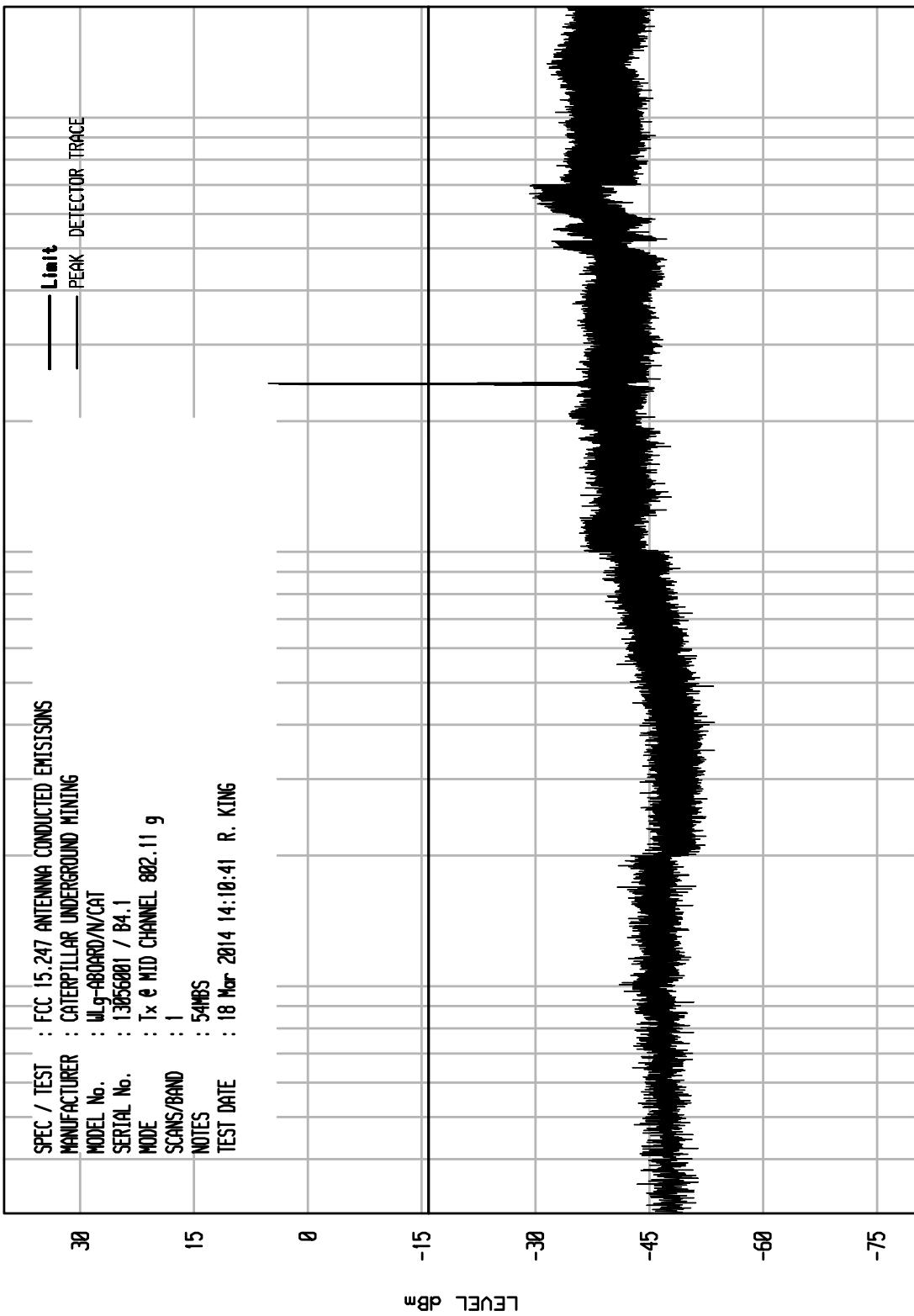


ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

MKA1 04/24/13

UNIV RCU EMI RUN 16

SPEC / TEST	FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING
MODEL No.	W9-ABORD/N/CAT
SERIAL No.	13056001 / B4.1
MODE	Tx & MID CHANNEL 882.11 g
SCANS/BAND	1
NOTES	54MBS
TEST DATE	18 Mar 2014 14:10:41 R. KING



START = 30

100

10000

FREQUENCY MHz

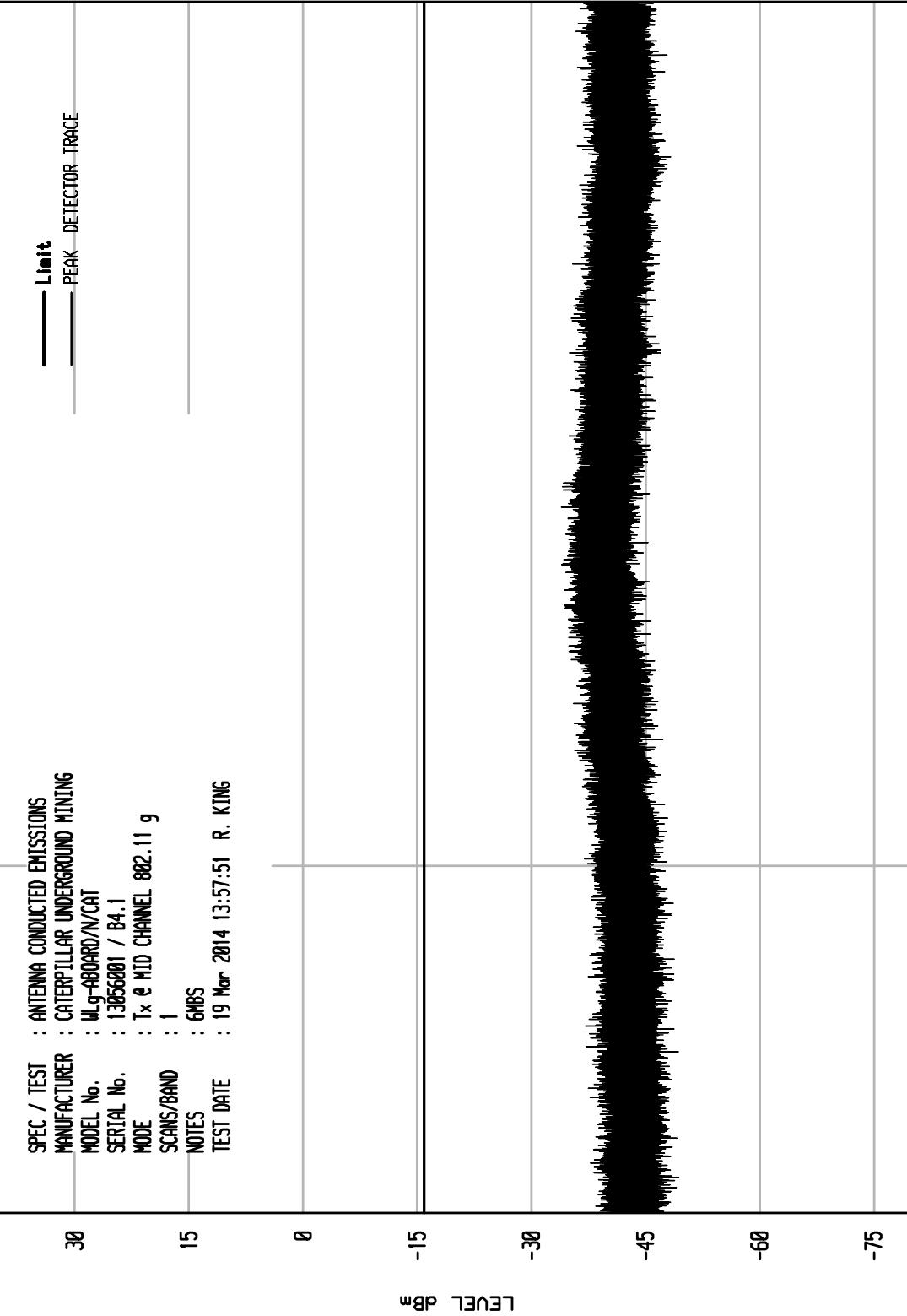
STOP = 18000

ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

MKAI 04/24/13

UNIV RCU EMI RUN 33

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/N/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & MID CHANNEL 882.11 g
SCANS/BAND	: 1
NOTES	: 6MBPS
TEST DATE	: 19 Mar 2014 13:57:51 R. KING

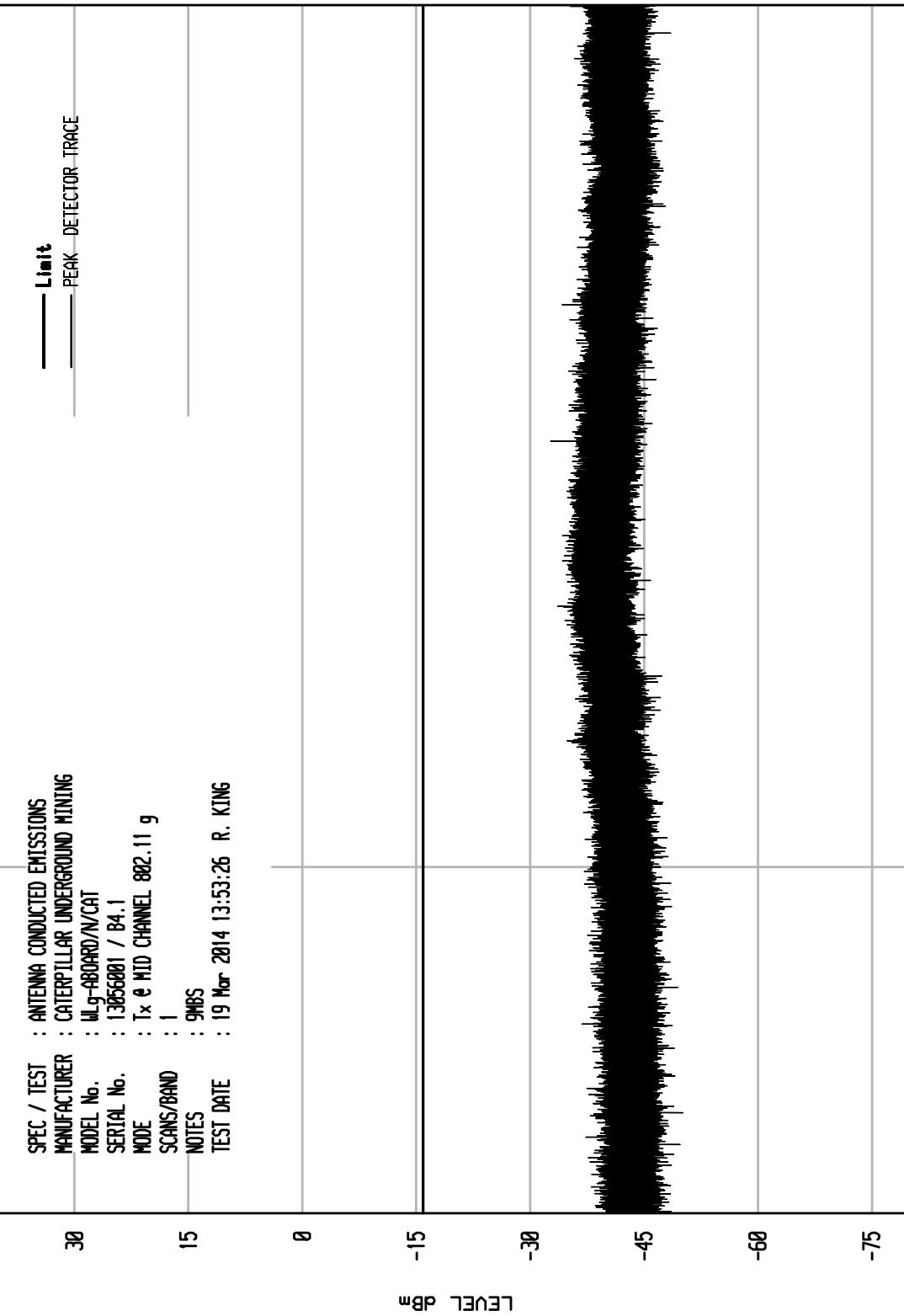


ELITE ELECTRONIC ENGINEERING Inc.
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MKA1 04/24/13

UNIV RCU EMI RUN 32

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & MID CHANNEL 882.11 g
SCANS/BAND	: 1
NOTES	: 9MBPS
TEST DATE	: 19 Mar 2014 13:53:26 R. KING



START = 18000

FREQUENCY MHz

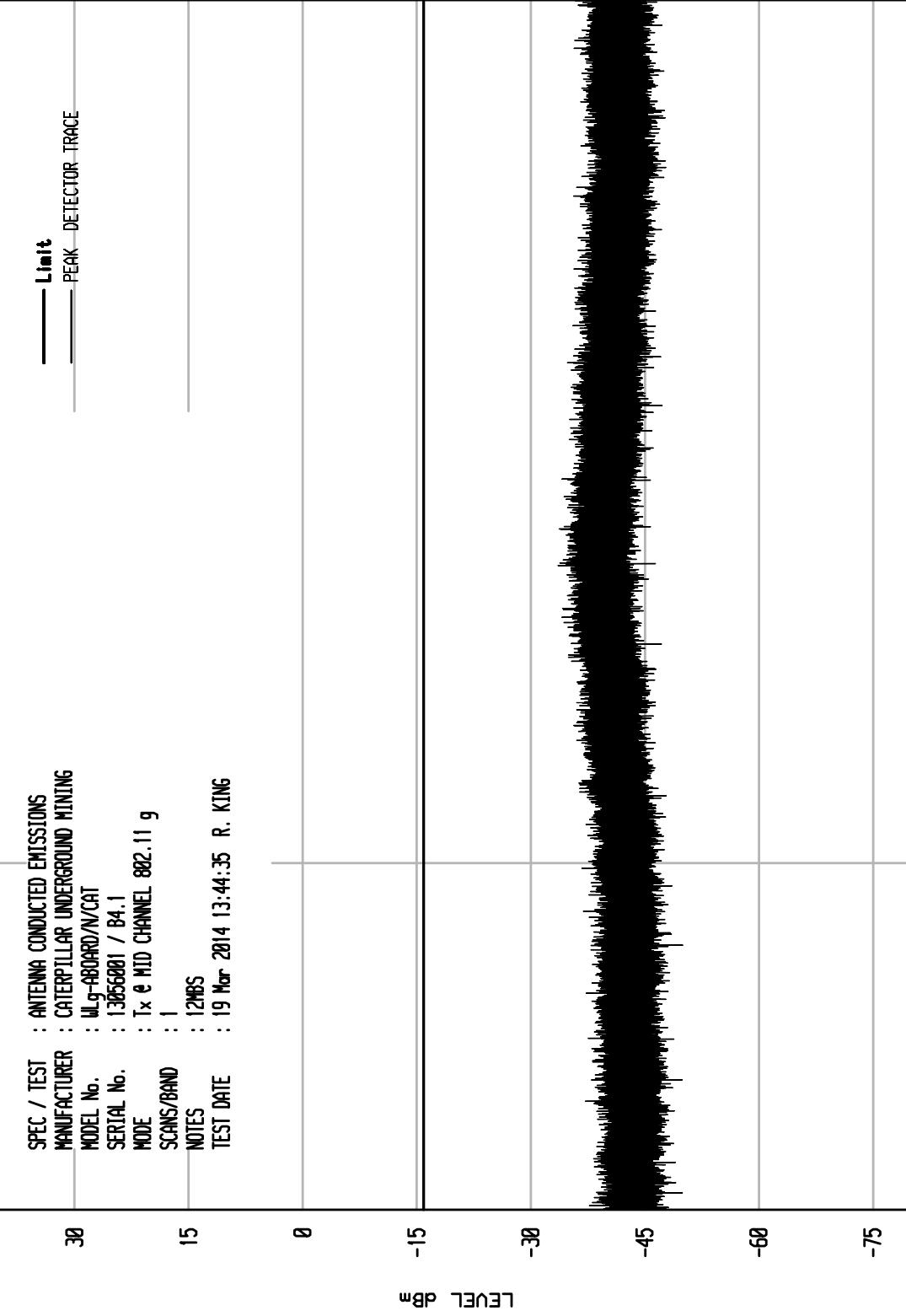
STOP = 26000

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515

WKA1 04/24/13

UNIV RCU EMI RUN 31

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/N/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & MID CHANNEL 882.11 g
SCANS/BAND	: 1
NOTES	: 12MBS
TEST DATE	: 19 Mar 2014 13:44:35 R. KING



START = 18000

FREQUENCY MHz

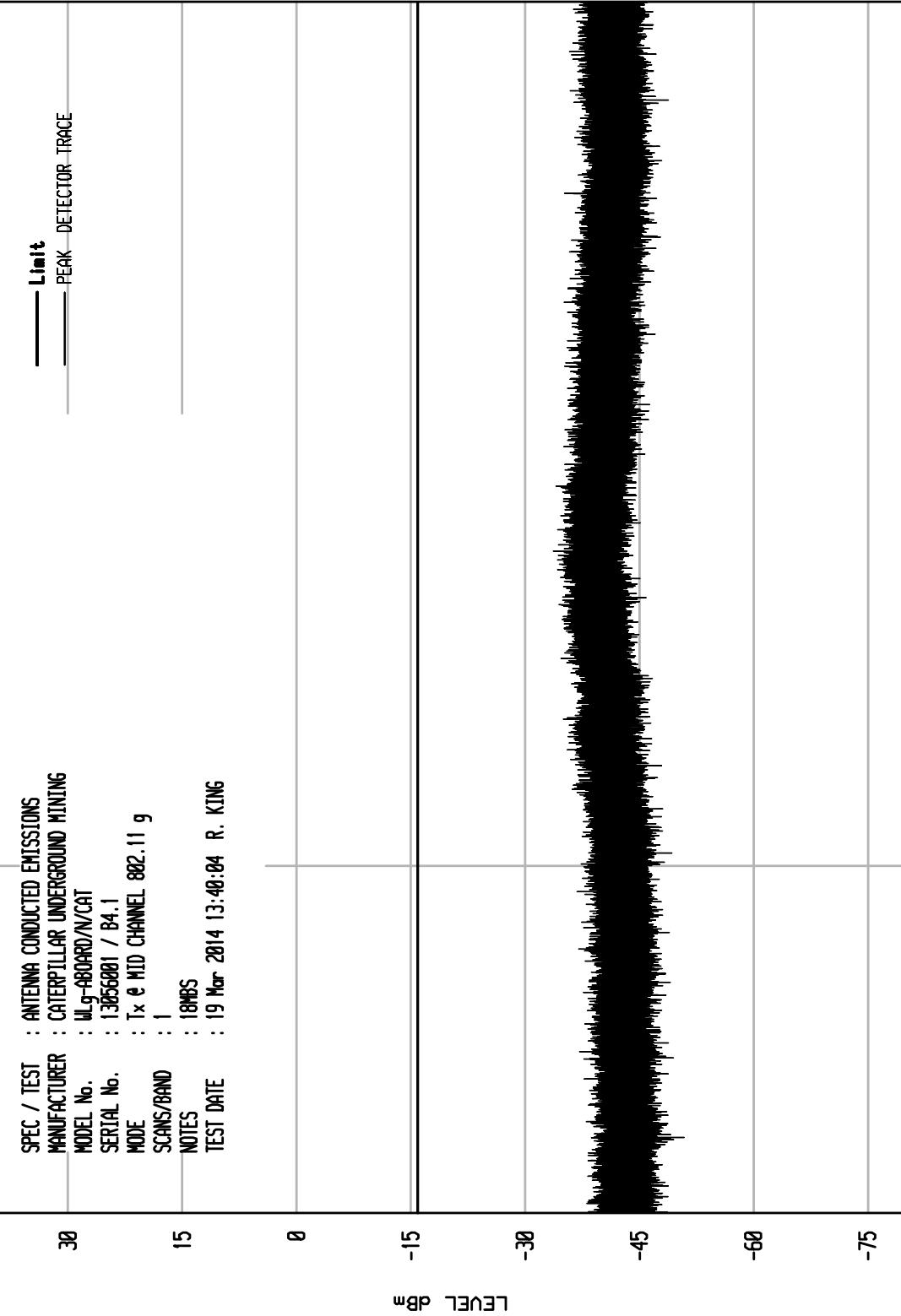
STOP = 26000

ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

WKA1 04/24/13

UNIV RCU EMI RUN 30

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/N/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & MID CHANNEL 882.11 g
SCANS/BAND	: 1
NOTES	: 18MBS
TEST DATE	: 19 Mar 2014 13:40:04 R. KING



START = 180000

FREQUENCY MHz

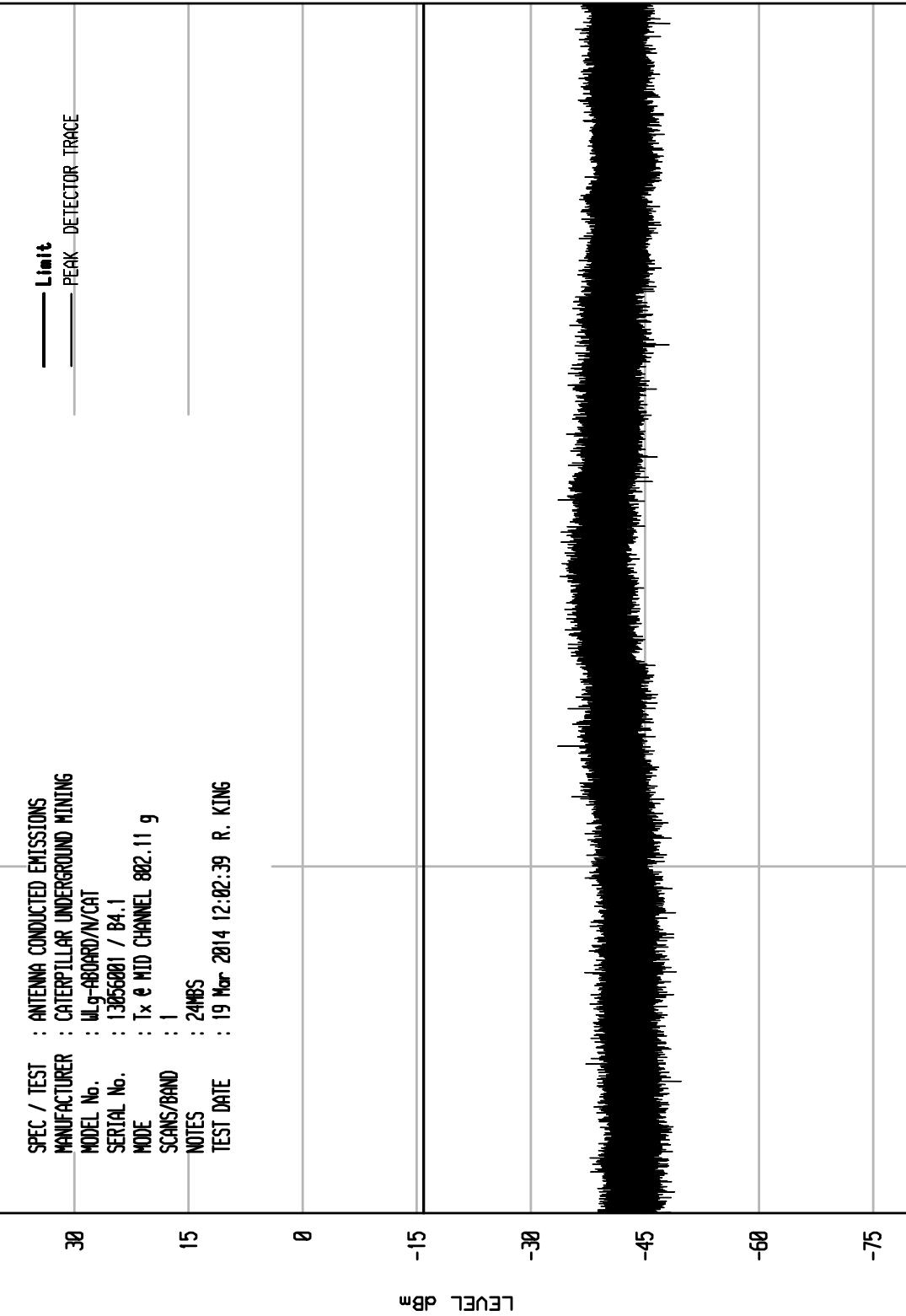
STOP = 260000

ELITE ELECTRONIC ENGINEERING Inc.
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MKAI 04/24/13

UNIV RCU EMI RUN 28

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & MID CHANNEL 882.11 g
SCANS/BAND	: 1
NOTES	: 24MBS
TEST DATE	: 19 Mar 2014 12:02:39 R. KING



START = 180000

FREQUENCY MHz

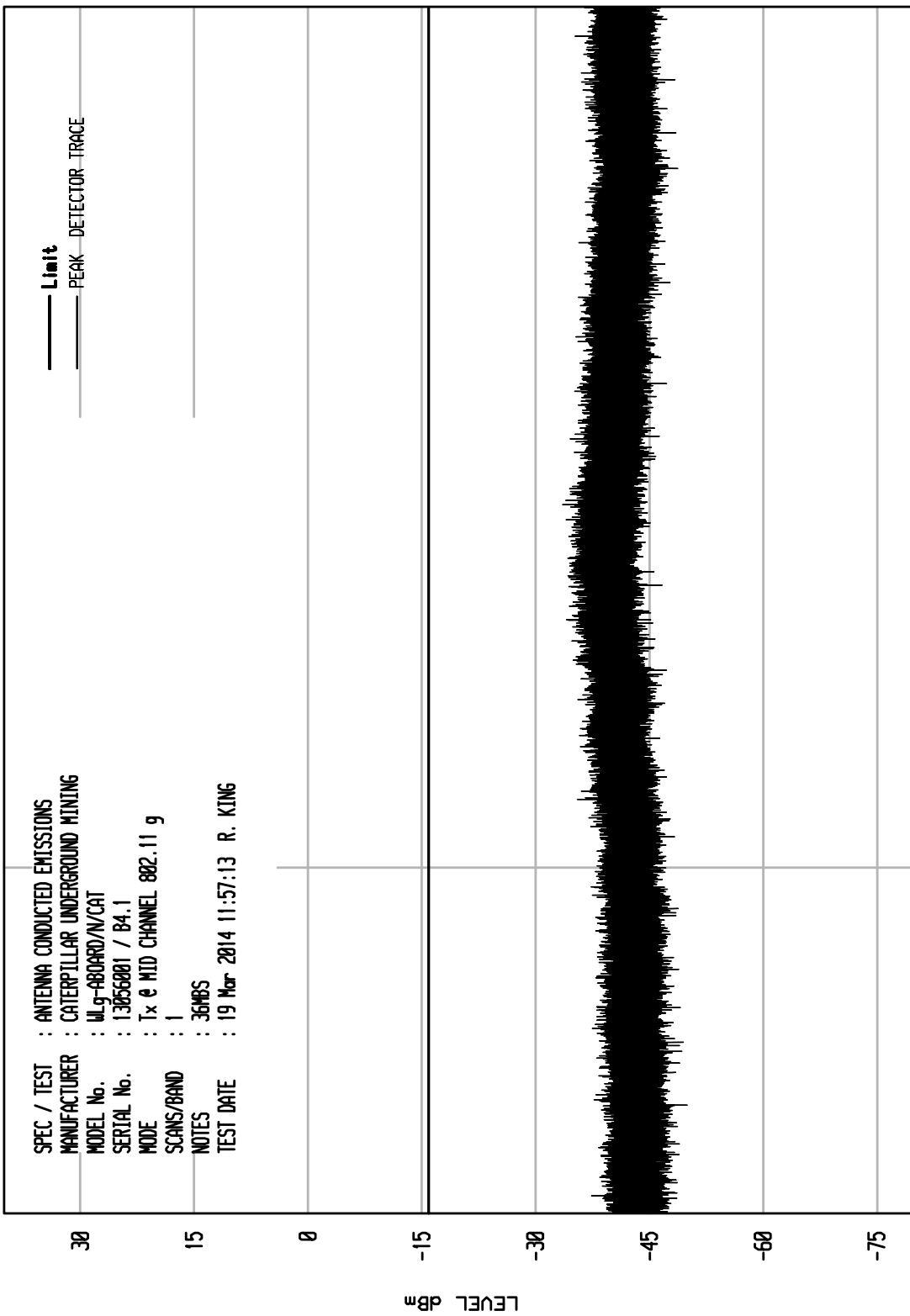
STOP = 260000

ELITE ELECTRONIC ENGINEERING Inc.
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MKAI 04/24/13

UNIV RCU EMI RUN 27

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/N/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & MID CHANNEL 882.11 g
SCANS/BAND	: 1
NOTES	: 36MBS
TEST DATE	: 19 Mar 2014 11:57:13 R. KING

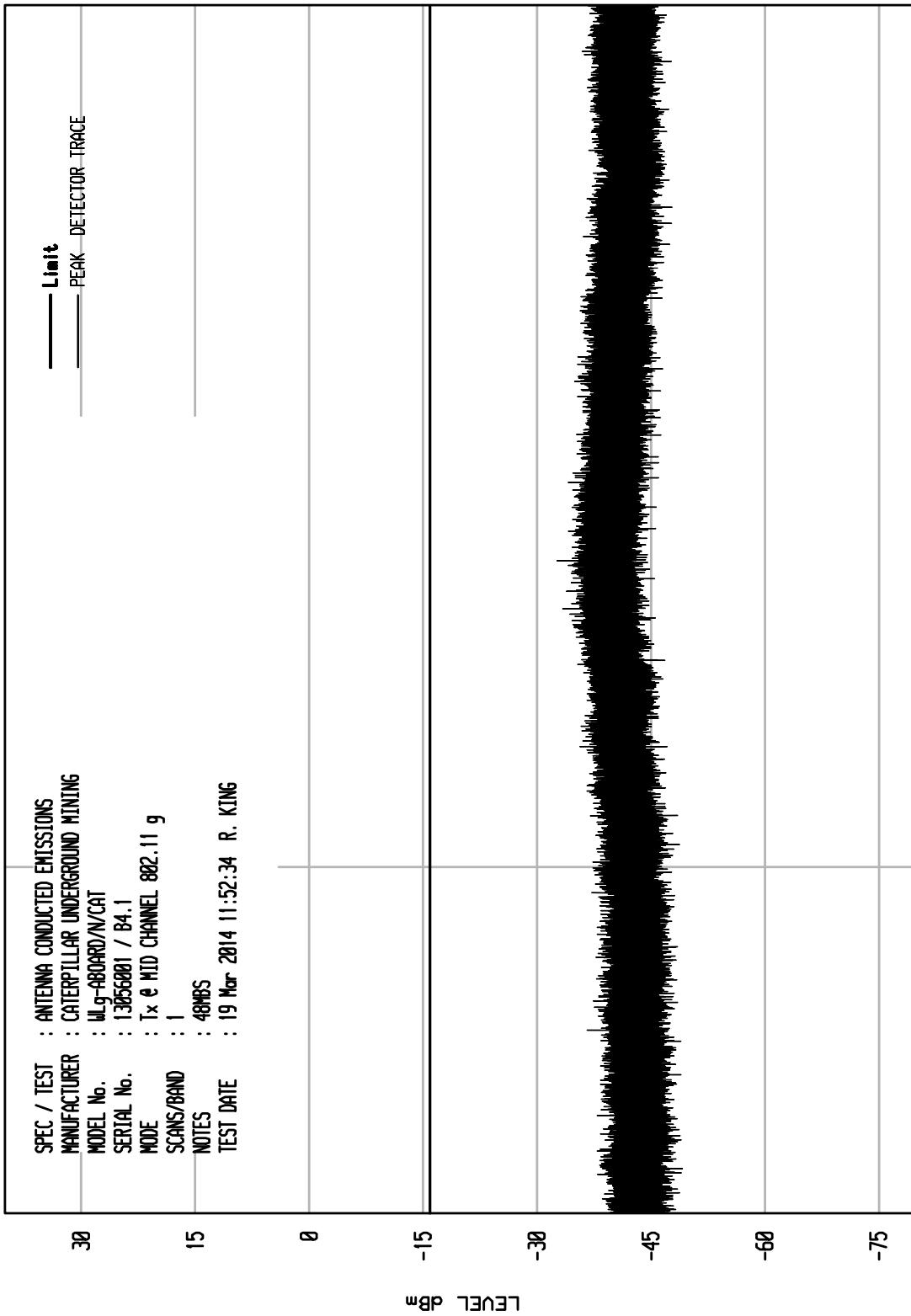


ELITE ELECTRONIC ENGINEERING Inc.
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WKA1 04/24/13

UNIV RCU EMI RUN 26

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/N/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & MID CHANNEL 882.11 g
SCANS/BAND	: 1
NOTES	: 48Mbps
TEST DATE	: 19 Mar 2014 11:52:34 R. KING

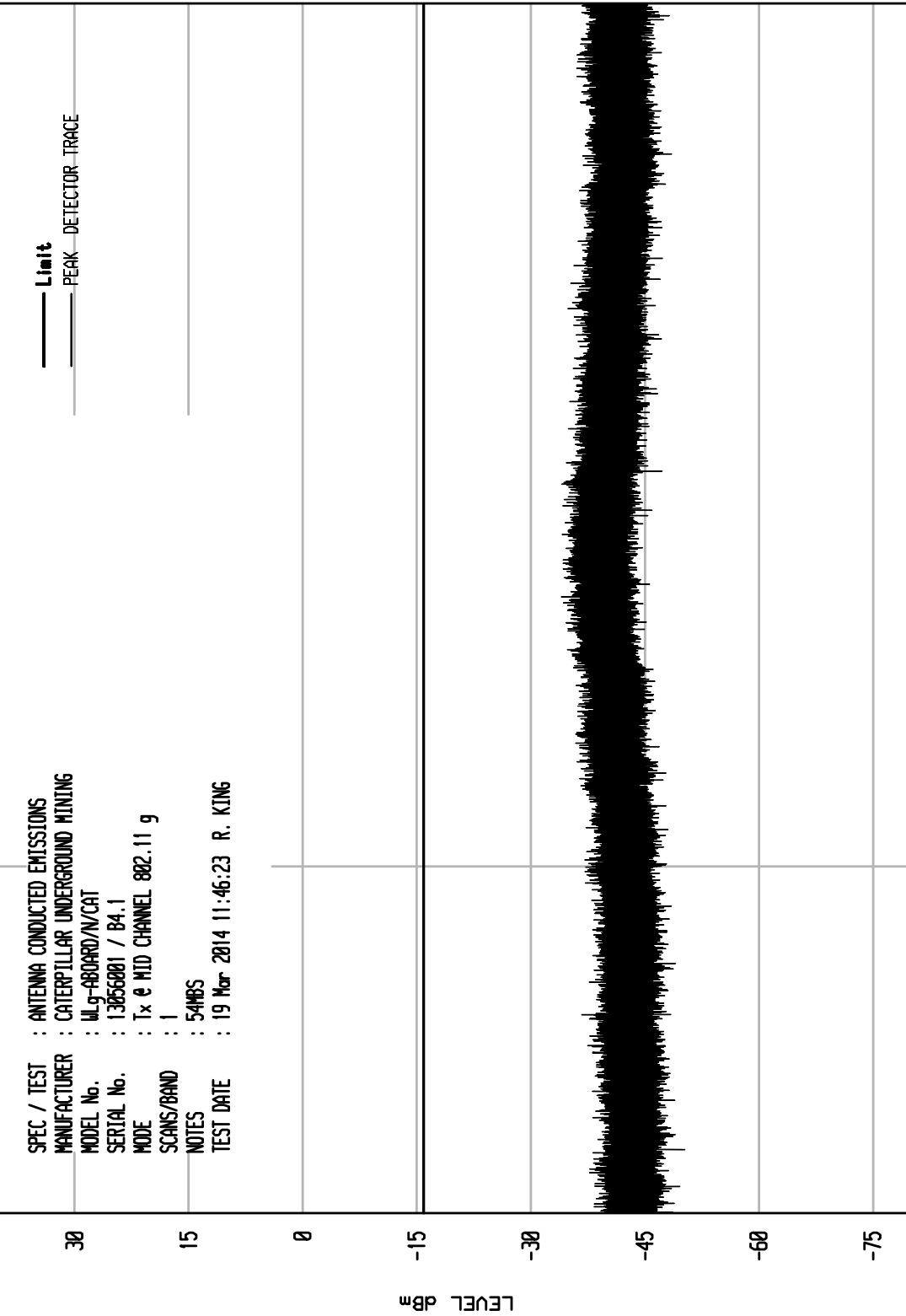


ELITE ELECTRONIC ENGINEERING Inc.
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WKA1 04/24/13

UNIV RCU EMI RUN 25

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/N/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & MID CHANNEL 882.11 g
SCANS/BAND	: 1
NOTES	: 54MBS
TEST DATE	: 19 Mar 2014 11:46:23 R. KING



START = 18000

FREQUENCY MHz

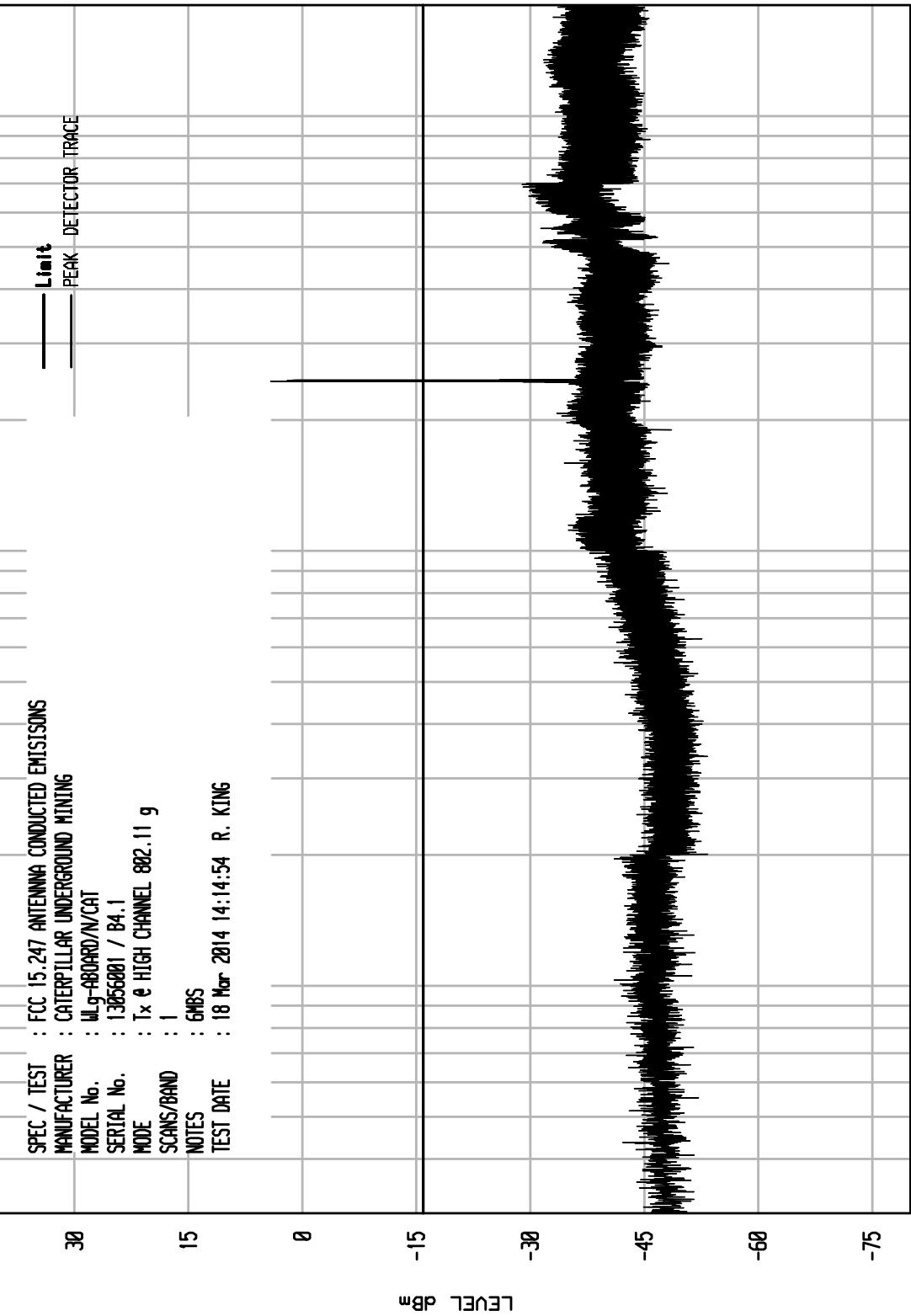
STOP = 26000

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515

WKA1 04/24/13

UNIV RCU EMI RUN 17

SPEC / TEST	FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING
MODEL No.	W4-ABORD/NCAT
SERIAL No.	13056001 / B4.1
MODE	Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	1
NOTES	6MBPS
TEST DATE	18 Mar 2014 14:14:54 R. KING



Limit
PEAK
DETECTOR-TRACE

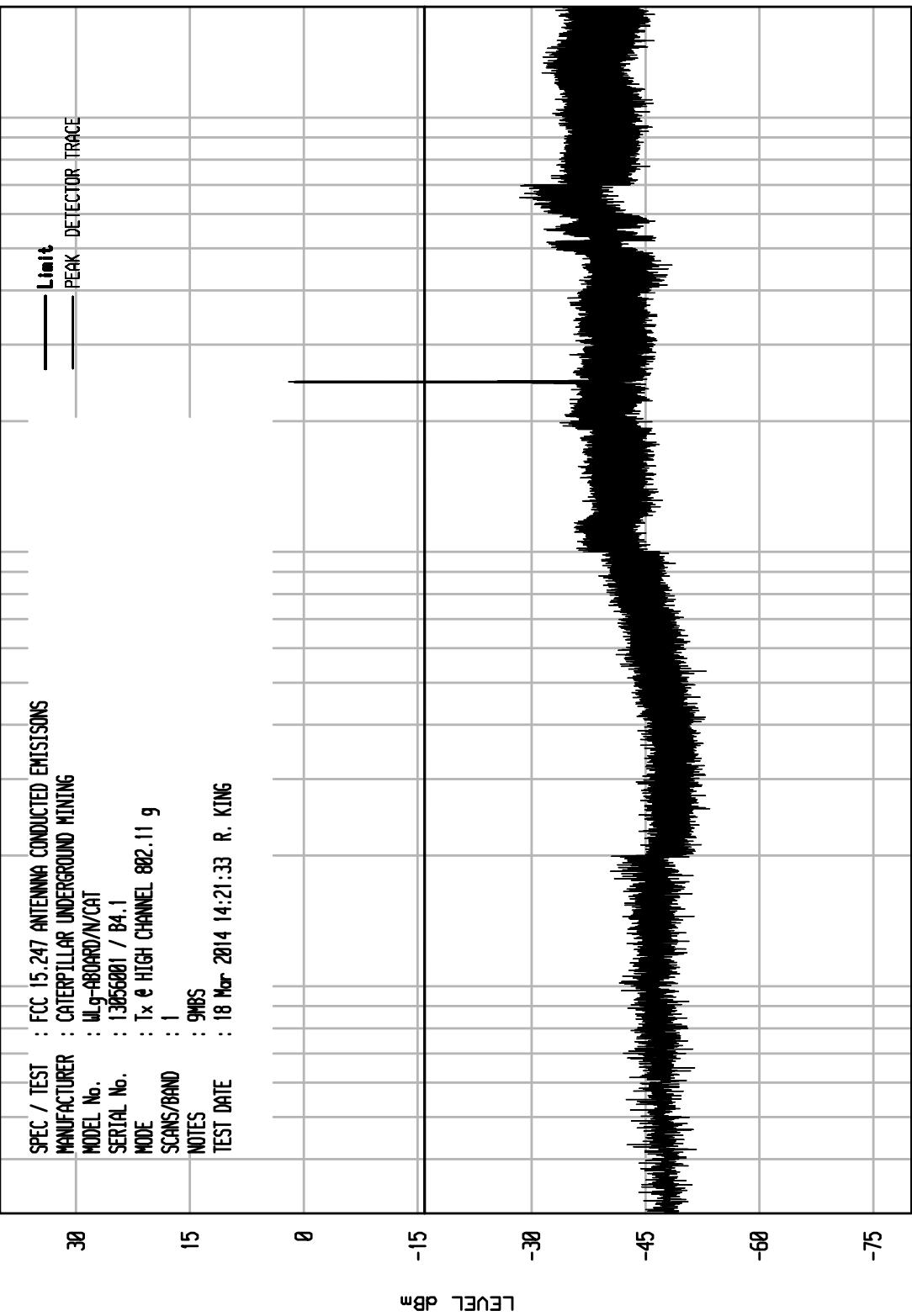
100000
10000
1000
100
START = 100
STOP = 18000
FREQUENCY MHz
LEVEL dBm
-75
-60
-45
-30
-15
0
15
30

ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 18

MKA1 04/24/13

SPEC / TEST	FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING
MODEL No.	W4-ABORD/N/CAT
SERIAL No.	13056001 / B4.1
MODE	Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	1
NOTES	9MBPS
TEST DATE	18 Mar 2014 14:21:33 R. KING



START = 1000

FREQUENCY MHz

STOP = 18000

10000

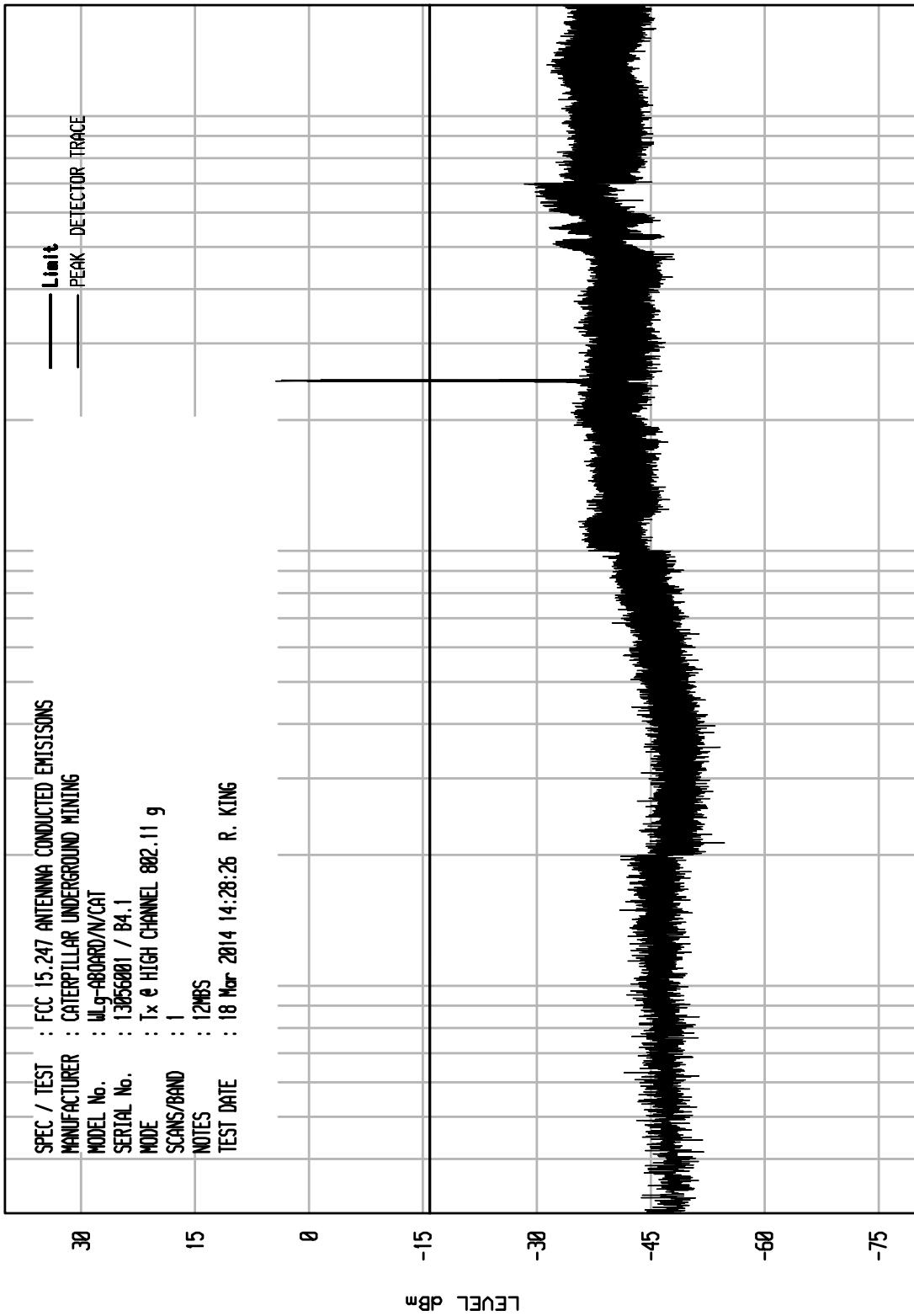
ELITE ELECTRONIC ENGINEERING Inc.

