

## TECHNICAL BULLETIN

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### WARRANTY PROGRAM FOR

PALADIN DIGITAL FIRE CONTROL SYSTEM (PDFCS)  
PN 12999080

CONTRACT NUMBER DAAE30-01-D-1003

DISTRIBUTION STATEMENT A: Approved for public release, distribution is unlimited.

\*SUPERSESSION NOTICE: Supersedes TB 9-2350-314-20-2-3, 1 October 2004, including all changes.

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HEADQUARTERS, DEPARTMENT OF THE ARMY  
30 NOVEMBER 2011



TECHNICAL BULLETIN  
No. 9-2350-314-23-2-1

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, D.C., 30 November 2011

WARRANTY PROGRAM  
FOR  
PALADIN DIGITAL FIRE CONTROL SYSTEM (PDFCS)  
PN 12999080

CONTRACT NUMBER DAAE30-01-D-1003

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this publication. If you find any errors, or if you would like to recommend any improvements to the procedures in this publication, please let us know. The preferred method is to submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms) through the Internet on the TACOM Unique Logistics Support Applications (TULSA) Web site. The Internet address is <https://tulsa.tacom.army.mil>. Access to all applications requires CAC authentication, and you must complete the Access Request form the first time you use it. The DA Form 2028 is located under the TULSA Applications on the left-hand navigation bar. Fill out the form and click on SUBMIT. Using this form on the TULSA Web site will enable us to respond more quickly to your comments and to better manage the DA Form 2028 program. You may also mail, e-mail, or fax your comments or DA Form 2028 directly to the U.S. Army TACOM Life Cycle Management Command. The postal mail address is U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP / TECH PUBS, MS 727, 6501 E. 11 Mile Road, Warren, MI 48397-5000. The e-mail address is [tacomlcmc.daform2028@us.army.mil](mailto:tacomlcmc.daform2028@us.army.mil). The fax number is DSN 786-1856 or Commercial (586) 282-1856. A reply will be furnished to you.

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**NOTES**

- There is no warranty coverage remaining for the Display Unit. Do not RMA PDCU, PCU-2, or keypad LRUs with a serial number above 375, these items must be requisitioned.
- Warranty applicable to first 375 serial numbered units only for PDCU, PCU-2, and keypad. For the display units and PMVS radars it will be necessary to query the warranty database to determine if any warranty coverage remains.
  - a. This Warranty Agreement provides guidance for user activities in managing and complying with the manufacturer's warranty for components of the Paladin Digital Fire Control System (PDFCS) procured under Contract DAAE30-01-D-1003 with Northrup Grumman (NG).
  - b. Due to warranty claims processing time, the warranty alone may not be an appropriate vehicle for maintaining readiness of the PDFCS. The requisitioning of replacement components should be considered in addition to processing a warranty claim when the rapid restoration of PDFCS operation is essential to maintain readiness.
  - c. The warranty provides that the PDFCS components at the time of acceptance (or delivery) will:
    - 1) conform to design and manufacturing requirements; 2) be free from all defects in materials and workmanship; and 3) conform to all performance requirements delineated in the applicable specifications of the contract. The warranty periods for the PDFCS Line Replaceable Units (LRUs) may vary depending on the time when the LRUs are procured and accepted by the Government and delivered to the user. Therefore, the warranty period of the PDFCS will be tracked by the serial number of each LRU and can be found at the contractor's website. Table 1 of this TB identifies the LRUs in the PDFCS that will be covered by the contractor warranty. The warranty will include furnishing of serviceable items (without cost

to the government) to replace any items that prove to be nonconforming and/or defective within the warranty period.

d. When repair or replacement requires transportation of the nonconforming or defective items, transportation will be funded by the contractor assuming that proper return procedures are followed. Refer to paragraphs 6 and 7.

e. This TB provides information on manufacturer's warranties for PDFCS components. The warranty period must be verified by component serial number on the PDFCS warranty website, <https://johnstown.portal-dynamics.com/pdfcs/index.php>

f. To obtain warranty service, the user must submit a returned material authorization (RMA) request for warranty repair through the website referenced in paragraph e above. If any difficulties are encountered contact the warranty coordinator Milton Parker at DSN 786-8767, Commercial (586) 282-8767 or via email at [milton.l.parker.ctr@mail.mil](mailto:milton.l.parker.ctr@mail.mil), to request warranty support. For information that you will be required to provide to obtain a RMA, see paragraph

g. If you have difficulty with the warranty process, please contact the local TACOM LAR or the major item manager Amanda Jones at DSN 786-3416, Commercial (586) 282-3416. For the PDU, contact the local CECOM LAR or the CECOM item manager at DSN 992-4080, commercial (732) 532-4080.

