspring
Model:	PA2431U	Model:	Serial Cradle
Serial:	9505	Serial:	3003E
FCC ID:	none	FCC ID:	DoC

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2.1033(c)(4) - Type(s) of Emissions

10K0F1D

2.1033(c)(5) – Frequency Range

896 – 901 MHz

2.1033(c)(6) –Range of Operating Power

The operating RF output power (ERP) is 1.808 watts. The output power is fixed. There is no means provided for variation of the operating power.

2.1033(c)(7) – Maximum Power Rating

The maximum power rating as defined in Part 90.635(d) is 100 watts E.R.P. The Wireless Messaging Module, @ctiveLink has a maximum power rating of 1.808 watts.

2.1033(c)(8) - DC Voltages

The transmitter in the @ctiveLink is powered by a 3.6V NiCad battery internal to the unit. The NiCad battery supplies a DC voltage of 3.6V and a current of 600mA to the final RF power amplifier stage.

2.1033(c)(9) – Tune-Up Procedure

There is no tune-up procedure for the output power as it is fixed to the maximum output power supplied by the final RF power amplifier stage. There is no means provided for variation of the operating power.

2.1033(c)(10) - Frequency Stabilization, Modulation, & Spurious Radiation

This section has been provided to the FCC per a separate file due to confidentiality reasons.

2.1033(c)(13) – Description of Modulation

This section has been provided to the FCC per a separate file due to confidentiality reasons.

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2.1033(c)(14)/2.1046/90.635(d)- RF Power Output

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: Glenayre Electronics, Inc.

Specification: FCC 90.635(d)

Work Order #: 74280 Date: 05/09/2000
Test Type: Maximized Emissions Time: 15:49:24
Equipment: 2-way pager Sequence#: 9

Manufacturer: Glenayre Electronics Tested By: Art Rice

Model: @ctive Link

S/N: C_8

Test Equipment:

2 0 % 2 4 11 P 11 C 11 C 1				
Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 85650A QP Adaptor	2430A00541	04/09/2000	04/09/2001	0
HP 85662A Display	2112A02174	04/09/2000	04/09/2001	0
HP 85680A S. A.	2049A01408	04/09/2000	04/09/2001	0
Cable, 3m	Cbl3mha00	01/18/2000	01/18/2001	0
Log Periodic, A.H. SAS200/510	318	04/23/1999	05/19/2000	0

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
2-way pager*	Glenayre Electronics	@ctive Link	C_8

Support Devices:

Function	Manufacturer	Model #	S/N	

Test Conditions / Notes:

Tested in accordance with FCC Part 2 and Part 90 test procedures. The EUT is a two-way pager that operates in the 896-901 MHz range. Testing the pager in the transmit mode in three positions to determine worst case. The front of the unit is defined as the side that has the button. Position 1 is with bottom edge placed on table top. Position 2 is with right end placed on table top. Position 3 is with back placed on table top. Note: Spec limit of 147.4 dBuV is equivalent to 100 watts radiated from a dipole. The carrier frequency is 896.025 MHz with a channel bandwidth of 10 KHz. The main digital clock is 9.6 MHz. The EUT is in "test mode 39", which causes it to transmit with no modulation of the carrier.

Measur	rement Data:	R	eading lis	ted by ma	argin.		Τe	est Distanc	e: 3 Meters	3	
			Cable	Log							
#	Freq	Rdng					Dist	Corr	Spec	Margin	Polar
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\mu V/m$	$dB\mu V/m$	dB	Ant
1	896.110M	100.0	+4.4	+22.5			+0.0	126.9	145.2	-18.3	Horiz
									Pager is in	position 2	
2	896.110M	99.6	+4.4	+22.5			+0.0	126.5	145.2	-18.7	Vert
									Pager is in	position 1	
3	896.110M	94.1	+4.4	+22.5			+0.0	121.0	145.2	-24.2	Horiz
									Pager is in	position 3	
4	896.110M	93.4	+4.4	+22.5			+0.0	120.3	145.2	-24.9	Vert
									Pager is in	position 3	
5	896.110M	88.5	+4.4	+22.5			+0.0	115.4	145.2	-29.8	Horiz
									Pager is in	position 1	
6	896.110M	86.5	+4.4	+22.5			+0.0	113.4	145.2	-31.8	Vert
									Pager is in	position 2	

Report No: FC00-053 Page 6 of 31 Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: Glenayre Electronics, Inc.

Specification: FCC 90.635(d)

Work Order #: 74280 Date: 5/9/2000
Test Type: Maximized Emissions Time: 15:54:26
Equipment: 2-way pager Sequence#: 10
Manufacturer: Glenayre Electronics Tested By: Art Rice

Model: @ctive Link

S/N: C_8

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 85650A QP Adaptor	2430A00541	04/09/2000	04/09/2001	0
HP 85662A Display	2112A02174	04/09/2000	04/09/2001	0
HP 85680A S. A.	2049A01408	04/09/2000	04/09/2001	0
Cable, 3m	Cbl3mha00	01/18/2000	01/18/2001	0
Log Periodic, A.H. SAS200/510	318	04/23/1999	05/19/2000	0

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
2-way pager*	Glenayre Electronics	@ctive Link	C_8

Support Devices:

TI				
Function	Manufacturer	Model #	S/N	

Test Conditions / Notes:

Tested in accordance with FCC Part 2 and Part 90 test procedures. The EUT is a two-way pager that operates in the 896-901 MHz range. Testing the pager in the transmit mode in three positions to determine worst case. The front of the unit is defined as the side that has the button. **Position 1** is with bottom edge placed on table top. **Position 2** is with right end placed on table top. **Position 3** is with back placed on table top. Note: Spec limit of 147.4 dBuV is equivalent to 100 watts radiated from a dipole. The carrier frequency is 900.9375 MHz with a channel bandwidth of 10 kHz. The main digital clock is 9.6 MHz. The EUT is in "test mode 29", which causes it to transmit with no modulation of the carrier.