Downers Grove, Ill. 60515

WKA1 04/24/13

UNIV RCU EMI RUN 19

SPEC / TEST	FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING
MODEL No.	W9-ABORD/N/CAT
SERIAL No.	13056001 / B4.1
MODE	Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	1
NOTES	12Mbps
TEST DATE	18 Mar 2014 14:28:26 R. KING

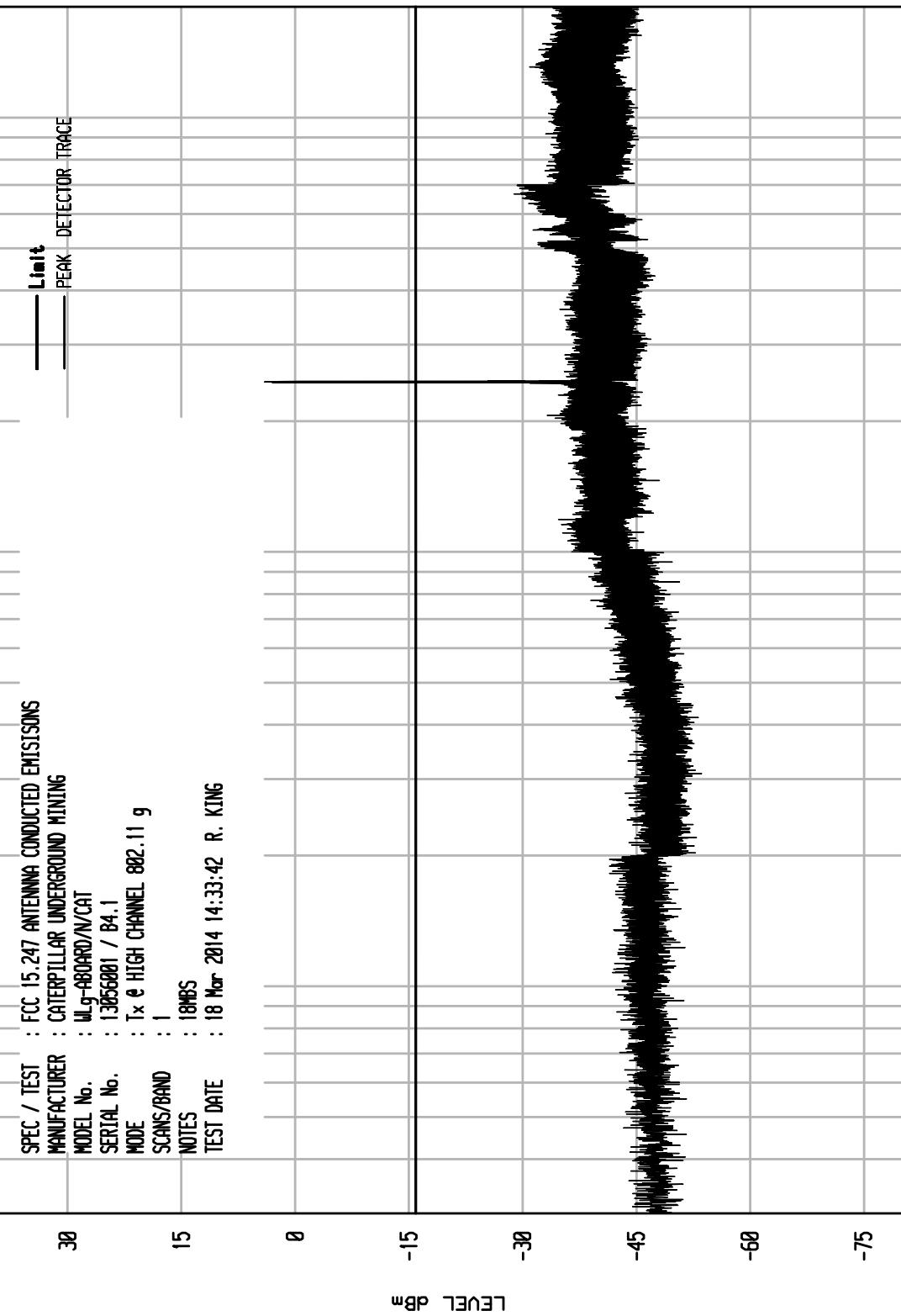


ELITE ELECTRONIC ENGINEERING Inc.
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MKA1 04/24/13

UNIV RCU EMI RUN 2B

SPEC / TEST	FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING
MODEL No.	W4-ABORD/NCAT
SERIAL No.	13056001 / B4.1
MODE	Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	1
NOTES	19Mbps
TEST DATE	18 Mar 2014 14:33:42 R. KING



START = 30

100

10000

FREQUENCY MHz

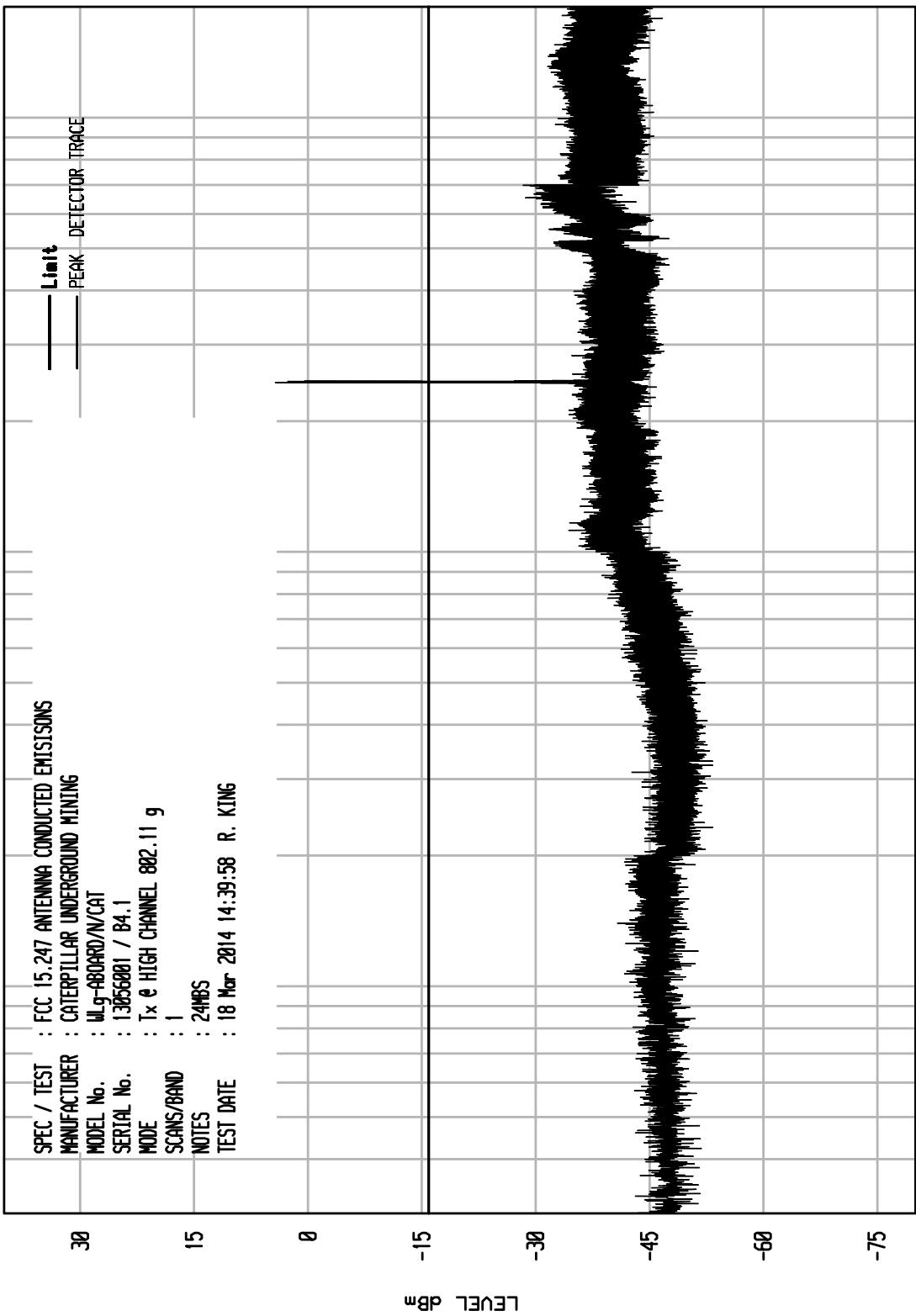
STOP = 18000

ELITE ELECTRONIC ENGINEERING Inc.
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MKA1 04/24/13

UNIV RCU EMI RUN 21

SPEC / TEST	FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING
MODEL No.	W9-ABORD/N/CAT
SERIAL No.	13056001 / B4.1
MODE	Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	1
NOTES	24MBPS
TEST DATE	18 Mar 2014 14:39:58 R. KING



START = 30

100

 10000
 FREQUENCY MHz

 STOP = 18000
 10000

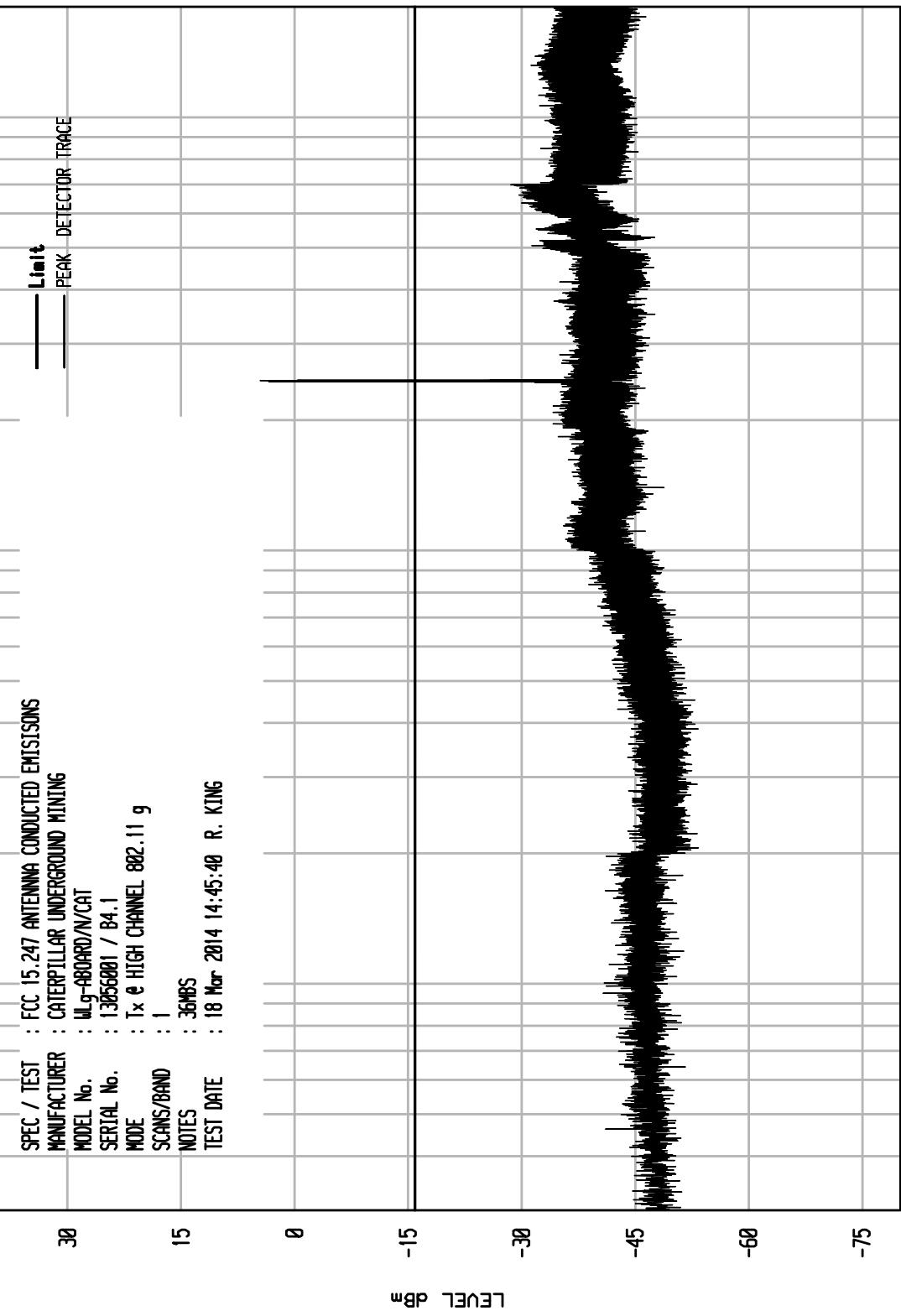
ELITE ELECTRONIC ENGINEERING Inc.

Downers Grove, Ill. 60515

MKA1 04/24/13

UNIV RCU EMI RUN 22

SPEC / TEST	FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING
MODEL No.	W4-ABORD/N/CAT
SERIAL No.	13056001 / B4.1
MODE	Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	1
NOTES	36MBPS
TEST DATE	18 Mar 2014 14:45:40 R. KING

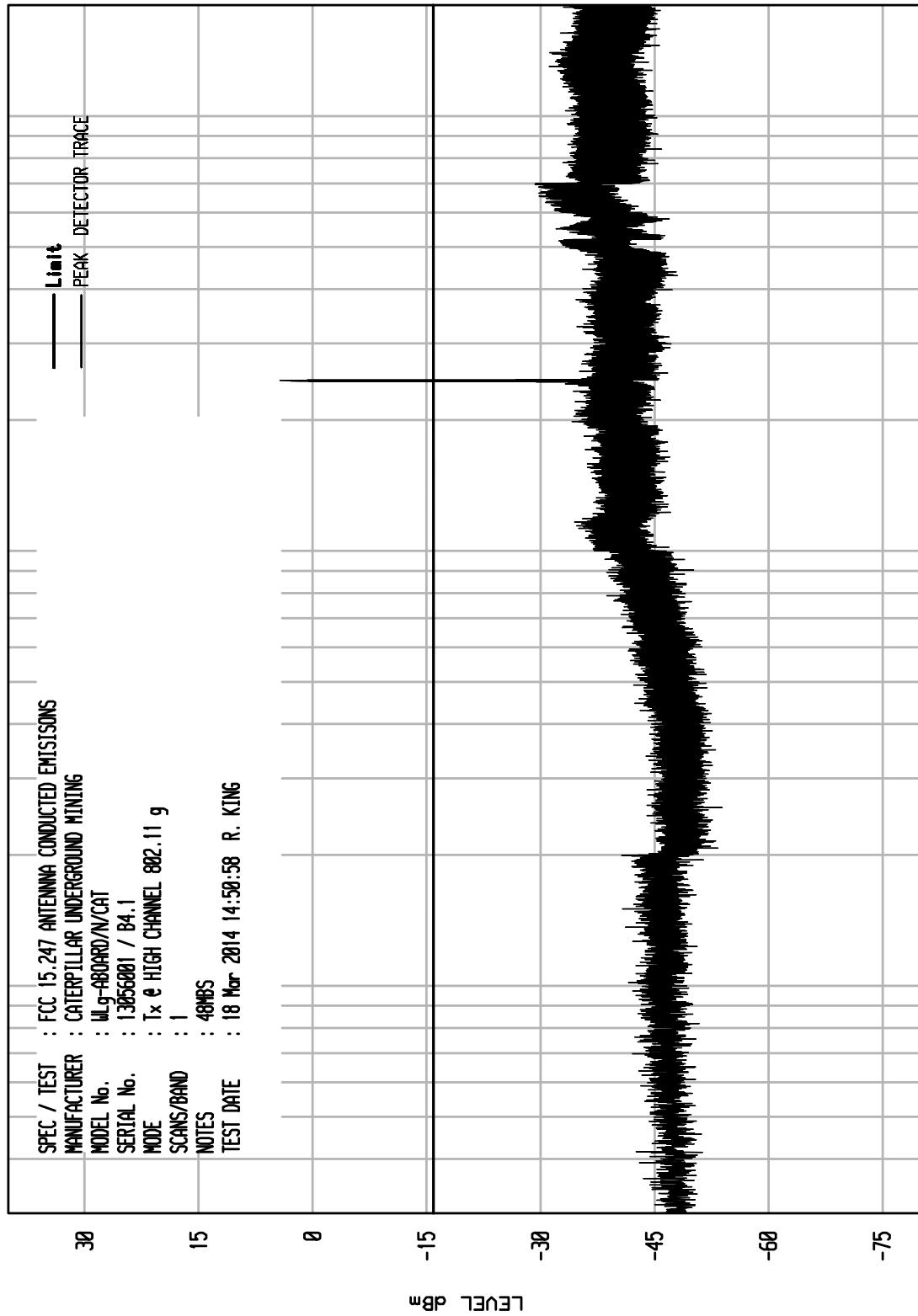


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515

WKA1 04/24/13

UNIV RCU EMI RUN 23

SPEC / TEST	FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING
MODEL No.	W4-ABORD/N/CAT
SERIAL No.	13056001 / B4.1
MODE	Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	1
NOTES	48Mbps
TEST DATE	18 Mar 2014 14:50:58 R. KING

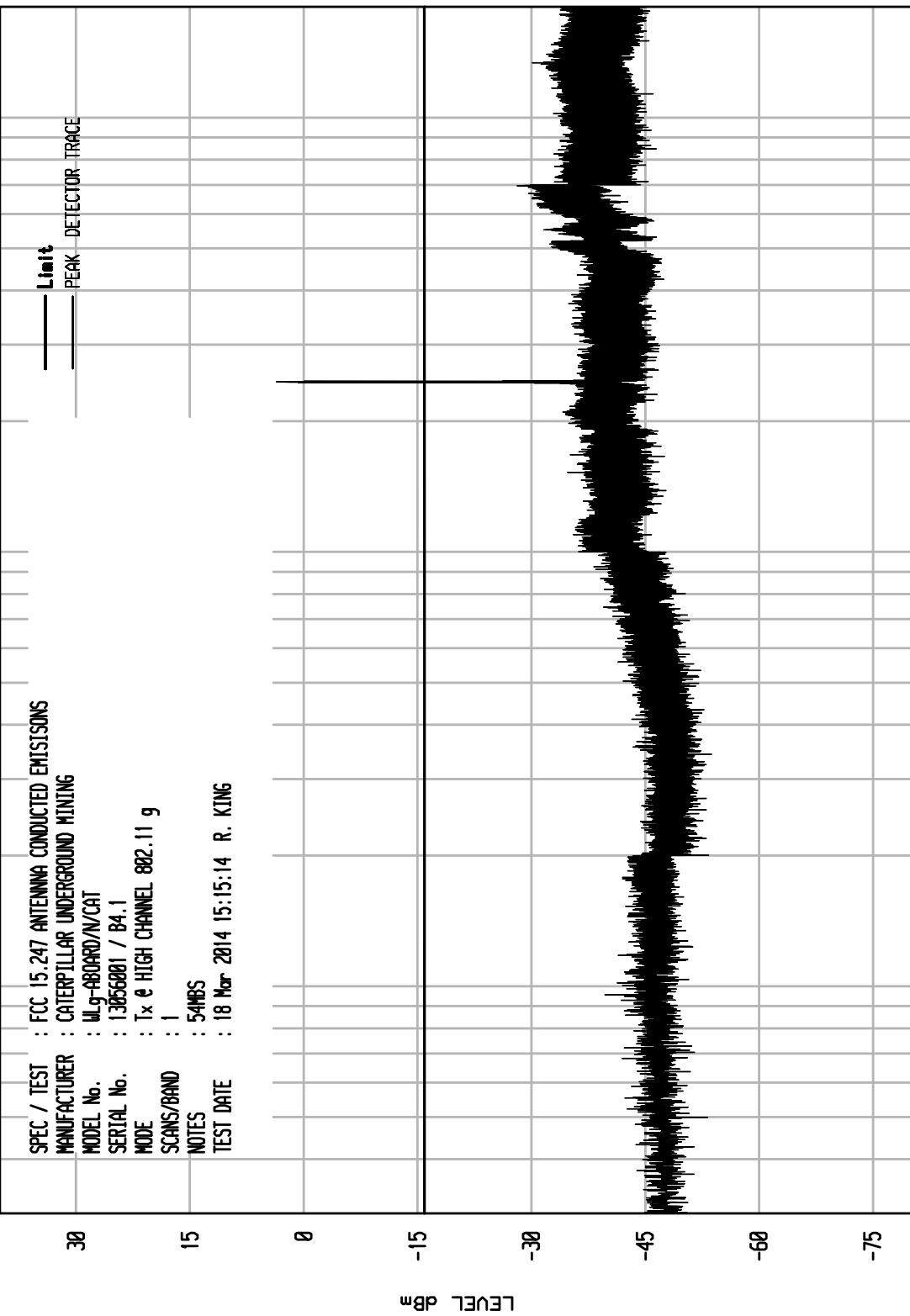


ELITE ELECTRONIC ENGINEERING Inc.
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MKA1 04/24/13

UNIV RCU EMI RUN 26

SPEC / TEST	: FCC 15.247 ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	: 1
NOTES	: 54MBS
TEST DATE	: 18 Mar 2014 15:15:14 R. KING



START = 30

10000

10000

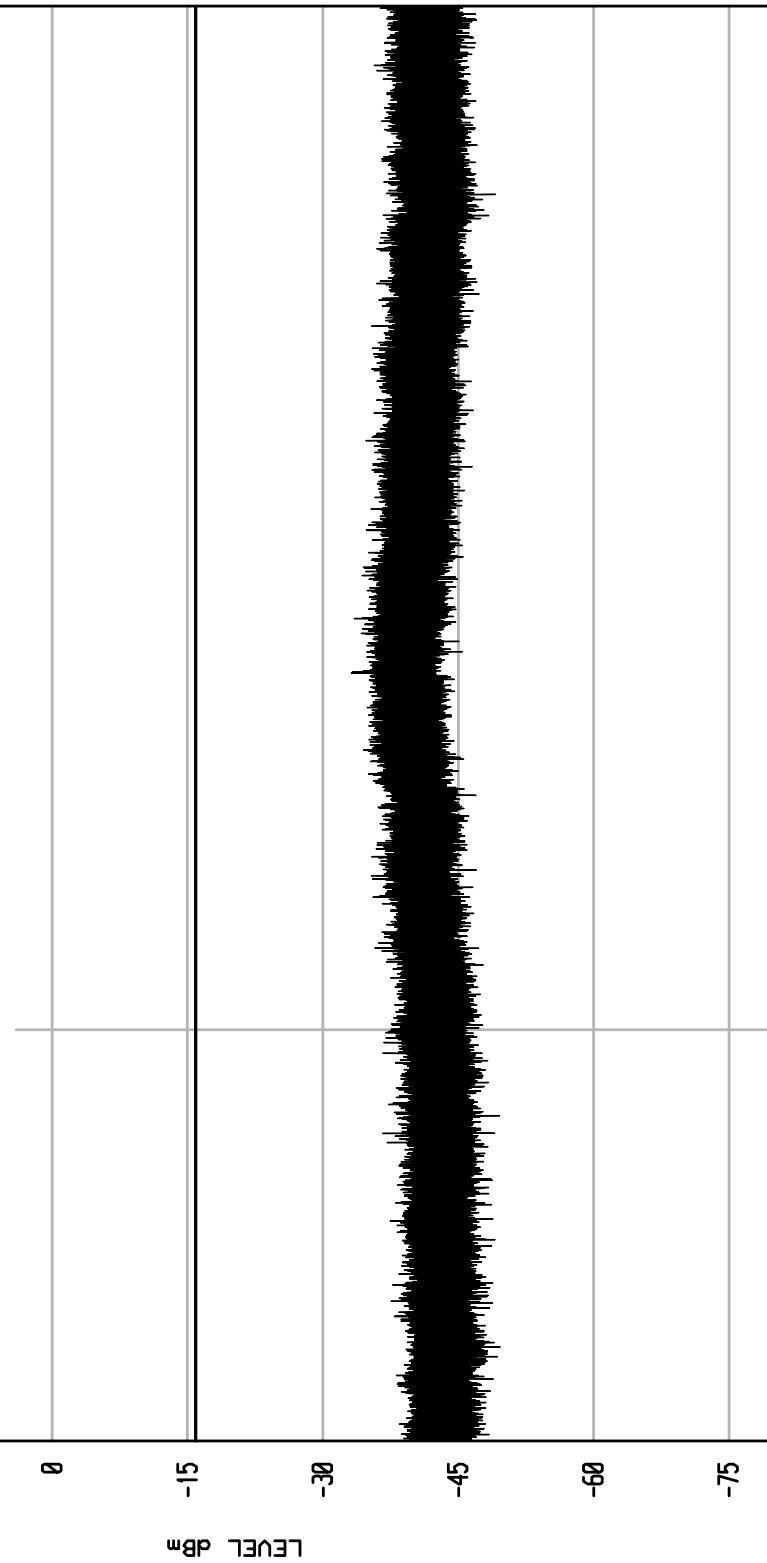
FREQUENCY MHz

 STOP = 18000
 10000

ELITE ELECTRONIC ENGINEERING Inc.
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 UNIV RCU EMI RUN 15
 WK#1 04/24/13

30	SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/NCAT
	SERIAL No.	: 13056001 / B4.1
	MODE	: Tx & HIGH CHANNEL 802.11 g
	SCANS/BAND	: 1
	NOTES	: 6MBPS
15	TEST DATE	: 19 Mar 2014 10:57:02 R. KING

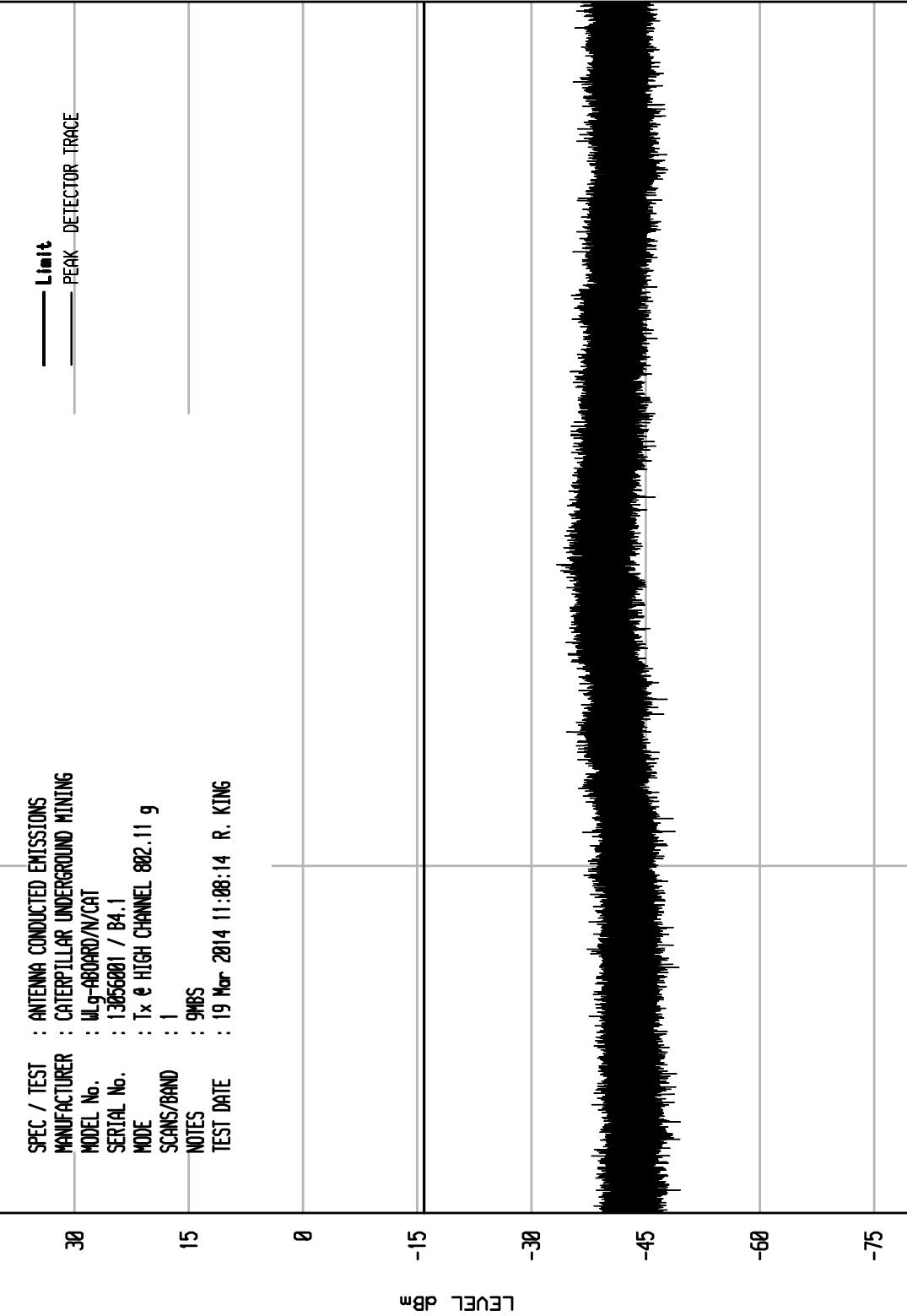


ELITE ELECTRONIC ENGINEERING Inc.
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WKA1 04/24/13

UNIV RCU EMI RUN 16

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W4-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	: 1
NOTES	: 9MBPS
TEST DATE	: 19 Mar 2014 11:08:14 R. KING



START = 180000

FREQUENCY MHz

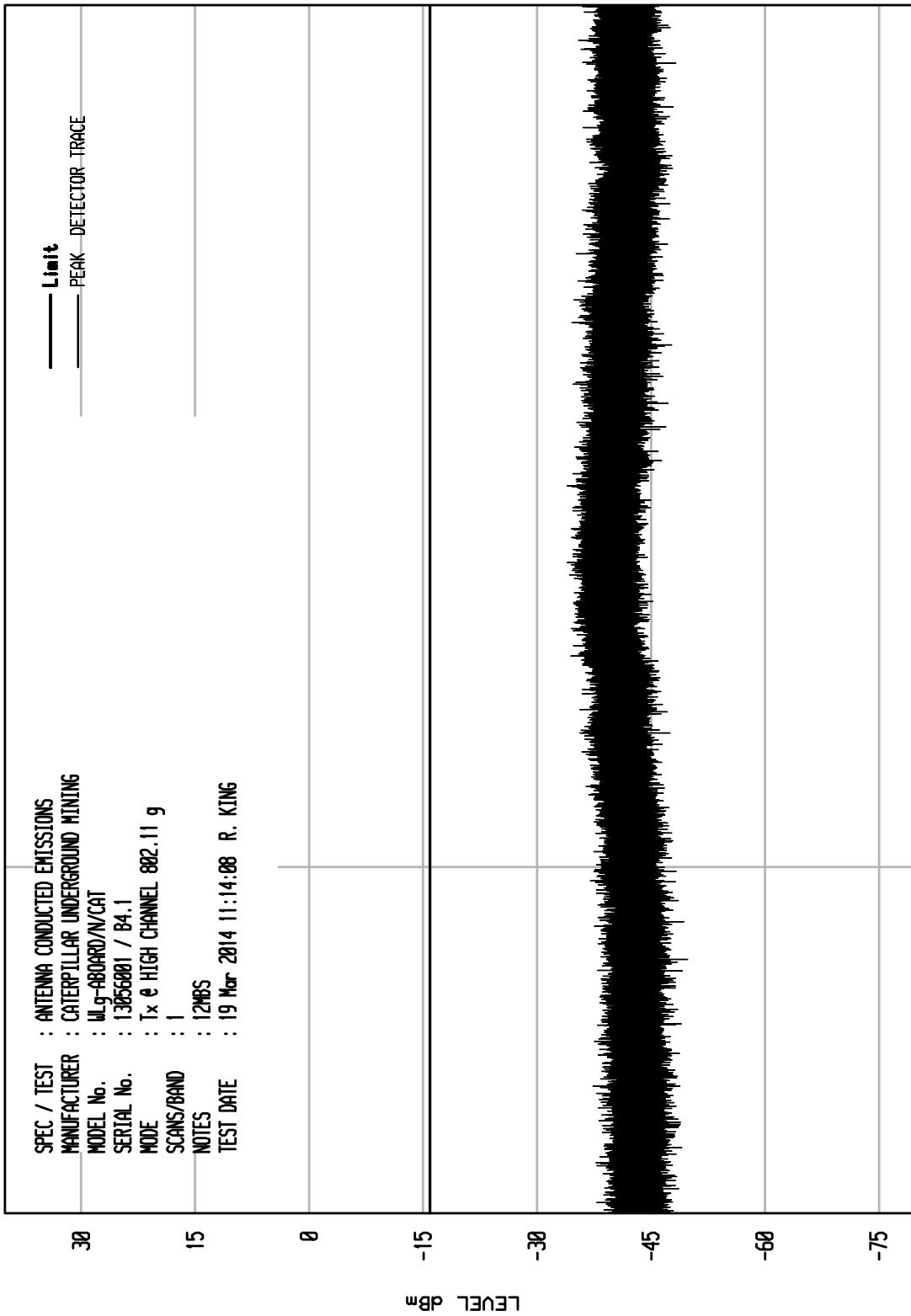
STOP = 260000

ELITE ELECTRONIC ENGINEERING Inc.
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MKAI 04/24/13

UNIV RCU EMI RUN 17

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/N/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	: 1
NOTES	: 12Mbps
TEST DATE	: 19 Mar 2014 11:14:08 R. KING

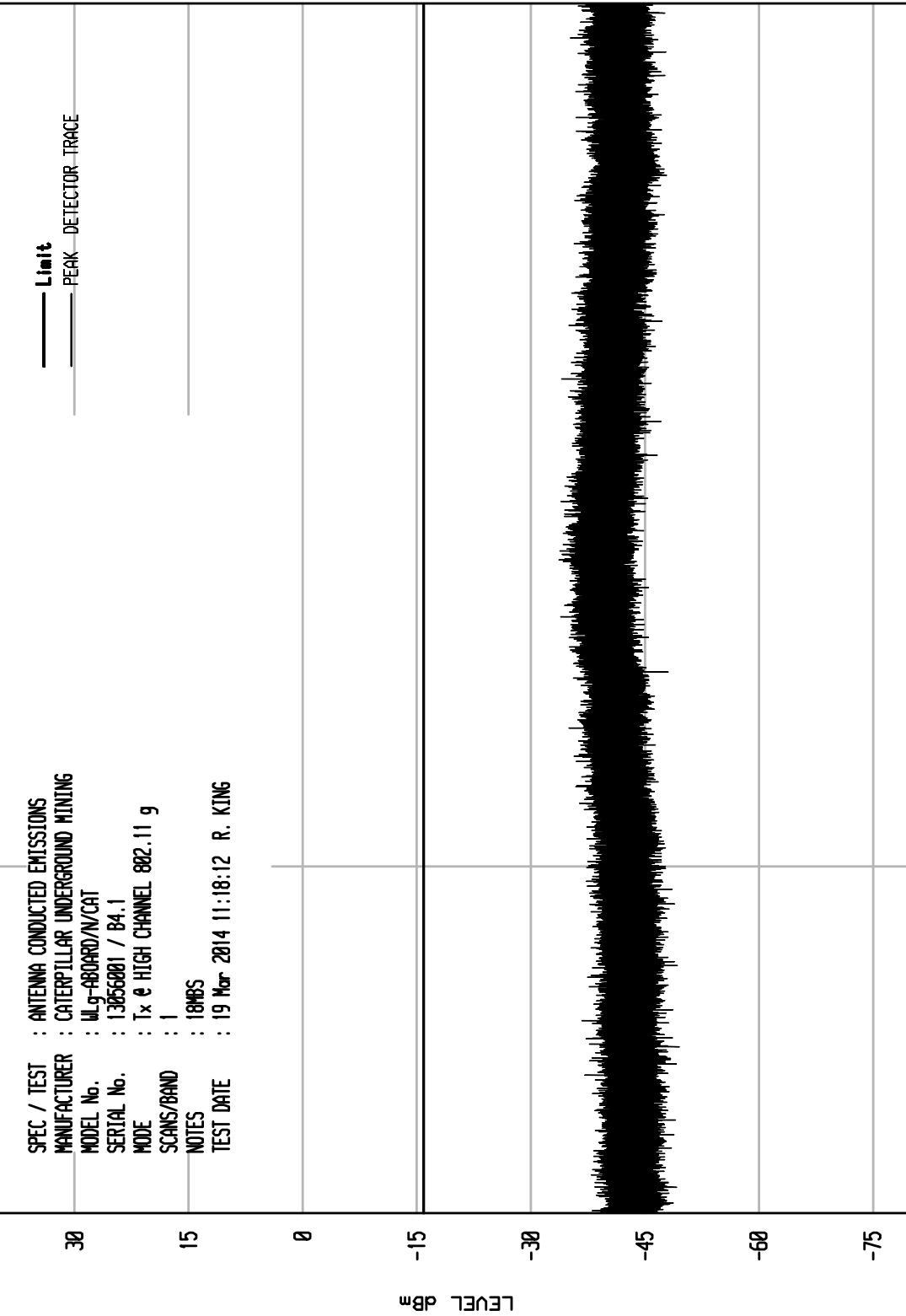


ELITE ELECTRONIC ENGINEERING Inc.
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WKA1 04/24/13

UNIV RCU EMI RUN 18

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W4-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	: 1
NOTES	: 192Mbps
TEST DATE	: 19 Mar 2014 11:18:12 R. KING

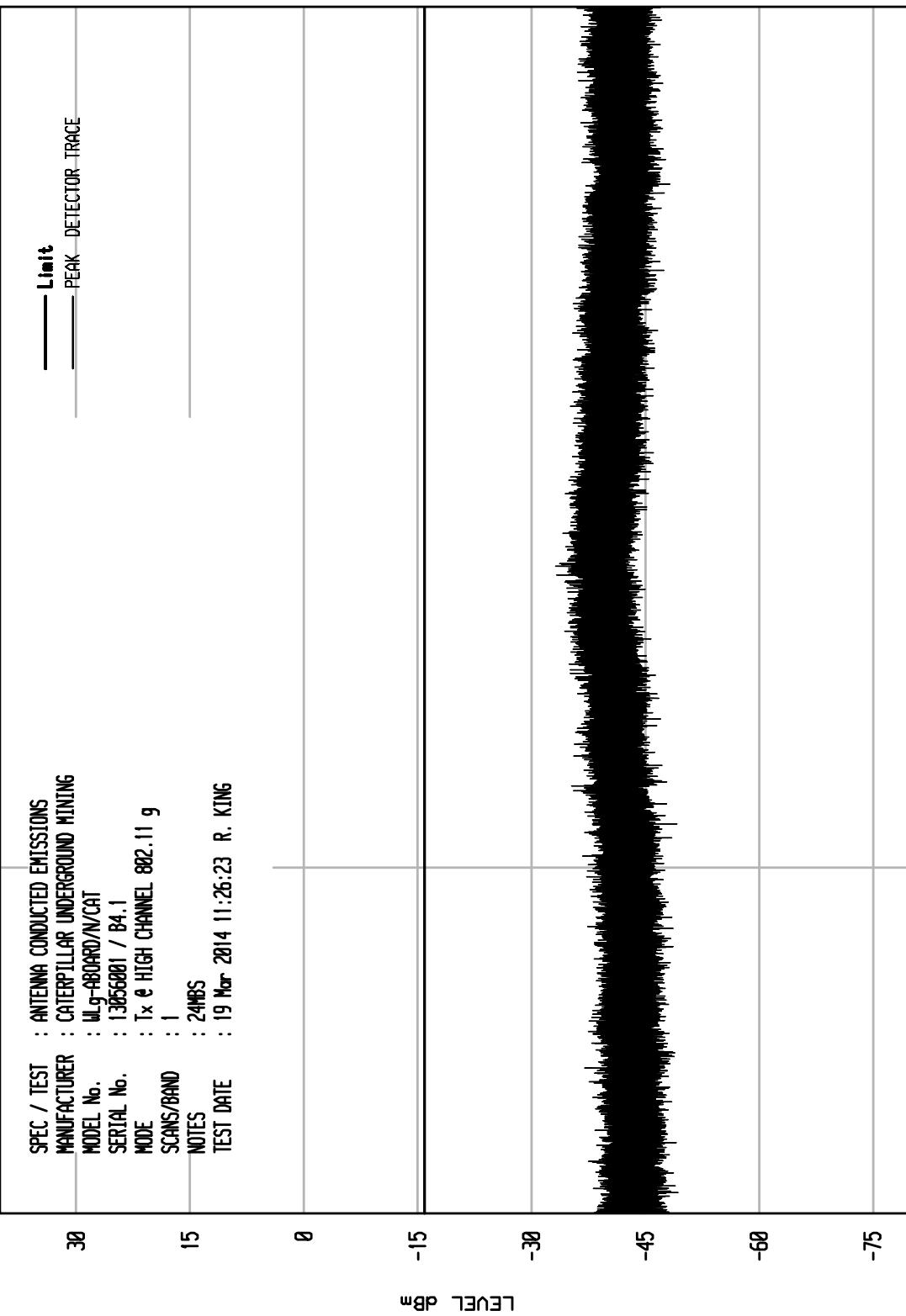


ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 2B

MKA1 04/24/13

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	: 1
NOTES	: 24Mbps
TEST DATE	: 19 Mar 2014 11:26:23 R. KING