## 2. EXPLANATION OF TERMS.

a. Abuse. The improper use, repair, or handling of warranted items in such a manner that the warranty may become void.

b. Defect. Any condition or characteristic in any supplies or services furnished by the contractor under the contract that is not in compliance with the requirements of the contract.

c. Failed Item. A part, component, or end item that fails to perform its intended use.

d. Improper Use. The improper use, repair, or handling of items in such a manner that the warranty may become void.

e. No Evidence of Failure (NEOF). The return of suspected defective warranty items to the manufacturer that are eventually determined to be serviceable.

f. Repair. To restore an item to serviceable condition without affecting the warranty.

g. Return Material Authorization (RMA). A contractor number assigned for return of unserviceable warranted item(s).

h. Serviceable. The condition of an item that may be new or used that meets all the requirements and performs the functions for which it was originally intended.

i. Warranty. A promise or statement of fact from a seller to a purchaser on the nature, usefulness, or condition of the supplies or performance of services to be furnished. The main purposes of a warranty in a government contract are to outline the rights and obligations of the contractor and the government for defective items and services. It also serves to foster quality performance by the contractor, but it is not a substitute for an adequate quality assurance program.

j. Warranty Claim. Action started by the equipment user for authorized warranty repair or replacement from the manufacturer.

k. Warranty Period. Time during which the warranty is in effect and normally measured as the maximum number of years, months, and days used. This information can be found on the PDFCS warranty website, <https://johnstown.portal-dynamics.com/pdfcs/index.php>

3. **COVERAGE - SPECIFIC.** The following listing identifies the PDFCS components covered under this Warranty Technical Bulletin:

Table 1 - Warranted Components

Nomenclature	NSN	Part No.	CAGEC
PDFCS Digital Computer Unit (PDCU)	NA	12999083	19200
KEYPAD	NA	12999084	19200
PDFCS Power Conditioning Unit-2 (PCU-2)	NA	12999085	19200
PDFCS Muzzle Velocity System (PMVS)	5985-01-522-1648	12999104	19200

4. **CONTRACTOR RESPONSIBILITIES.**

a. The items determined to be defective, due to defective material or workmanship will be replaced with a serviceable item and returned to the warranty claimant at no cost to the government.

b. Upon request of an RMA, the contractor will either:

(1) Request return of the item using RMA number assigned at the time the return decision is made

or

(2) Determine that the failure or item is not covered under warranty.

c. Repair or replace the returned item.

d. Maintain a real time database that contains serial number listing of warranted items, warranty information, and status of maintenance actions including expected return date identified by component serial number. This database shall be accessible to the user to track status of maintenance and warranty information.

e. Maintain a telephone number for the purpose of obtaining warranty service support. Refer to paragraph 1f.

5. **GOVERNMENT RESPONSIBILITIES.**

a. **User Responsibilities.** The user will ensure that troubleshooting was done and that there is no evidence of abuse. All information will be documented at the time of the RMA request.

b. **Nullification.** The following actions taken by the user may nullify the warranty:

(1) Improper installation.

(2) Improper use.

(3) Abuse.

(4) Performing maintenance not authorized in TM 9-2350-314-20-2-2.

(5) Improper packaging causing damage during shipment. Package in accordance with paragraph 6d.

c. The warranty does not cover user costs associated with the removal and installation of defective or failed warranty items.

## 6. CLAIM PROCEDURES.

a. Identification of Failed Items. PDFCS components that experience a failure shall be tagged or identified to prevent improper repair or use.

b. Turn-In Procedures.

(1) User will complete a DA Form 2407, Maintenance Request, warranty claim action and turn-in document for each serial numbered item. User will initiate a request-for-issue using the ULLS for each item turned in for warranty claim. Refer to the following table for mandatory RMA entries and as a guide in completing DA Form 2407.

### NOTE

Non-RMA specific data elements will be entered IAW local Standard Operating Procedures (SOPs).