Measur	rement Data:	R	Reading listed by margin.			. Test Distance: 3 Meters					
			Cable	Log							
#	Freq	Rdng					Dist	Corr	Spec	Margin	Polar
	MHz	dΒμV	dB	dB	dB	dB	Table	dBµV/m	dBμV/m	dB	Ant
1	901.022M	100.9	+4.4	+22.5			+0.0	127.8	145.2	-17.4	Vert
									Pager is in	position 1	
2	901.022M	100.7	+4.4	+22.5			+0.0	127.6	145.2	-17.6	Horiz
									Pager is in	position 2	
3	901.026M	97.6	+4.4	+22.5			+0.0	124.5	145.2	-20.7	Horiz
									Pager is in	position 3	
4	901.026M	92.0	+4.4	+22.5			+0.0	118.9	145.2	-26.3	Vert
									Pager is in	position 3	
5	901.021M	89.6	+4.4	+22.5			+0.0	116.5	145.2	-28.7	Vert
									Pager is in	position 2	
6	901.022M	88.1	+4.4	+22.5			+0.0	115.0	145.2	-30.2	Horiz
									Pager is in	position 1	

Report No: FC00-053 Page 7 of 31 Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: Glenayre Electronics, Inc.

Specification: FCC 90.635(d)

Work Order #: 74365 Date: 5/15/2000
Test Type: Maximized Emissions Time: 17:40:04
Equipment: 2-way pager Sequence#: 26
Manufacturer: Glenayre Electronics Tested By: Art Rice
Model: @ctive Link S/N: C 8

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 85650A QP Adaptor	2430A00541	04/09/2000	04/09/2001	0
HP 85662A Display	2112A02174	04/09/2000	04/09/2001	0
HP 85680A S. A.	2049A01408	04/09/2000	04/09/2001	0
Cable, 3m	Cbl3mha00	01/18/2000	01/18/2001	0
Log Periodic, A.H. SAS200/510	464	10/12/1999	10/12/2000	2

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N	
2-way pager*	Glenayre Electronics	@ctive Link	C_8	

Support Devices:

Function	Manufacturer	Model #	S/N
Personal Data Assistant	Handspring	Visor	WAI 0863 (asset #)

Test Conditions / Notes:

Tested in accordance with FCC Part 2 and Part 90 test procedures. The EUT is a two-way pager that operates in the 896-901 MHz range. Testing the pager in the transmit mode in three positions to determine worst case. The front of the unit is defined as the side that has the button. The bottom edge has the interface connector. **Position 1** is with bottom edge pointed down toward the table top. **Position 2** is with right end pointed down toward the table top. **Position 3** is with back placed on table top. The carrier frequency is 896.025 MHz with a channel bandwidth of 10 kHz. The main digital clock is 9.6 MHz. The EUT is in "test mode 39", which causes it to transmit with no modulation of the carrier. The Pager is plugged into the expansion port of the PDA. The address bus and data bus which interface with the Personal Data Assistant (PDA) are continuously active. The PDA sleep mode is disabled to provide continuous activity. The PDA is battery operated with no charger jack provided.

Mea	Measurement Data:			Reading listed by margin.			Test Distance: 3 Meters					
				Cable	Log							
#		Freq	Rdng					Dist	Corr	Spec	Margin	Polar
		MHz	dΒμV	dB	dB	dB	dB	Table	$dB\mu V/m$	$dB\mu V/m$	dB	Ant
	1	896.061M	95.1	+4.4	+22.1			+0.0	121.6	145.2	-23.6	Horiz
							Remax'	d with pa	ger in posi	tion 2. (An	tenna at 1.	4 m)
	2	896.061M	94.3	+4.4	+22.1			+0.0	120.8	145.2	-24.4	Horiz
										Pager is in	position 3	
	3	896.109M	92.0	+4.4	+22.1			+0.0	118.5	145.2	-26.7	Vert
										Pager is in	position 1	

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4	896.109M	89.7	+4.4	+22.1	+0.0 116.2 145.2 -29.0 Horiz
					Pager is in position 1.
5	896.059M	86.8	+4.4	+22.1	+0.0 113.3 145.2 -31.9 Vert
					Pager is in position 3.
6	896.036M	80.0	+4.4	+22.1	+0.0 106.5 145.2 -38.7 Vert
					Pager is in position 2.

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Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: Glenayre Electronics, Inc.

Specification: FCC 90.635(d)

Work Order #: 74365 Date: 5/15/2000
Test Type: Maximized Emissions Time: 16:21:55
Equipment: 2-way pager Sequence#: 25
Manufacturer: Glenayre Electronics Tested By: Art Rice

Model: @ctive Link

S/N: C_8

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 85650A QP Adaptor	2430A00541	04/09/2000	04/09/2001	0
HP 85662A Display	2112A02174	04/09/2000	04/09/2001	0
HP 85680A S. A.	2049A01408	04/09/2000	04/09/2001	0
Cable, 3m	Cbl3mha00	01/18/2000	01/18/2001	0
Log Periodic, A.H. SAS200/510	464	10/12/1999	10/12/2000	2

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
2-way pager*	Glenayre Electronics	@ctive Link	C_8

Support Devices:

Function	Manufacturer	Model #	S/N
Personal Data Assistant	Handspring	Visor	WAI 0863 (asset #)

Test Conditions / Notes:

Tested in accordance with FCC Part 2 and Part 90 test procedures. The EUT is a two-way pager that operates in the 896-901 MHz range. Testing the pager in the transmit mode in three positions to determine worst case. The front of the unit is defined as the side that has the button. The bottom edge has the interface connector. **Position 1** is with bottom edge pointed down toward the table top. **Position 2** is with right end pointed down toward the table top. **Position 3** is with back placed on table top. The carrier frequency is 900.9375 MHz with a channel bandwidth of 10 kHz. The main digital clock is 9.6 MHz. The EUT is in "test mode 39", which causes it to transmit with no modulation of the carrier. The Pager is plugged into the expansion port of the PDA. The address bus and data bus which interface with the Personal Data Assistant (PDA) are continuously active. The PDA sleep mode is disabled to provide continuous activity. The PDA is battery operated with no charger jack provided.