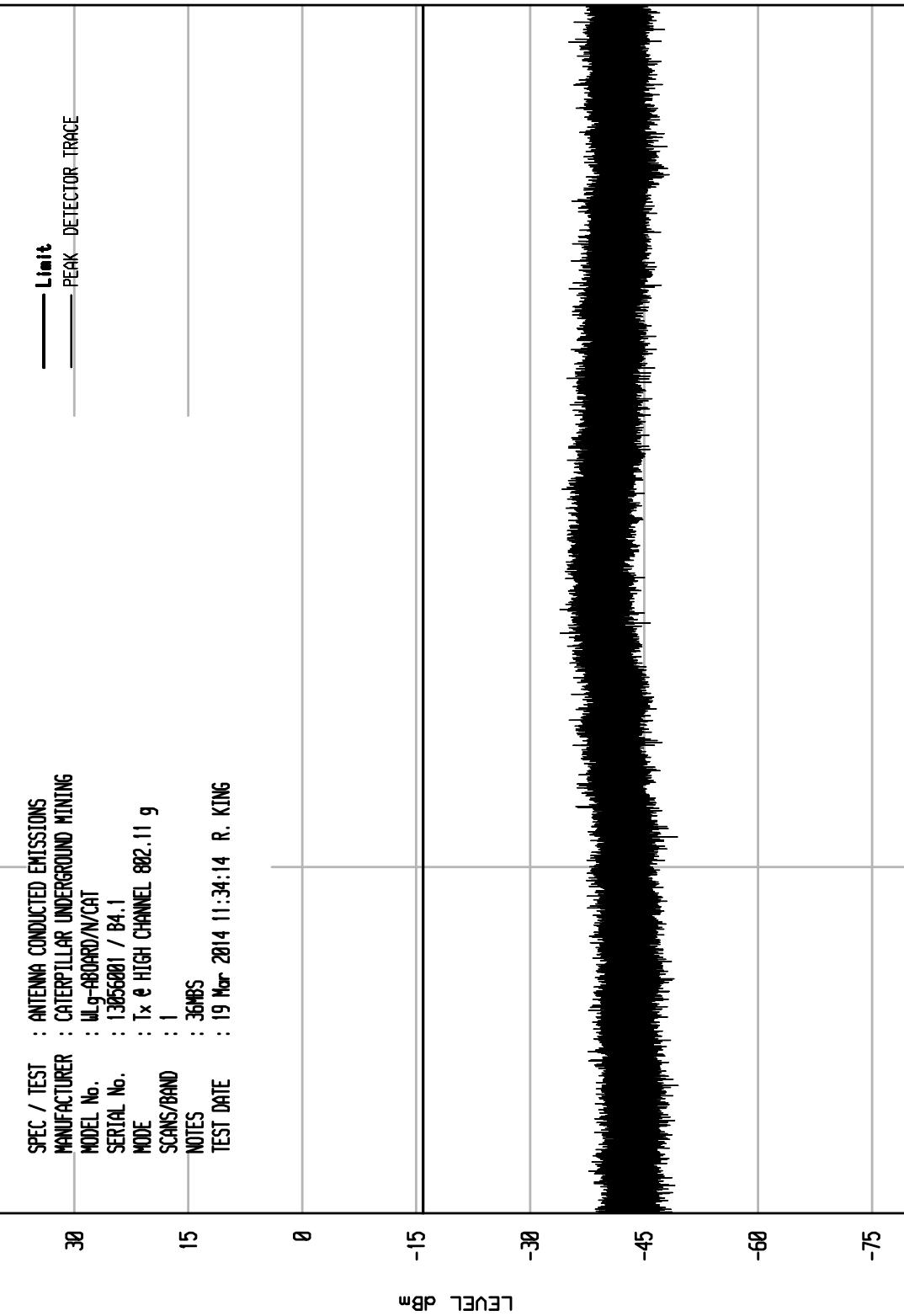


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MKA1 04/24/13

UNIV RCU EMI RUN 22

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	: 1
NOTES	: 3GBPS
TEST DATE	: 19 Mar 2014 11:34:14 R. KING

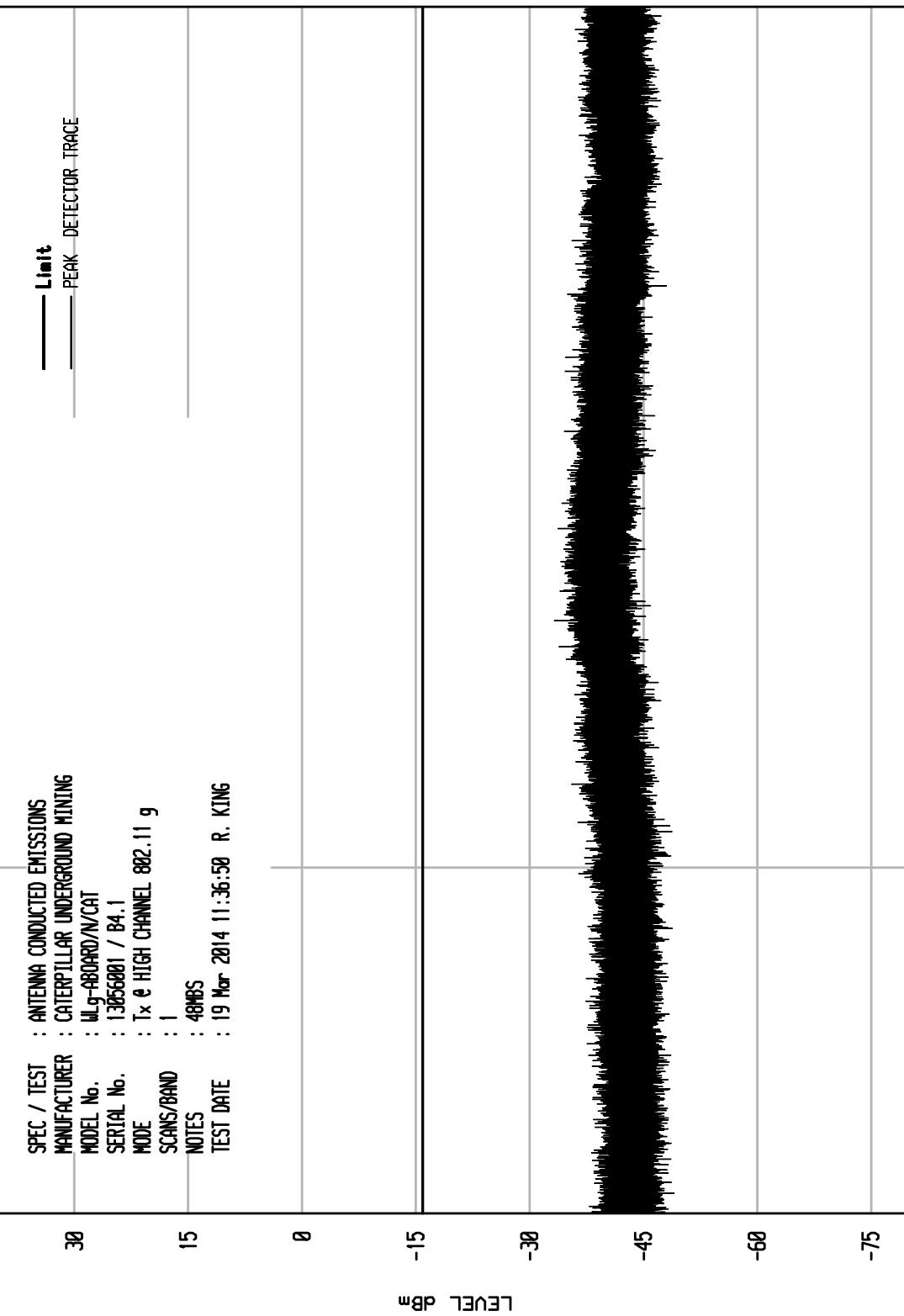


ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 23

MKA1 04/24/13

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	: 1
NOTES	: 48Mbps
TEST DATE	: 19 Mar 2014 11:36:50 R. KING

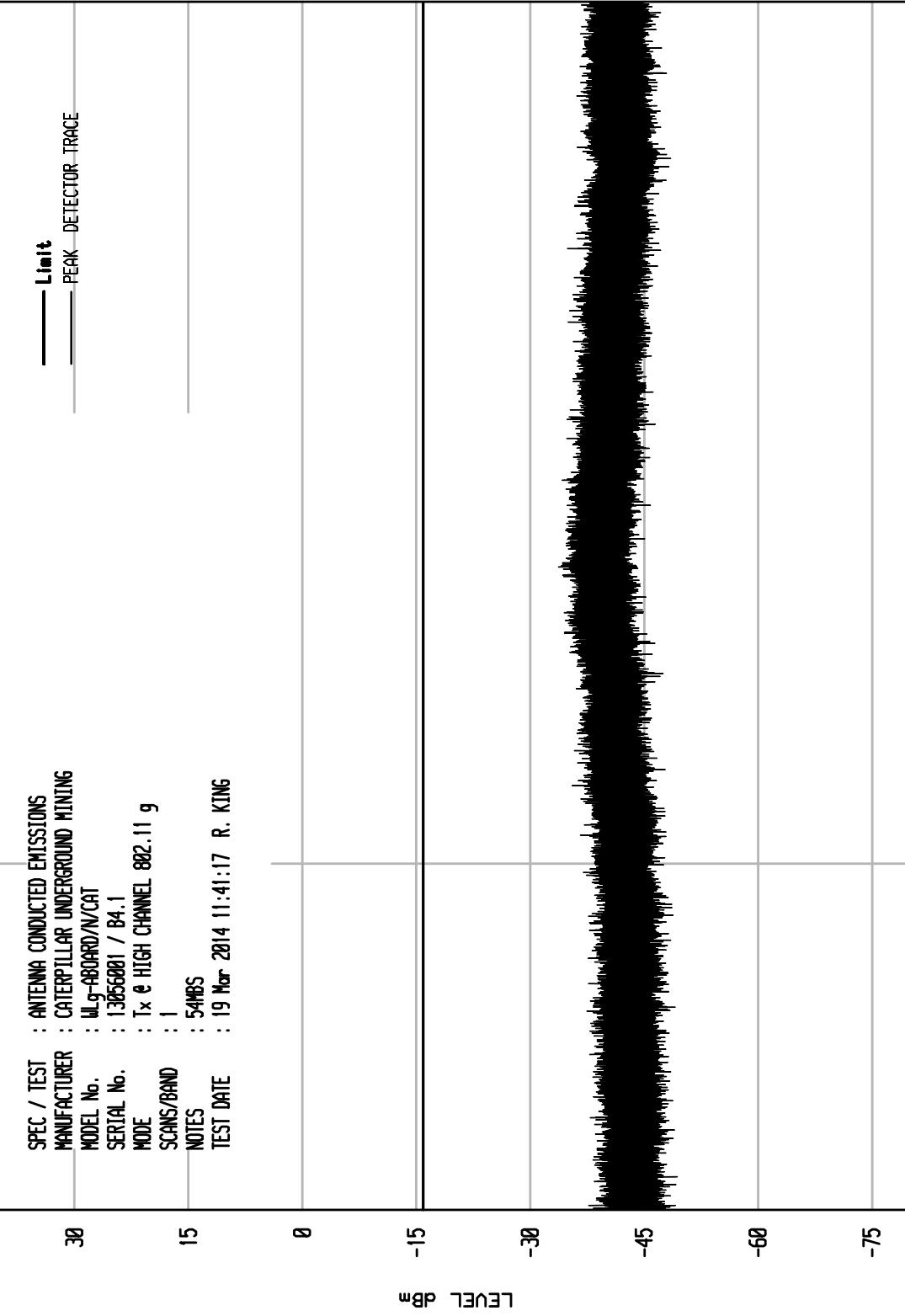


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WKA1 04/24/13

UNIV RCU EMI RUN 24

SPEC / TEST	: ANTENNA CONDUCTED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx & HIGH CHANNEL 802.11 g
SCANS/BAND	: 1
NOTES	: 54MBS
TEST DATE	: 19 Mar 2014 11:41:17 R. KING



START = 18000

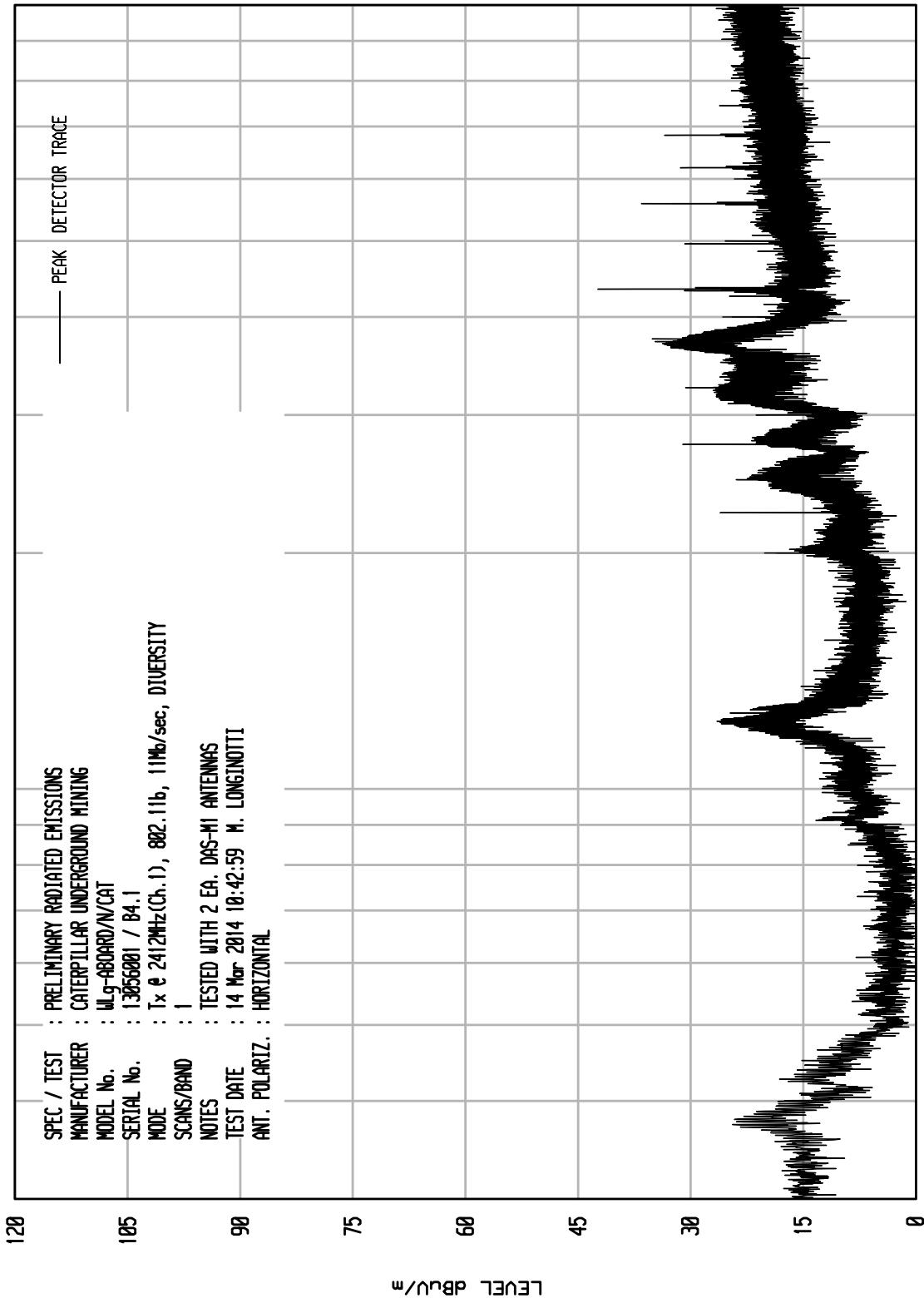
FREQUENCY MHz

STOP = 26000

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 MKA1 04/24/13
 UNIV RCU EMI RUN 16

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2412MHz(Ch. 1), 802.11b, 11Mb/sec, DIVERSITY
SCANS/BAND	: 1
NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
TEST DATE	: 14 Mar 2014 10:42:59 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

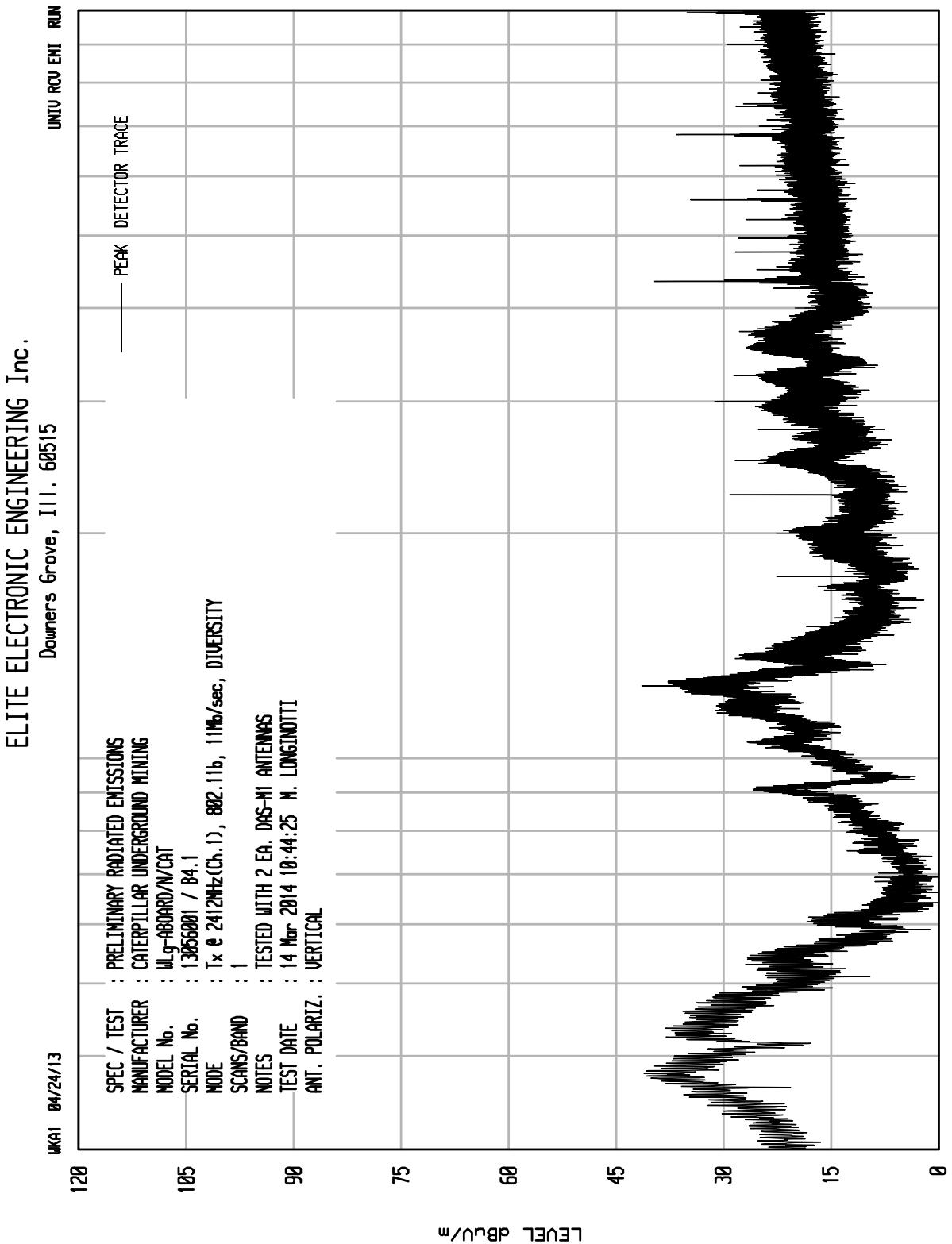


ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 17

MKA 04/24/13

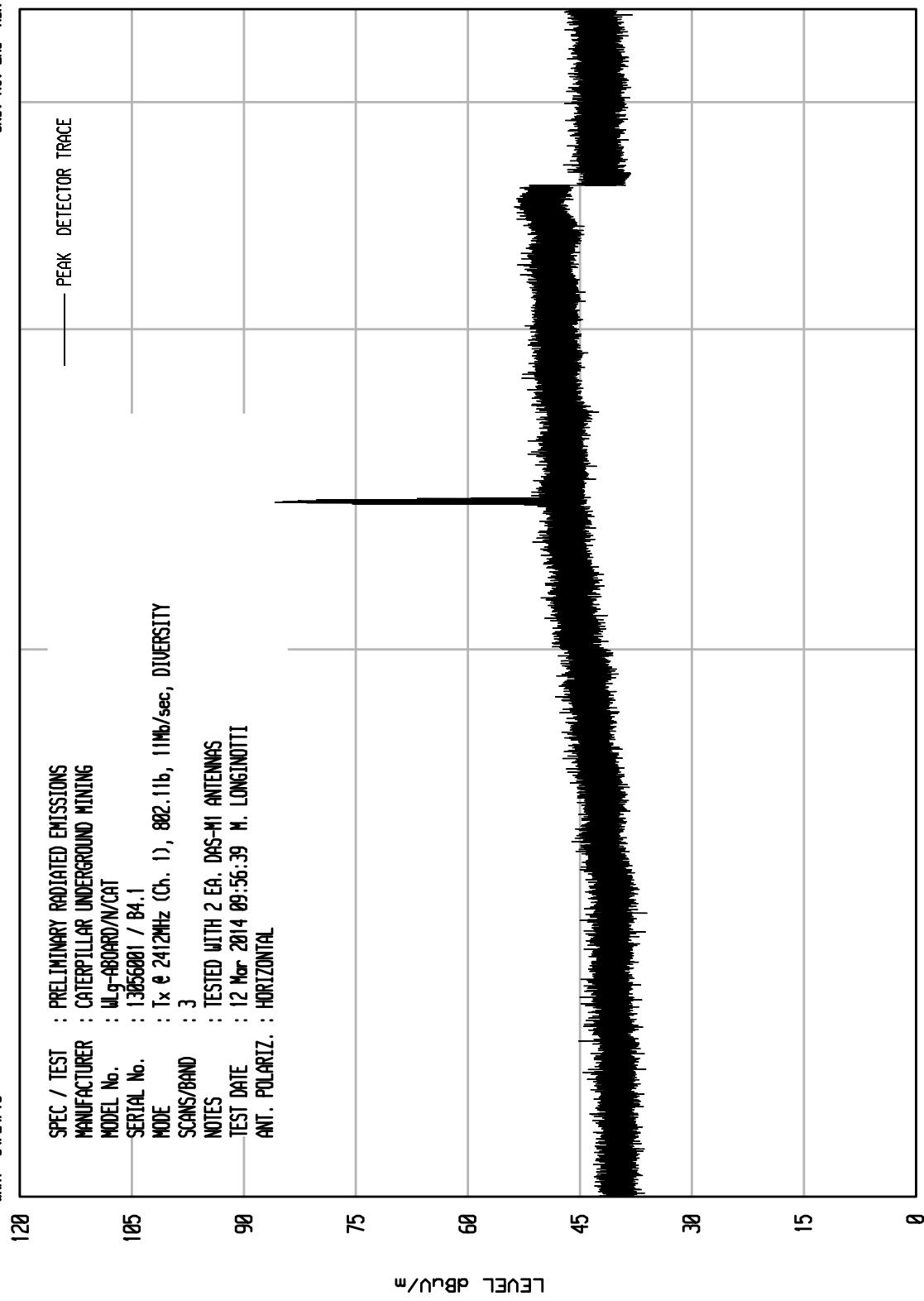
SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2412MHz(Ch. 1), 802.11b, 11Mb/sec, DIVERSITY
SCANS/BAND	: 1
NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
TEST DATE	: 14 Mar 2014 10:44:25 H. LONGINOTTI
ANT. POLARIZ.	: VERTICAL



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 Downers Grove, Ill. 60515

MKA1 04/24/13

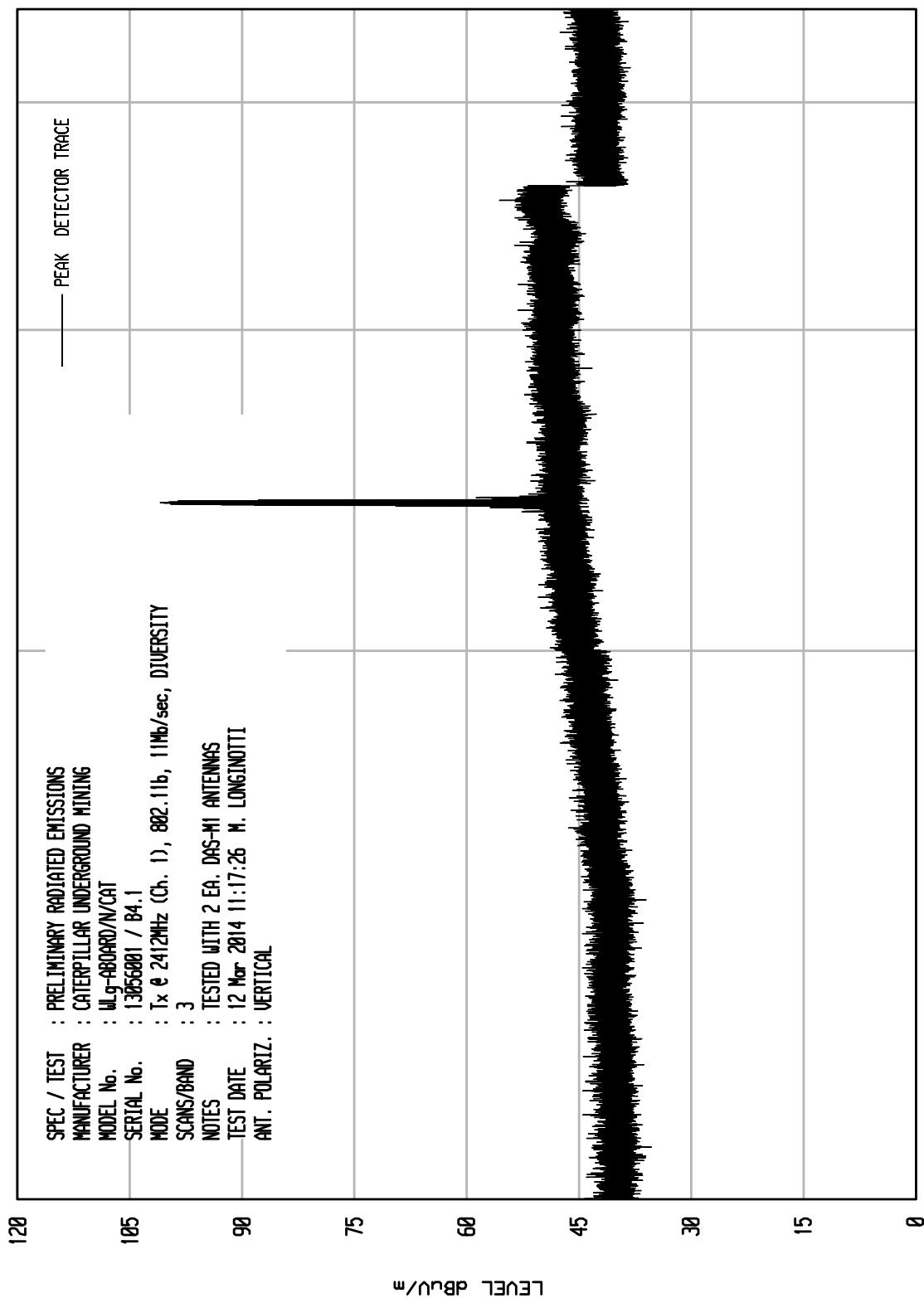
UNIV RCU EMI RUN 4



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 6

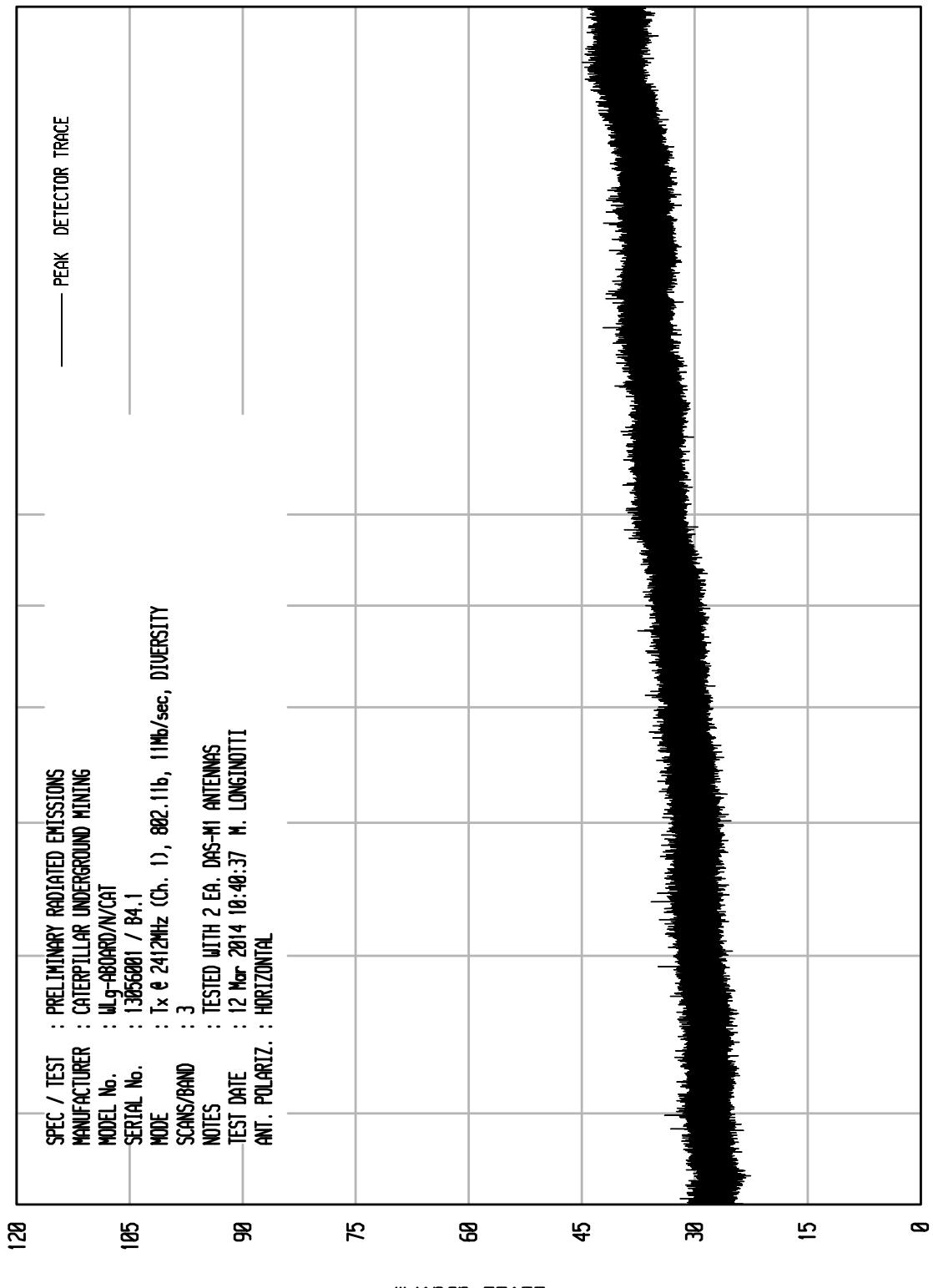
MKA1 04/24/13



ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 3

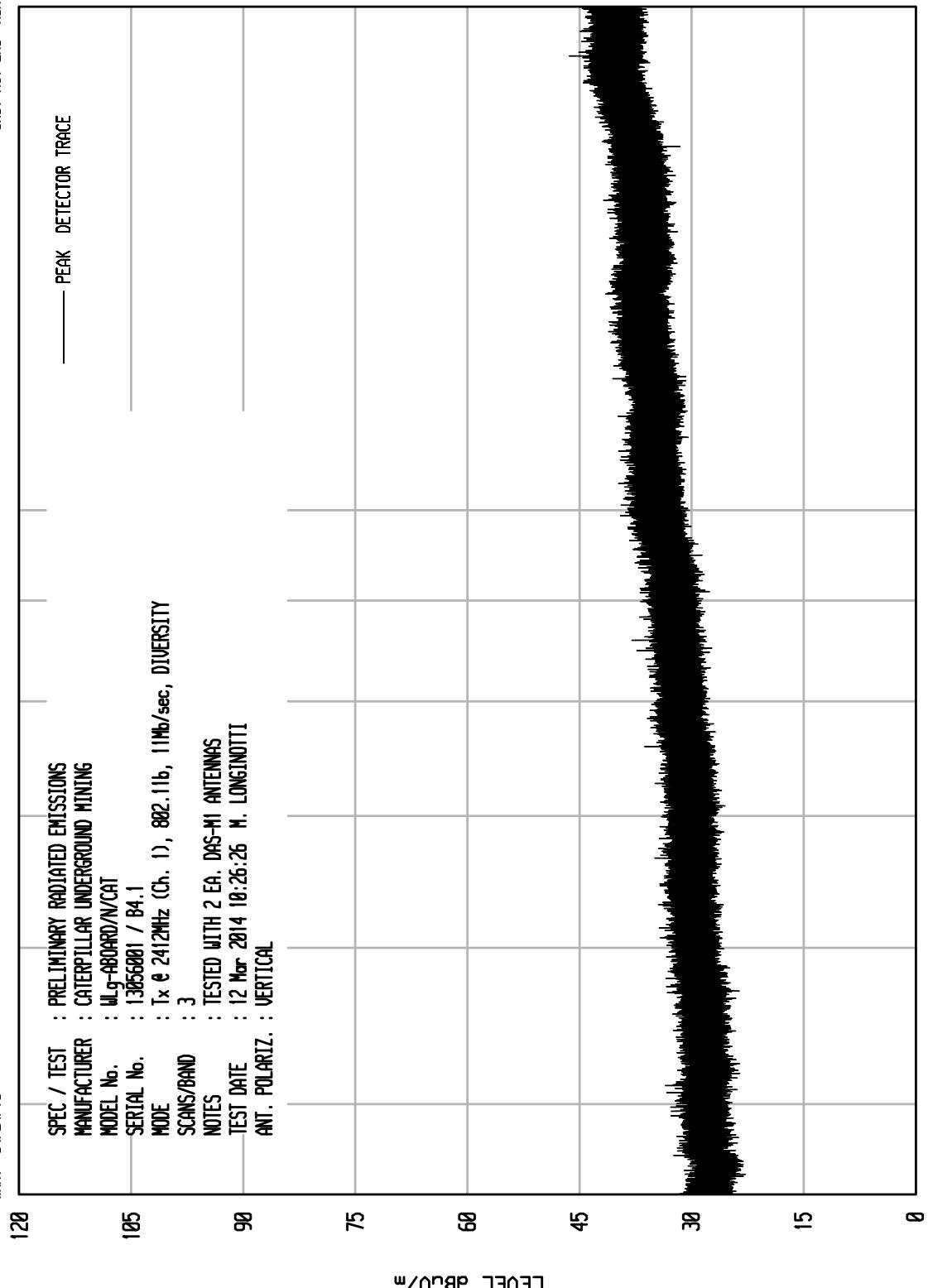
MKA1 04/24/13



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UNIV RCU EMI RUN 1

MKA1 04/24/13



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

MKA1 04/24/13

UNIV RCU EMI RUN 8

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
105	MODE	: Tx @ 2412MHz (CH.1), 802.11b, 11mb/sec, DIVERSITY
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
	TEST DATE	: 13 Mar 2014 11:29:16 R. KING
	ANT. POLARIZ.	: HORIZONTAL

LEVEL dBm/m

START = 180000

FREQUENCY MHz

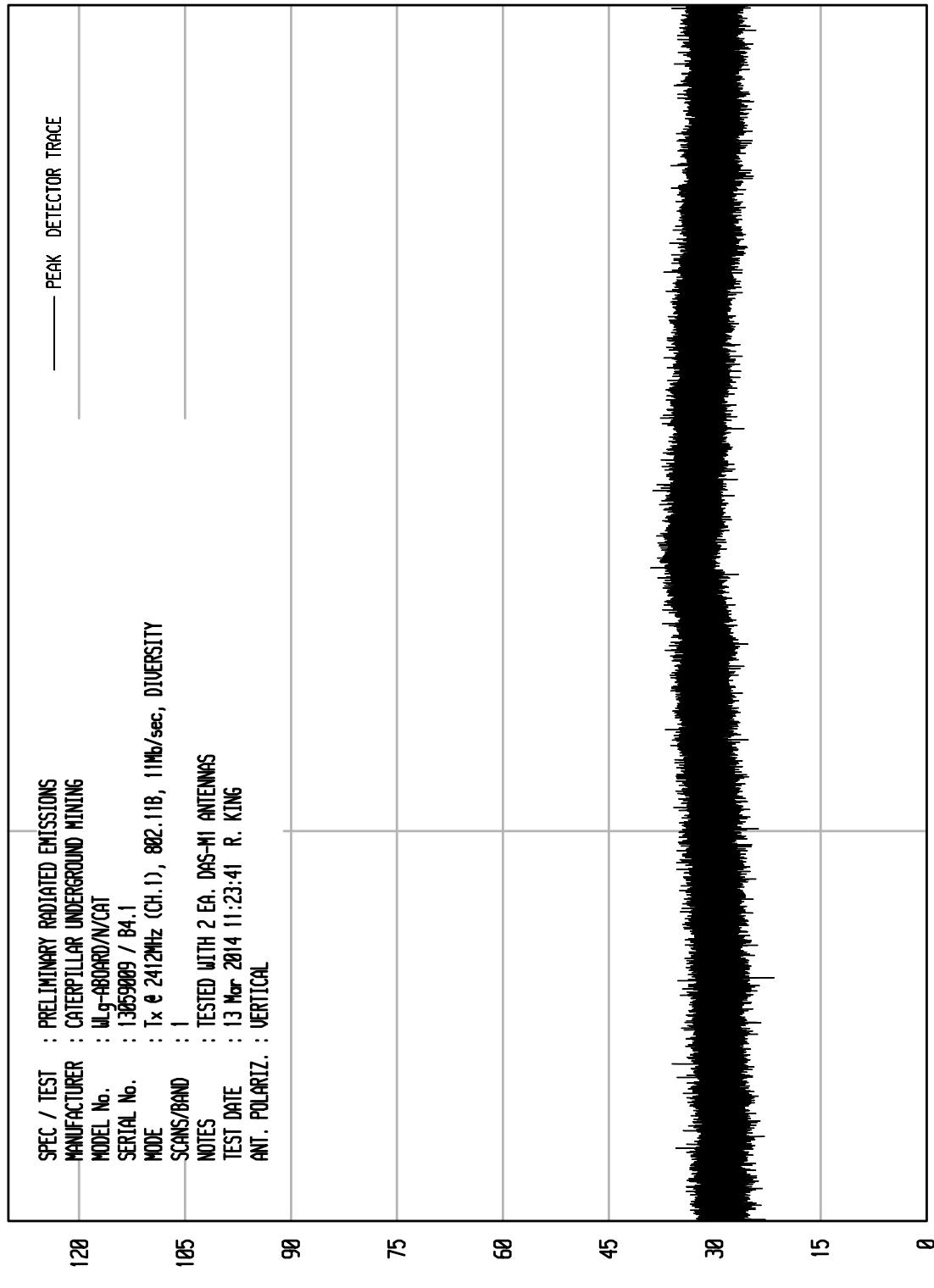
STOP = 250000

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 Downers Grove, Ill. 60155

MKA1 04/24/13

UNIV RCU EMI RUN 7

SPEC / TEST		PRELIMINARY RADIATED EMISSIONS	PEAK DETECTOR TRACE
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/N/CAT		
SERIAL No.	13059009 / B4.1		
MODE	Tx @ 2412MHz (CH.1), 802.11b, 11mb/sec, DIVERSITY		
SCANS/BAND	1		
NOTES	TESTED WITH 2 EA. DAS-MI ANTENNAS		
TEST DATE	13 Mar 2014 11:23:41 R. KING		
ANT. POLARIZ.	VERTICAL		