Table 2 - RMA Input Data

Block No.	Data Element	Data Input
1a*	UIC Customer	Self-Explanatory
1b*	Customer Unit Name	Self-Explanatory
1c	Phone No.	Self-Explanatory
7*	PN	From table 1, TB 9-2350-314-20-2-3
9*	Noun	From table 1, TB 9-2350-314-20-2-3
10a	ORG WON/DOC No.	Per Unit SOP
11*	Serial Number	Serial no. of item in block 9
12	QTY	1
13	PD (Priority Designator)	Per Unit SOP
19	In Warranty	Y
24*	Describe Deficiencies or Symptoms	Date of failure and symptoms identified
25*	Remarks	USA No. of vehicle from which LRU was removed

\* RMA mandatory data elements

(2) Supply Support Activity (SSA) will process a RMA request utilizing the DA Form 2407 warranty claim data. The RMA will be requested IAW paragraph 1f and will include all items indicated RMA mandatory in paragraph 6b(1). SSA will generate a turn-in document (D6\_) and provide the turn-in document number as part of the RMA request.

(3) Turn-in special area requirement IAW paragraph 6f.

c. Disposition. Upon receipt of an RMA response, the item will be returned to the contractor as directed. A copy of the DA Form 2407 must be included in the container with the returned item. The SSA must include the turn-in document number as the second line of their return address on the shipping label used to return the item. If the item is not eligible for warranty repair, contact the appropriate TACOM or CECOM item manager IAW paragraph 1g.

d. Packaging Instructions. These items require special packaging for shipment during the processing of warranty claims. The LRU shall be packaged and returned within its long-term reusable container, if available. As an alternative use Fastpac XE7 or package securely in approved container with protection plate over machine mounting surface and 6 inches of foam insulation between inner and outer containers.

e. NEOF Returns. When items returned to the contractor for repair are found to be serviceable, the submitting user will be billed for the cost of testing and shipping.

- f. Special Area Requirements. The following warranty procedures are applicable only to units in Iraq:

NOTE

The PDFCS Display Unit (PDU) is not warranted when the using unit is located in Iraq.

(1) Unit PLL clerk checks AEPS website (aeps.ria.army.mil) or Paladin warranty website (<https://johnstown.portal-dynamics.com/pdfcs/index.php?src=mil>) to determine if item is under warranty. The PDFCS Display Unit (PDU) is not warranted when the using unit is located in Iraq.

(2) Tag each LRU with a DA Form 2402 or DD Form 1577-2.

(3) Prepare a DA Form 2407 and request a replacement from the FS Battalion shop stock.

(4) Shop stock clerk requests a Repair Maintenance Authorization (RMA) utilizing the Paladin warranty website.

(5) When the RMA is received, the unserviceable LRU will be retrograded through the Team Armor Partnership (TAP) Forward by preparing an ULLS high priority turn-in document with a ship to address of RIC: WDZ and DODAAC: W91XTZ. In the remarks block of the turn-in document indicate Project Code: G1G and RMA Number (provided per RMA request).

(6) The priority of the turn-in document will be established as follows:

- If additional shop stock assets of the LRU are on-hand, use priority 05.
- If the shop stock asset balance for the LRU is zero, use priority 02.

(7) The LRU tagged with a DA Form 2402 or DD Form 1577-2 will be placed in the appropriate long life reusable container (LLRC) along with a copy of the DA Form 2407. If a LLRC is not available, use a suitable container and cushioning material to protect the LRU, see paragraph 6b. Be sure the Container has a shipping label indicating the NSN, Document Number and priority, CC: F, DODAAC: W91XTZ, RIC: WDZ, RMA Number and Project Code: G1G.

NOTE

At no time should the Paladin LRUs be combined with items in a multi-pack for a location other than DODAAC: W91XTZ (TAP Forward).

(8) Place the LRU on its own pallet for shipment or only with other materiel being transported to DODAAC: W91XTZ (TAP Forward).

(9) Transport the LRU to the Iraq TAP Forward site.

(10) Continue to check RMA status to obtain information on the status of the RMA until the LRU or a replacement is received.

(11) When an LRU is received, locate the RMA referenced in the shipping documents, go to the Paladin warranty website, RMA status, and enter the serial number of the LRU received in the received column.

g. Claim Denial. If a warranty claim is denied, the contractor shall contact the user and inform them that the equipment will not be covered under warranty. Refer to paragraph 1g.