Meas	Measurement Data:		Reading listed by margin.				Test Distance: 3 Meters				
			Cable	Log							
#	Freq	Rdng					Dist	Corr	Spec	Margin	Polar
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\mu V/m$	$dB\mu V/m$	dB	Ant
	1 900.938M	93.8	+4.4	+22.0			+0.0	120.2	145.2	-25.0	Horiz
									Pager is in	position 2	
	2 900.950M	89.9	+4.4	+22.0			+0.0	116.3	145.2	-28.9	Horiz
									Pager is in	position 3	
	3 900.940M	89.8	+4.4	+22.0		•	+0.0	116.2	145.2	-29.0	Horiz
									Pager is in	position 1	

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4	900.940M	89.6	+4.4	+22.0	+0.0 116.0 145.2 -29.2 Vert
					Pager is in position 1.
5	900.950M	88.2	+4.4	+22.0	+0.0 114.6 145.2 -30.6 Vert
					Pager is in position 3.
6	900.938M	78.9	+4.4	+22.0	+0.0 105.3 145.2 -39.9 Vert
					Pager is in position 2.

Report No: FC00-053 Page 11 of 31 Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: Glenayre Electronics, Inc.

Specification: FCC 90.635(d)

Work Order #: 74495 Date: 06/05/2000
Test Type: Maximized Emissions Time: 13:25:32
Equipment: 2-way pager Sequence#: 39
Manufacturer: Glenayre Electronics Tested By: Art Rice

Model: @ctive Link

S/N: C_8

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 85650A QP Adaptor	2430A00541	04/09/2000	04/09/2001	0
HP 85662A Display	2112A02174	04/09/2000	04/09/2001	0
HP 85680A S. A.	2049A01408	04/09/2000	04/09/2001	0
Cable, 3m	Cbl3mha00	01/18/2000	01/18/2001	0
Log Periodic, A.H. SAS200/510	464	10/12/1999	10/12/2000	2

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
2-way pager*	Glenayre Electronics	@ctive Link	C_8

Support Devices:

Function	Manufacturer	Model #	S/N
Personal Data Assistant	Handspring	Visor	WAI 0863 (asset #)
Laptop PC	Toshiba	PA1205U X	12424214
AC adapter for PC	Toshiba	PA2431U	9505
Docking station	Handspring	Serial Cradle	3003E

Test Conditions / Notes:

Tested in accordance with FCC Part 2 and Part 90 test procedures. The EUT is a two-way pager that operates in the 896-901 MHz range. Testing the pager while installed in the expansion port of the Personal Data Assistant (PDA) which is mounted on it's docking station. The address bus and data bus which interface the pager with the PDA are continuously active. The PDA sleep mode is disabled to provide continuous activity. The docking station is connected to the Laptop PC serial port through a shielded DB9 cable that is permanently attached to the docking station. "Hot Sync" software is transferring files from the PC to the docking station. The laptop PC is placed at the back edge of the test table. The docking station is placed to the left of the PC. The PC AC adapter is placed on the floor of the turntable. Note: Spec limit of 147.4 dBuV is equivalent to 100 watts radiated from a dipole. The carrier frequency is 896.025 MHz with a channel bandwidth of 10 kHz. The main digital clock is 9.6 MHz. The EUT is in "test mode 39", which causes it to transmit with no modulation of the carrier.

Measu	rement Data:	R	eading lis	ted by ma	argin.		Te	est Distance	e: 3 Meters	3	
#	Freq MHz	Rdng dBuV	Cable dB	Log dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBuV/m	Margin dB	Polar Ant
1	896.108M	92.2	+4.4	+22.1	ub	uD	+0.0	118.7	145.2	-26.5	Horiz
2	896.108M	90.6	+4.4	+22.1			+0.0	117.1	145.2	-28.1	Vert

Report No: FC00-053 Page 12 of 31 Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: Glenayre Electronics, Inc.

Specification: FCC 90.635(d)

Work Order #: 74495 Date: 06/05/2000
Test Type: Maximized Emissions Time: 13:01:00
Equipment: 2-way pager Sequence#: 38
Manufacturer: Glenayre Electronics Tested By: Art Rice

Model: @ctive Link

S/N: C_8

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 85650A QP Adaptor	2430A00541	04/09/2000	04/09/2001	0
HP 85662A Display	2112A02174	04/09/2000	04/09/2001	0
HP 85680A S. A.	2049A01408	04/09/2000	04/09/2001	0
Cable, 3m	Cbl3mha00	01/18/2000	01/18/2001	0
Log Periodic, A.H. SAS200/510	464	10/12/1999	10/12/2000	2

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
2-way pager*	Glenayre Electronics	@ctive Link	C_8

Support Devices:

Function	Manufacturer	Model #	S/N
Personal Data Assistant	Handspring	Visor	WAI 0863 (asset #)
Laptop PC	Toshiba	PA1205U X	12424214
AC adapter for PC	Toshiba	PA2431U	9505
Docking station	Handspring	Serial Cradle	3003E

Test Conditions / Notes:

Tested in accordance with FCC Part 2 and Part 90 test procedures. The EUT is a two-way pager that operates in the 896-901 MHz range. Testing the pager while installed in the expansion port of the Personal Data Assistant (PDA) which is mounted on it's docking station. The address bus and data bus which interface the pager with the PDA are continuously active. The PDA sleep mode is disabled to provide continuous activity. The docking station is connected to the Laptop PC serial port through a shielded DB9 cable that is permanently attached to the docking station. "Hot Sync" software is transferring files from the PC to the docking station. The laptop PC is placed at the back edge of the test table. The docking station is placed to the left of the PC. The PC AC adapter is placed on the floor of the turntable. Note: Spec limit of 147.4 dBuV is equivalent to 100 watts radiated from a dipole. The carrier frequency is 900.9375 MHz with a channel bandwidth of 10 kHz. The main digital clock is 9.6 MHz. The EUT is in "test mode 39", which causes it to transmit with no modulation of the carrier.