START = 180000

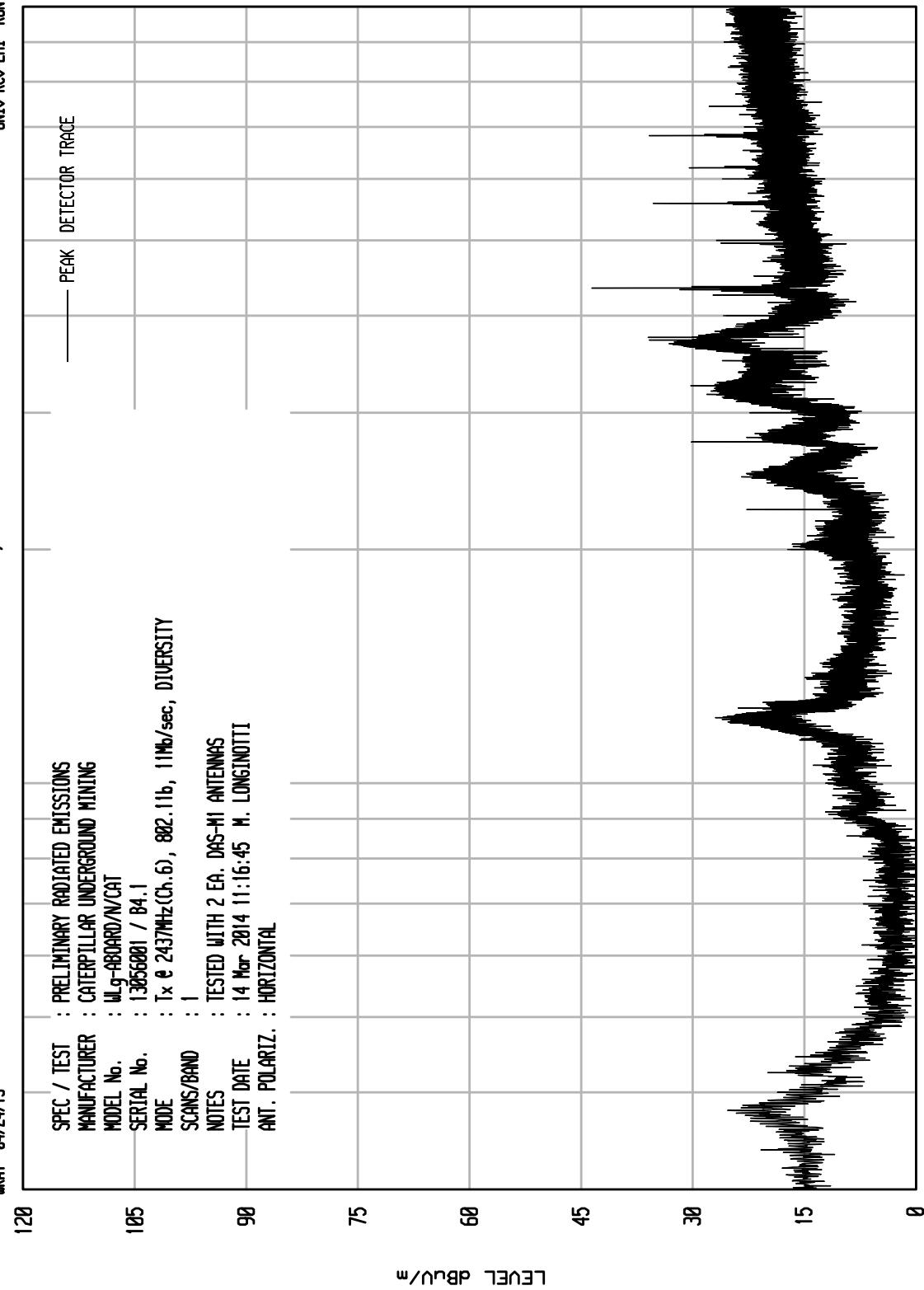
FREQUENCY MHz

STOP = 25000

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UNIV RCV EMI RUN 28

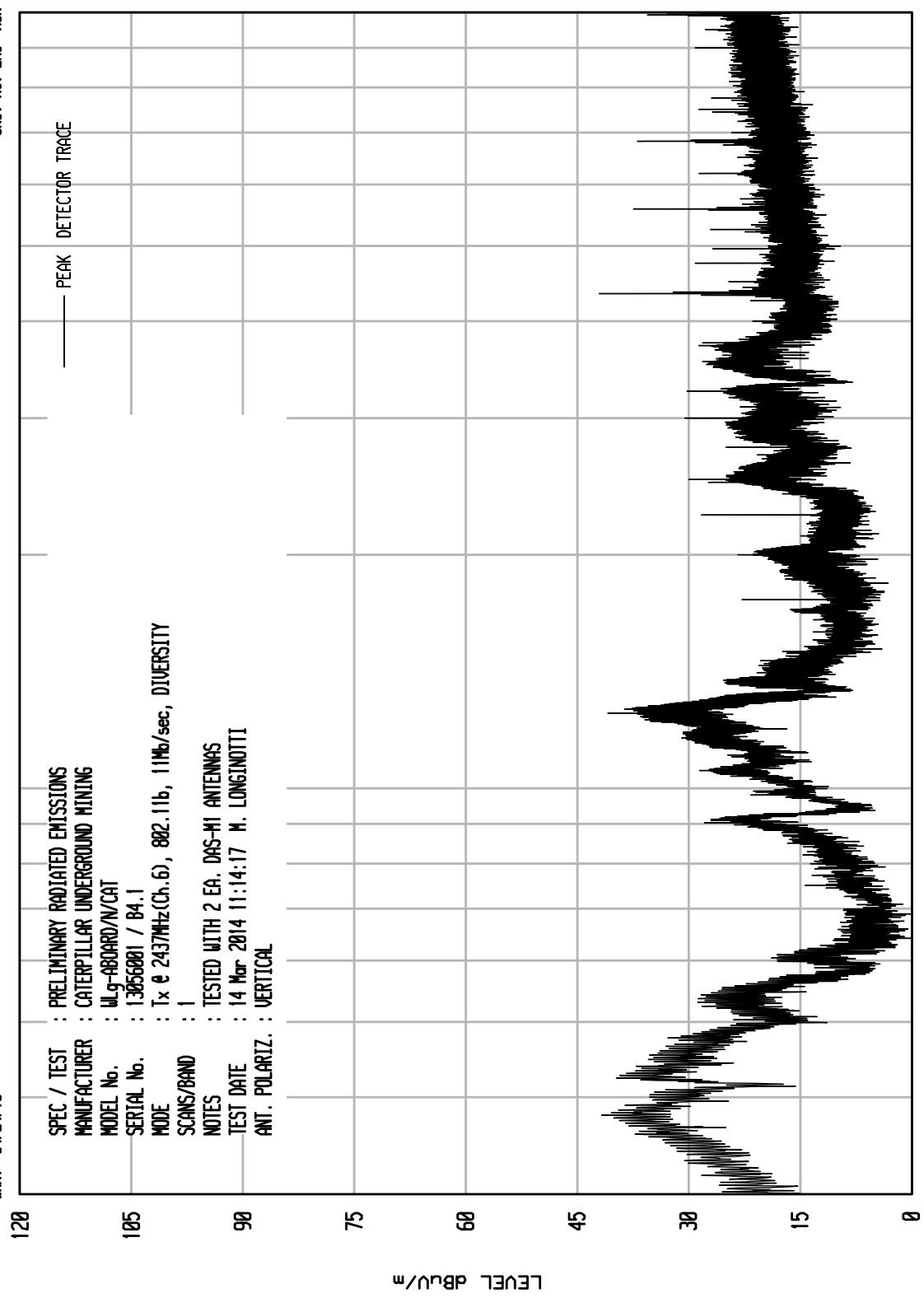
WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/N/CAT		
SERIAL No.	130256001 / B4.1		
MODE	Tx @ 2437MHz(Ch. 6), 802.11b, 11Mb/sec, DIVERSITY		
SCANS/BAND	1		
NOTES	TESTED WITH 2 EA. DAS-MI ANTENNAS		
TEST DATE	14 Mar 2014 11:16:45 M. LONGINOTTI		
ANT. POLARIZ.	: HORIZONTAL		



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 MKA1 04/24/13
 UNIV RCU EMI RUN 19

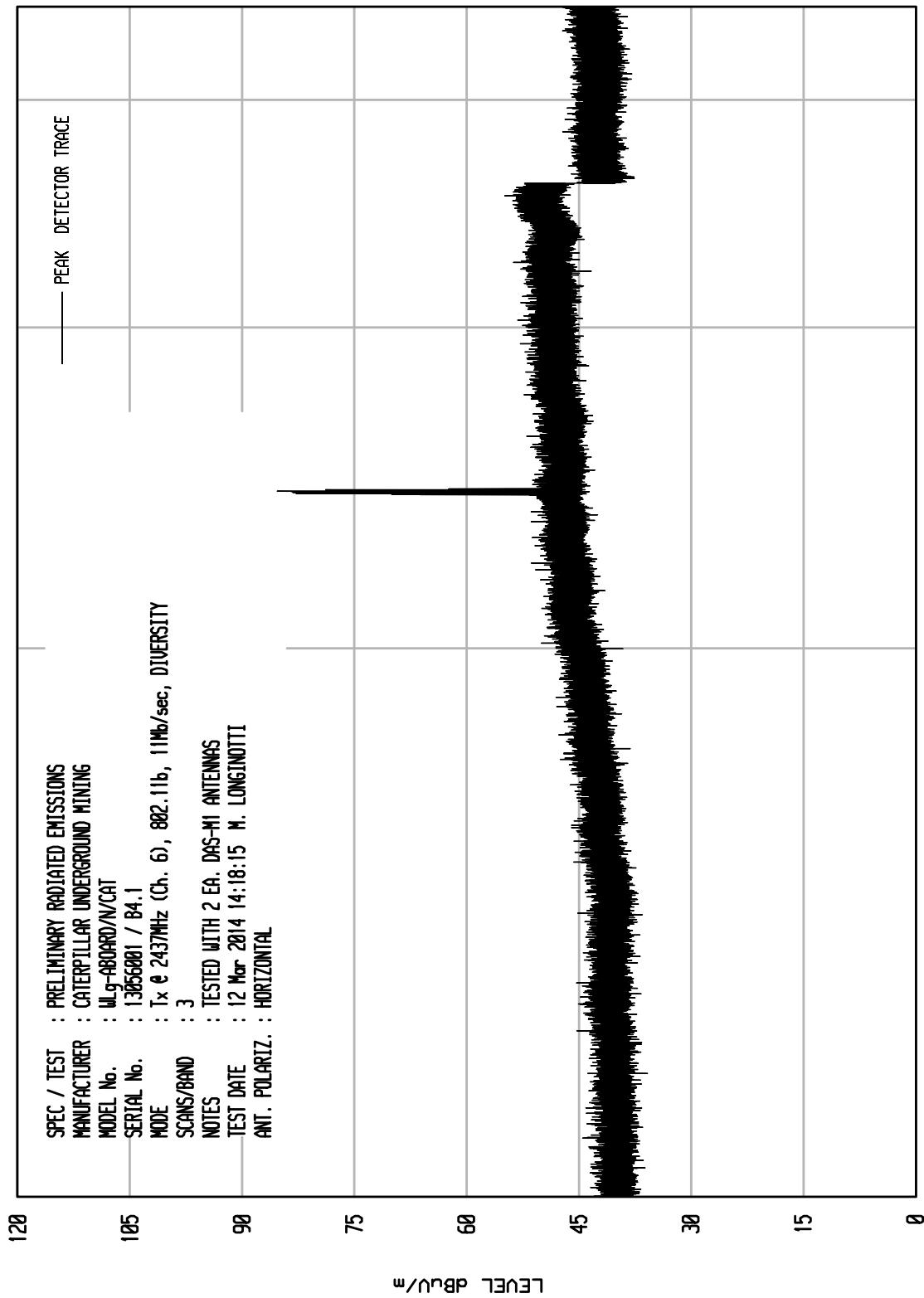
SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/N/CAT
SERIAL No.	: 130256001 / B4.1
MODE	: Tx @ 2437MHz(Ch. 6), 802.11b, 11Mb/sec, DIVERSITY
SCANS/BAND	: 1
NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
TEST DATE	: 14 Mar 2014 11:14:17 H. LONGINOTTI
ANT. POLARIZ.	: VERTICAL


 START = 30
 STOP = 100
 FREQUENCY MHz

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UNIV RCU EMI RUN 12

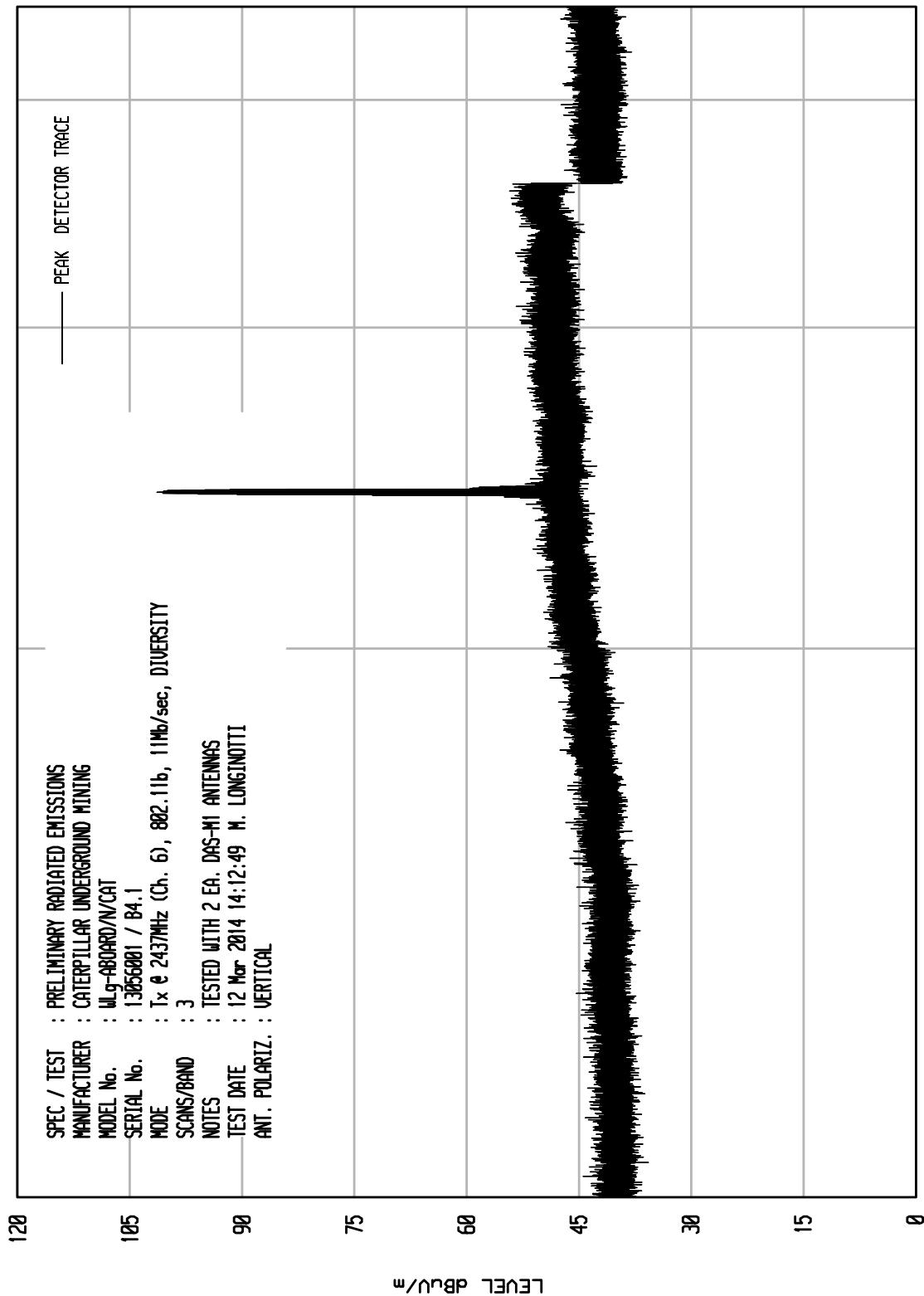
MKA1 04/24/13



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UNIV RCU EMI RUN 11

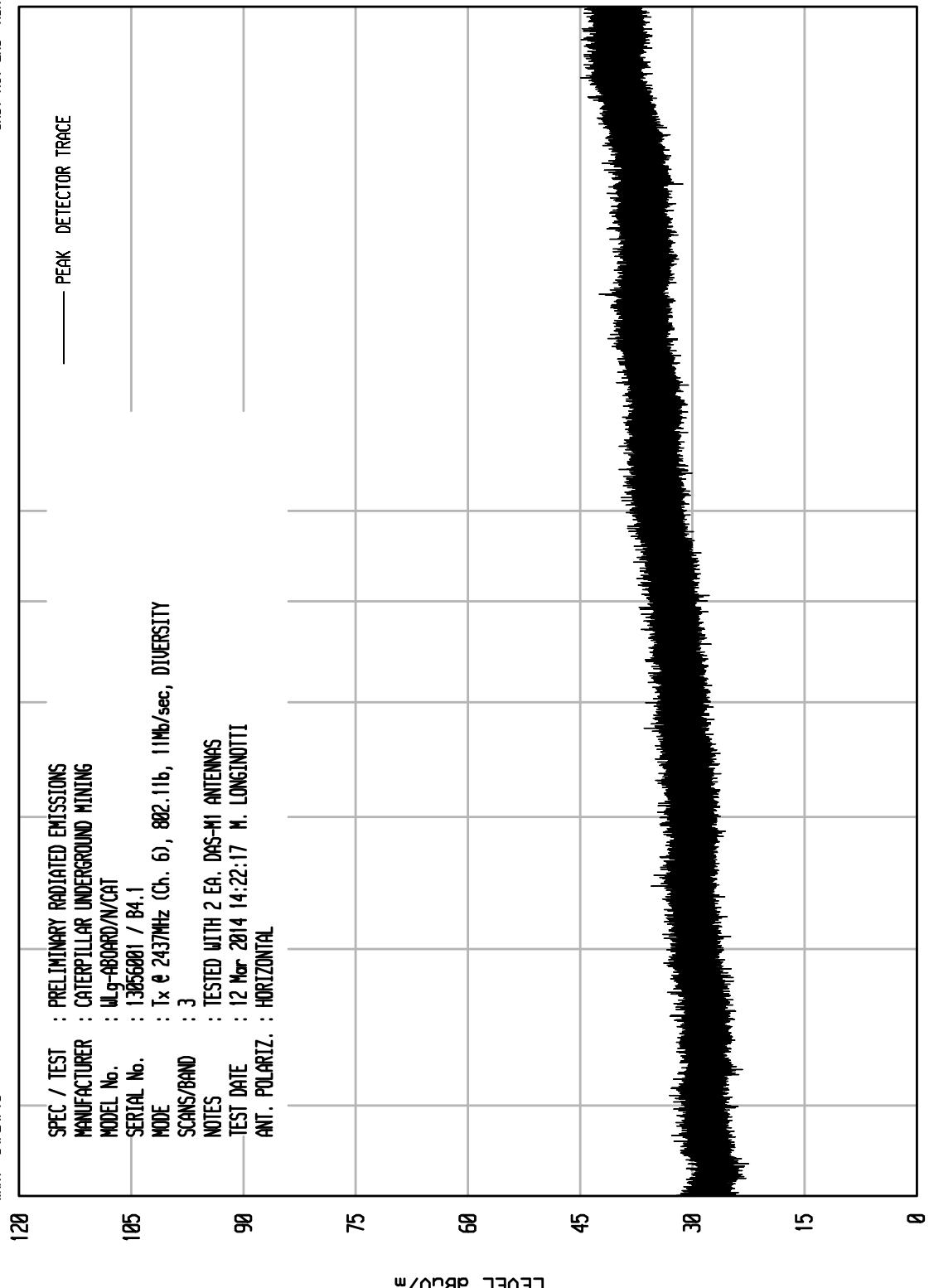
MKA1 04/24/13



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UNIV RCU EMI RUN 10

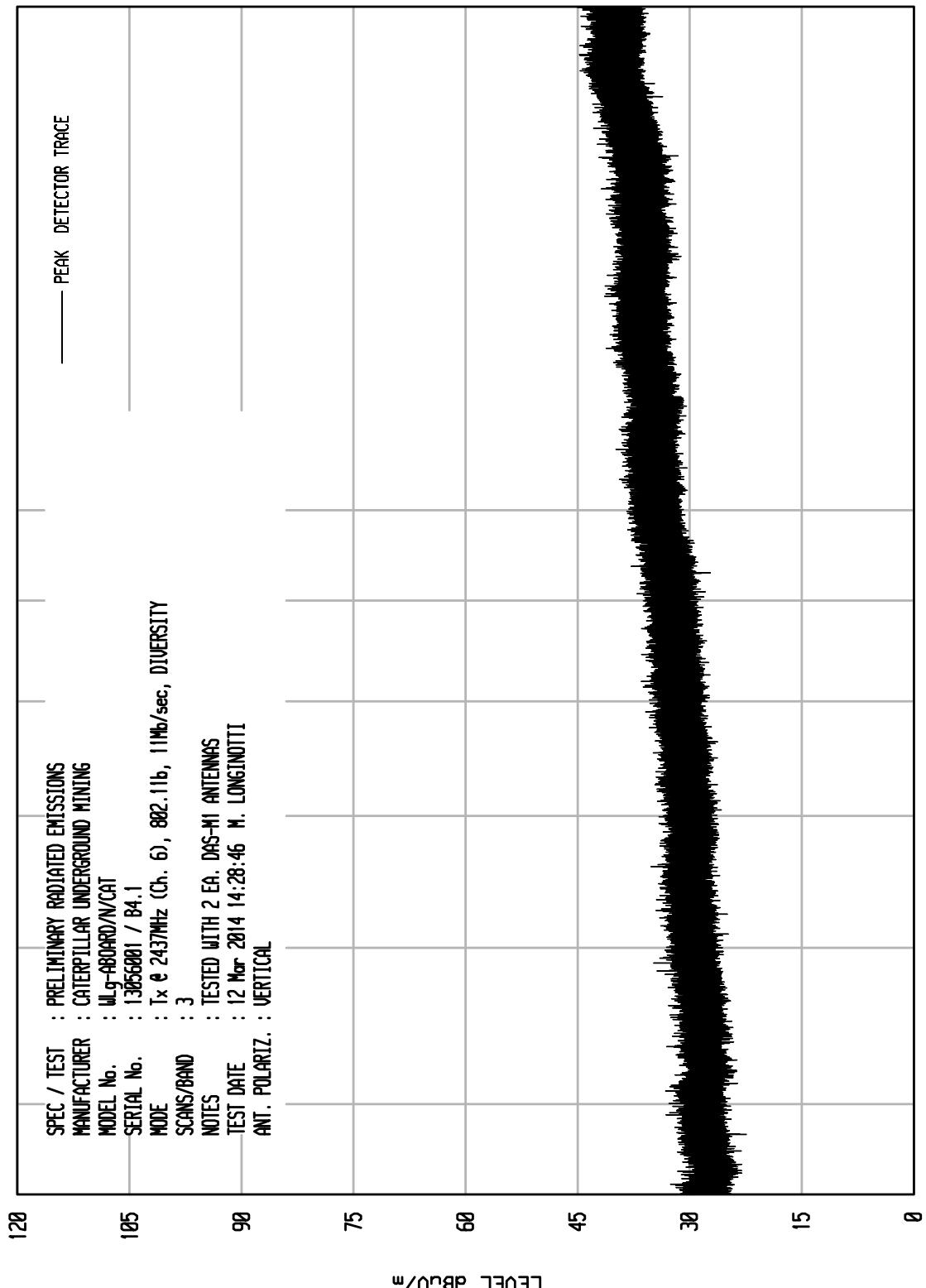
MKA1 04/24/13



ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 11

MKA1 04/24/13

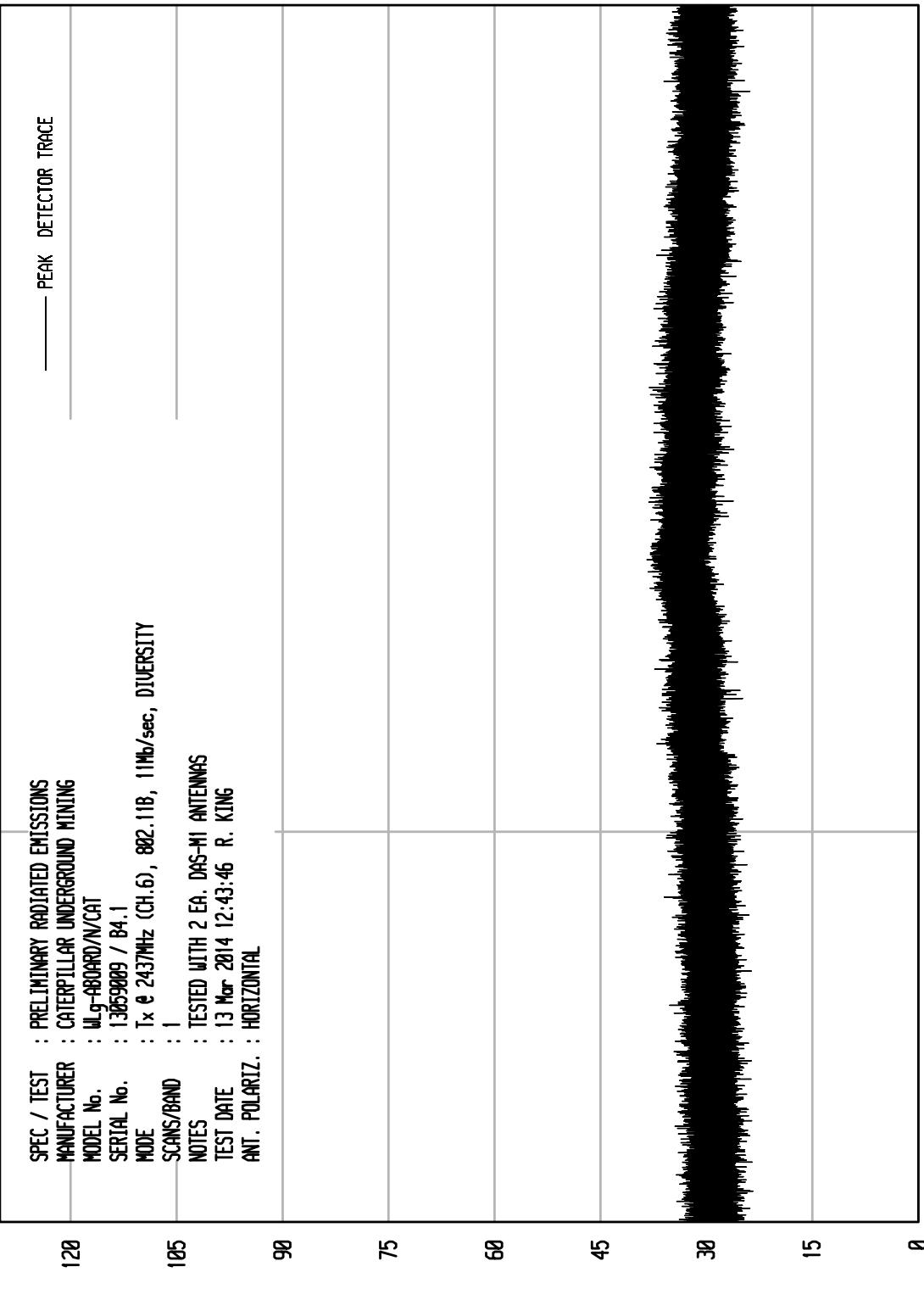


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UNIV RCU EMI RUN 9

MKA1 04/24/13

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
105	MODE	: Tx @ 243MHz (CH.6), 802.11b, 11mb/sec, DIVERSITY
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
	TEST DATE	: 13 Mar 2014 12:43:46 R. KING
90	ANT. POLARIZ.	: HORIZONTAL



START = 18000

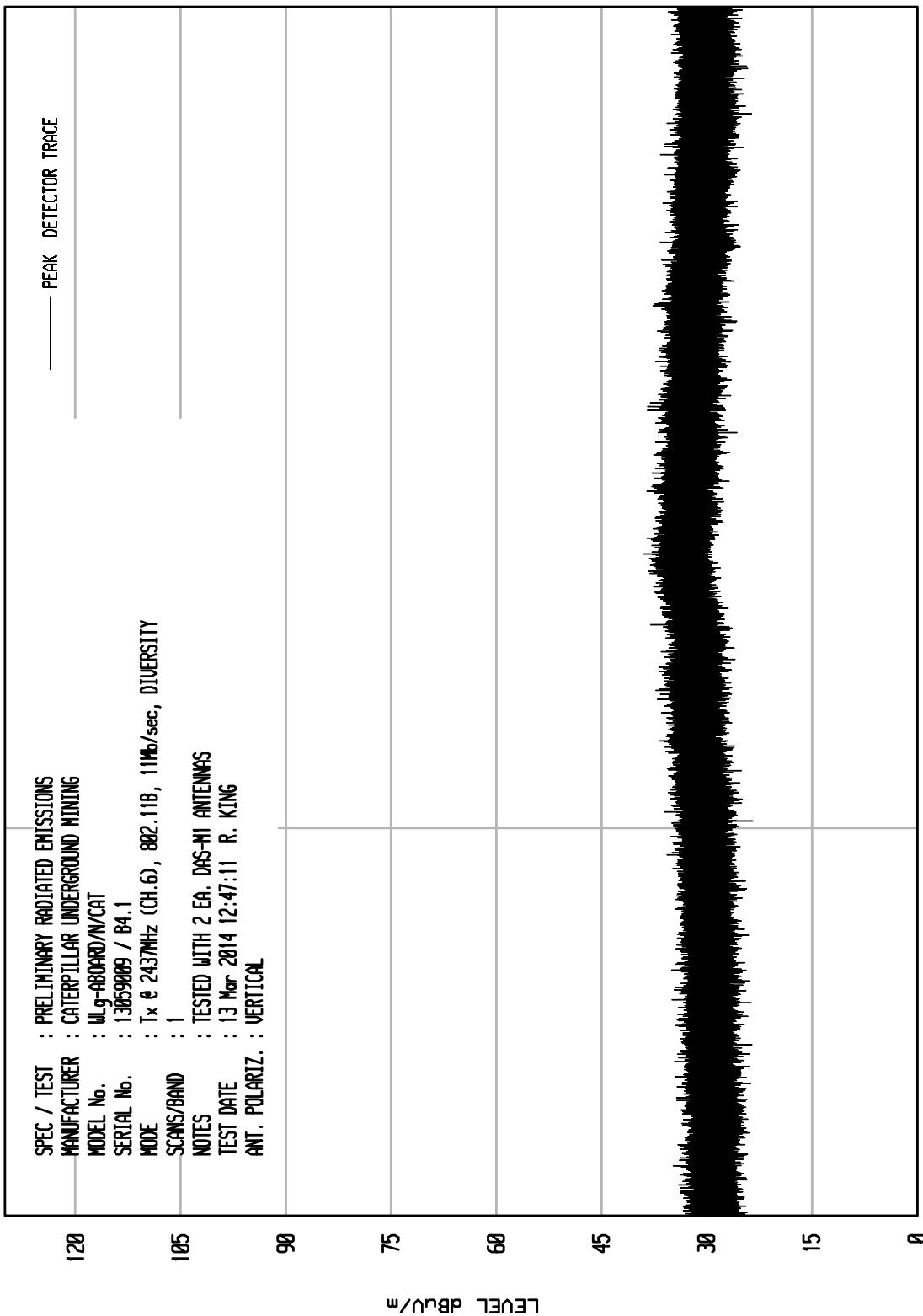
FREQUENCY MHz

STOP = 25000

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MKA1 04/24/13

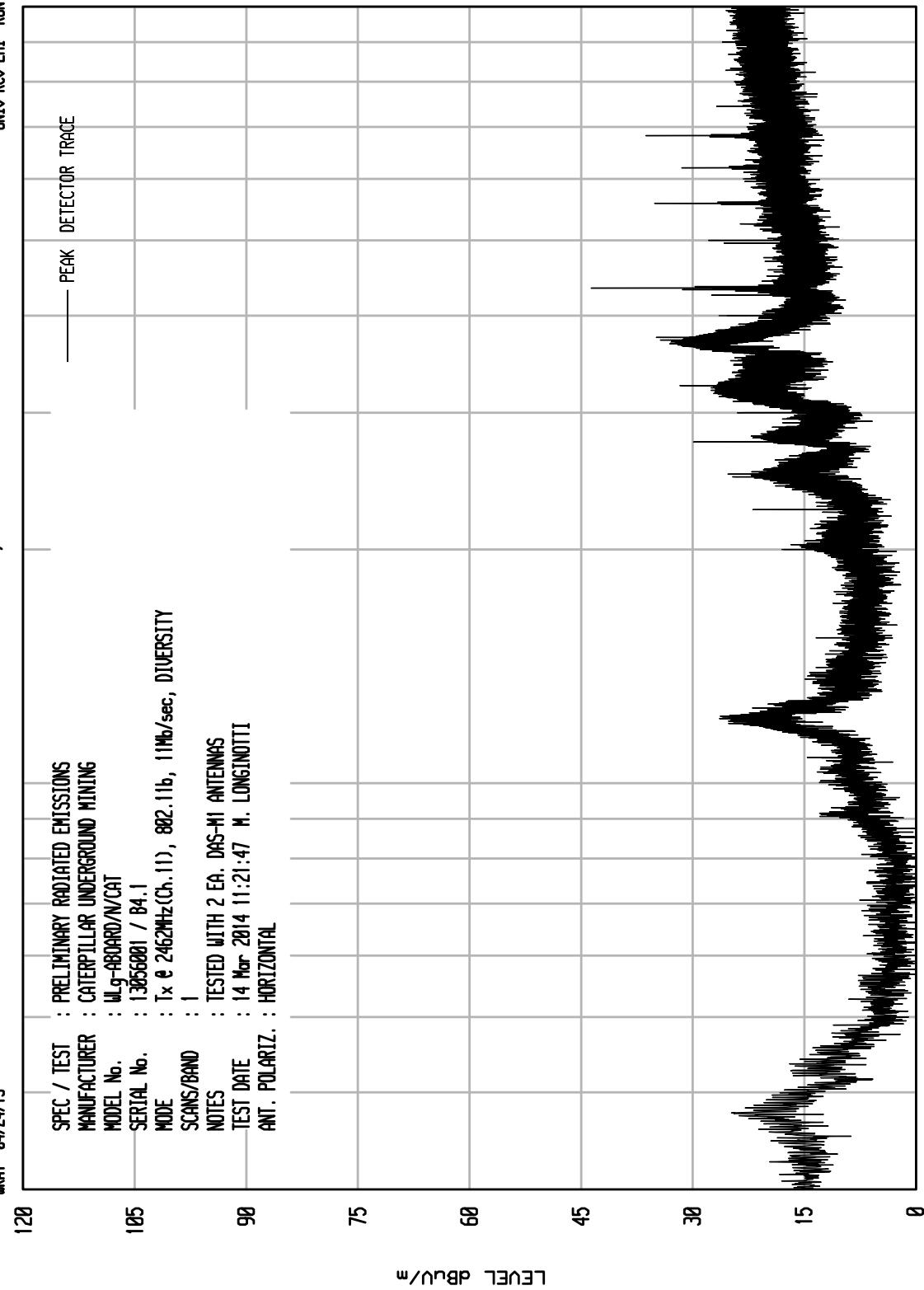
UNIV RCU EMI RUN 10



ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 21

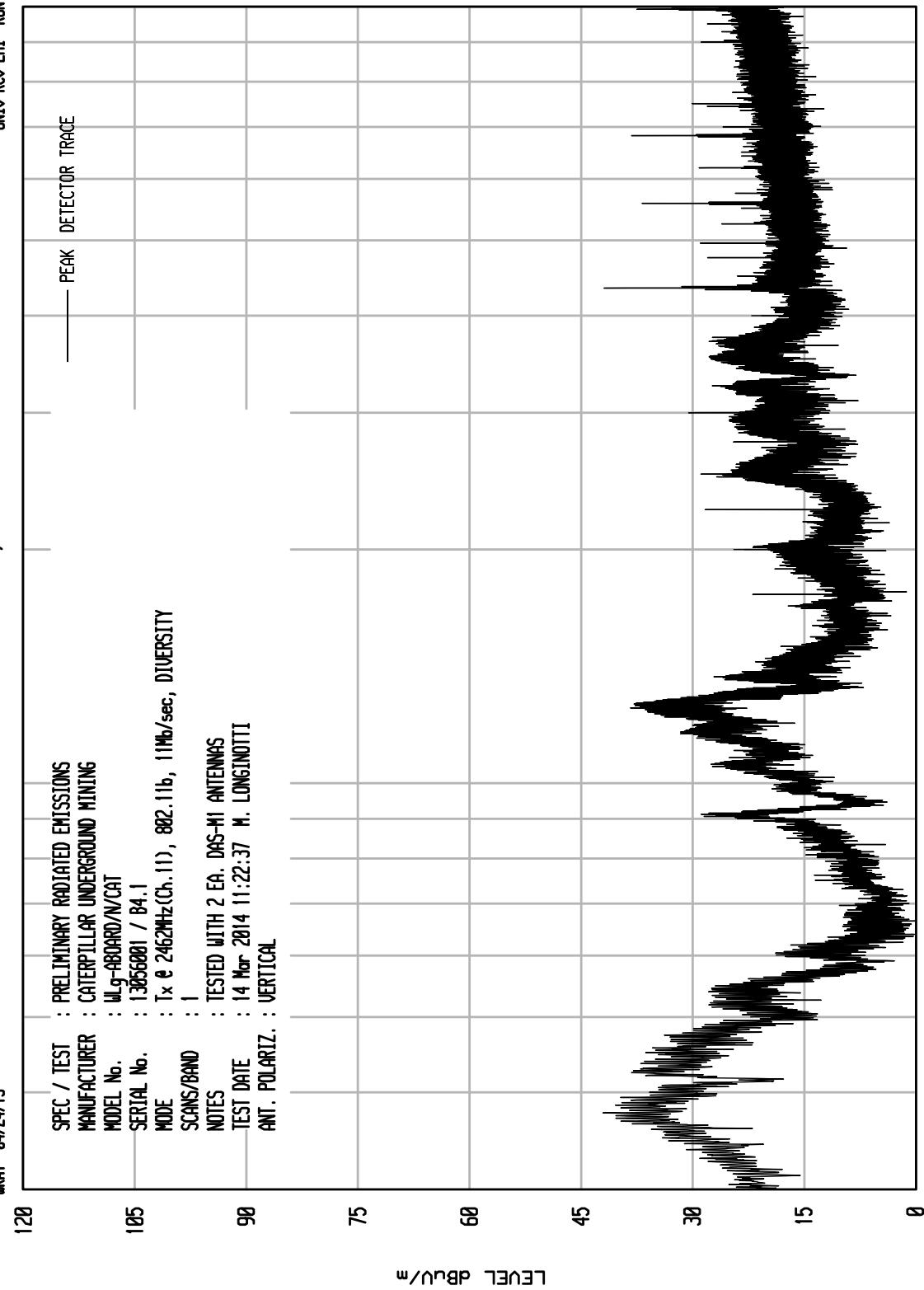
WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/N/CAT		
SERIAL No.	130256001 / B4.1		
MODE	Tx @ 2462MHz(Ch. 11), 802.11b, 11Mbps, DIVERSITY		
SCANS/BAND	1		
NOTES	TESTED WITH 2 EA. DAS-MI ANTENNAS		
TEST DATE	14 Mar 2014 11:21:47 M. LONGINOTTI		
ANT. POLARIZ.	HORIZONTAL		



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UNIV RCU EMI RUN 22

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/NCAT		
SERIAL No.	13056001 / B4.1		
MODE	Tx @ 2462MHz(Ch. 11), 802.11b, 11Mbps, DIVERSITY		
SCANS/BAND	1		
NOTES	TESTED WITH 2 EA. DAS-MI ANTENNAS		
TEST DATE	14 Mar 2014 11:22:37		
ANT. POLARIZ.	VERTICAL		



STOP = 1000

FREQUENCY MHz

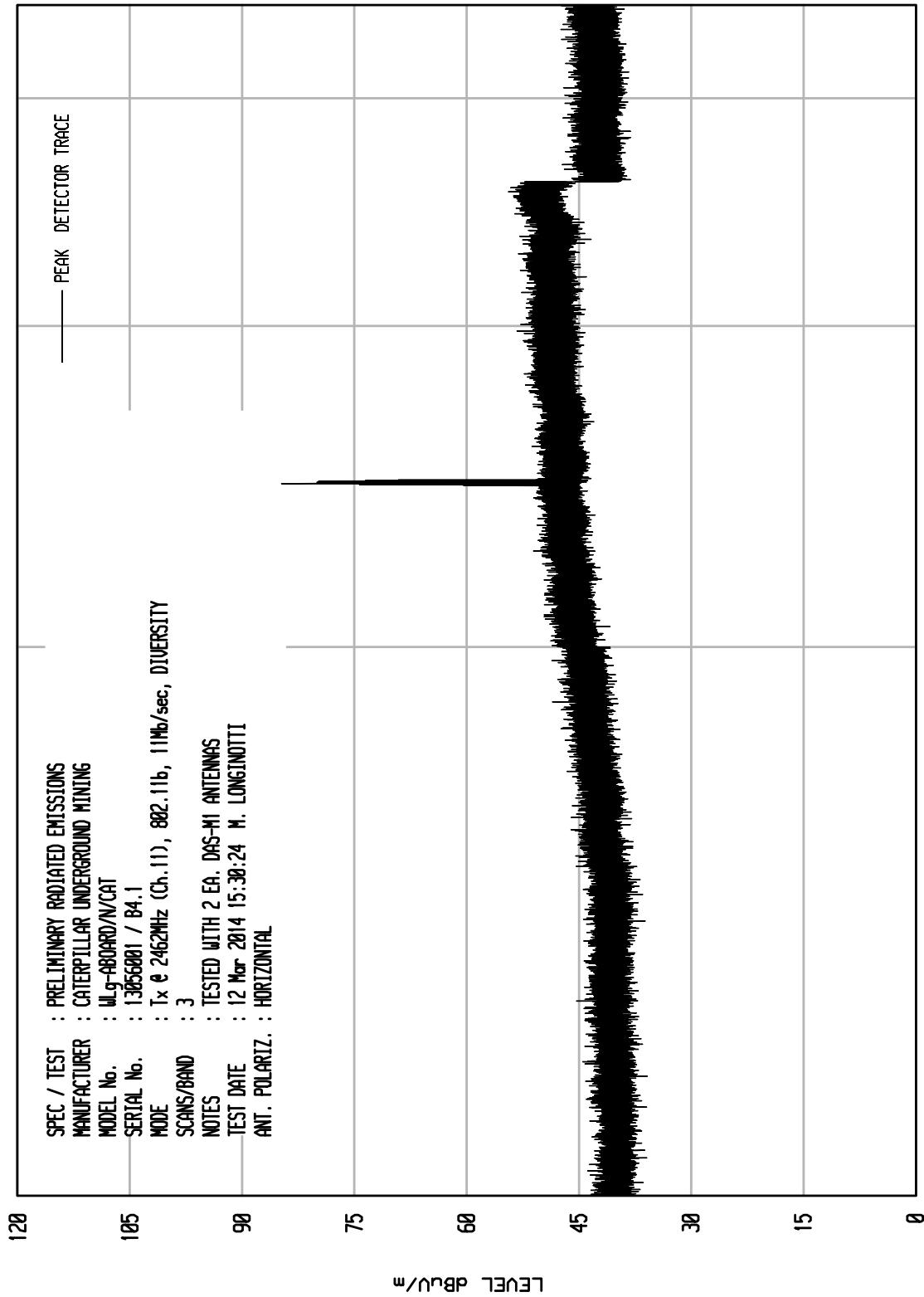
100

START = 30

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UNIV RCU EMI RUN 14

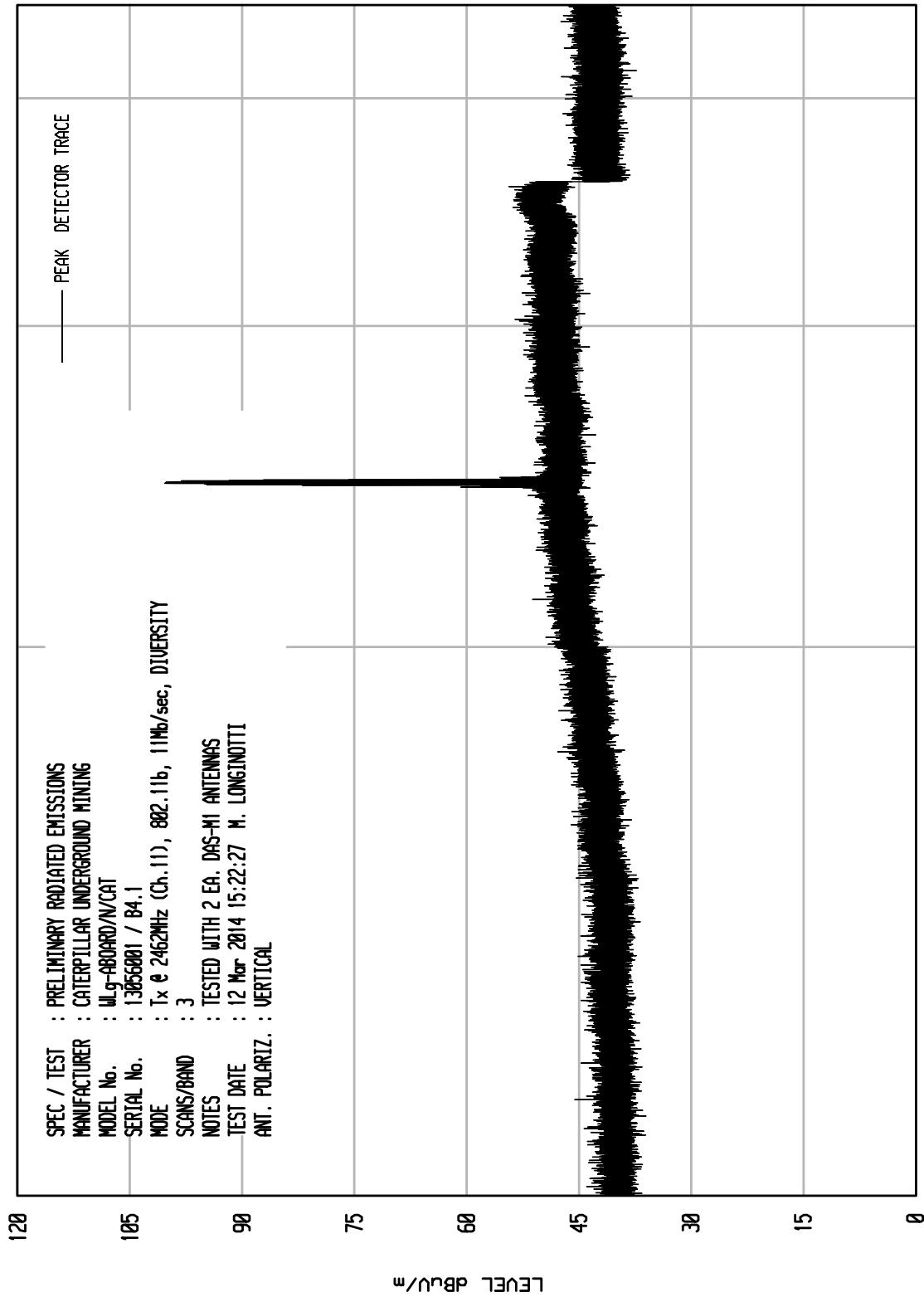
MKA1 04/24/13



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UNIV RCU EMI RUN 13

MKA1 04/24/13



ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 12

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2462MHz (Ch. 11), 882.11b, 11Mbps, DIVERSITY
SCANS/BAND	: 3
NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
TEST DATE	: 12 Mar 2014 15:33:05 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

