

Project 25 Compliance Assessment Program

Summary Test Report

Daniels Electronics UT-4E850-00-300

STR-Codan-100005

Test Item Description		
Manufacturer	Codan Radio Communications	
Manufacturer Contact	Mike Cyr	
Product Name	MT-4E Transmitter UT-4E850-00-300 (768 – 869 MHz)	
Installed Options	Hardware	50149.6
		50156.6
		50175.3
		50177.3
	Firmware	2.2.2.D.S3.3
Installed Vocoder	Enhanced Full Rate	

Test Description
P25-CAB-CAI_TEST_REQ – March 2010, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Performance Conventional Mode Operation Base Station/Repeaters

Laboratory Information	
P25 CAP Laboratory Code	P25CAP081016
Date(s) of Test	April 29, 2010 to May 11, 2010
Date(s) of Issue	August 13, 2010

Informative References	
Date	Title
March 2010	P25-CAB-CAI_TEST_REQ

P25-CAB-CAI_TEST_REQ – March 2010, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Performance Conventional Mode Operation Base Station/Repeaters	DTR: TIMCO081016 UT-4E850-00-300
--	---

RECEIVER TESTS (N/A)

Test Case	Description	Requirement	Results
2.1.4	Reference Sensitivity	≤ -113 dBm (Class B)	N/A1
2.1.5	Faded Reference Sensitivity	≤ -105 dBm (Class B)	N/A1
2.1.7	Adjacent Channel Rejection	≥ 60 dB (Class B)	N/A1
2.1.8	Co-Channel Rejection	≤ 9 dB	N/A1
2.1.9	Spurious Response Rejection	≥ 70 dB (Class B)	N/A1
2.1.10	Intermodulation Rejection	≥ 70 dB (Class B)	N/A1
2.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	N/A1
2.1.17	Late Entry Unsilence Delay		N/A1
	No Talk Group or Encryption	≤ 125 ms	
	Talk Group Only	≤ 370 ms	
	Encryption Only	≤ 370 ms	
	Both (on clear or encrypted channel)	≤ 460 ms	
2.1.18	Receiver Throughput Delay	≤ 125 ms	N/A1

TX TESTS (800 MHz)

Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Channel Power Ratio	≥ 67 dB	P
2.2.14	Transmitter Throughput Delay	≤ 125 ms	P
2.2.15	Frequency Deviation for C4FM		P
	High Level signal Deviation	2544 Hz < f _{dev} ≤ 3111 Hz	
	Low Level Signal Deviation	848 Hz < f _{dev} ≤ 1037 Hz	
2.2.16	Modulation Fidelity	≤ 5 % (Class A)	P
2.2.18	Transient Frequency Behavior		P
	Time Interval t1 = 20.0 ms	Δf ≤ 12.5 kHz	
	Time Interval t2 = 50.0 ms	Δf ≤ 6.25 kHz	
	Time Interval t3 = 10.0 ms	Δf ≤ 12.5 kHz	

TX TESTS (700 MHz)				
Test Case	Description		Requirement	Results
2.2.8.2	Unwanted Emissions: Adjacent Channel Power Ratio			P
	Freq Offset (Khz)	Measurement BW (Khz)	ACPR (dB)	P
	9.375	6.25	40	P
	15.625	6.25	60	P
	21.875	6.25	60	P
	37.5	25	60	P
	62.5	25	65	P
	87.5	25	65	P
	150	100	65	P
	250	100	65	P
	350	100	65	P
	>400 Khz to 12 Mhz	30 (s)	75	P
	12 Mhz to paired receive band	30 (s)	75	P
In paired receive band	30 (s)	100	P	
2.2.14	Transmitter Throughput Delay		≤ 125 ms	P
2.2.15	Frequency Deviation for C4FM High Level signal Deviation Low Level Signal Deviation		2544 Hz $\leq f_{dev} \leq$ 3111 Hz 848 Hz $\leq f_{dev} \leq$ 1037 Hz	P
2.2.16	Modulation Fidelity		≤ 5 % (Class A)	P
2.2.18	Transient Frequency Behavior Time Interval t1 = 20.0 ms Time Interval t2 = 50.0 ms Time Interval t3 = 10.0 ms		{ Δf } \leq 12.5 kHz { Δf } \leq 6.25 kHz { Δf } \leq 12.5 kHz	P

Test Case Result Definitions	
No Test Performed	-
Test Does Not Apply to the Test Object	N/A
Test Object Meets Requirements	P (Pass)
Test Object Does Not Meet Requirements	F (Fail)
Test Object is Inconclusive	I (Inconclusive)

Comments
N/A1: UT-4E850 is a modular transmitter and therefore P25-CAB-CAI P25-CAB-CAI_TEST_REQ –March 2010, Section 2.2.1.1 Receiver tests are not applicable and not supported by this module.

The information contained herein has been provided by the manufacturer of the product with permission to make the information publically available. The Department of Homeland Security (DHS) is making this information available as a public service; however, DHS IS PROVIDING THE INFORMATION "AS IS." DHS MAKES NO EXPRESS OR IMPLIED WARRANTIES AND SPECIFICALLY, DHS MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDING THE ACCURACY OR USE OF THIS INFORMATION. Reference to any specific commercial products, processes, or services by trade name, trademark, manufacturer, or otherwise does not constitute an endorsement by or a recommendation from DHS.

OMB NO: 1640-0015

EXPIRATION DATE: 04/30/2012

Burden Statement

An agency may not conduct or sponsor information collection and a person is not required to respond to this information collection unless it displays a current valid Office of Management and Budget control number and an expiration date. The control number for this collection is 1640-0015 and this form will expire on 04/30/2012. The estimated average time to complete this for is 60 minutes per respondent. If you have any comments regarding the burden estimate you can write to Department of Homeland Security, Science and Technology Directorate, Washington, DC 20528.

DHS FORM 10056 – June 2009