Measu	rement Data:	R	eading lis	ted by ma	argin.		Te	est Distance	e: 3 Meters	3	
#	Freq MHz	Rdng dBµV	Cable dB	Log dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	901.025M	91.8	+4.4	+22.0			+0.0	118.2	145.2	-27.0	Horiz
2	901.025M	91.8	+4.4	+22.0			+0.0	118.2	145.2	-27.0	Vert

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Video Bandwidth and Resolution Bandwidth Settings:

Frequency Range	Signal Analyzer VBW & RBW Setting
896– 901 MHz	1 MHz

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Front View of Transmitter Only

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Back View of Transmitter Only

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Front View of Transmitter with PDA

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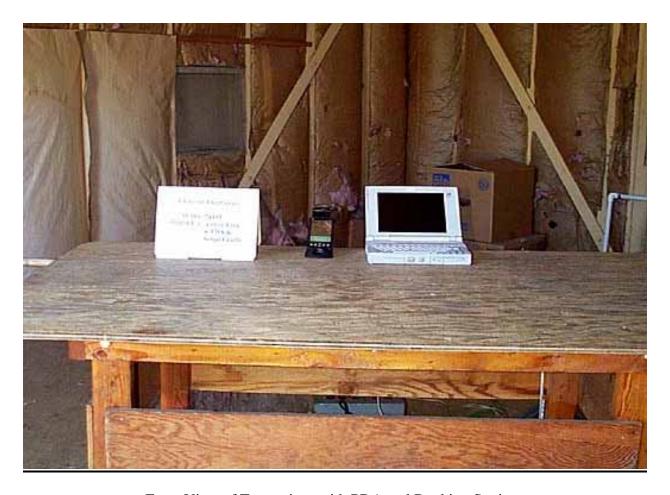
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Back View of Transmitter with PDA

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Front View of Transmitter with PDA and Docking Station

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Back View of Transmitter with PDA and Docking Station

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<u>2.1033(c)(14)/2.1047(a)/90.211 - MODULATION CHARACTERISTICS – Audio Frequency Response</u>

Not applicable to this unit.

2.1033(c)(14)/2.1047(b)/90.211 - MODULATION CHARACTERISTICS - Modulation Limiting Response

Customer supplied data to be uploaded to the FCC in separate files.

2.1033(c)(14)/2.1049(i)/90.210- OCCUPIED BANDWIDTH

Customer supplied data to be uploaded to the FCC in separate files.

2.1033(c)(14)/2.1051/N/A - SPURIOUS EMISSIONS AT ANTENNA TERMINAL

Measurements were not taken at the antenna terminal because the 2-way pager has a permanently attached integral antenna and there was no means of modifying the antenna for direct measurements. A similar device was previous tested in the same manner and granted on August 20, 1998 (K3N5000).

2.1033(c)(14)/2.1053/90.210(i) - FIELD STRENGTH OF SPURIOUS RADIATION

Test Equipment Used:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 85650A QP Adaptor	2430A00541	04/09/2000	04/09/2001	0
HP 85662A Display	2112A02174	04/09/2000	04/09/2001	0
HP 85680A S. A.	2049A01408	04/09/2000	04/09/2001	0
Bicon, AH Sys. SAS200/540	273	10/29/1999	10/29/2000	0
Cable, 3m	Cbl3mha00	01/18/2000	01/18/2001	0
Log Periodic, A.H. SAS200/510	464	10/12/1999	10/12/2000	2
Horn Ant, ARA DRG-118A	1064	02/08/2000	02/08/2001	2061
Cable,100 ft Andrews FSJ1P-50A-4A	Cable #7	09/23/1999	09/23/2000	0
Cable, 25 ft Andrews FSJ1P-50A-4A	Cable #12	09/23/1999	09/23/2000	0
Preamp, HP83017A	3123A00281	07/27/1999	07/27/2000	786
HP 8596E S.A.	3346A00225	05/10/2000	05/10/2001	783

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Test Data for Transmitter Only

FCC CFR 47	Part 2.1053 8	k 90.210(i)	•/								
configuration	n)	model: @ctiv	,								
		• • •	ments required	d: Field streng	th of spurious	radiation, emis	sion mask I.				
Operating Ch	nannel - 896.0)25 MHz									
Polarity	Freq (MHz)	Reading in dBuV	PreAmp Factor	Cable Factor	Horn Antenna	Corrected E (dBuV/M)	V/M	P (Watts)	Spec Limit Watts	Pass or Fail	
Horizontal	3584.10	56.00	-38.50	14.7	32	64.20	0.001621810	0.00000789	0.000050000	Pass	
Horizontal	2688.08	56.80	-38.20	12.4	30.8	61.80	0.001230269	0.000000454	0.000050000	Pass	
Vertical	8064.26	38.20	-36.80	23	37	61.40	0.001174898	0.000000414	0.000050000	Pass	
Horizontal	7168.20	36.90	-34.80	21.3	37.6	61.00	0.001122018	0.00000378	0.000050000	Pass	
Vertical	8960.29	32.50	-35.00	25.5	37.3	60.30	0.001035142	0.000000321	0.000050000	Pass	
Horizontal	1792.50	64.50	-39.00	9.2	25.5	60.20	0.001023293	0.000000314	0.000050000	Pass	
	ATIONS	radiated nowe	er of oach cour	rique amissian	with reference	a to the upmodu	ulated carrier pe	ower output of th	o transmittor		
		•	•				•	•		!	
The 43+10log	J(P) dB Tout of	band attenuat	ion equates to	o a 50 uvv iimii	Tor any P. Tr	ne rollowing equ	lations establish	this amplitude	ilmit for spuriou	s emissions.	
Spurious Emi	ssions Limit (c	dBW) = 10logP	- (43±10logP)	. – -43 dBW							
•	•	$V) = 10^{-10091}$, ,								
Opunous Enni	COTOTIO ZITTIIC (10 (10/10	77 - 00 10 0	, , , , ,							
P Calculation	าร							Conversion of	dBuV/m to V/r	n	
$P = (Ed)^2/30(0$	G)							[invlog(Reading	g in dBuV/m/20)]*.000001 = V/	m
E = V/m											
d= distance											
G = Gain of A	ntenna (num	erical gain of ha	alf wave dipole	antenna 1.64) per Part 2.10	053(a)					