105

90

75

60

45

30

15

0

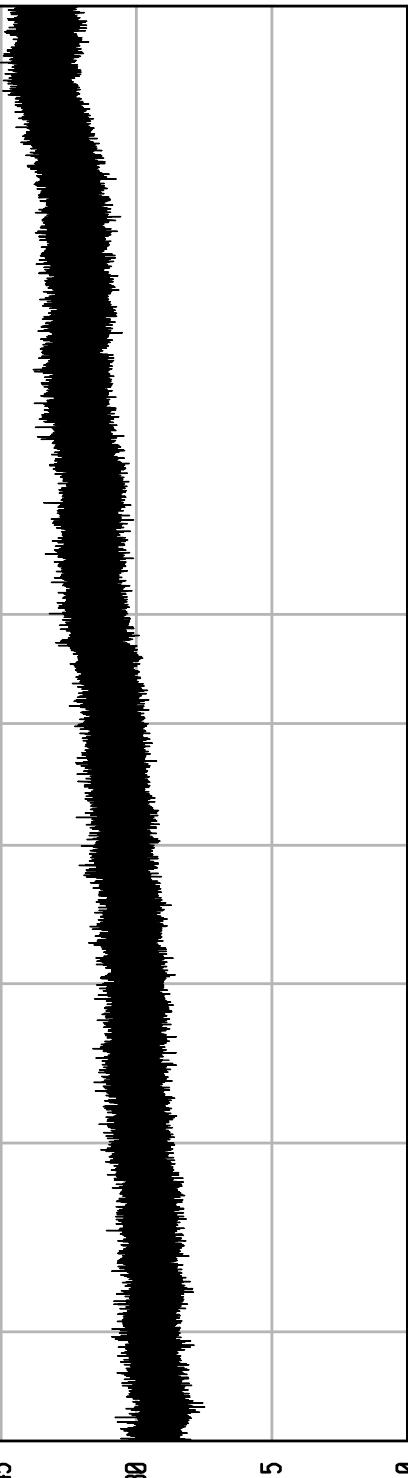
LEVEL dBu/m

START = 4500

FREQUENCY MHz

10000

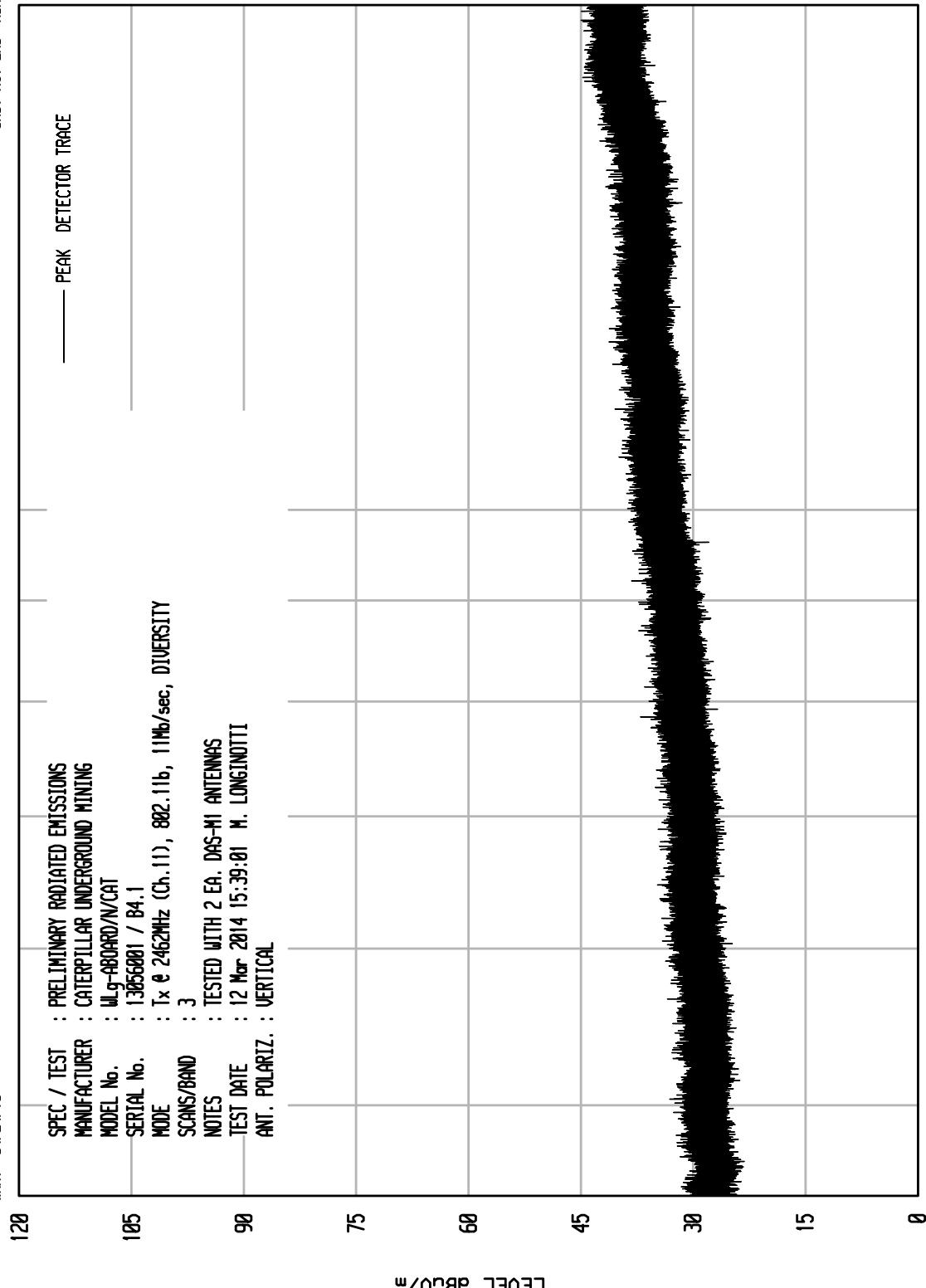
STOP = 18000



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UNIV RCU EMI RUN 13

MKA1 04/24/13

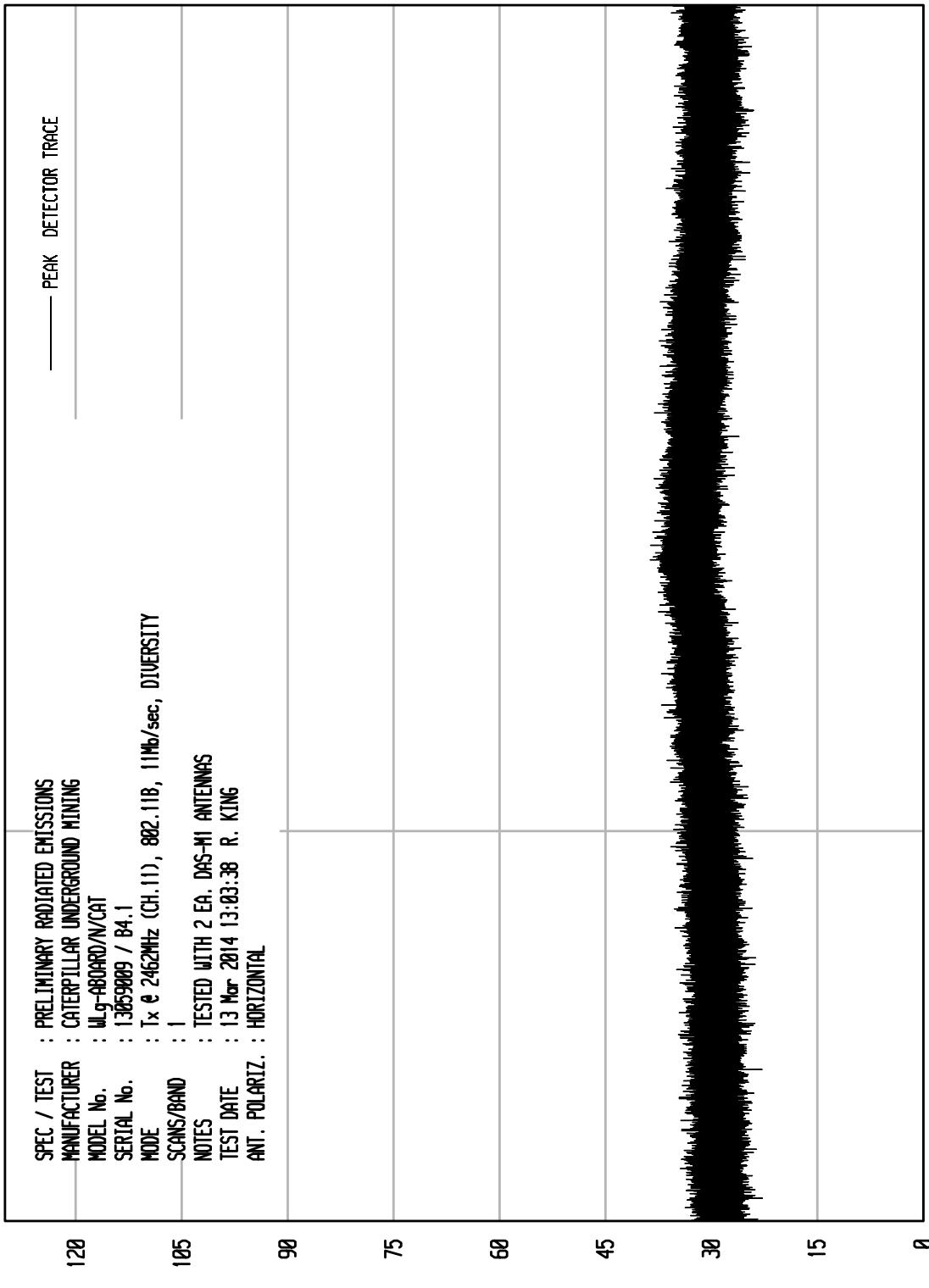


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MKA1 04/24/13

UNIV RCU EMI RUN 12

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS	PEAK DETECTOR TRACE
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING	
	MODEL No.	: M9-ABORD/N/CAT	
	SERIAL No.	: 13059009 / B4.1	
105	MODE	: Tx @ 2462MHz (CH.11), 802.11B, 11Mbps, DIVERSITY	
	SCANS/BAND	: 1	
	NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS	
	TEST DATE	: 13 Mar 2014 13:03:38 R. KING	
90	ANT. POLARIZ.	: HORIZONTAL	



START = 180000

FREQUENCY MHz

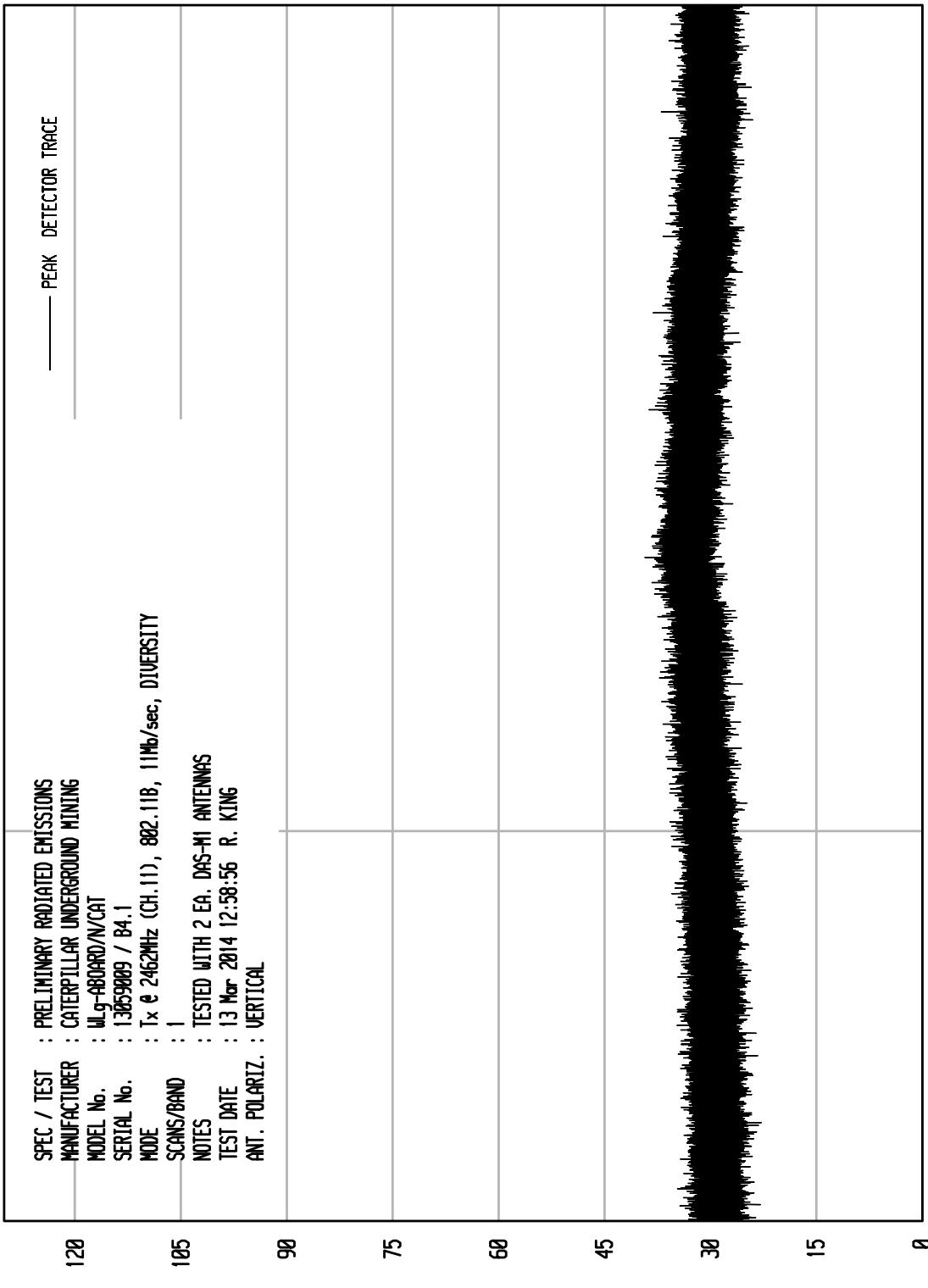
STOP = 250000

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MKA1 04/24/13

UNIV RCU EMI RUN 11

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS	PEAK DETECTOR TRACE
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING	
	MODEL No.	: W9-ABORD/N/CAT	
	SERIAL No.	: 13059009 / B4.1	
105	MODE	: Tx @ 2462MHz (CH.11), 802.11B, 11Mbps, DIVERSITY	
	SCANS/BAND	: 1	
	NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS	
	TEST DATE	: 13 Mar 2014 12:58:56 R. KING	
90	ANT. POLARIZ.	: VERTICAL	



START = 180000

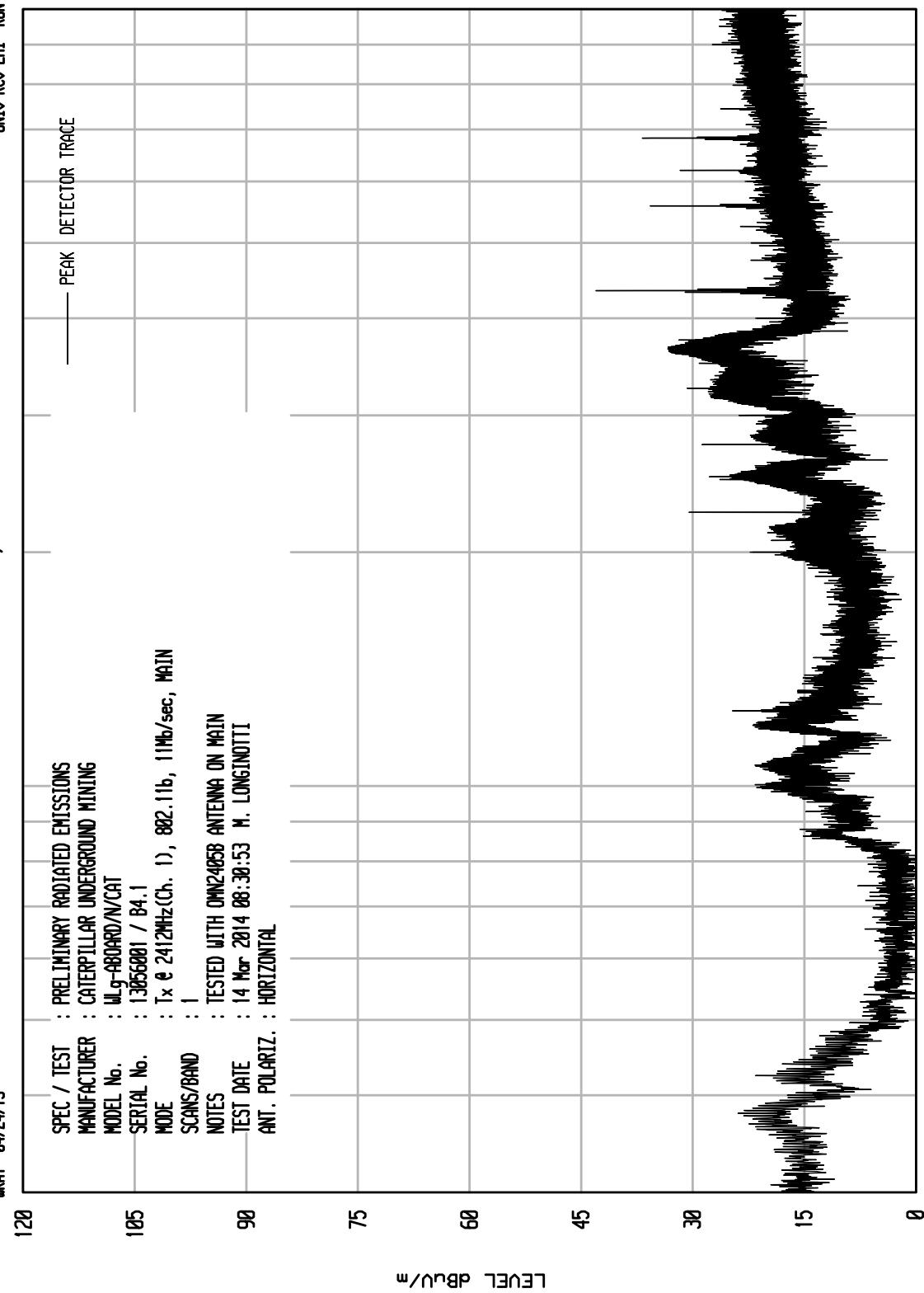
FREQUENCY MHz

STOP = 250000

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UNIV RCU EMI RUN 1

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/NCAT		
SERIAL No.	13056001 / B4.1		
MODE	Tx @ 2412MHz(Ch. 1), 802.11b, 11mb/sec, MAIN		
SCANS/BAND	1		
NOTES	TESTED WITH OMN2405B ANTENNA ON MAIN		
TEST DATE	14 Mar 2014 08:30:53		
ANT. POLARIZ.	: HORIZONTAL		

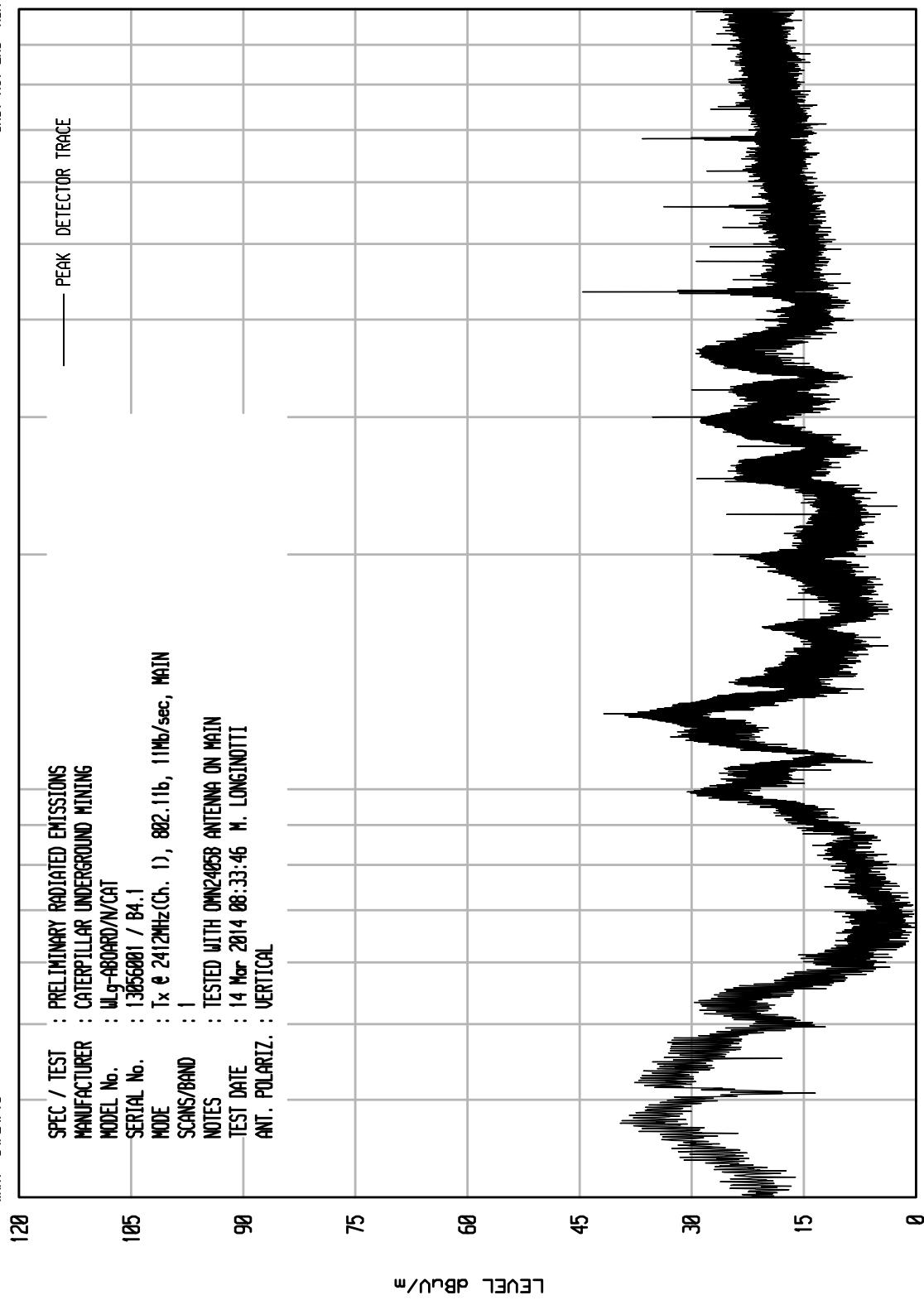


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MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2412MHz(Ch. 1), 802.11b, 11mb/sec, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 14 Mar 2014 08:33:46
ANT. POLARIZ.	: VERTICAL

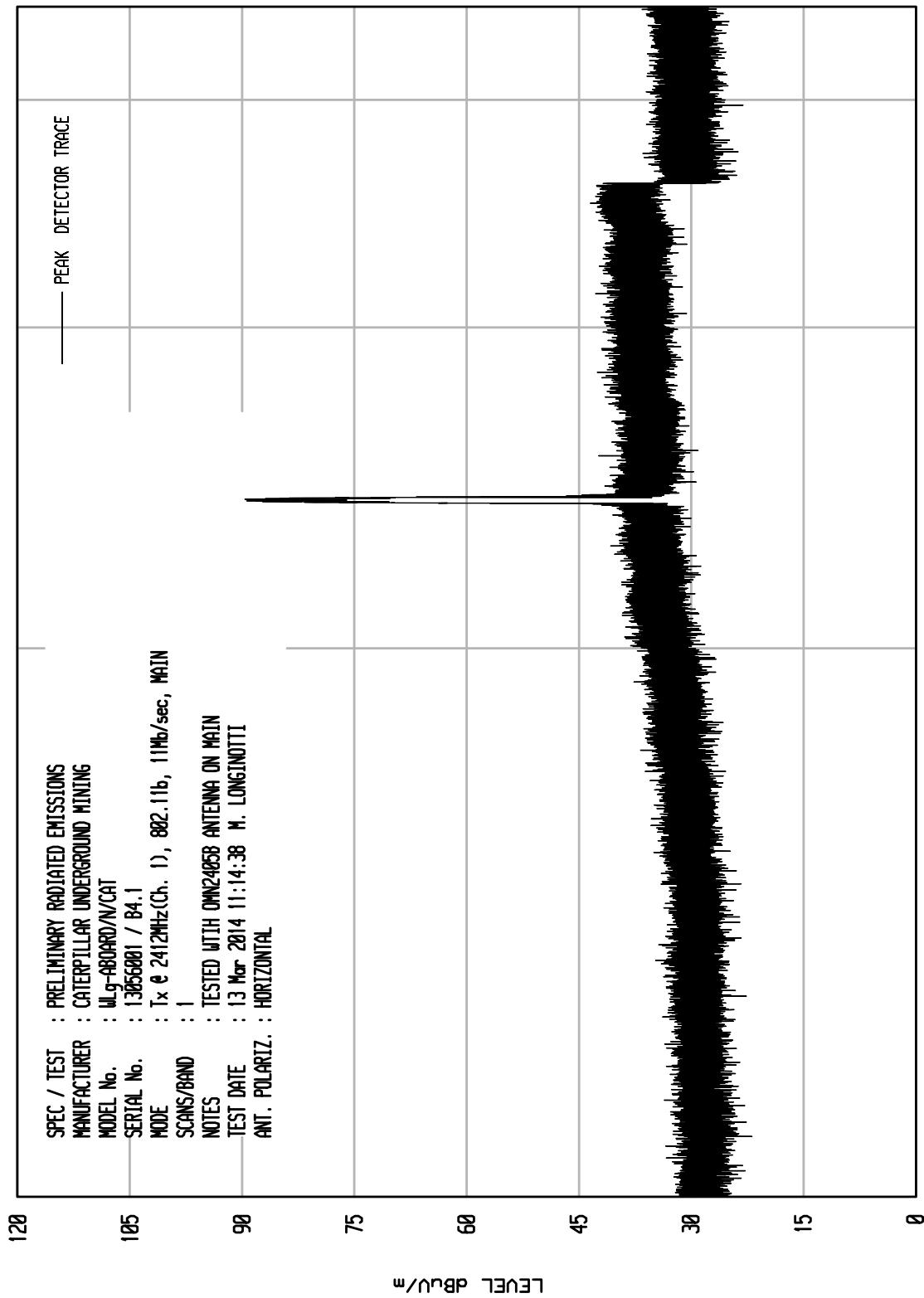
UNIV RCU EMI RUN 2



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UNIV RCU EMI RUN 6

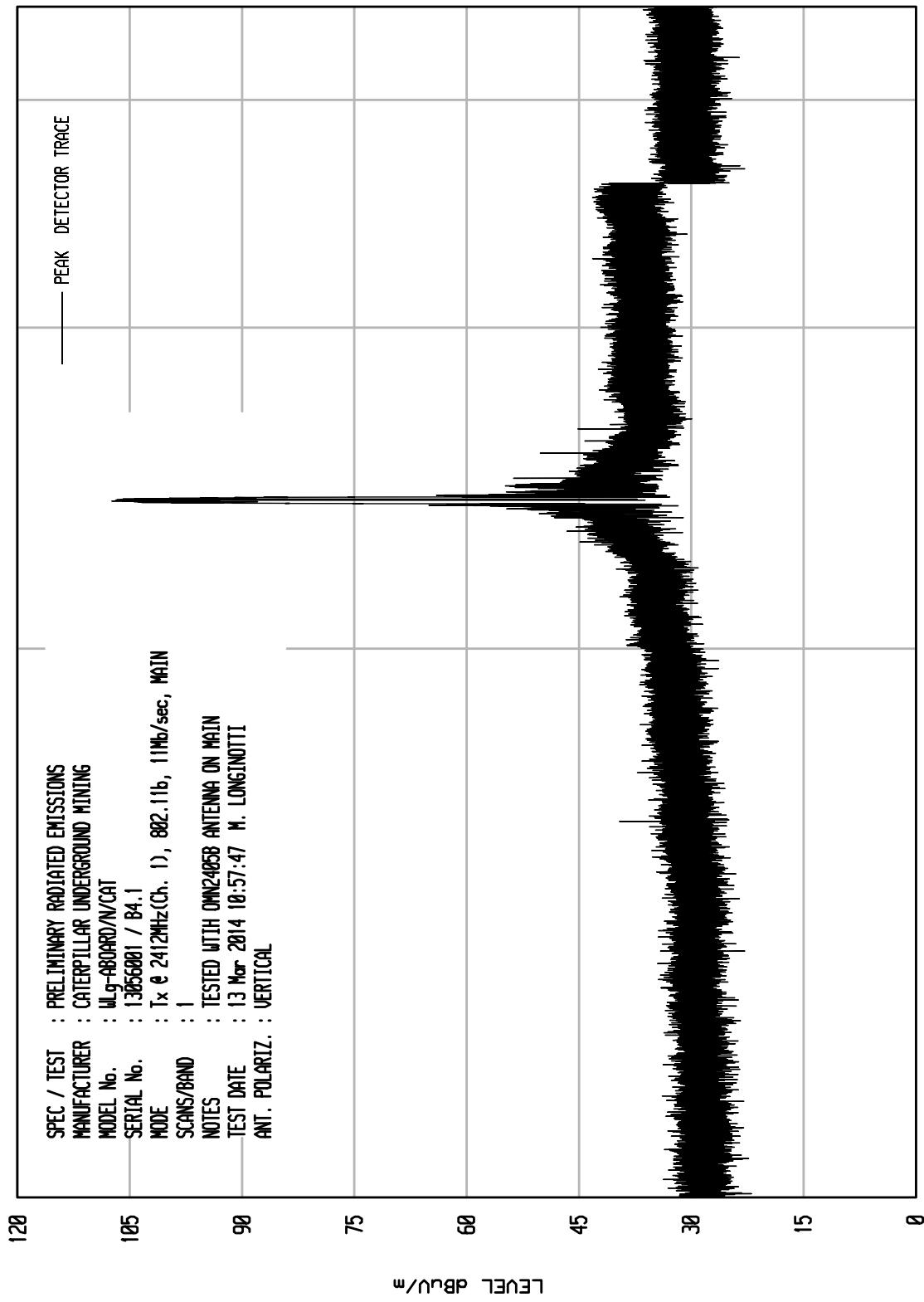
MKA1 04/24/13



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UNIV RCU EMI RUN 5

MKA1 04/24/13



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UNIV RCU EMI RUN 7

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2412MHz (Ch. 1), 882.11b, 11Mbps, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 13 Mar 2014 11:17:24 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

105

90

75

60

45

30

15

0

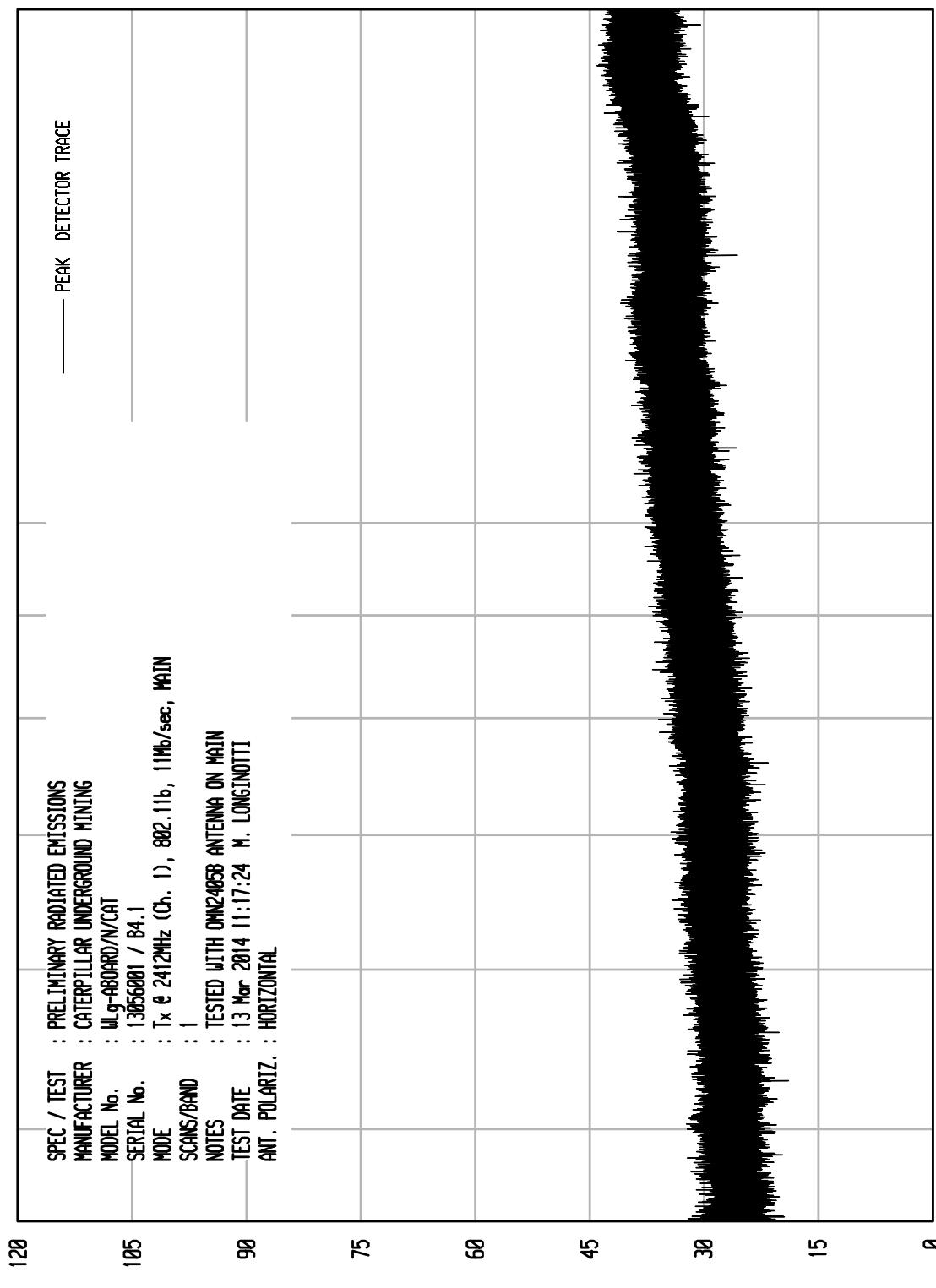
LEVEL dBu/m

START = 4500

 FREQUENCY MHz
 10000

STOP = 18000

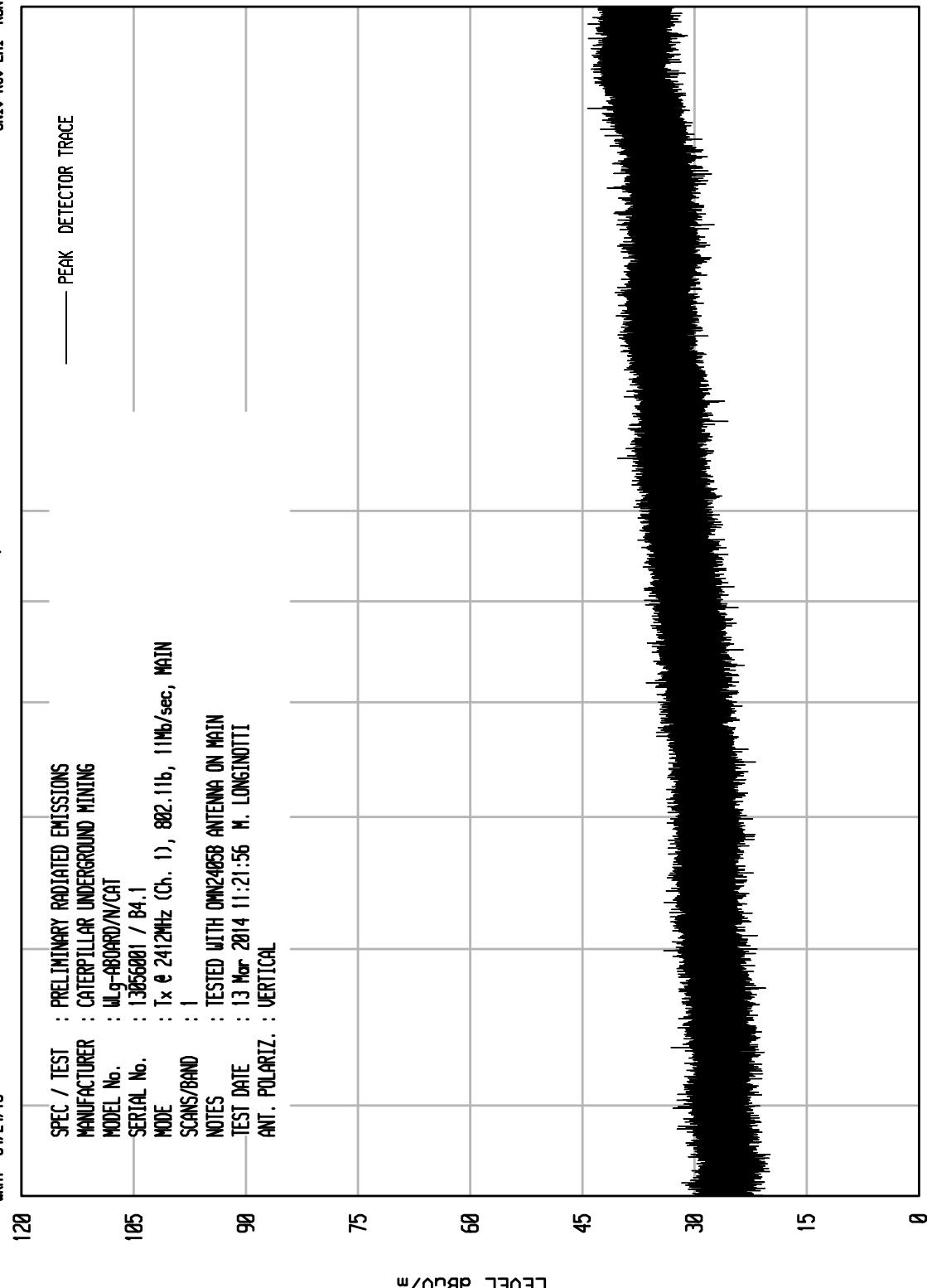
PEAK DETECTOR TRACE



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UNIV RCU EMI RUN 8

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
		MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
105		MODEL No.	: W9-ABORD/N/CAT
SERIAL No.			: 13056001 / B4.1
MODE			: Tx @ 2412MHz (Ch. 1), 882.11b, 11Mbps/sec, MAIN
SCANS/BAND			: 1
NOTES			: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE			: 13 Mar 2014 11:21:56 M. LONGINOTTI
ANT. POLARIZ.			: VERTICAL



START = 4500

STOP = 18000

ELITE ELECTRONIC ENGINEERING Inc.
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MKA1 04/24/13

UNIV RCU EMI RUN 14

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 1305909 / B4.1
105	MODE	: Tx @ 2412MHz (CH.1), 802.11B, 11mb/sec, MAIN
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMN2408SB ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 13:34:30 R. KING
	ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

45

30

15

0

LEVEL dBm/m

START = 180000

FREQUENCY MHz

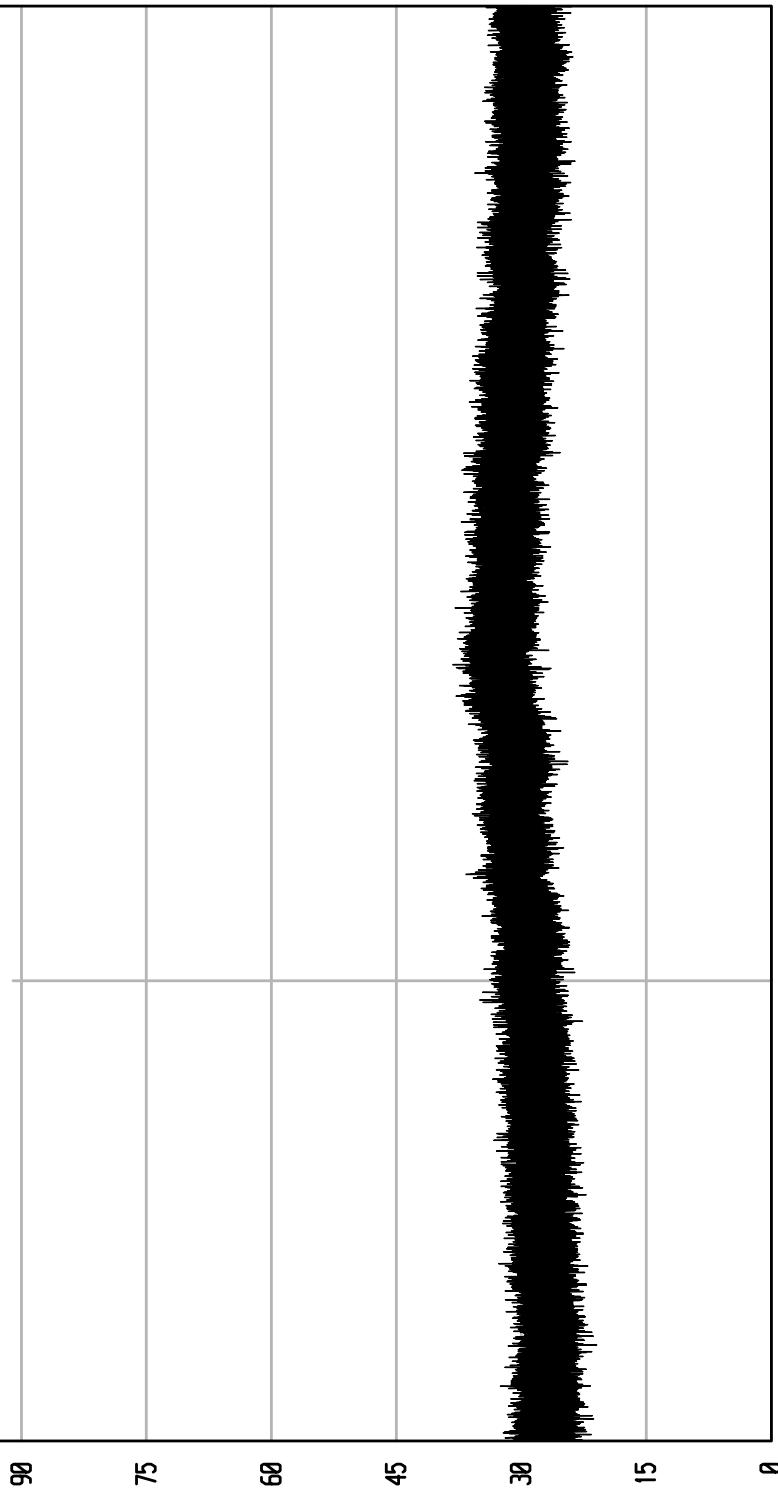
STOP = 250000

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MKA1 04/24/13

UNIV RCU EMI RUN 13

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: M9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
105	MODE	: Tx @ 2412MHz (CH.1), 802.11B, 11mb/sec, MAIN
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMNIDIRECTIONAL ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 13:28:33 R. KING
	ANT. POLARIZ.	: VERTICAL