7. STORAGE/SHIPPING/HANDLING. Use the provided LLRC for the PDCS LRUs as described in TM 9-2350-314-24P-2 and table 3.

For ULLS generated turn-in documents:

- (1) Use container and LRU NSN (column D)) when returning an LRU in a LLRC.
- (2) If the LRU in column (A) is packaged in any other container, use the LRU part number indicated in column (B).
- (3) Use NSNs in column (C) to request additional containers, if required.

Table 3 - Container Data

(A) LRU NOMENCLATURE	(B) LRU PART NUMBER	(C) LLR CONTAINER NSN	(D) LLR CONTAINER AND LRU NSN
Keypad	12999084	8145-01-523-6530	7025-01-524-8671
PDCU	12999033	8145-01-523-6529	7010-01-524-8672
PCU-2	12999085	8145-01-523-9134	6130-01-524-8673
PMVS	12999104	8145-01-523-9135	5895-01-524-8674



<b>RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS</b> For use of this form, see AR25-30; the proponent agency is OAASA.						Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE Date you filled out this form
<b>TO</b> (Forward to proponent of publication or form) (Include ZIP Code) U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000						<b>FROM</b> (Activity and location) (Include ZIP Code) Your mailing address	
<b>PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS</b>							
PUBLICATION/FORM NUMBER TB 9-2350-314-23-2-1						DATE 30 Nov 2011	TITLE Warranty Program For Paladin Digital Fire Control System
ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)	
<h1>SAMPLE</h1>							
TYPED NAME, GRADE OR TITLE Your Name					TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION Your Phone Number		SIGNATURE Your Signature

<b>TO</b> <i>(Forward direct to addressee listed in publication)</i> U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000				<b>FROM</b> <i>(Activity and location) (Include ZIP Code)</i>  Your Address				<b>DATE</b> Date you filled out this form	
<b>PART II – REPAIR PARTS AND SPECIAL TOOL LIST      STS AND SUPPLY CATALOGS/SUPPLY MANUALS</b>									
PUBLICATION NUMBER TB 9-2350-314-23-2-1				DATE 30 Nov 2011		TITLE    Warranty Program for Paladin <i>Digital Fire Control System</i>			
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION	
<div style="font-size: 100px; font-weight: bold; opacity: 0.5;">SAMPLE</div>									
<b>PART III – REMARKS</b> <i>(Any general remarks, or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)</i>									
TYPED NAME, GRADE OR TITLE Your Name				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION Your Phone Number			SIGNATURE Your Signature		

<b>RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS</b> <b>For use of this form, see AR 310-1; the proponent agency is the US Army Adjutant General Center.</b>						Use Part II ( <i>reverse</i> ) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
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TYPED NAME, GRADE OR TITLE				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION		SIGNATURE	

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By Order of the Secretary of the Army:

Official:

A handwritten signature in black ink, appearing to read "Joyce E. Morrow". The signature is fluid and cursive, with the first name "Joyce" being more prominent.

JOYCE E. MORROW  
Administrative Assistant to the  
Secretary of the Army

1129705

RAYMOND T. ODIERNO  
General, United States Army  
Chief of Staff

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 372582 requirements for TB 9-2350-314-23-2-1.



## THE METRIC SYSTEM AND EQUIVALENTS

<p><b>Linear Measure</b></p> <p>1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches  1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches  1 Kilometer = 1000 Meters = 0.621 Miles</p> <p><b>Weights</b></p> <p>1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces  1 Kilogram = 1000 Grams = 2.2 Pounds  1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons</p> <p><b>Liquid Measure</b></p> <p>1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  1 Liter = 1000 Milliliters = 33.82 Fluid Ounces</p>	<p><b>Square Measure</b></p> <p>1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches  1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet  1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles</p> <p><b>Cubic Measure</b></p> <p>1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches  1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet</p> <p><b>Temperature</b></p> <p><math>9/5\text{ }^{\circ}\text{C} + 32 = ^{\circ}\text{F}</math>  <math>5/9\text{ }(^{\circ}\text{F} - 32) = ^{\circ}\text{C}</math>  212° Fahrenheit is equivalent to 100° Celsius  90° Fahrenheit is equivalent to 32.2° Celsius  32° Fahrenheit is equivalent to 0° Celsius</p>
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## APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

To Change	To	Multiply By
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