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Test Data for Transmitter Only

FCC CFR 47	Part 2.1053 &	90.210(1)									
configuration	n)	model: @ctiv	`								
CFR 47 Part	2.1053 & 90.2	210(i) Measurer	ments required	l: Field streng	th of spurious	radiation, emis	sion mask I.				
Operating Cl	hannel - 900.9	375 MHz									
Polarity	Freq (MHz)	Reading in dBuV	PreAmp Factor	Cable Factor	Horn Antenna	Corrected E (dBuV/M)	V/M	P (Watts)	Spec Limit Watts	Pass or Fail	
Horizontal	1801.88	70.10	-38.90	9.2	25.6	66.00	0.001995262	0.000001194	0.000050000	Pass	
Horizontal	4504.65	53.50	-37.30	16.6	31	63.80	0.001548817	0.000000720	0.000050000	Pass	
Horizontal	3603.71	55.00	-38.40	14.7	32	63.30	0.001462177	0.000000641	0.000050000	Pass	
Horizontal	8108.43	39.10	-36.70	23	37.1	62.50	0.001333521	0.00000533	0.000050000	Pass	
Horizontal	2702.81	56.80	-38.20	12.5	30.8	61.90	0.001244515	0.000000465	0.000050000	Pass	
Vertical	7207.49	37.60	-34.80	21.4	37.6	61.80	0.001230269	0.000000454	0.000050000	Pass	
Notes: Frequ 20dB below th	lency range in he permissible	vestigated was value were rep	from 30 MHz to orted. CKC da	to 9.01 GHz. A	All spurious ar ame is fc90se	nd harmonic em 12a-txspurs900	nissions were in 0.9MHz.DAT (p	vestigated. All osition 2, standa	emissions detec alone)	ted that were I	ess than
	LATIONS										
								wer output of th			
The 43+10log	g(P) dB "out of	band" attenuat	tion equates to	a 50 uW limit	for any P. Th	e following equ	ations establish	this amplitude	limit for spurious	s emissions.	
Spurious Emi	ssions Limit (d	IBW) = 10logP	- (43+10logP)	= -43 dBW.							
Spurious Emi	ssions Limit (V	V) = 10^(-43/10	0) = 50 * 10^-6	W.							
P Calculation	ns							Conversion of	dBuV/m to V/r	n	
$P = (Ed)^2/30(0)^2$	G)							[invlog(Reading	g in dBuV/m/20)]*.000001 = V/	m
E = V/m											
d= distance											
G = Gain of A	intenna (nume	erical gain of ha	alf wave dipole	antenna 1.64) per Part 2.10)53(a)					

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CFR 47 Part 90.635(d) mobile transmitter calculations:

Transmitter Power Limitations Calculations for **transmitter only** (standalone) configuration:

Maximum transmit level measured at 896.025 MHz was 126.9 dBµV/m.

Convert to linear V/m:

inv $\log(126.9/20)$ *.000001 = 2.21 V/m = E

Calculate P:

 $P = (Ed)^2 / 30G$ [assume G = 1.0 worst case, distance d=3 meters]

 $P = (2.21*3)^2/30*1.0$

P = 43.957/30

P = 1.465 watts (100 watts is allowable in Part 90 for mobile transmitters)

Maximum transmit level measured at 900.9375 MHz was 127.8 dBµV/m.

Convert to linear V/m:

inv $\log(127.8/20)$ *.000001 = 2.455 V/m = E

Calculate P:

 $P = (Ed)^2 / 30G$ [assume G = 1.0 worst case, distance d=3 meters]

 $P = (2.455*3)^2/30*1.0$

P = 54.230/30

P = 1.808 watts (100 watts is allowable in Part 90 for mobile transmitters)

Spec Limit Calculations:

 $(Ed)^2/30G=P$ [where P=100 watts, G = 1, and D = 3m]

 $(Ed)^2 = P*30*G$

 $Ed = (P*30*G)^{1/2}$

 $E = (P*30*G)^{1/2}/d$

 $E = (100*30*1)^{1/2}/3$

 $E = (3000)^{1/2}/3$

E = 18.25 V/m

 $E = 18,250,000 \mu V/m$

20 $log(18,250,000 \mu V/m) = 145.23 dB\mu V/m$ (specification limit used on CKC data sheets to calculate margin)

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		smitter wit	th PDA								
FCC CFR 47	Part 2.1053 8	ß 90.210(i)									
Glenayre Ele PDA)	ectronics, Inc	. model: @ctiv	e Link (confi	guration with							
	t 2.1053 & 90.2	210(i) Measuren	ments required	d: Field strengt	th of spurious	radiation, emis	sion mask I.	I			
Operating C	hannel - 896.0	025 MHz							I.		
Polarity	Freq (MHz)	Reading in dBuV	PreAmp Factor	Cable Factor	Horn Antenna	Corrected E (dBuV/M)	V/M	P (Watts)	Spec Limit Watts	Pass or Fail	
Horizontal	1792.05	71.70	-39.40	9.6	25.5	67.40	0.002344229	0.000001649	0.000050000	Pass	
Horizontal	2688.08	58.80	-38.50	12.7	30.8	63.80	0.001548817	0.000000720	0.000050000	Pass	
Vertical	7168.20	38.40	-35.20	21.7	37.6	62.50	0.001333521	0.000000533	0.000050000	Pass	
Vertical	8064.23	39.00	-37.00	23.2	37	62.20	0.001288250	0.000000498	0.000050000	Pass	
Horizontal	3584.10	53.40	-38.70	14.9	32	61.60	0.001202264	0.000000434	0.000050000	Pass	
Vertical	8960.24	33.70	-35.30	25.8	37.3	61.50	0.001188502	0.000000424	0.000050000	Pass	
								nvestigated. Allosition 2, with F		T	Too than
	LATIONS										
		•	•				•	wer output of th			
The 43+10log	g(P) dB "out of	f band" attenuat	ion equates to	a 50 uW limit	for any P. Th	ne following equ	uations establish	n this amplitude	limit for spuriou	s emissions.	
0		1D(A) 101 D	(40, 40), 5)	40. IDIA/							
•	•	dBW) = 10logP	,								
Spurious Em	issions Limit (\	W) = 10^(-43/10	0) = 50 * 10^-6	W.							
D O-ld-d-						1	T		SalDan Mara Can Mil		T
P Calculatio								Conversion of			
$P = (Ed)^2/30(E = V/m)$	(G)							[invlog(Reading	g in dBuV/m/20 _,)]*.000001 = V/	m I
d= distance											
	A mtamma (# : : : : :	aniant main after	ifa. alter - I -) man Dant 0.1	052(-)					
G = Gain of F	Antenna (num	erical gain of ha	an wave dipole	antenna 1.64)	per Paπ 2.1	ບວ ა (a)		ĺ			