START = 18000

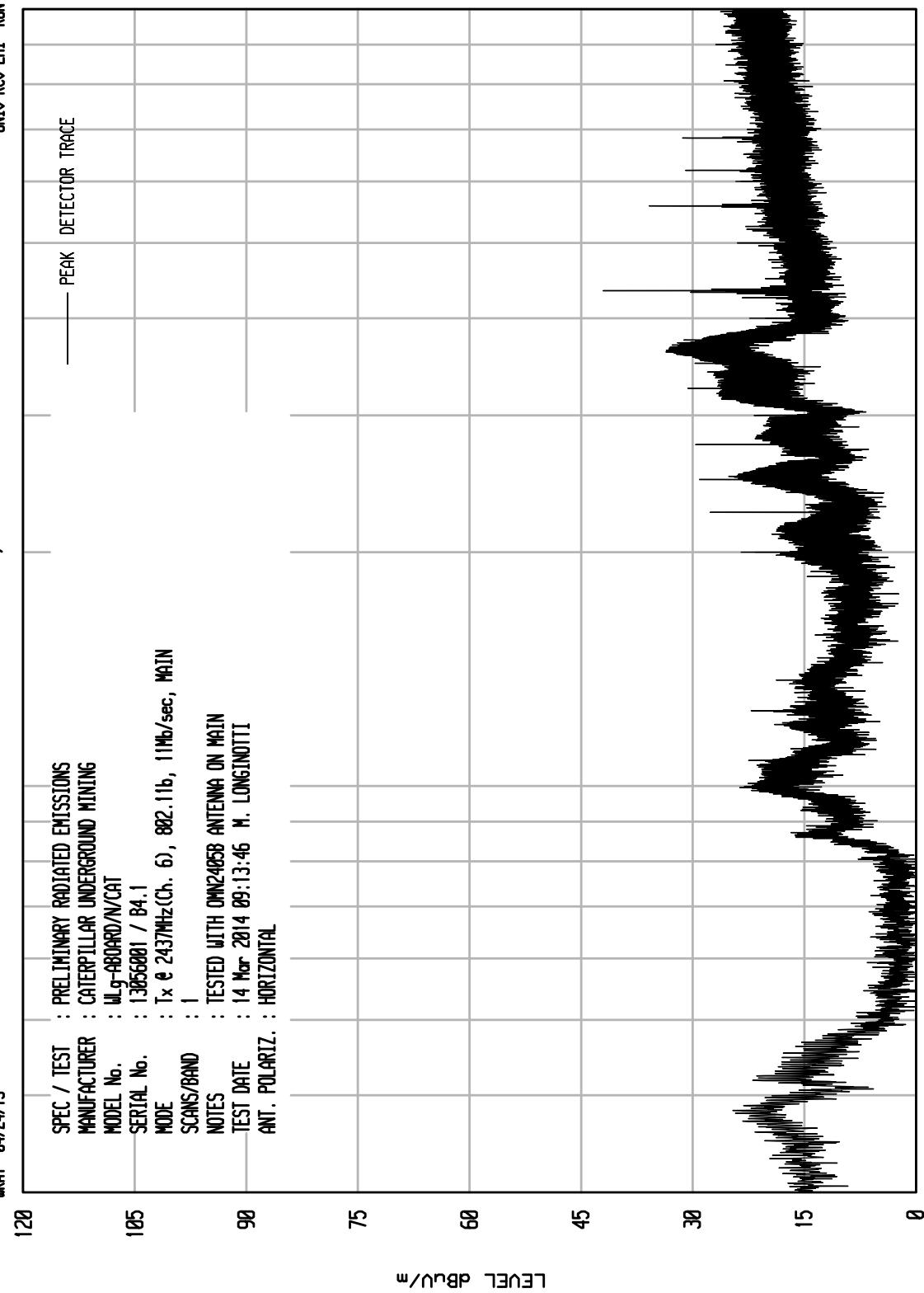
FREQUENCY MHz

STOP = 25000

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UNIV RCU EMI RUN 6

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/NCAT		
SERIAL No.	13056001 / B4.1		
MODE	Tx @ 243MHz(Ch. 6), 802.11b, 11mb/sec, MAIN		
SCANS/BAND	1		
NOTES	TESTED WITH OMN2405B ANTENNA ON MAIN		
TEST DATE	14 Mar 2014 09:13:46	M. LONGINOTTI	
ANT. POLARIZ.	HORIZONTAL		



STOP = 1000

FREQUENCY MHz

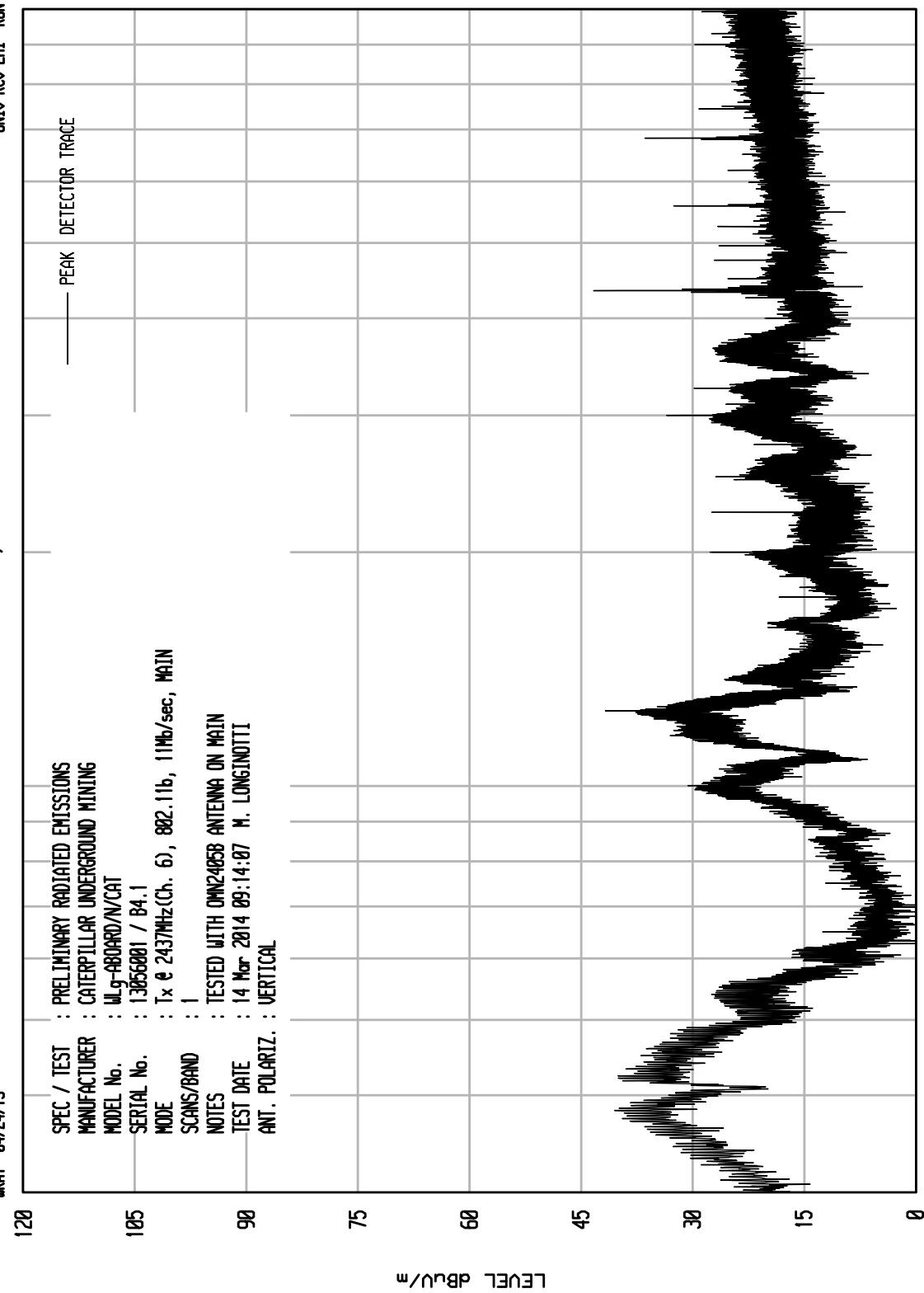
100

START = 30

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UNIV RCU EMI RUN 7

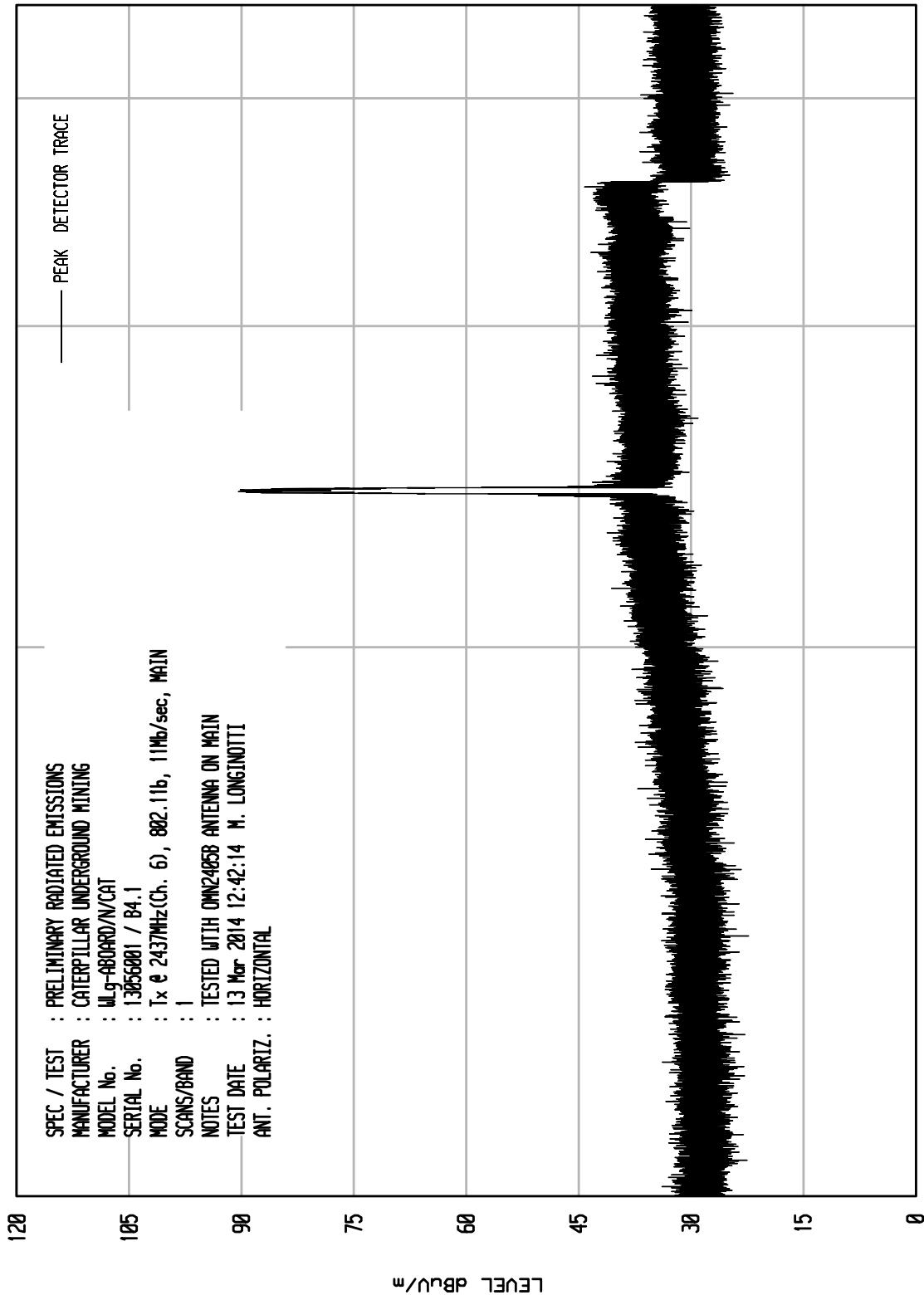
WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/NCAT		
SERIAL No.	13056001 / B4.1		
MODE	Tx @ 243MHz(Ch. 6), 802.11b, 11mb/sec, MAIN		
SCANS/BAND	1		
NOTES	TESTED WITH OMN2405B ANTENNA ON MAIN		
TEST DATE	14 Mar 2014 09:14:07	M. LONGINOTTI	
ANT. POLARIZ.	VERTICAL		



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UNIV RCU EMI RUN 7

MKA1 04/24/13



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MKA1 04/24/13

UNIV RCU EMI RUN 8

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 243MHz(Ch. 6), 802.11b, 11mb/sec, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 13 Mar 2014 12:49:15 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

105

90

75

60

45

30

15

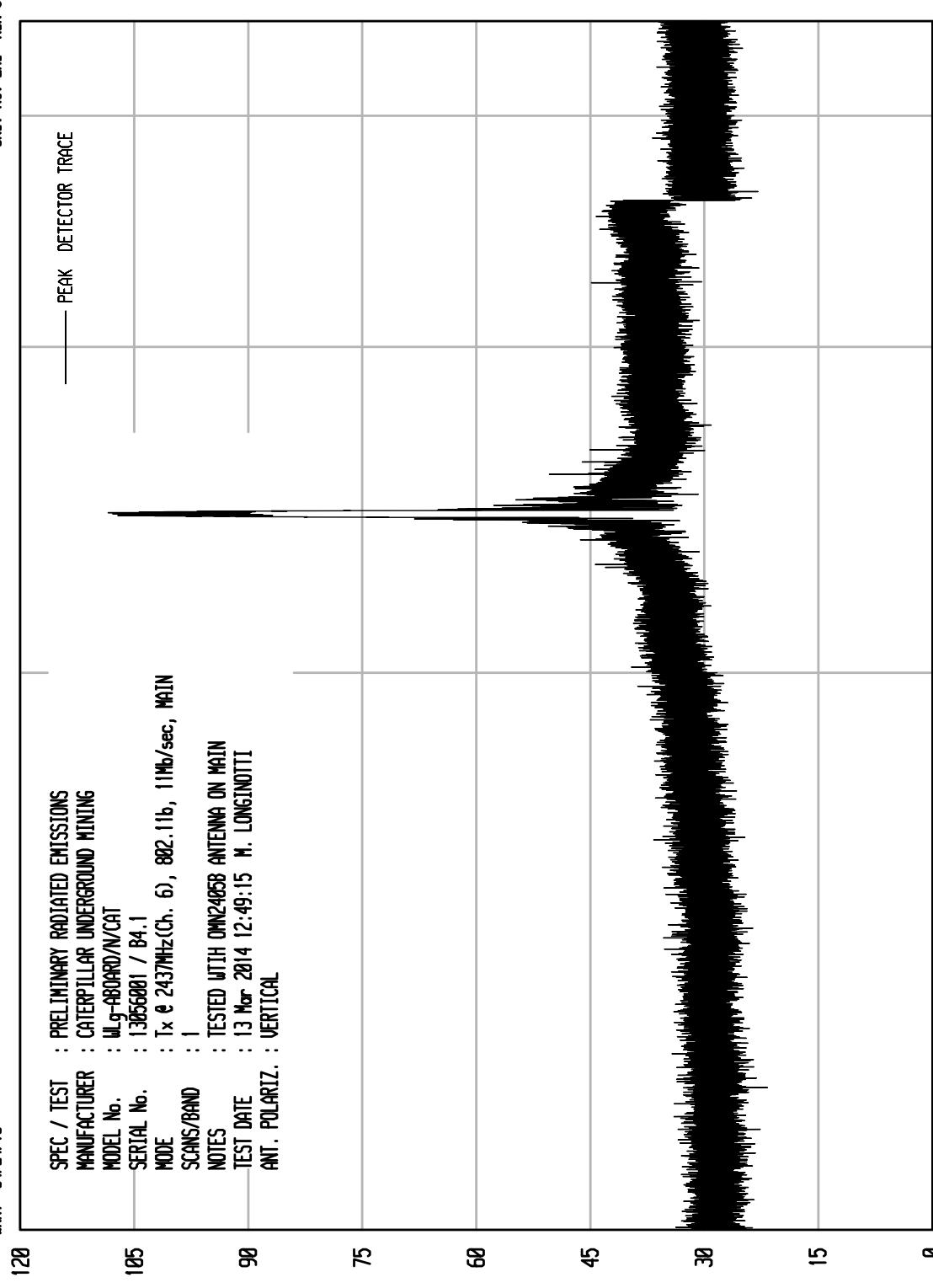
0

LEVEL dBu/m

START = 1000

FREQUENCY MHz

STOP = 4500



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UNIV RCU EMI RUN 10

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 243MHz (Ch. 6), 882.11b, 11Hz/sec, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 13 Mar 2014 12:57:46 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

105

90

75

60

45

30

15

0

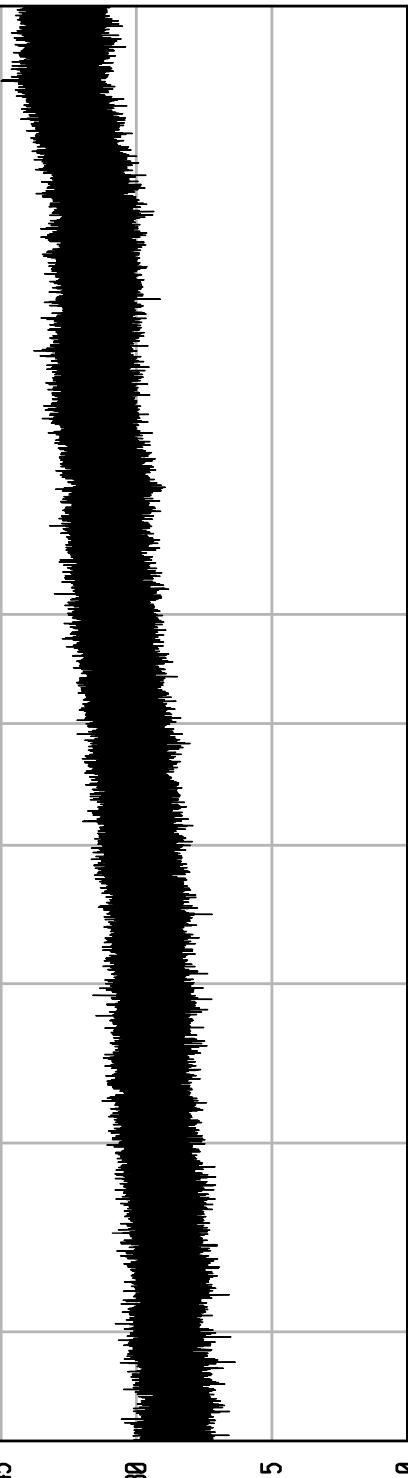
LEVEL dBuU/m

START = 4500

FREQUENCY MHz

10000

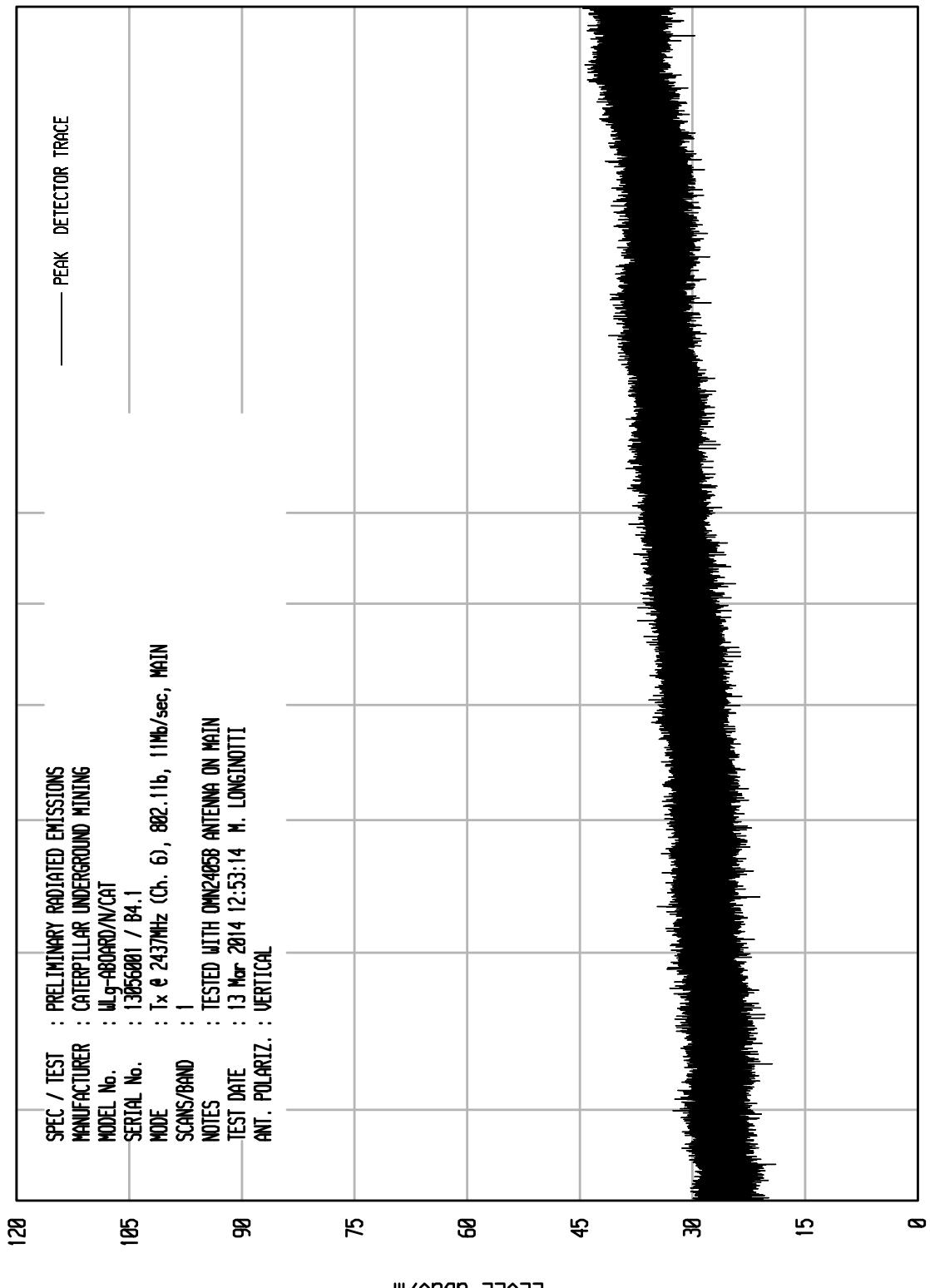
STOP = 18000



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UNIV RCU EMI RUN 9

MKA1 04/24/13

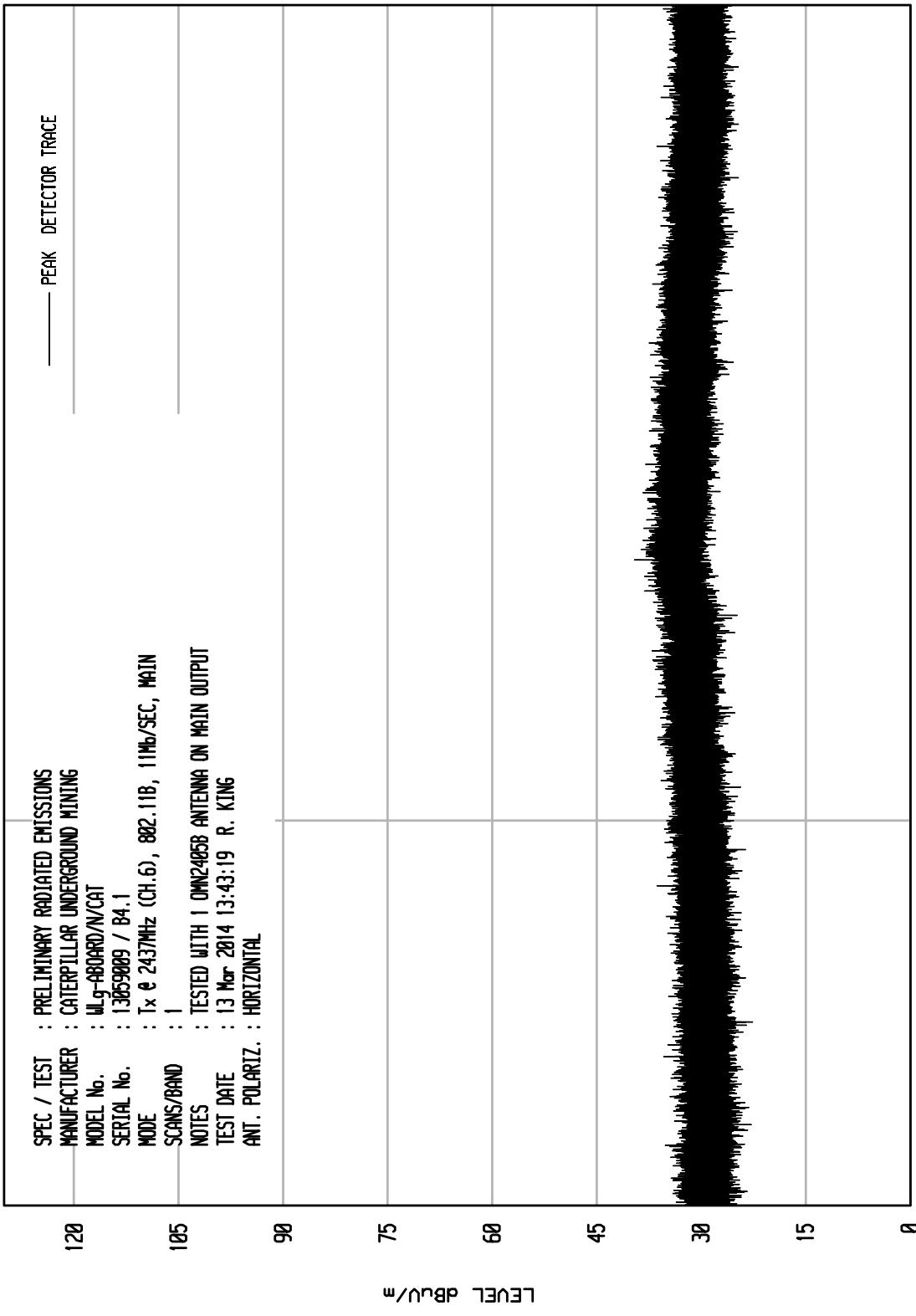


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MKA1 04/24/13

UNIV RCU EMI RUN 15

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 1305909 / B4.1
105	MODE	: Tx @ 243MHz (CH.6), 802.11B, 11MB/SEC, MAIN
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMN2408SB ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 13:43:19 R. KING
	ANT. POLARIZ.	: HORIZONTAL



START = 18000

FREQUENCY MHz

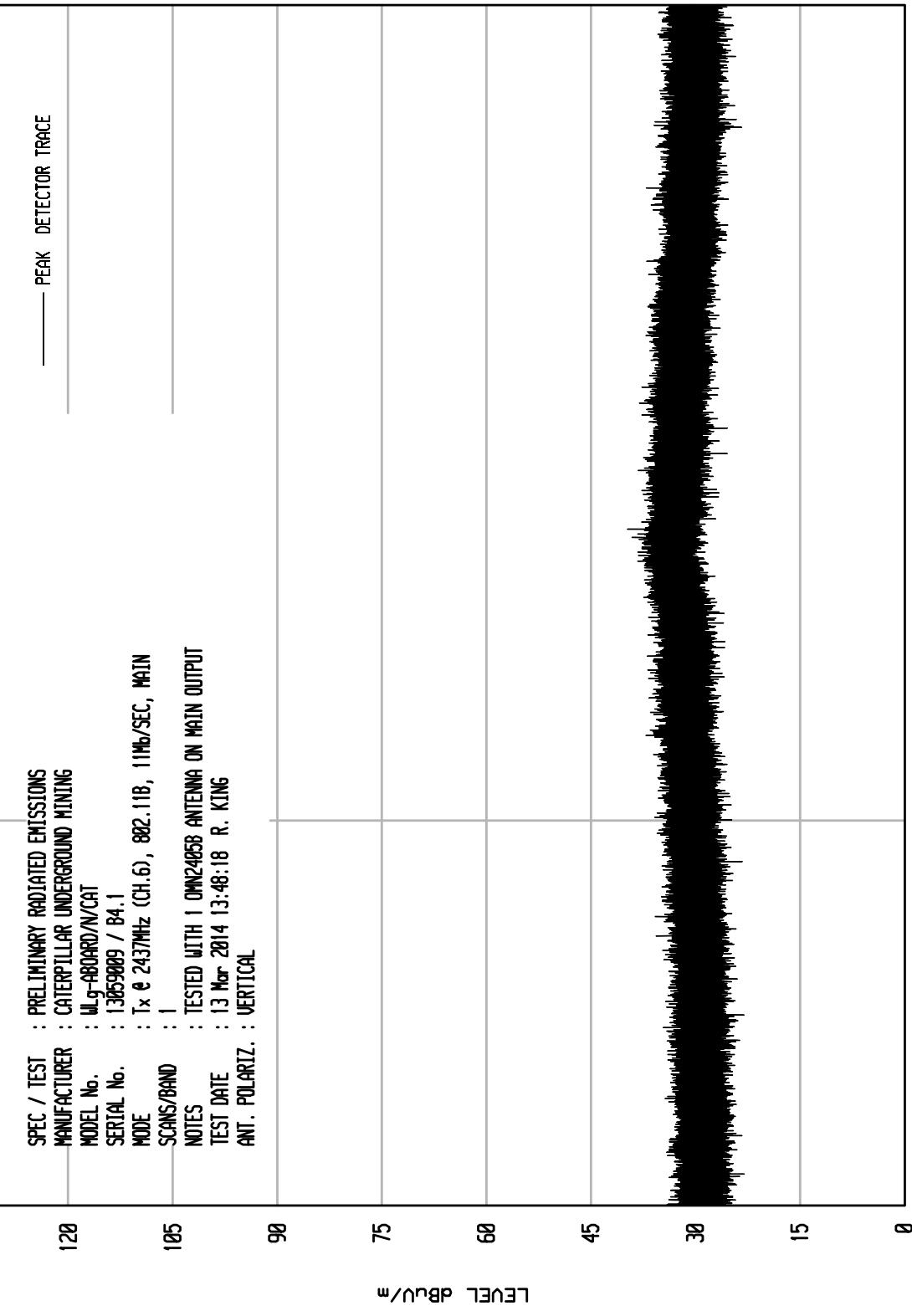
STOP = 25000

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MKA1 04/24/13

UNIV RCU EMI RUN 16

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
	MODE	: Tx @ 243MHz (CH. 6), 802.11B, 11MB/SEC, MAIN
105	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMNIDIRECTIONAL ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 13:48:18 R. KING
	ANT. POLARIZ.	: VERTICAL



START = 180000

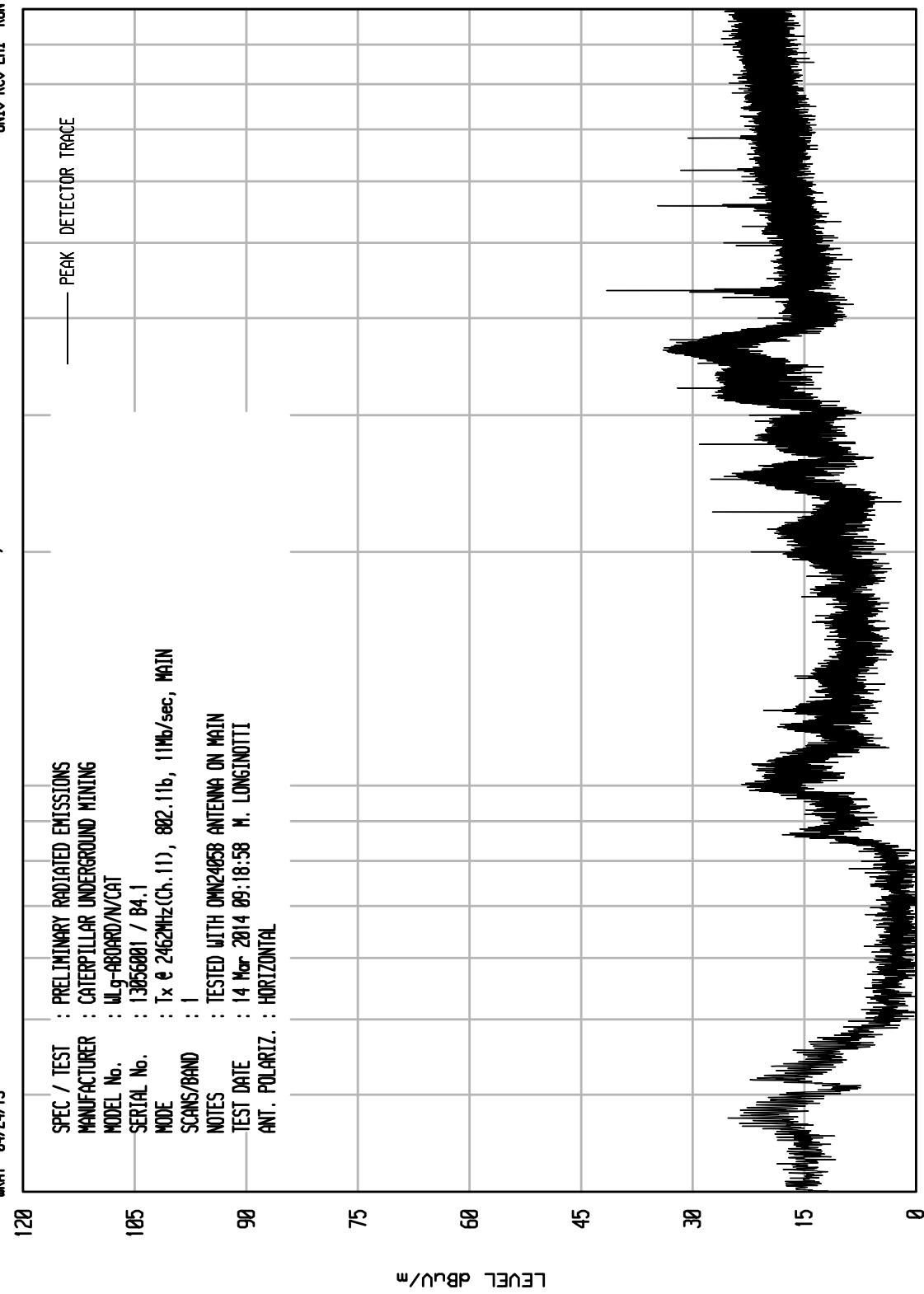
FREQUENCY MHz

STOP = 250000

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UNIV RCU EMI RUN 9

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/NCAT		
SERIAL No.	13056001 / B4.1		
MODE	Tx @ 2462MHz(Ch. 11), 802.11b, 11mb/sec, MAIN		
SCANS/BAND	1		
NOTES	TESTED WITH OMN2405B ANTENNA ON MAIN		
TEST DATE	14 Mar 2014 09:18:58	M. LONGINTUTI	
ANT. POLARIZ.	: HORIZONTAL		



STOP = 1000

FREQUENCY MHz

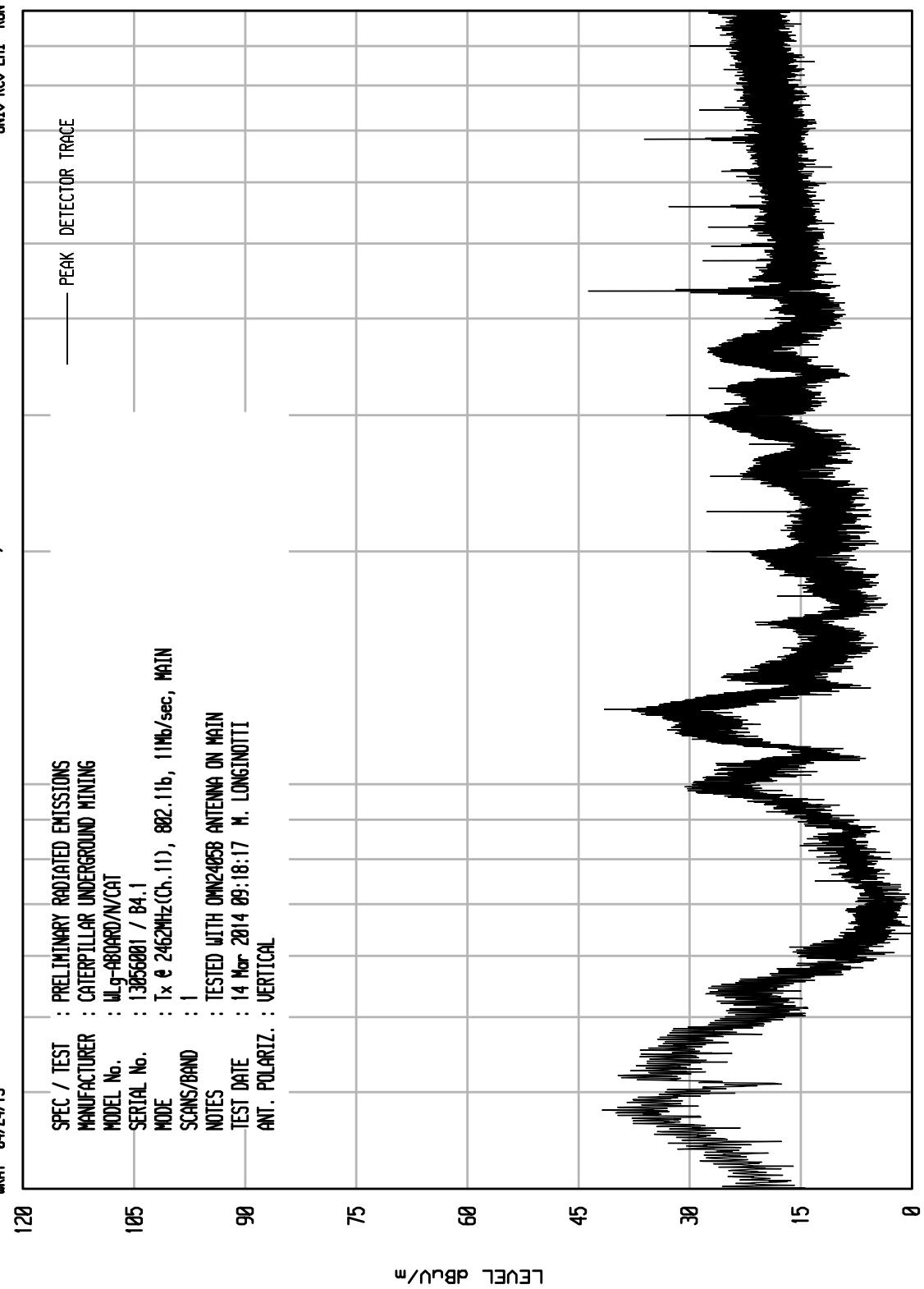
100

START = 30

ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 8

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/NCAT		
SERIAL No.	13056001 / B4.1		
MODE	Tx @ 2462MHz(Ch. 11), 802.11b, 11mb/sec, MAIN		
SCANS/BAND	1		
NOTES	TESTED WITH OMN2405B ANTENNA ON MAIN		
TEST DATE	14 Mar 2014 09:18:17 M. LONGINOTTI		
ANT. POLARIZ.	VERTICAL		



STOP = 1000

FREQUENCY MHz

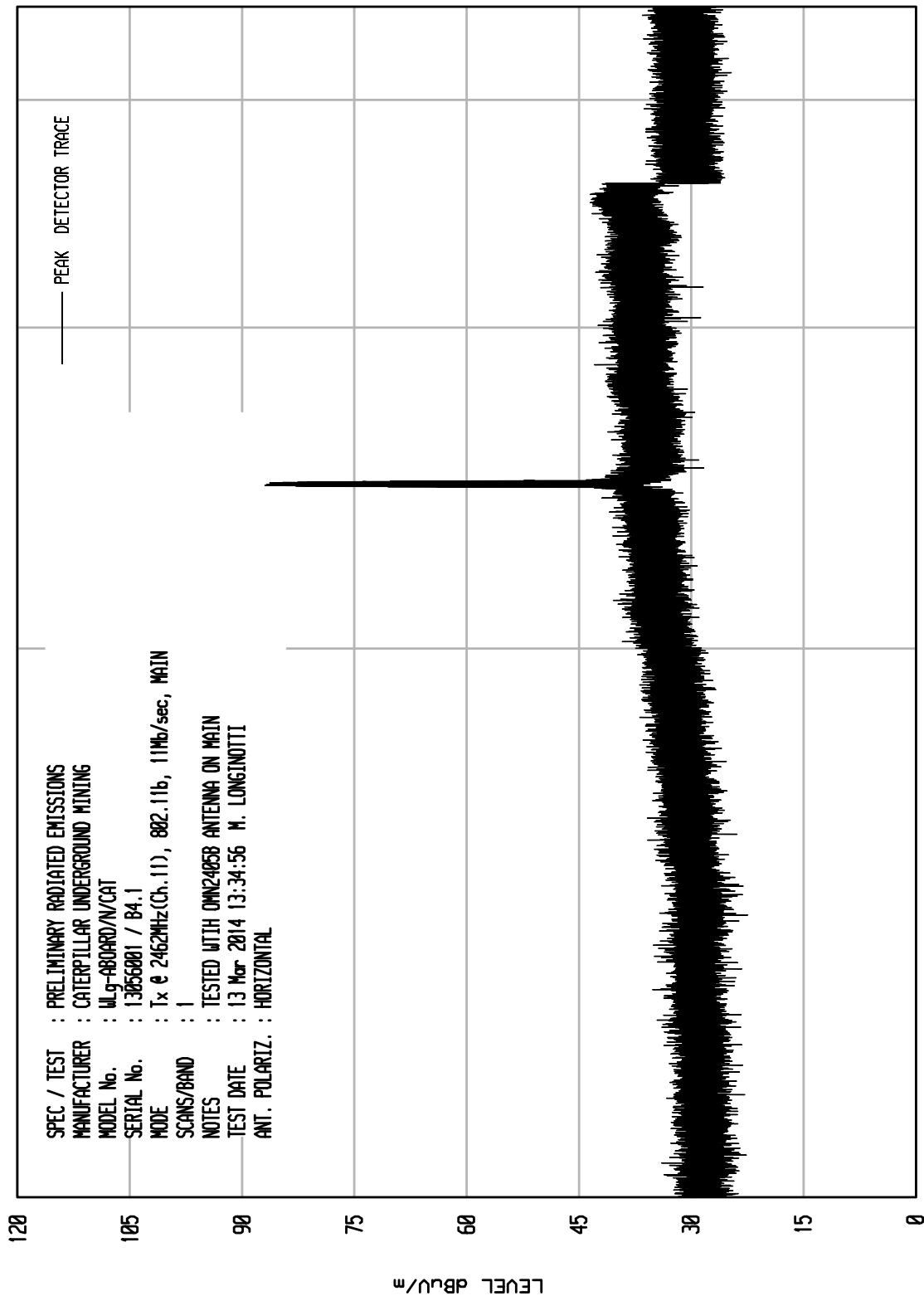
100

START = 30

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UNIV RCU EMI RUN 10

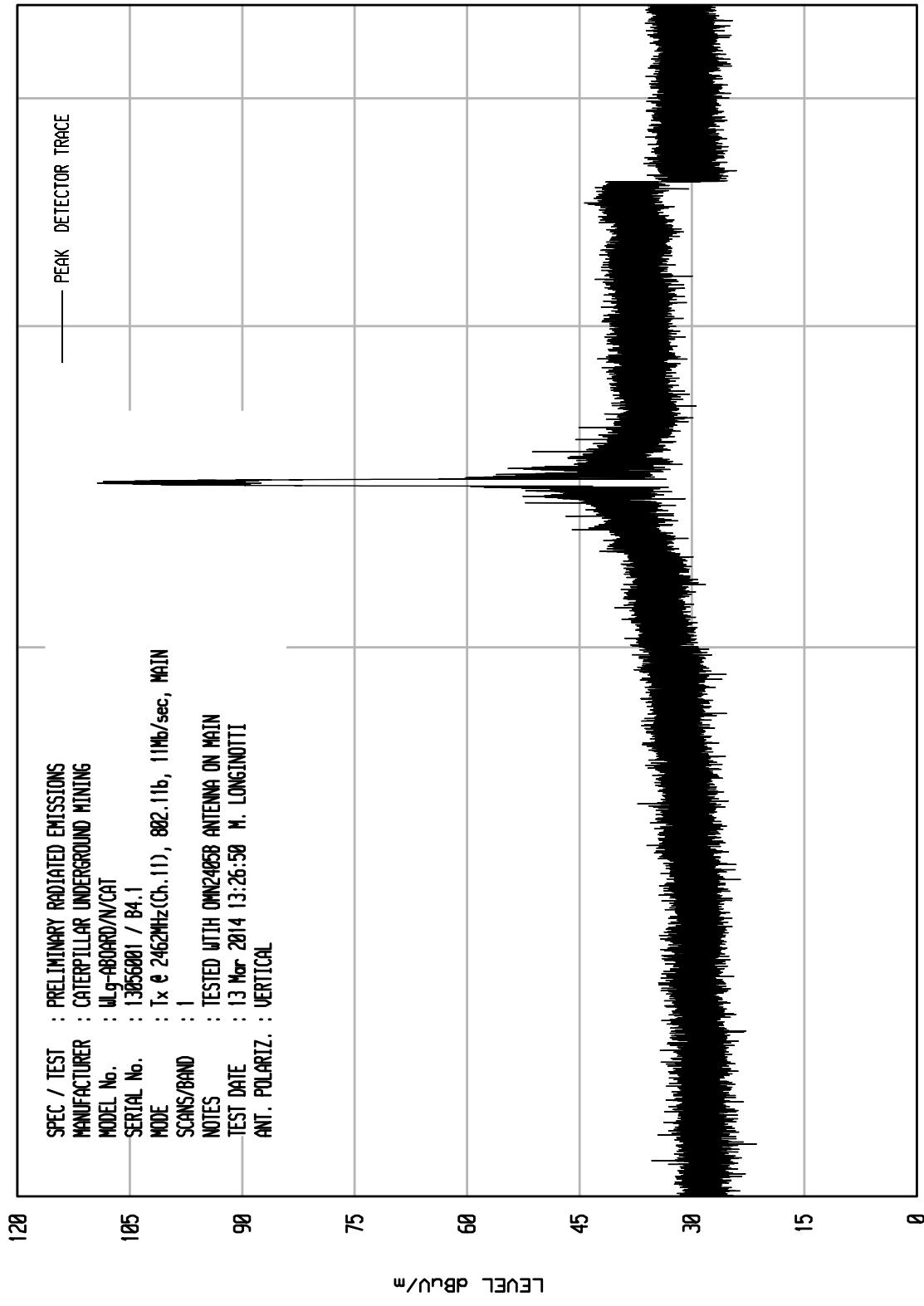
MKA1 04/24/13



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UNIV RCU EMI RUN 9

MKA1 04/24/13



ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 11

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2462MHz (Ch. 11), 882.11b, 11Mbps, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 13 Mar 2014 13:41:27 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