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Test Data for Transmitter with PDA

	tranias mad	el: @ctive Linl	k (oonfigurati	on with DDA							
			, ,			and the Community	-1				
		210(i) Measurer	ments required	i: Field streng	ith of spurious	radiation, emis	sion mask i.				
	nannel - 900.9				1		T			1	
Polarity	Freq (MHz)	Reading in dBuV	PreAmp Factor	Cable Factor	Horn Antenna	Corrected E (dBuV/M)	V/M	P (Watts)	Spec Limit Watts	Pass or Fail	
Horizontal	1801.77	71.90	-39.40	9.7	25.6	67.80	0.002454709	0.000001808	0.000050000	Pass	
Horizontal	8108.31	39.00	-37.00	23.3	37.1	62.40	0.001318257	0.000000521	0.000050000	Pass	
Vertical	9009.28	33.60	-35.00	26	37.2	61.80	0.001230269	0.000000454	0.000050000	Pass	
Horizontal	7207.37	37.20	-35.20	21.8	37.6	61.40	0.001174898	0.000000414	0.000050000	Pass	
Horizontal	3603.65	49.00	-38.60	14.9	32	57.30	0.000732825	0.000000161	0.000050000	Pass	
Horizontal	4504.58	46.70	-37.80	17.1	31	57.00	0.000707946	0.000000150	0.000050000	Pass	
	ency range in						emissions were i 9ghz900.9.DAT			ected that were	less tha
20dB below th	ency range in ne permissible	value were rep	oorted. CKC da	ata sheet file r	name is fc90se	e33a-txspurs1-9	9ghz900.9.DAT	(position 2, with	PDA)	ected that were	less tha
CALCUL	ency range in the permissible control of the contro	e value were rep	oorted. CKC da	ata sheet file r	with reference	e to the unmodu	Oghz900.9.DAT	(position 2, with	PDA) e transmitter.		less tha
CALCUL	ency range in the permissible control of the contro	e value were rep	oorted. CKC da	ata sheet file r	with reference	e to the unmodu	9ghz900.9.DAT	(position 2, with	PDA) e transmitter.		less tha
CALCUL Note: The dat	ency range in the permissible control of the per	e value were repersion of the	orted. CKC da	ious emission	with reference	e to the unmodu	Oghz900.9.DAT	(position 2, with	PDA) e transmitter.		less tha
CALCUL Note: The dat The 43+10log Spurious Emis	ency range in the permissible state at taken is the control of the	e radiated power band" attenuated BW) = 10logP	er of each spur tion equates to	ious emission a 50 uW limit = -43 dBW.	with reference	e to the unmodu	Oghz900.9.DAT	(position 2, with	PDA) e transmitter.		less tha
CALCUL Note: The dat The 43+10log Spurious Emis	ency range in the permissible state at taken is the control of the	e value were repersion of the	er of each spur tion equates to	ious emission a 50 uW limit = -43 dBW.	with reference	e to the unmodu	Oghz900.9.DAT	(position 2, with	PDA) e transmitter.		less tha
CALCUL Note: The dat The 43+10log Spurious Emis	ency range in the permissible and permissible and permissible and permissible and permissible and permissions the control of the permissions that the permission that	e radiated power band" attenuated BW) = 10logP	er of each spur tion equates to	ious emission a 50 uW limit = -43 dBW.	with reference	e to the unmodu	Ulated carrier pour	(position 2, with	e transmitter.	s emissions.	less tha
CALCUL Note: The dat The 43+10log Spurious Emis Spurious Emis	ency range in the permissible and permissible	e radiated power band" attenuated BW) = 10logP	er of each spur tion equates to	ious emission a 50 uW limit = -43 dBW.	with reference	e to the unmodu	Julated carrier pourations establish	wer output of the this amplitude	e transmitter. limit for spuriou	s emissions.	
CALCUL Note: The dat The 43+10log Spurious Emis Spurious Emis P Calculation P = (Ed) ² /30(0	ency range in the permissible and permissible	e radiated power band" attenuated BW) = 10logP	er of each spur tion equates to	ious emission a 50 uW limit = -43 dBW.	with reference	e to the unmodu	Julated carrier pourations establish	(position 2, with	e transmitter. limit for spuriou	s emissions.	
CALCUL Note: The dat The 43+10log Spurious Emis Spurious Emis	ency range in the permissible and permissible	e radiated power band" attenuated BW) = 10logP	er of each spur tion equates to	ious emission a 50 uW limit = -43 dBW.	with reference	e to the unmodu	Julated carrier pourations establish	wer output of the this amplitude	e transmitter. limit for spuriou	s emissions.	

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CFR 47 Part 90.635(d) mobile transmitter calculations:

Transmitter Power Limitations Calculations for **configuration with PDA**:

Maximum transmit level measured at 896.025 MHz was 121.6 dB μ V/m.

Convert to linear V/m:

inv log(121.6/20) *.000001 = 1.20 V/m = E

Calculate P:

 $P = (Ed)^2 / 30G$ [assume G = 1.0 worst case, distance d=3 meters]

 $P = (1.2*3)^2/30*1.0$

P = 13.00/30

P = 0.434 watts (100 watts is allowable in Part 90 for mobile transmitters)

Maximum transmit level measured at 900.9375 MHz was 120.2 dB μ V/m.

Convert to linear V/m:

inv log(120.2/20) *.000001 = 1.023 V/m = E

Calculate P:

 $P = (Ed)^2 / 30G$ [assume G = 1.0 worst case, distance d=3 meters]

 $P = (1.023*3)^2/30*1.0$

P = 9.424/30

P = 0.314 watts (100 watts is allowable in Part 90 for mobile transmitters)

Spec Limit Calculations:

 $(Ed)^2/30G=P$ [where P=100 watts, G = 1, and D = 3m]

 $(Ed)^2 = P*30*G$

 $Ed = (P*30*G)^{1/2}$

 $E = (P*30*G)^{1/2}/d$

 $E = (100*30*1)^{1/2}/3$

 $E = (3000)^{1/2}/3$

E = 18.25 V/m

 $E = 18,250,000 \mu V/m$

20 $log(18,250,000 \mu V/m) = 145.23 dB\mu V/m$ (specification limit used on CKC data sheets to calculate margin)

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Test Data for Transmitter with PDA and Docking Station

	Part 2.1053 8										
Glenayre Ele	ectronics, Inc	model: @ctiv	e Link (confiç	guration with	PDA & Dock	ing Station)					
CFR 47 Part	t 2.1053 & 90.2	210(i) Measurer	nents required	l: Field streng	th of spurious	radiation, emis	sion mask I.	l.			
Operating C	hannel - 896.0)25 MHz									
Polarity	Freq (MHz)	Reading in dBuV	PreAmp Factor	Cable Factor	Horn Antenna	Corrected E (dBuV/M)	V/M	P (Watts)	Spec Limit Watts	Pass or Fail	
Horizontal	1792.05	76.60	-39.40	9.6	25.5	72.30	0.004120975	0.000005095	0.000050000	Pass	
Horizontal	8064.25	37.80	-37.00	23.2	37	61.00	0.001122018	0.000000378	0.000050000	Pass	
Vertical	7168.13	36.60	-35.20	21.7	37.6	60.70	0.001083927	0.000000352	0.000050000	Pass	
Horizontal	3584.18	50.50	-38.70	14.9	32	58.70	0.000860994	0.000000222	0.000050000	Pass	
Vertical	2688.15	49.80	-38.50	12.7	30.8	54.80	0.000549541	0.000000091	0.000050000	Pass	
Horizontal	6272.23	34.20	-36.20	20.9	35.4	54.30	0.000518800	0.000000081	0.000050000	Pass	
Notes: Frequ	Luency range in	vestigated was	from 30 MHz	l to 8.961 GHz.	All spurious	I and harmonic e	l missions were i	nvestigated. All PDA & Docking	emissions dete		less than
Notes: Freque 20dB below to CALCUIN Note: The date	LATIONS ata taken is the	vestigated was value were rep	from 30 MHz ported. CKC da	to 8.961 GHz. ata sheet file r	All spurious aname is fc90se	and harmonic e e48c-txspurs1-9	I missions were i Oghz.DAT (with	I nvestigated. All PDA & Docking wer output of th	emissions dete Station)	ected that were	less than
Notes: Freque 20dB below the CALCUIN Note: The date	LATIONS ata taken is the	vestigated was value were rep	from 30 MHz ported. CKC da	to 8.961 GHz. ata sheet file r	All spurious aname is fc90se	and harmonic e e48c-txspurs1-9	I missions were i Oghz.DAT (with	I nvestigated. All PDA & Docking	emissions dete Station)	ected that were	less than
CALCUINote: The da The 43+10log	LATIONS ata taken is the g(P) dB "out of issions Limit (c	vestigated was a value were repertured at the value was at the value at the value was at the value at the value at the value at the value was at the value at the	r of each spurion equates to	to 8.961 GHz. ata sheet file r ious emission a 50 uW limit = -43 dBW.	All spurious aname is fc90se	and harmonic e e48c-txspurs1-9	I missions were i Oghz.DAT (with	I nvestigated. All PDA & Docking wer output of th	emissions dete Station)	ected that were	less than
CALCUINote: The da The 43+10log	LATIONS ata taken is the g(P) dB "out of issions Limit (c	vestigated was a value were repeter to the value were repeter to the value were repeter to the value were radiated power band" attenuated to the value was a value were repeter to the value was a val	r of each spurion equates to	to 8.961 GHz. ata sheet file r ious emission a 50 uW limit = -43 dBW.	All spurious aname is fc90se	and harmonic e e48c-txspurs1-9	I missions were i Oghz.DAT (with	I nvestigated. All PDA & Docking wer output of th	emissions dete Station)	ected that were	less than
CALCUI Note: The da The 43+10log Spurious Em	LATIONS ata taken is the g(P) dB "out of issions Limit (Visions Li	vestigated was a value were repertured at the value was at the value at the value was at the value at the value at the value at the value was at the value at the	r of each spurion equates to	to 8.961 GHz. ata sheet file r ious emission a 50 uW limit = -43 dBW.	All spurious aname is fc90se	and harmonic e e48c-txspurs1-9	I missions were i Oghz.DAT (with	I nvestigated. All PDA & Docking wer output of th	emissions dete Station) e transmitter. limit for spuriou	s emissions.	less than
CALCUI Note: The da The 43+10log Spurious Emi Spurious Emi	LATIONS ata taken is the g(P) dB "out of issions Limit (Circuit)	vestigated was a value were repertured at the value was at the value at the value was at the value at the value at the value at the value was at the value at the	r of each spurion equates to	to 8.961 GHz. ata sheet file r ious emission a 50 uW limit = -43 dBW.	All spurious aname is fc90se	and harmonic e e48c-txspurs1-9	I missions were i Oghz.DAT (with	nvestigated. All PDA & Docking wer output of the hothis amplitude	emissions dete Station) e transmitter. limit for spuriou	s emissions.	
CALCUI Note: The da The 43+10log Spurious Em Spurious Em P Calculatio P = (Ed) ² /30(LATIONS ata taken is the g(P) dB "out of issions Limit (Circuit)	vestigated was a value were repertured at the value was at the value at the value was at the value at the valu	r of each spurion equates to	to 8.961 GHz. ata sheet file r ious emission a 50 uW limit = -43 dBW.	All spurious aname is fc90se	and harmonic e e48c-txspurs1-9	I missions were i Oghz.DAT (with	nvestigated. All PDA & Docking wer output of the this amplitude	emissions dete Station) e transmitter. limit for spuriou	s emissions.	
CALCUI Note: The da The 43+10log	LATIONS ata taken is the g(P) dB "out of issions Limit (Circuit)	vestigated was a value were repertured at the value was at the value at the value was at the value at the valu	r of each spurion equates to	to 8.961 GHz. ata sheet file r ious emission a 50 uW limit = -43 dBW.	All spurious aname is fc90se	and harmonic e e48c-txspurs1-9	I missions were i Oghz.DAT (with	nvestigated. All PDA & Docking wer output of the this amplitude	emissions dete Station) e transmitter. limit for spuriou	s emissions.	
CALCUI Note: The da The 43+10log Spurious Em Spurious Em P Calculatio P = (Ed) ² /30(E = V/m d= distance	LATIONS ata taken is the g(P) dB "out of issions Limit (Vissions Limit (Vissio	vestigated was a value were repertured at the value was at the value at the value was at the value at the valu	r of each spur ion equates to - (43+10logP)	ious emission a 50 uW limit = -43 dBW. W.	All spurious aname is fc90se	e to the unmodu	I missions were i Oghz.DAT (with	nvestigated. All PDA & Docking wer output of the this amplitude	emissions dete Station) e transmitter. limit for spuriou	s emissions.	