105

90

75

60

45

30

15

0

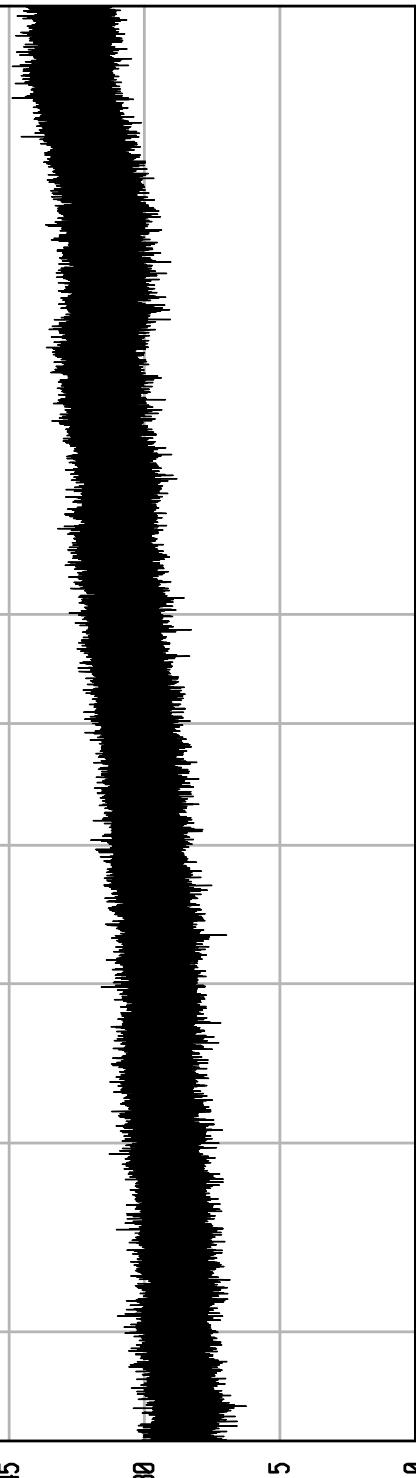
LEVEL dBuU/m

START = 4500

FREQUENCY MHz

10000

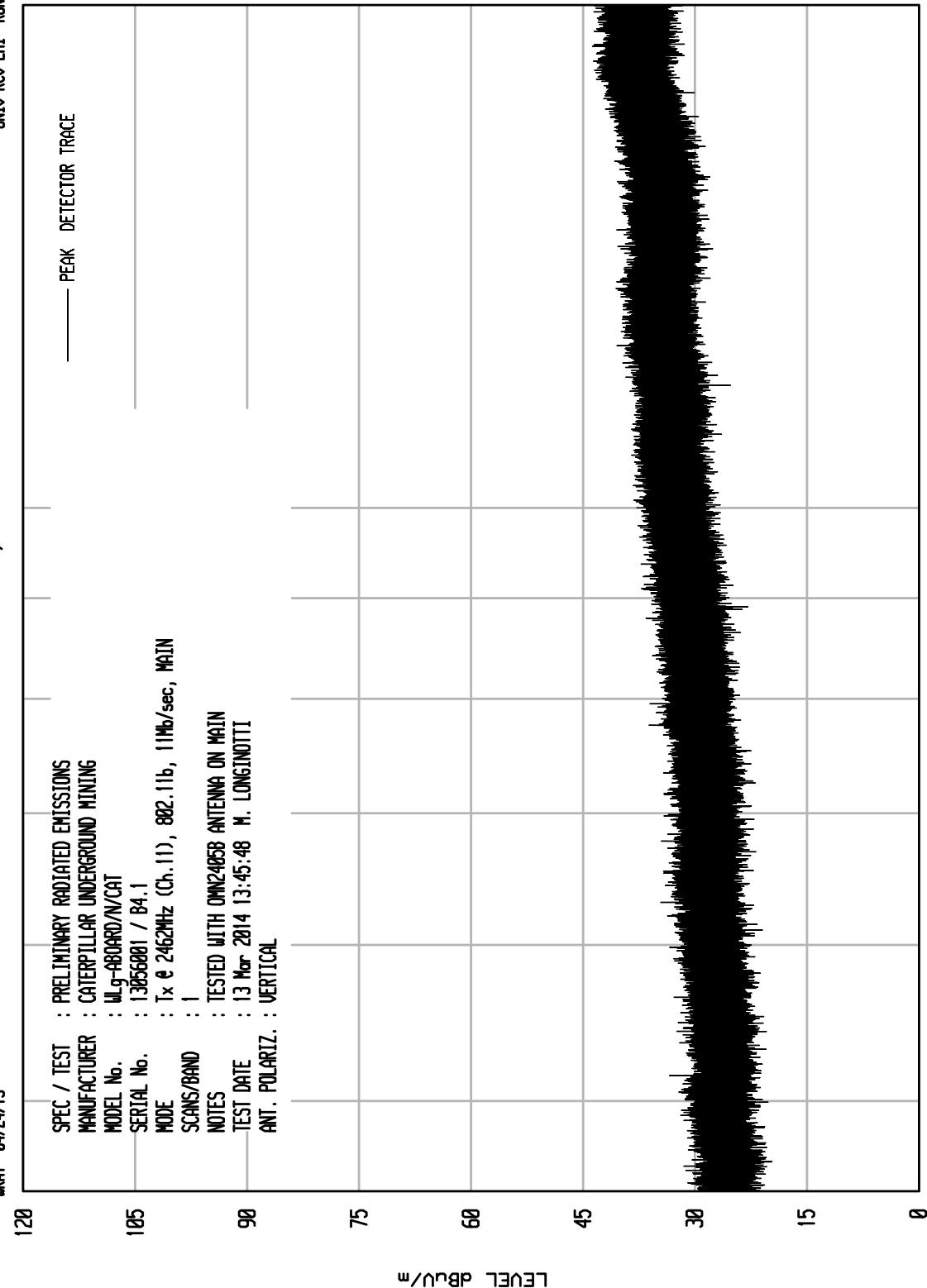
STOP = 18000



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UNIV RCU EMI RUN 12

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
		MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
105		MODEL No.	: W9-ABORD/NCAT
SERIAL No.		MODE	: Tx @ 2462MHz (Ch. 11), 882.11b, 11Mbps, MAIN
		SCANS/BAND	: 1
		NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
		TEST DATE	: 13 Mar 2014 13:45:48 M. LONGINOTTI
		ANT. POLARIZ.	: VERTICAL



START = 4500

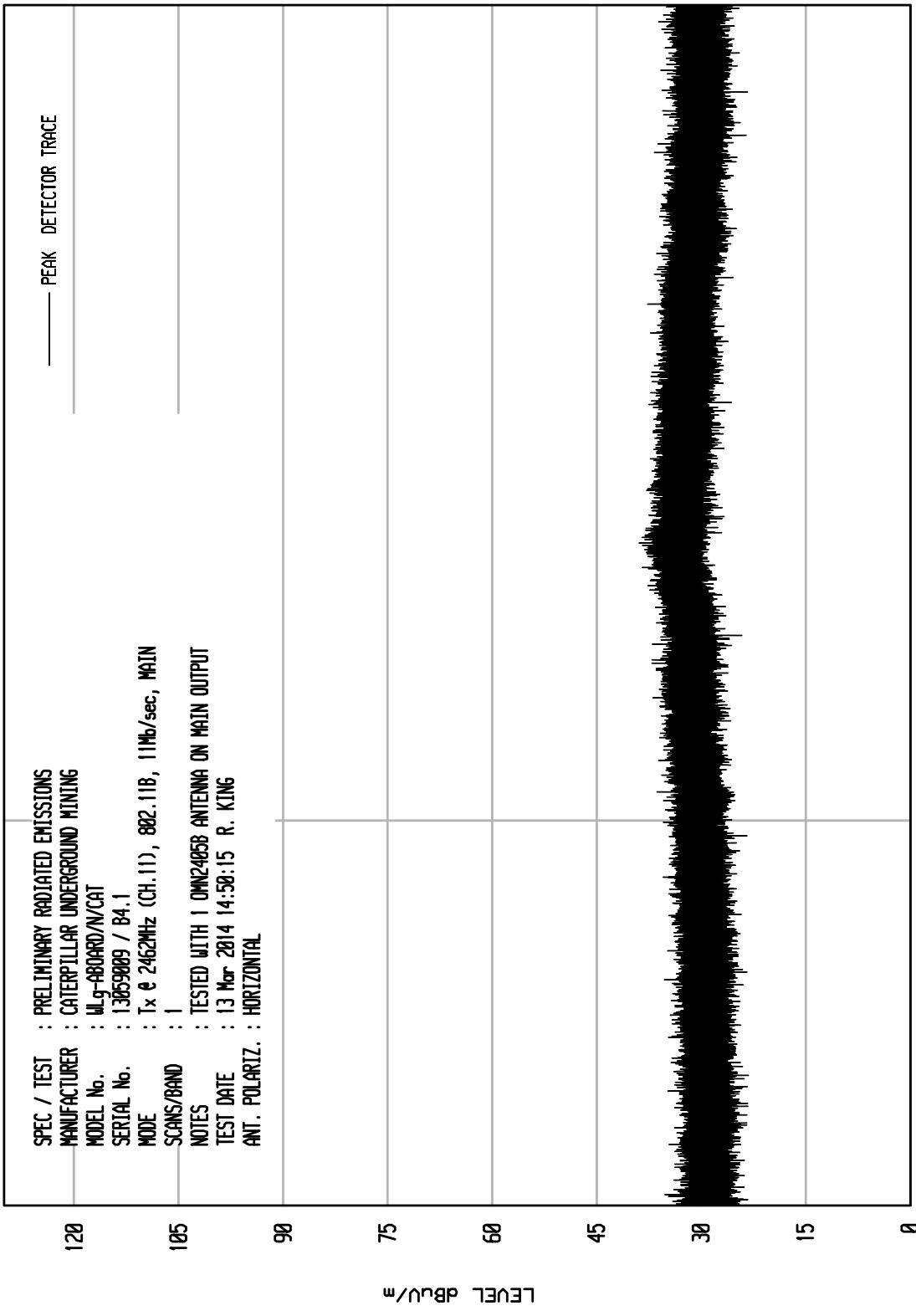
STOP = 18000

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MKA1 04/24/13

UNIV RCU EMI RUN 23

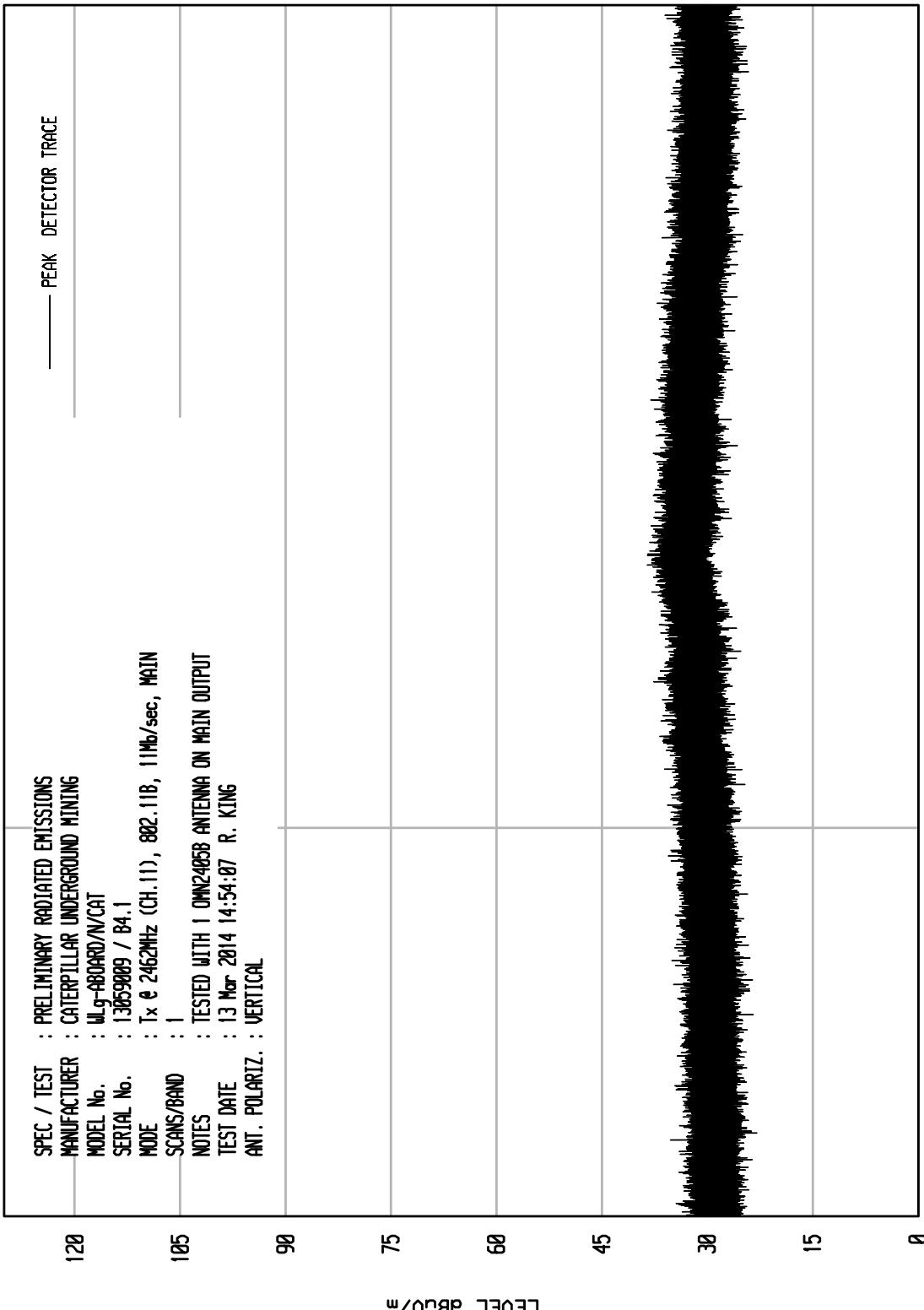
120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
105	MODE	: Tx @ 2462MHz (CH.11), 802.11B, 11mb/sec, MAIN
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMN2408SB ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 14:50:15 R. KING
	ANT. POLARIZ.	: HORIZONTAL



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MKA1 04/24/13

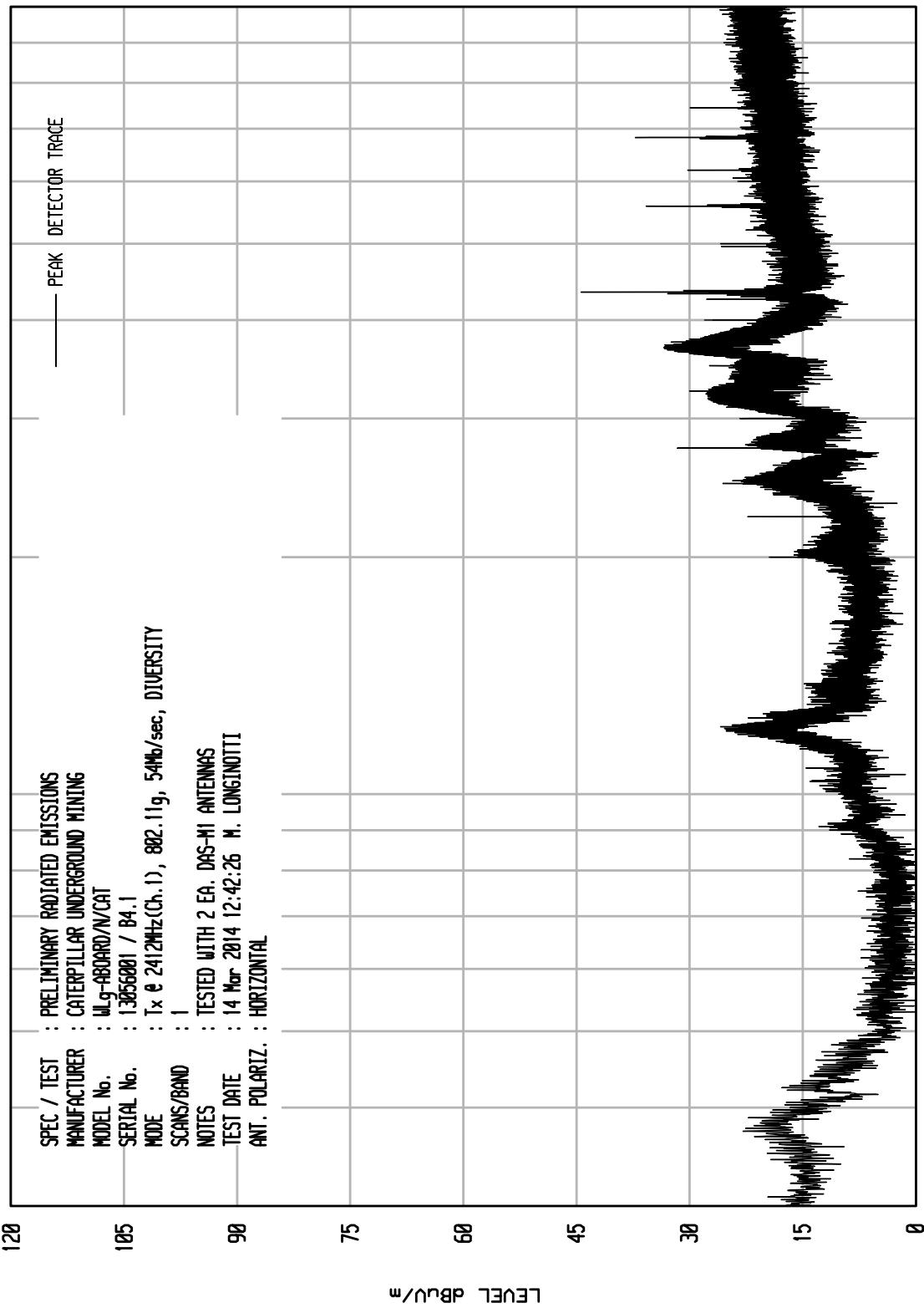
UNIV RCU EMI RUN 24



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MKA1 04/24/13 UNIV RCU EMI RUN 25

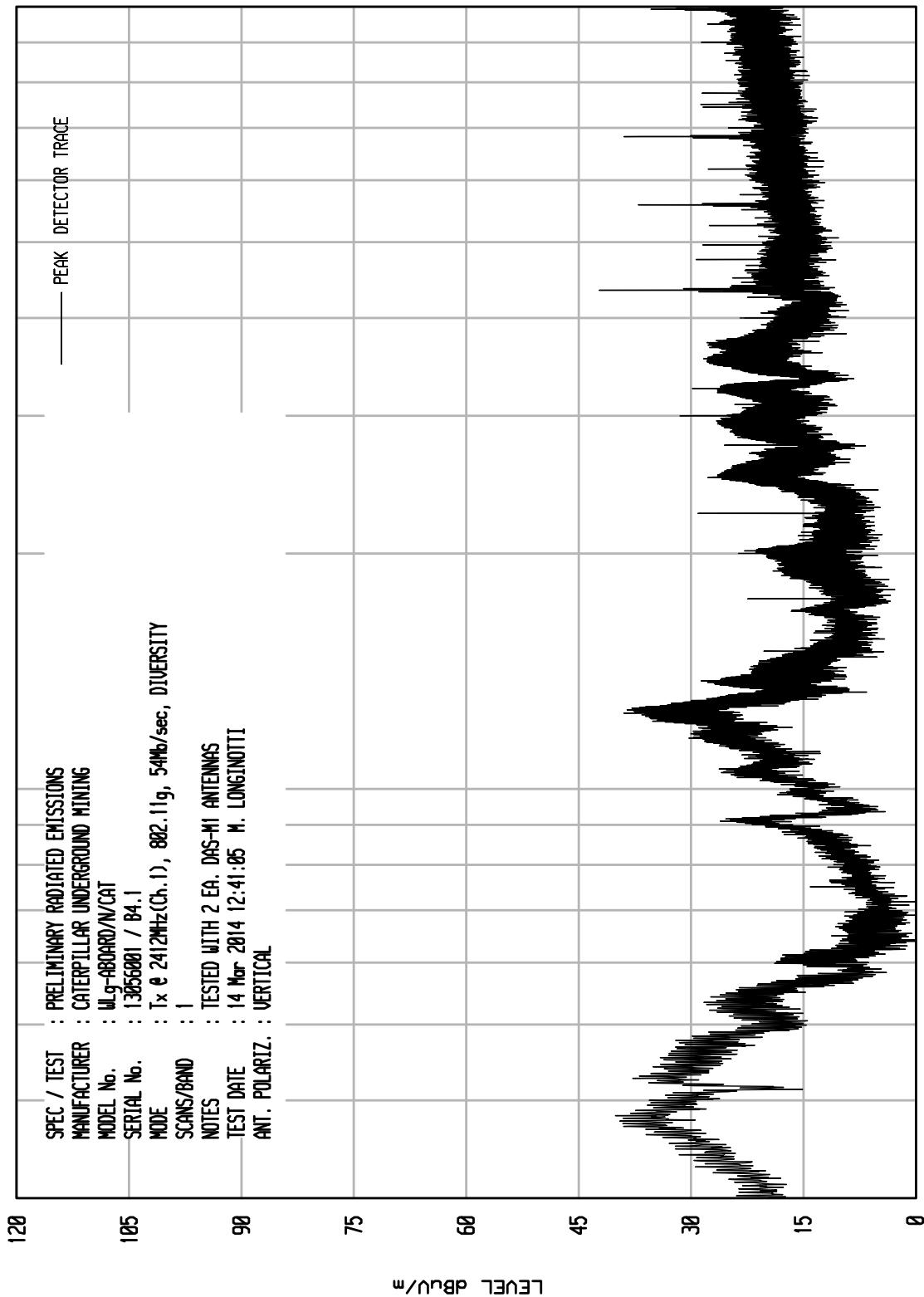
SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2412MHz(Ch. 1), 802.11g, 54Mb/sec, DIVERSITY
SCANS/BAND	: 1
NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
TEST DATE	: 14 Mar 2014 12:42:26 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL



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UNIV RCV EMI RUN 23

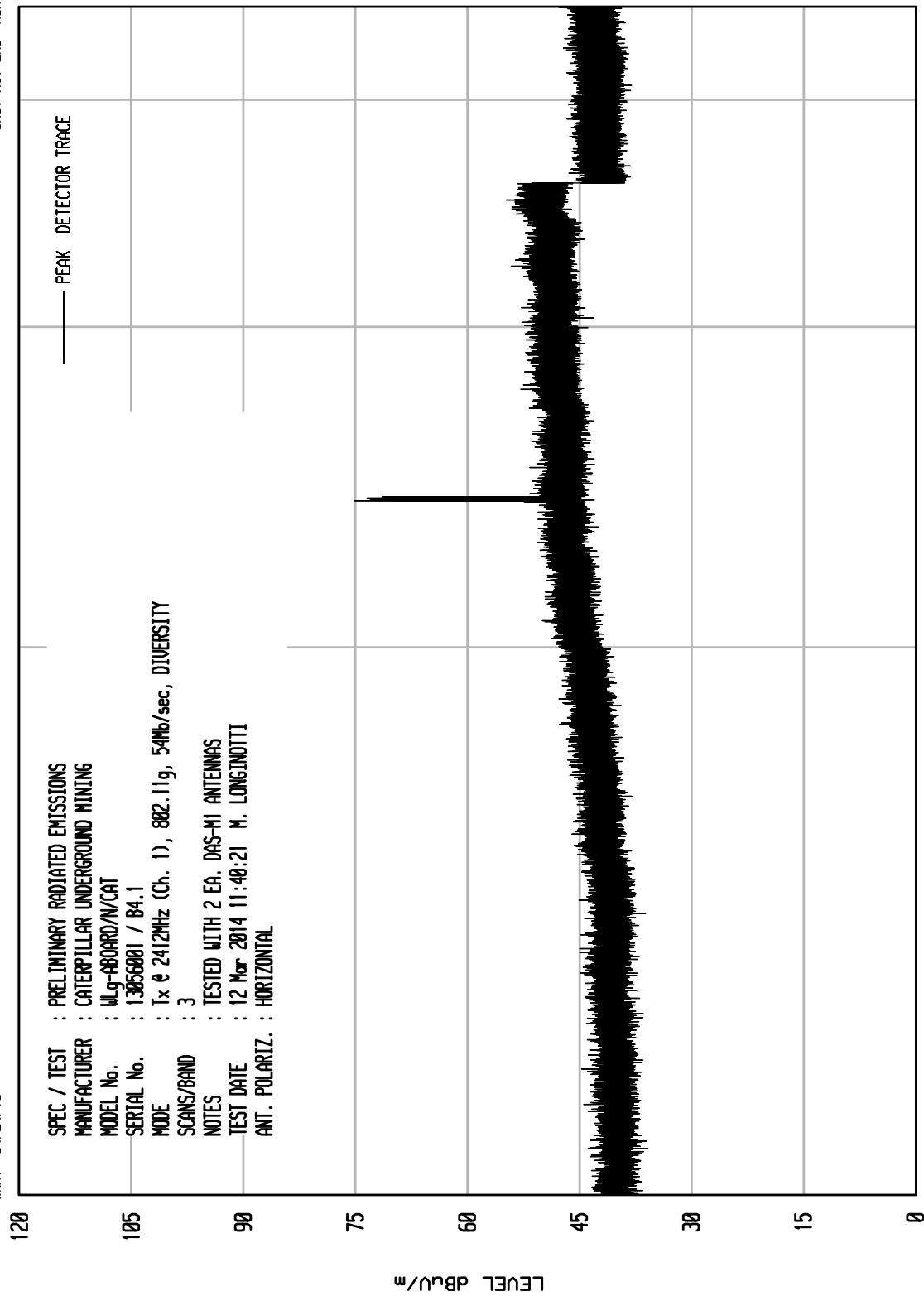
MKA1 04/24/13



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UNIV RCU EMI RUN 8

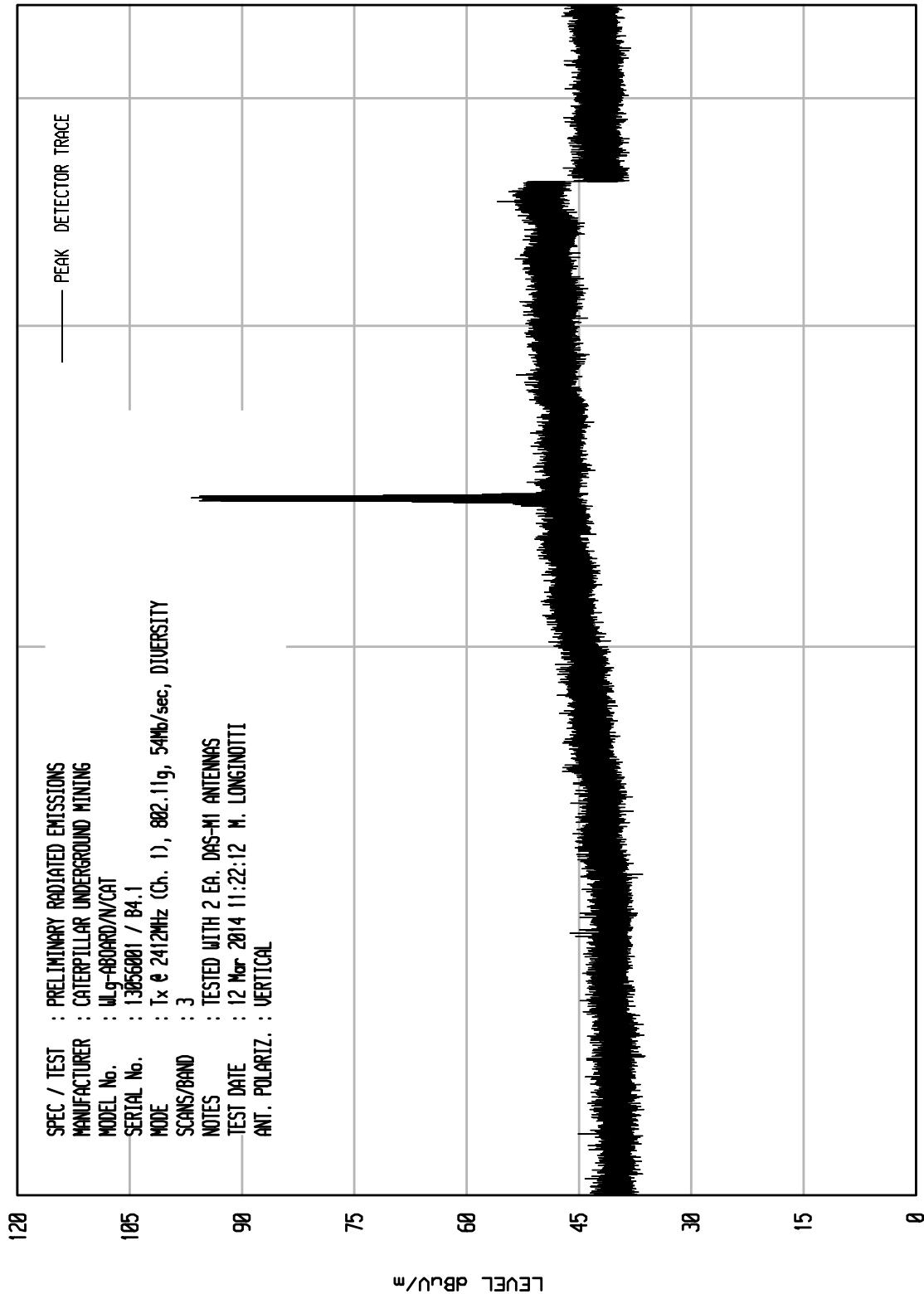
MKA1 04/24/13



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UNIV RCU EMI RUN 7

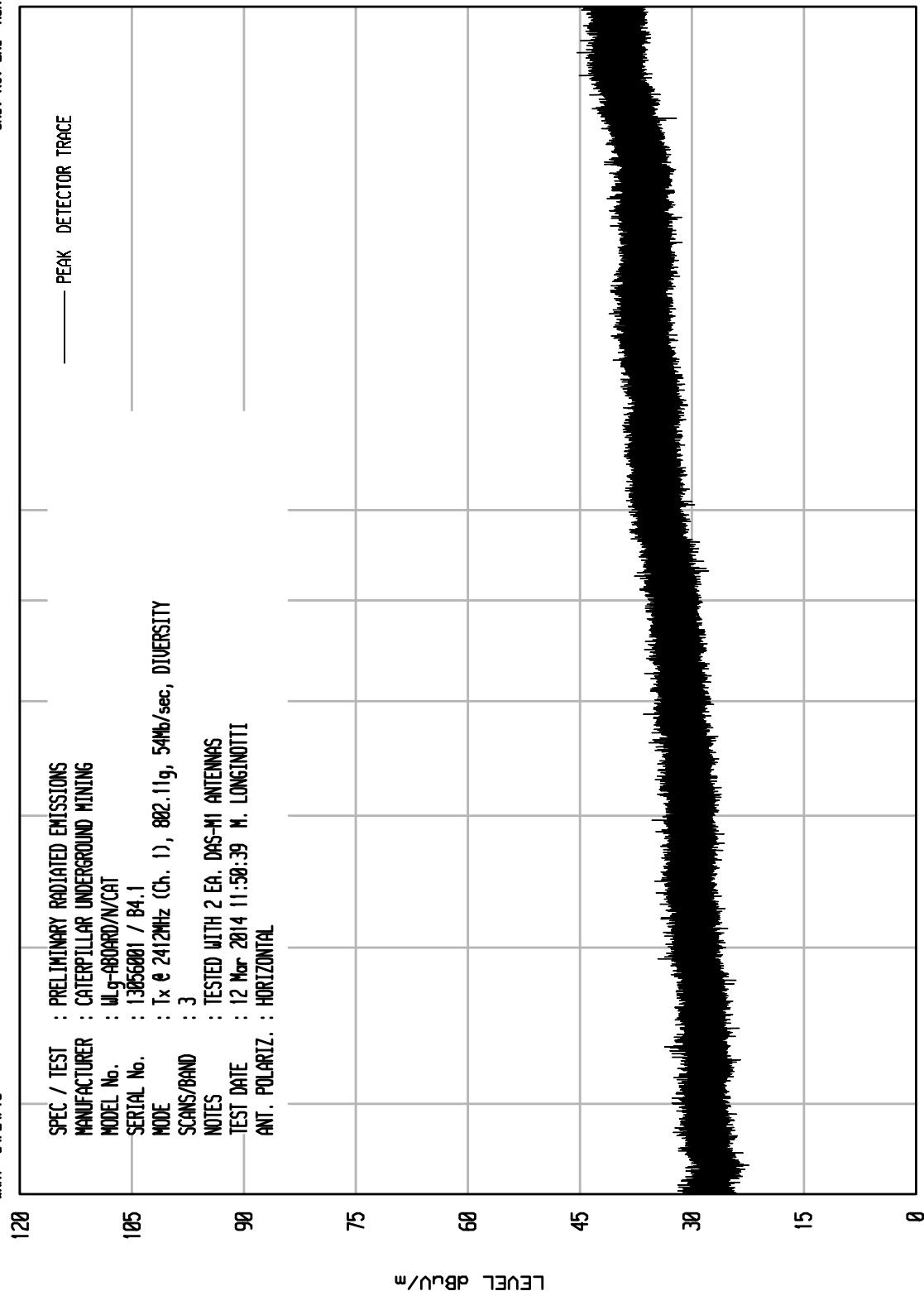
MKA1 04/24/13



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UNIV RCU EMI RUN 4

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
		MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
105		MODEL No.	: W9-ABORD/NCAT
SERIAL No.			: 13056001 / B4.1
MODE			: Tx @ 2412MHz (Ch. 1), 882.11g, 54dB/sec, DIVERSITY
SCANS/BAND			: 3
NOTES			: TESTED WITH 2 EA. DAS-MI ANTENNAS
TEST DATE			: 12 Mar 2014 11:50:39 M. LONGINOTTI
ANT. POLARIZ.			: HORIZONTAL



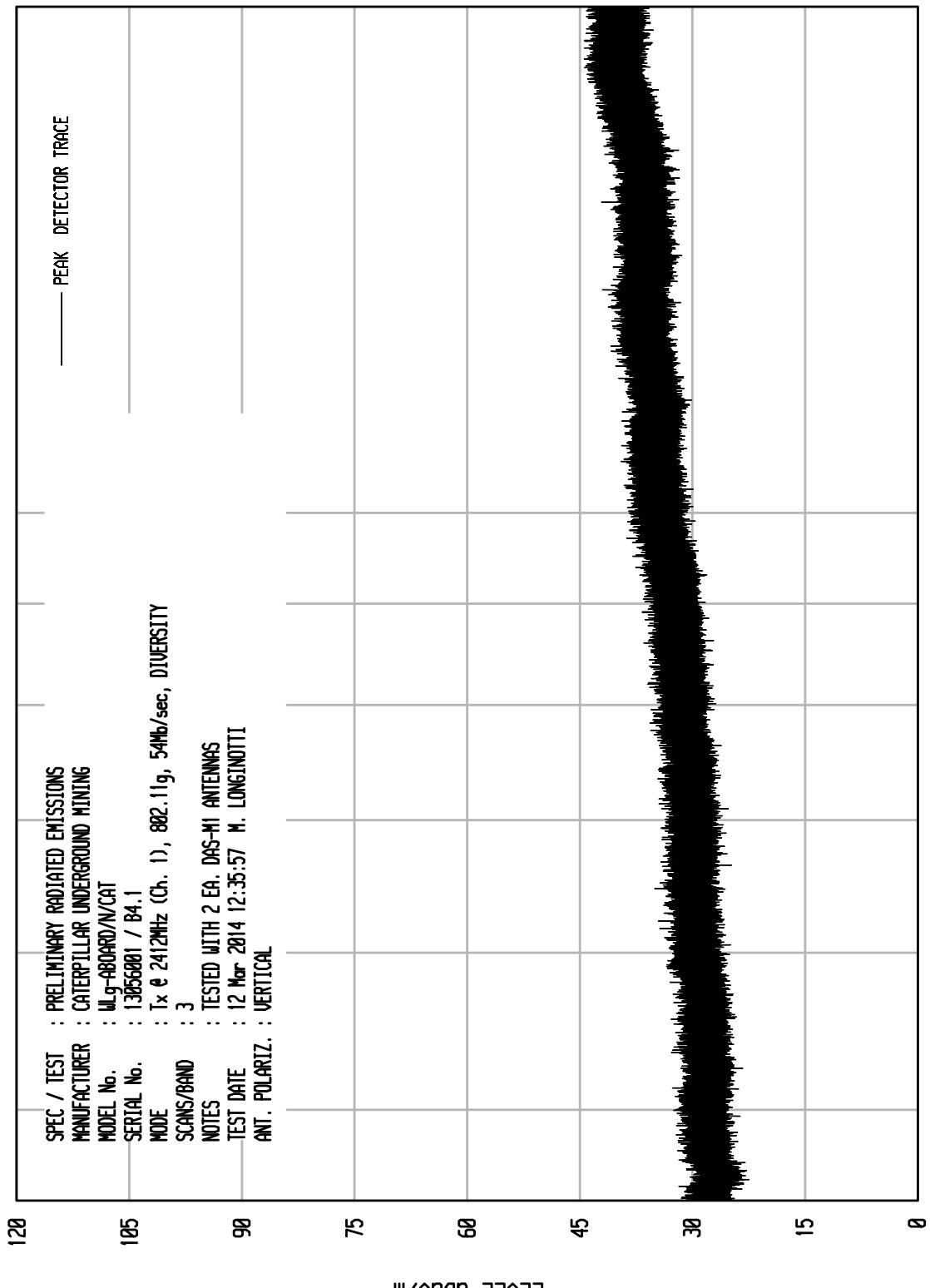
START = 4500

STOP = 18000

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UNIV RCU EMI RUN 5

MKA1 04/24/13

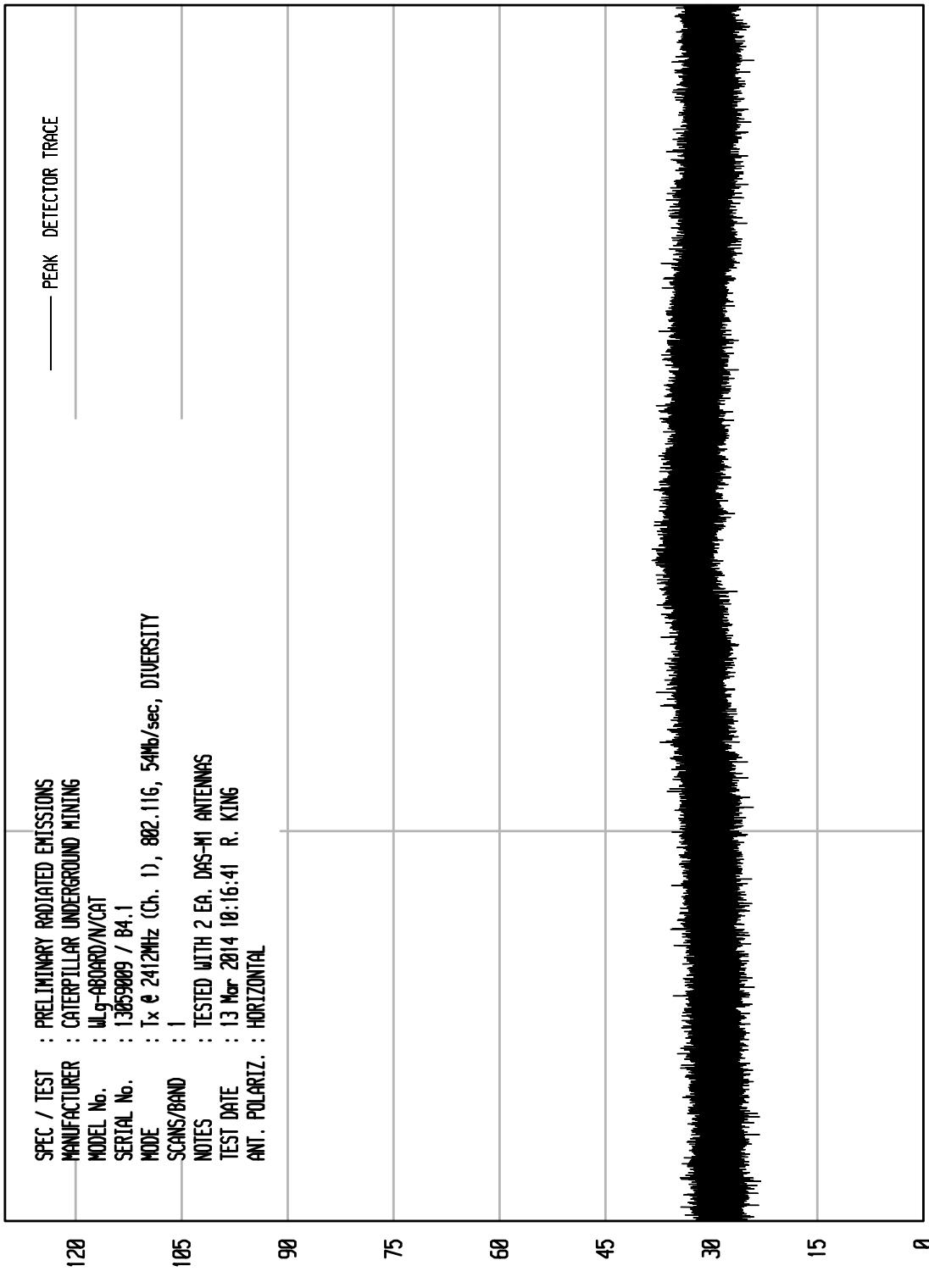


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WKA1 04/24/13

UNIV RCU EMI RUN 2

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS	PEAK DETECTOR TRACE
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING	
	MODEL No.	: W9-ABORD/N/CAT	
	SERIAL No.	: 13059009 / B4.1	
105	MODE	: Tx @ 2412MHz (Ch. 1), 882.116, 54MHz/sec, DIVERSITY	
	SCANS/BAND	: 1	
	NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS	
	TEST DATE	: 13 Mar 2014 10:16:41 R. KING	
	ANT. POLARIZ.	: HORIZONTAL	