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Test Data	a for Tran	smitter wit	h PDA ar	nd Dockin	g Station						
FCC CFR 47	Part 2.1053 8	k 90.210(i)									
Glenayre Ele	ectronics, Inc	. model: @ctiv	e Link (confiç	guration with	PDA & Dock	ing Station)					
CFR 47 Part	2.1053 & 90.2	210(i) Measurer	nents required	d: Field streng	th of spurious	radiation, emis	sion mask I.				
Operating C	hannel - 900.9	9375 MHz									
Polarity	Freq (MHz)	Reading in dBuV	PreAmp Factor	Cable Factor	Horn Antenna	Corrected E (dBuV/M)	V/M	P (Watts)	Spec Limit Watts	Pass or Fail	
Vertical	1801.78	75.30	-39.40	9.7	25.6	71.20	0.003630781	0.000003955	0.000050000	Pass	
Vertical	8108.51	39.10	-37.00	23.3	37.1	62.50	0.001333521	0.00000533	0.000050000	Pass	
Horizontal	7207.45	36.20	-35.20	21.8	37.6	60.40	0.001047129	0.000000329	0.000050000	Pass	
Horizontal	3603.83	51.50	-38.60	14.9	32	59.80	0.000977237	0.000000286	0.000050000	Pass	
Vertical	2702.71	50.30	-38.50	12.8	30.8	55.40	0.000588844	0.00000104	0.000050000	Pass	
Horizontal	6306.51	33.30	-36.00	21	35.6	53.90	0.000495450	0.00000074	0.000050000	Pass	
								nvestigated. Al PDA & Docking		olod trial work	71000 111011
CALCII	LATIONS										
		radiated name	r of oooh onur	ious omission	with reference	o to the upmed	ulated carrier as	ower output of th	o transmittar		
		•	•					this amplitude		c omissions	
1116 45+ 1010(g(i) ab oat oi	Danu allenual	ion equates to	a 30 uvv III III	TIOI ally 1. 11	ie following equ	dations establist	Titlis amplitude	iiiiiii ioi spailoa	s emissions.	
Spurious Em	issions Limit (d	dBW) = 10logP	- (43+10loaP)	= -43 dBW.							
'	•	N) = 10^(-43/10	, ,								
'	,	, ,	,								
P Calculations								Conversion of	Conversion of dBuV/m to V/m		
$P = (Ed)^2/30(G)$								[invlog(Reading in dBuV/m/20)]*.000001 = V/m			/m
E = V/m											
d= distance											
G = Gain of A	Antenna (num	erical gain of ha	If wave dipole	antenna 1.64	per Part 2.1	053(a)					

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CFR 47 Part 90.635(d) mobile transmitter calculations:

Transmitter Power Limitations Calculations for configuration with **PDA & Docking Station**:

Maximum transmit level measured at 896.025 MHz was 118.2 dBµV/m.

Convert to linear V/m:

inv $\log(118.2/20)$ *.000001 = .812 V/m = E

Calculate P:

 $P = (Ed)^2 / 30G$ [assume G = 1.0 worst case, distance d=3 meters]

 $P = (.812*3)^2/30*1.0$

P = 5.934/30

P = 0.197 watts (100 watts is allowable in Part 90 for mobile transmitters)

Maximum transmit level measured at 900.9375 MHz was 118.7 dBµV/m.

Convert to linear V/m:

inv log(118.7/20) *.000001 = .860 V/m = E

Calculate P:

 $P = (Ed)^2 / 30G$ [assume G = 1.0 worst case, distance d=3 meters]

 $P = (.860*3)^2/30*1.0$

P = 6.672/30

P = 0.222 watts (100 watts is allowable in Part 90 for mobile transmitters)

Spec Limit Calculations:

 $(Ed)^2/30G=P$ [where P=100 watts, G = 1, and D = 3m]

 $(Ed)^2 = P*30*G$

 $Ed = (P*30*G)^{1/2}$

 $E = (P*30*G)^{1/2}/d$

 $E = (100*30*1)^{\frac{1}{2}}$

 $E = (4920)^{\frac{1}{2}}$

E = 18.25 V/m

 $E = 18,250,000 \mu V/m$

20 $log(18,250,000 \mu V/m) = 145.23 dB\mu V/m$ (specification limit used on CKC data sheets to calculate margin)

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Photograph Showing Spurious Emissions

Test setup same as RF Power Output. See photos on pages 12 - 17.

2.1033(c)(14)/2.1055/90.213 - Frequency Stability

Customer supplied data to be uploaded to the FCC in separate files.

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