START = 18000

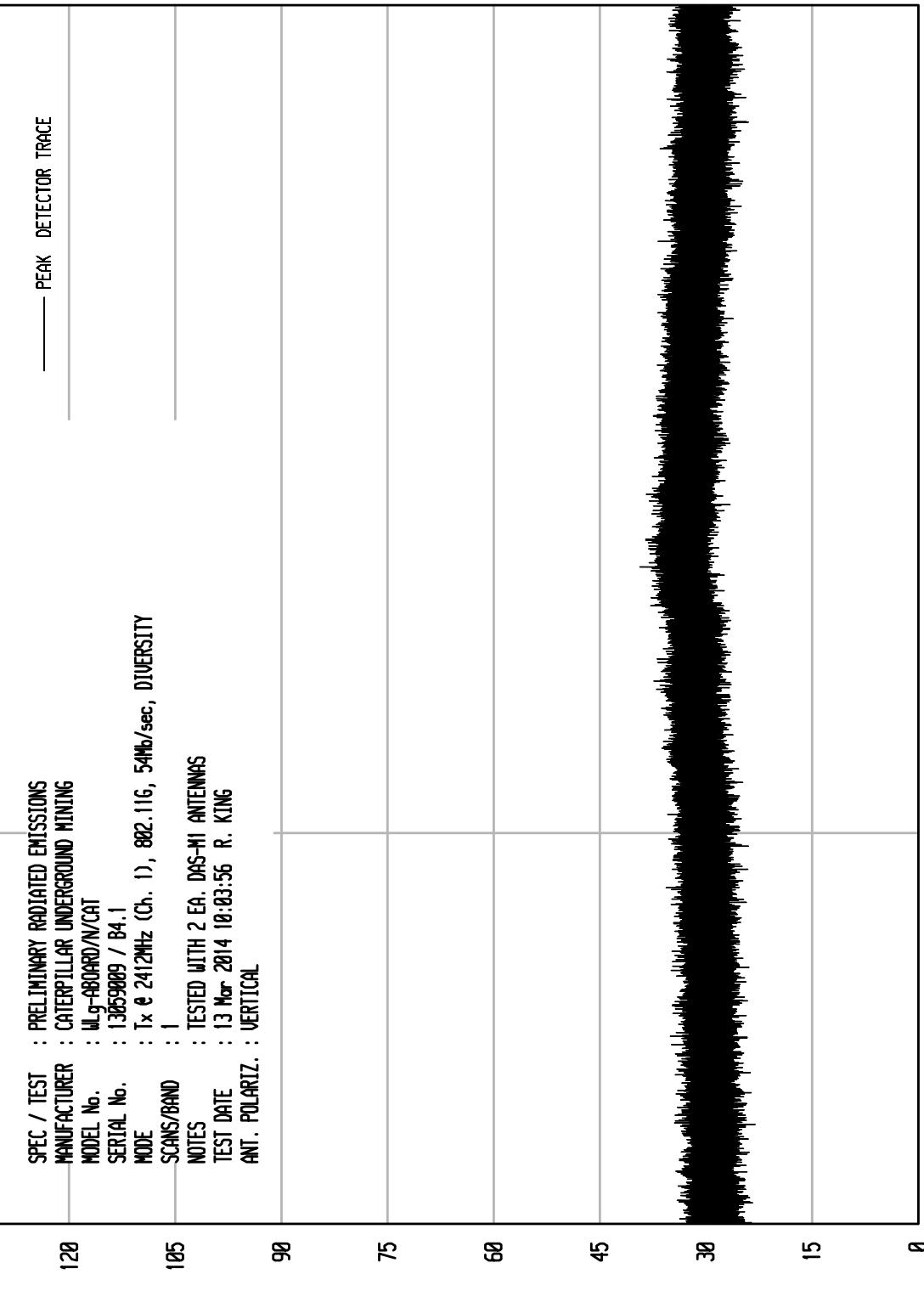
STOP = 25000

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WKA1 04/24/13

UNIV RCU EMI RUN 1

SPEC / TEST		PRELIMINARY RADIATED EMISSIONS	
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/N/CAT		
SERIAL No.	13059009 / B4.1		
MODE	Tx @ 2412MHz (Ch. 1), 882.116, 54MHz/sec, DIVERSITY		
SCANS/BAND	1		
NOTES	TESTED WITH 2 EA. DAS-MI ANTENNAS		
TEST DATE	13 Mar 2014 10:03:56	R. KING	
ANT. POLARIZ.	VERTICAL		



START = 180000

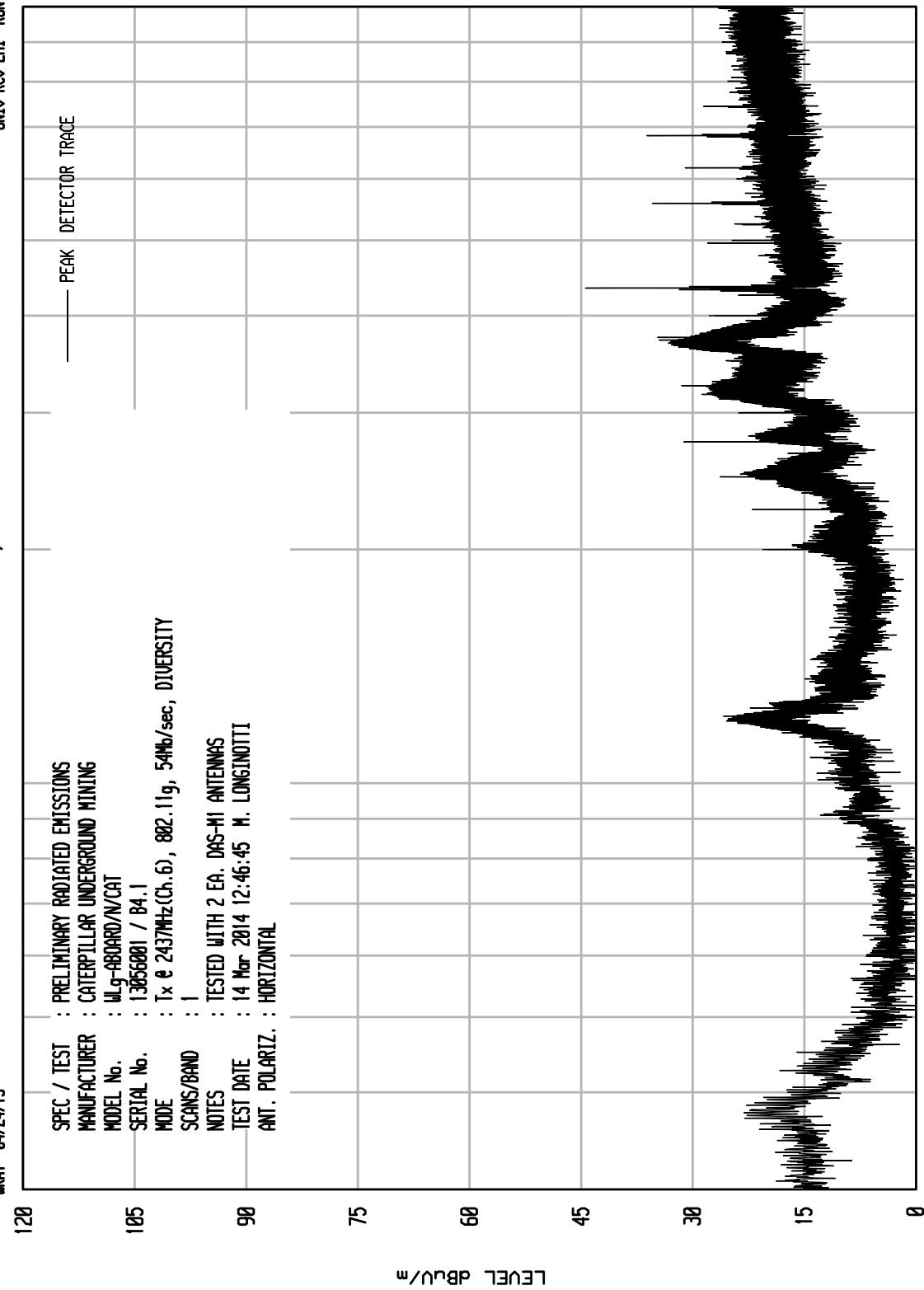
FREQUENCY MHz

STOP = 250000

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UNIV RCU EMI RUN 26

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/CAT		
SERIAL No.	130256001 / B4.1		
MODE	Tx @ 2437MHz(Ch. 6), 802.11g, 54Mb/sec, DIVERSITY		
SCANS/BAND	1		
NOTES	TESTED WITH 2 EA. DAS-MI ANTENNAS		
TEST DATE	14 Mar 2014 12:46:45		
ANT. POLARIZ.	: HORIZONTAL		



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UNIV RCU EMI RUN 27

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/CAT
SERIAL No.	: 130256001 / B4.1
MODE	: Tx @ 2437MHz(Ch. 6), 802.11g, 54Mbps, DIVERSITY
SCANS/BAND	: 1
NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
TEST DATE	: 14 Mar 2014 12:47:50 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

45

30

15

0

LEVEL dBUL/m

START = 30

100

FREQUENCY MHz

STOP = 1000

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UNIV RCU EMI RUN 9

MKA1 04/24/13

 SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
 MANUFACTURER : CATERPILLAR UNDERGROUND MINING

 MODEL No. : W9-ABORD/NCAT
 SERIAL No. : 13056001 / B4.1

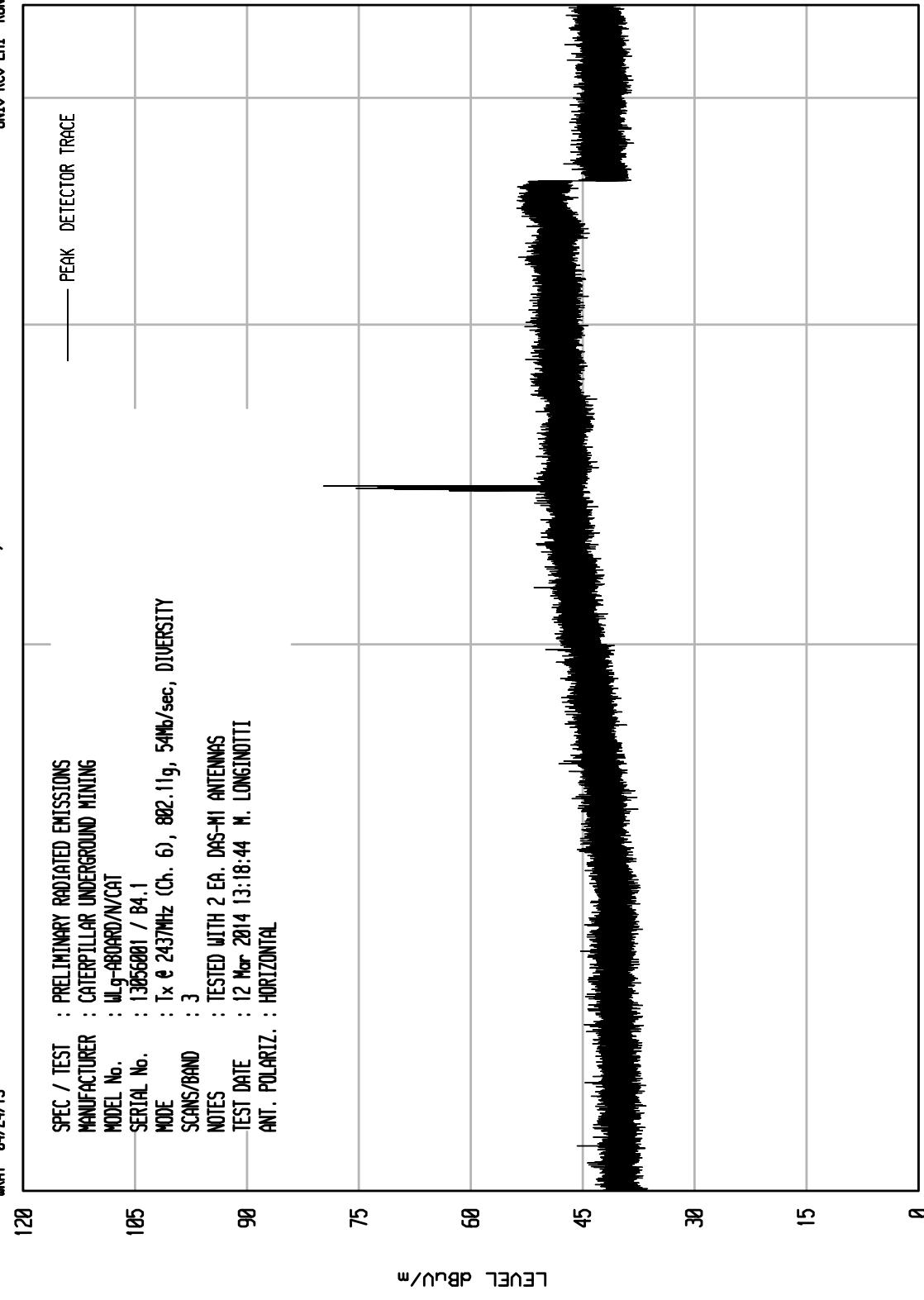
MODE : Tx @ 243MHz (Ch. 6), 882.11g, 54dB/sec, DIVERSITY

SCANS/BAND : 3

NOTES : TESTED WITH 2 EA. DAS-MI ANTENNAS

TEST DATE : 12 Mar 2014 13:18:44 M. LONGINOTTI

ANT. POLARIZ. : HORIZONTAL



START = 1000

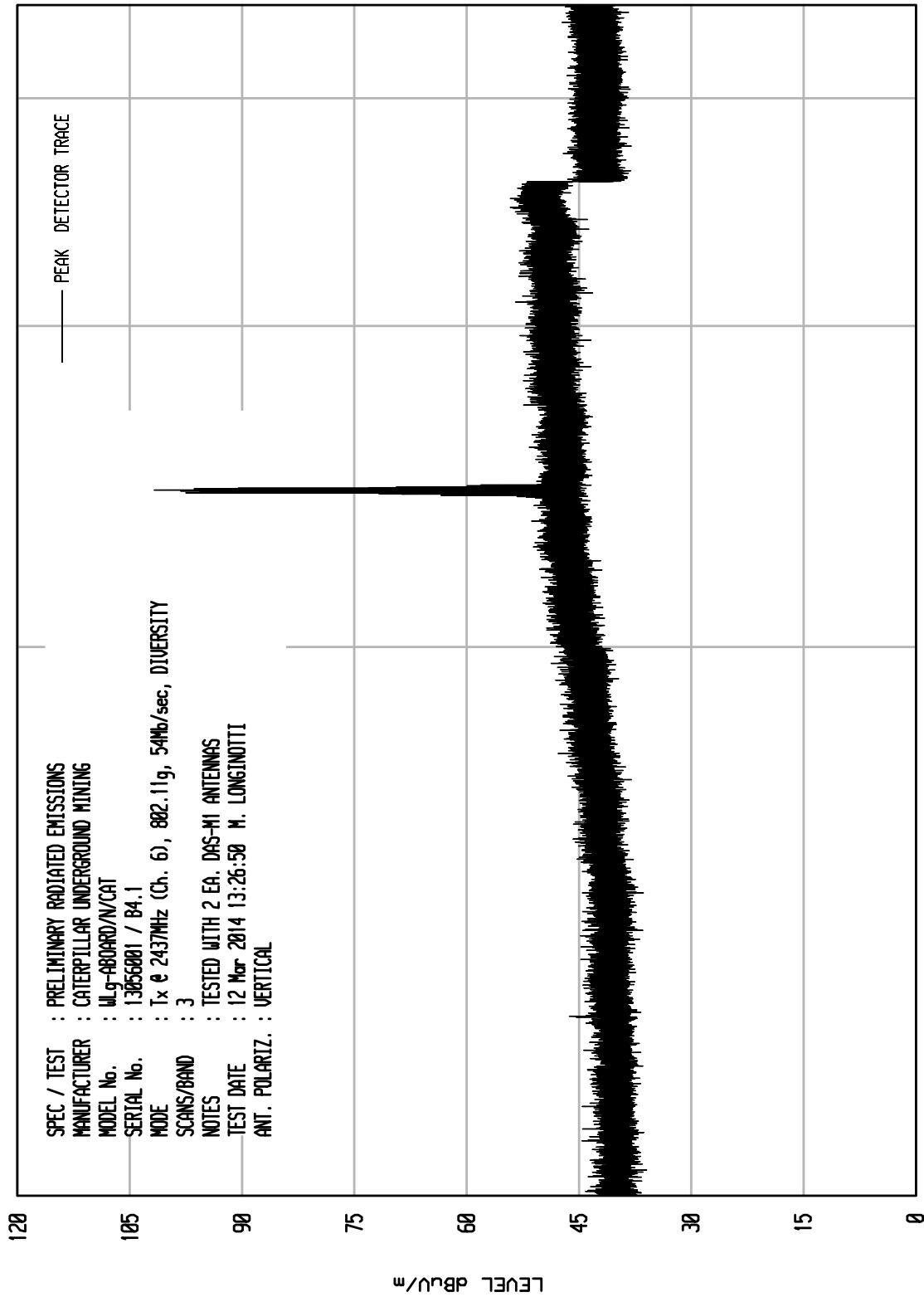
FREQUENCY MHz

STOP = 4500

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UNIV RCU EMI RUN 10

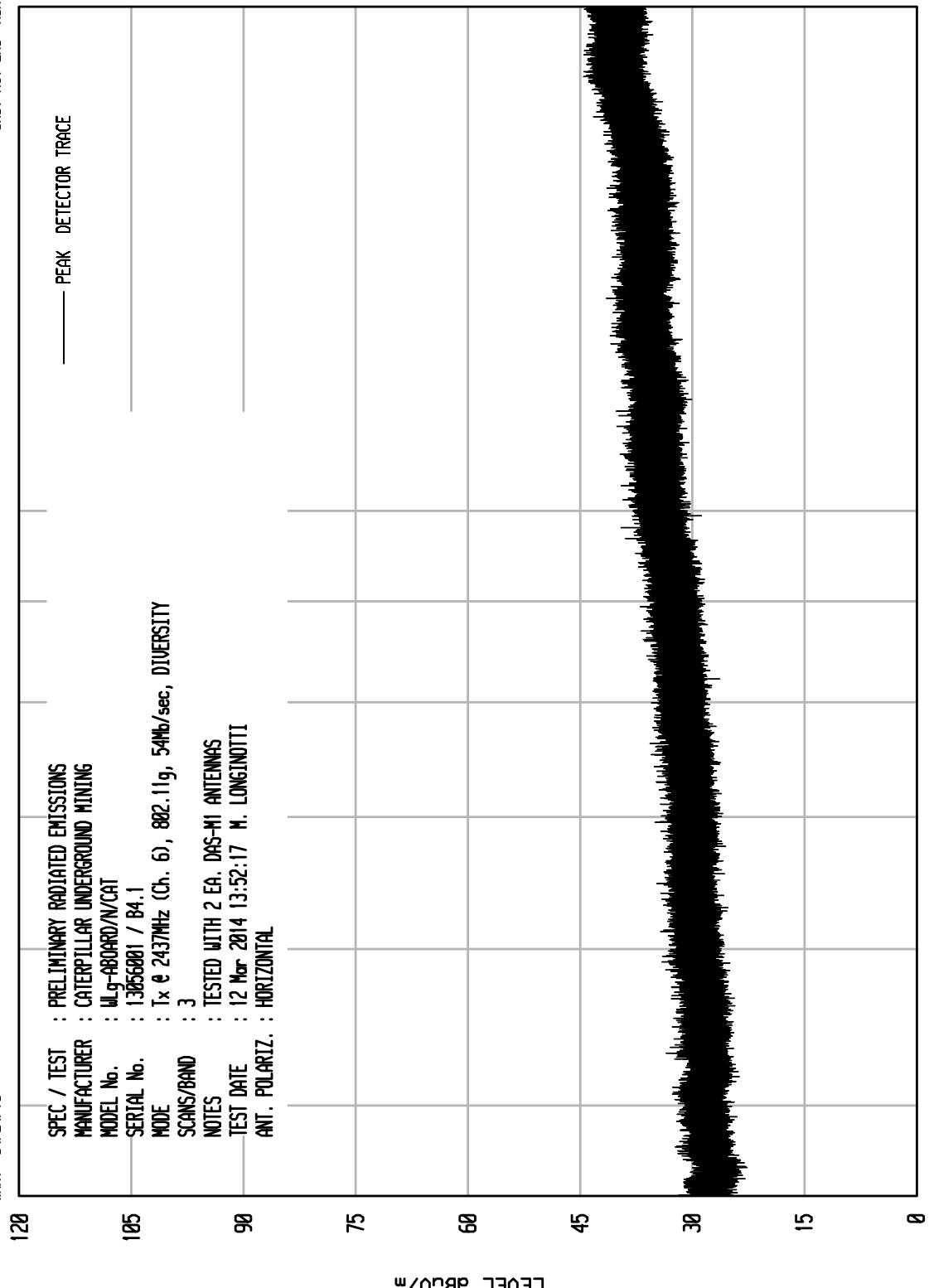
MKA1 04/24/13



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UNIV RCU EMI RUN 6

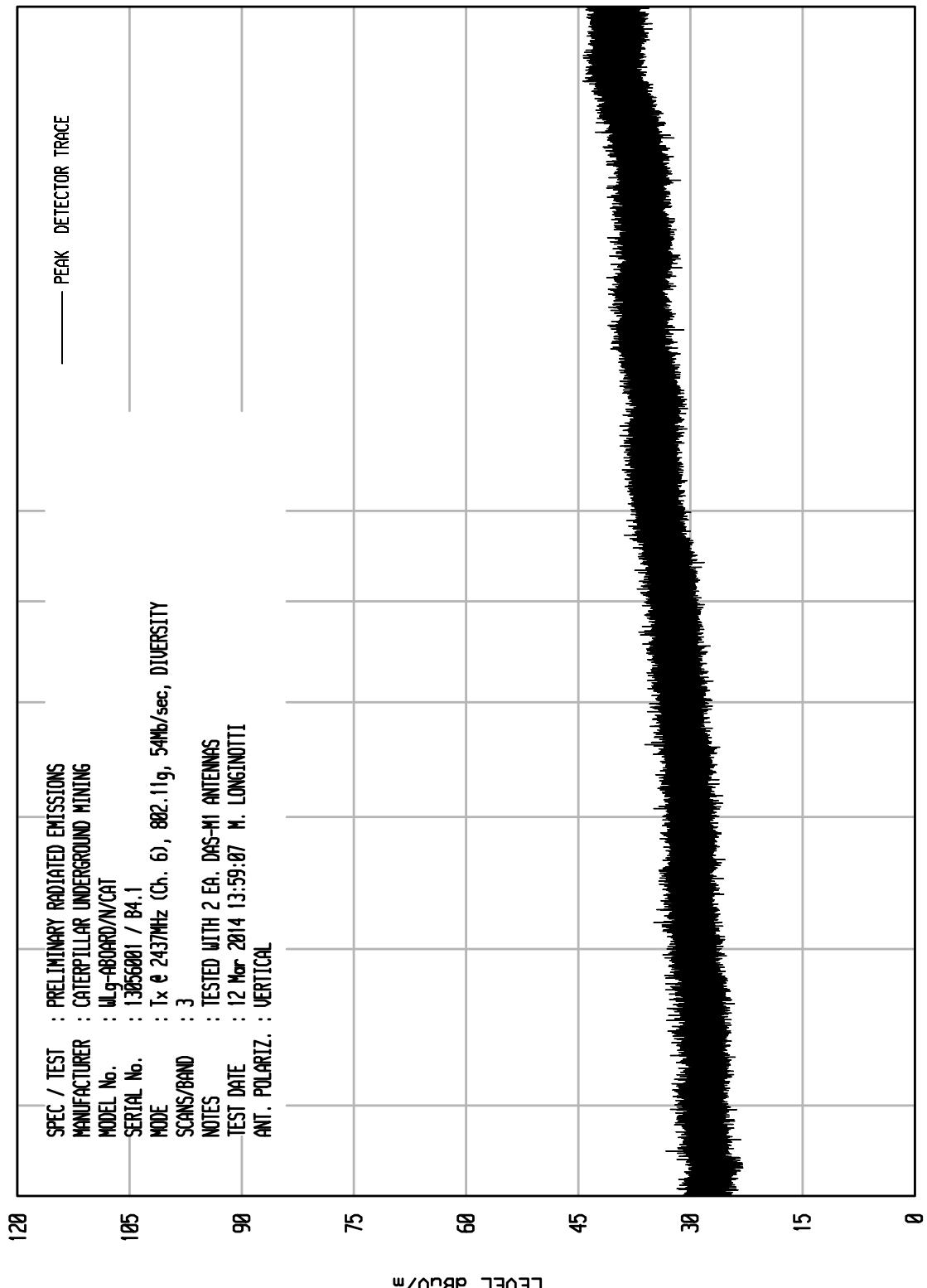
MKA1 04/24/13



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UNIV RCU EMI RUN 7

MKA1 04/24/13



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WKA1 04/24/13

UNIV RCU EMI RUN 3

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
105	MODE	: Tx @ 243MHz (CH. 6), 802.11b, 54Mb/sec, DIVERSITY
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS
	TEST DATE	: 13 Mar 2014 10:22:38 R. KING
	ANT. POLARIZ.	: HORIZONTAL

90
75
60
45
30
15
0

LEVEL dBUL/m

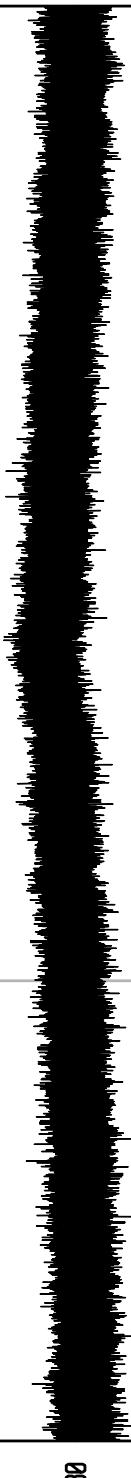
START = 180000

FREQUENCY MHz

STOP = 250000

PEAK DETECTOR TRACE

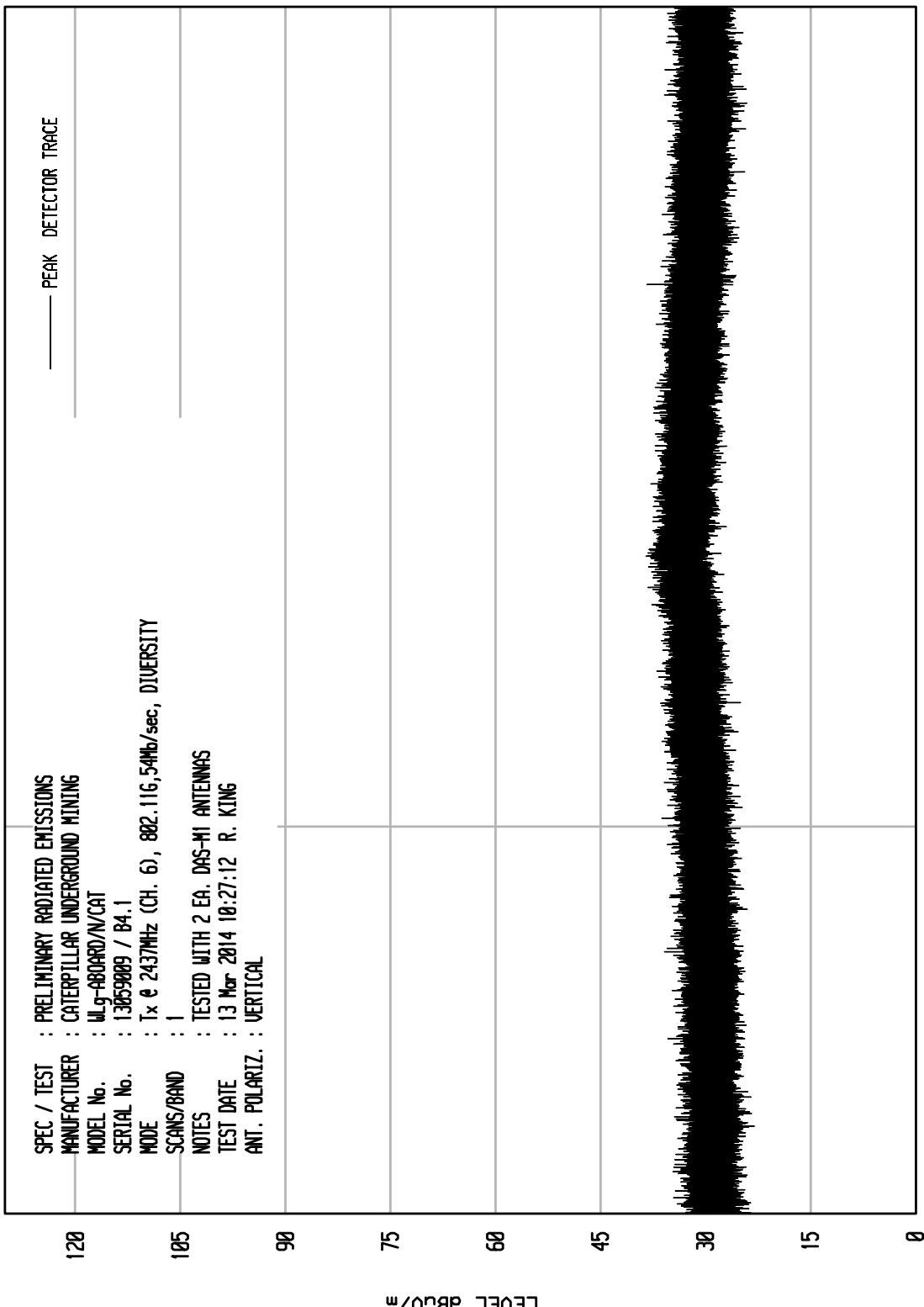
PEAK



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WKA1 04/24/13

UNIV RCU EMI RUN 4



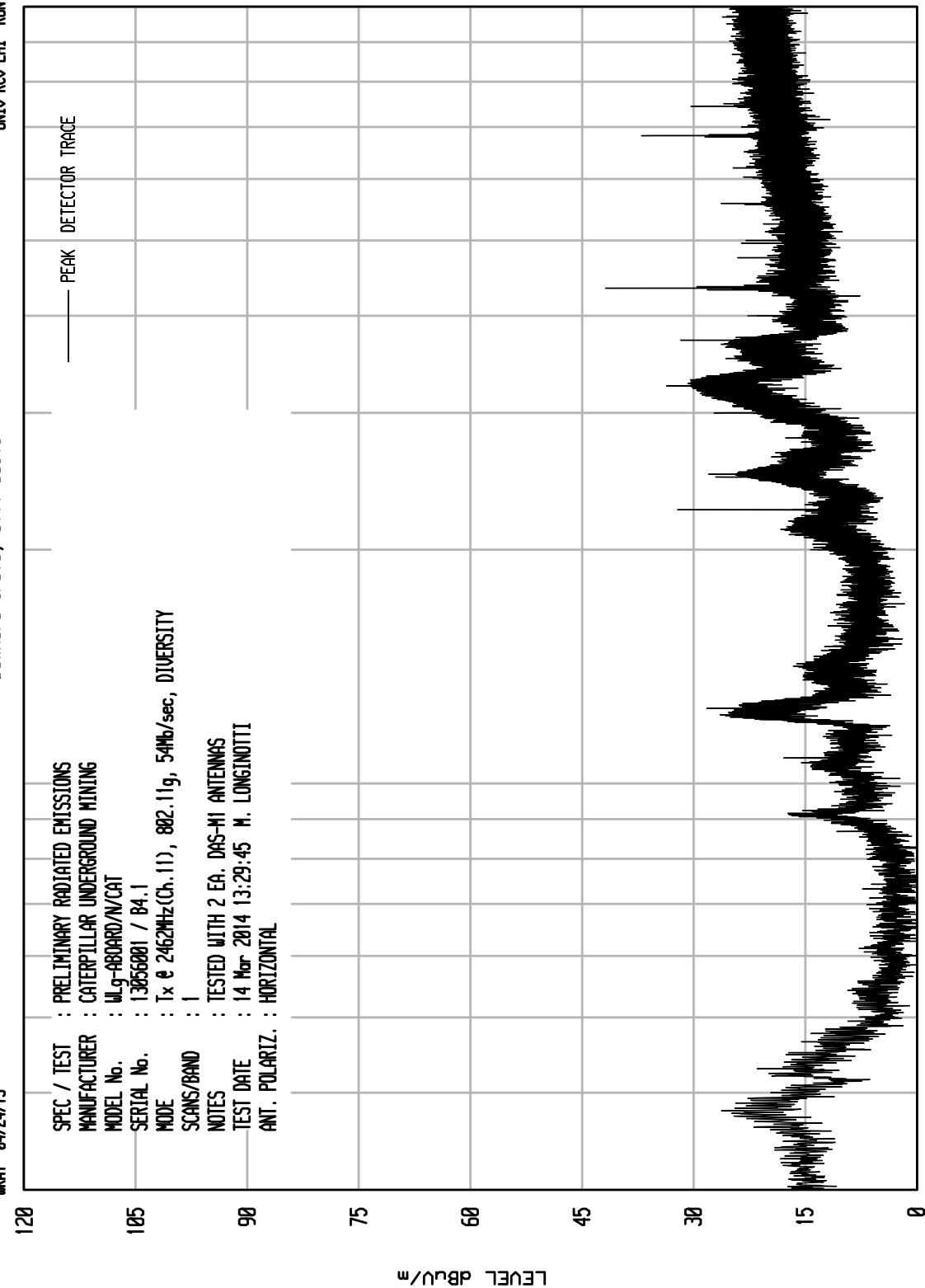
START = 180000

STOP = 250000

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UNIV RCU EMI RUN 29

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W4-ABORD/N/CAT		
SERIAL No.	130256001 / B4.1		
MODE	Tx @ 2462MHz(Ch. 11), 802.11g, 54MHz/sec, DIVERSITY		
SCANS/BAND	1		
NOTES	TESTED WITH 2 EA. DAS-MI ANTENNAS		
TEST DATE	14 Mar 2014 13:29:45		
ANT. POLARIZ.	: HORIZONTAL		



STOP = 1000

FREQUENCY MHz

100

START = 30

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UNIV RCU EMI RUN 28

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/N/CAT		
SERIAL No.	13056001 / B4.1		
MODE	Tx @ 2462MHz(Ch.1), 802.11g, 54MHz/sec, DIVERSITY		
SCANS/BAND	1		
NOTES	TESTED WITH 2 EA. DAS-MI ANTENNAS		
TEST DATE	14 Mar 2014 13:28:57		
ANT. POLARIZ.	VERTICAL		

120

105

90

75

60

45

30

15

0

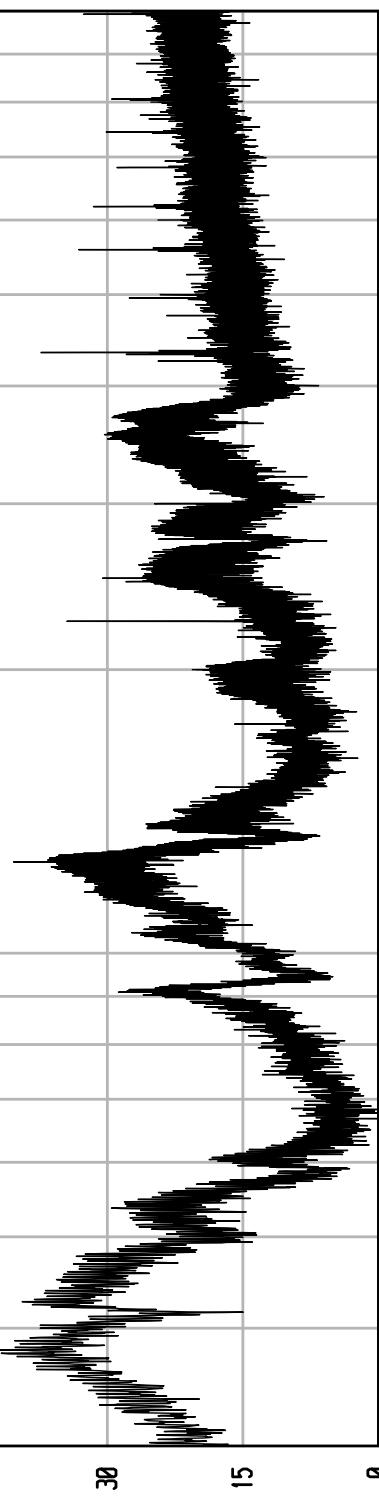
LEVEL dBUL/m

START = 30

100

FREQUENCY MHz

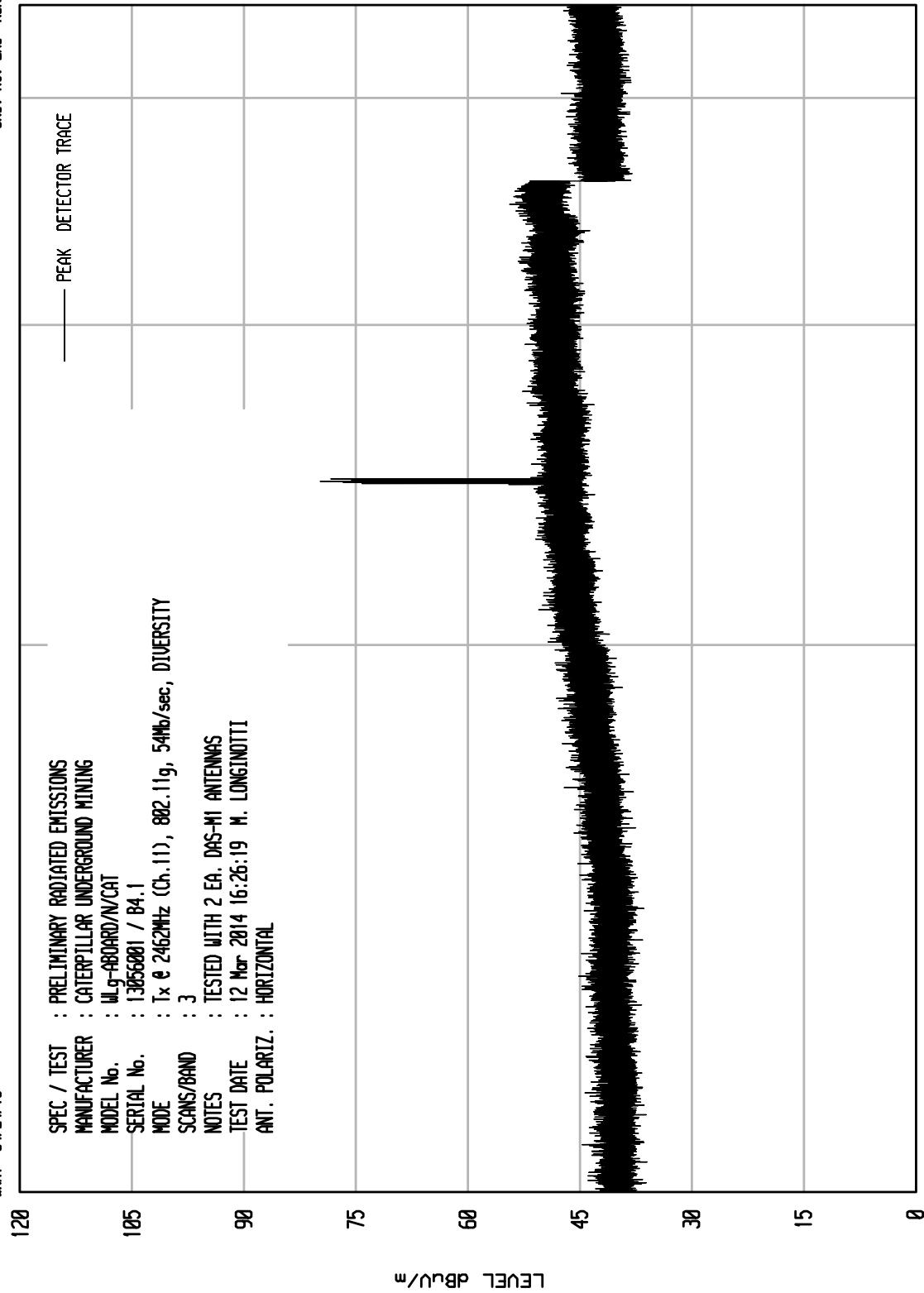
STOP = 1000



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UNIV RCU EMI RUN 16

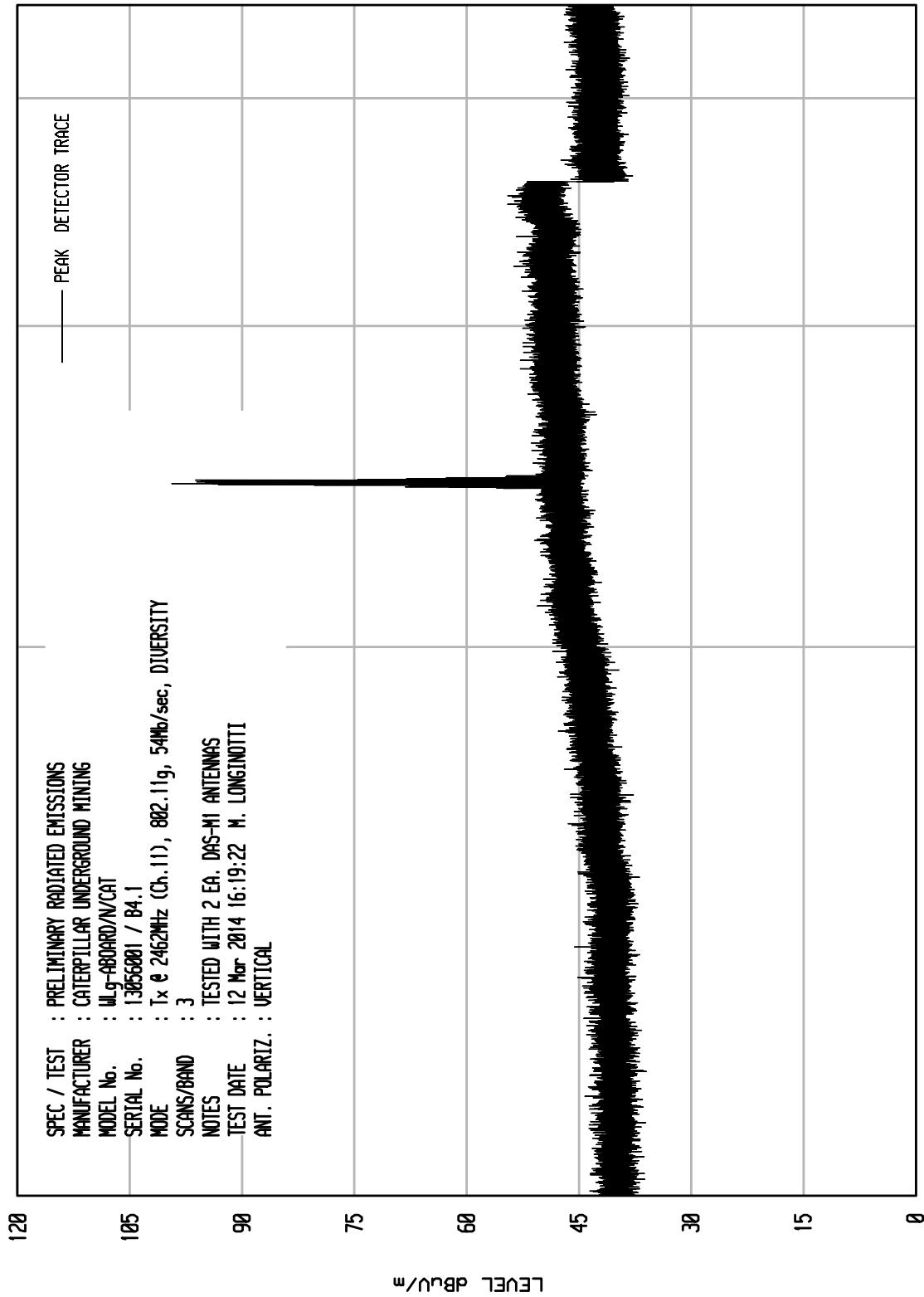
MKA1 04/24/13



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UNIV RCU EMI RUN 15

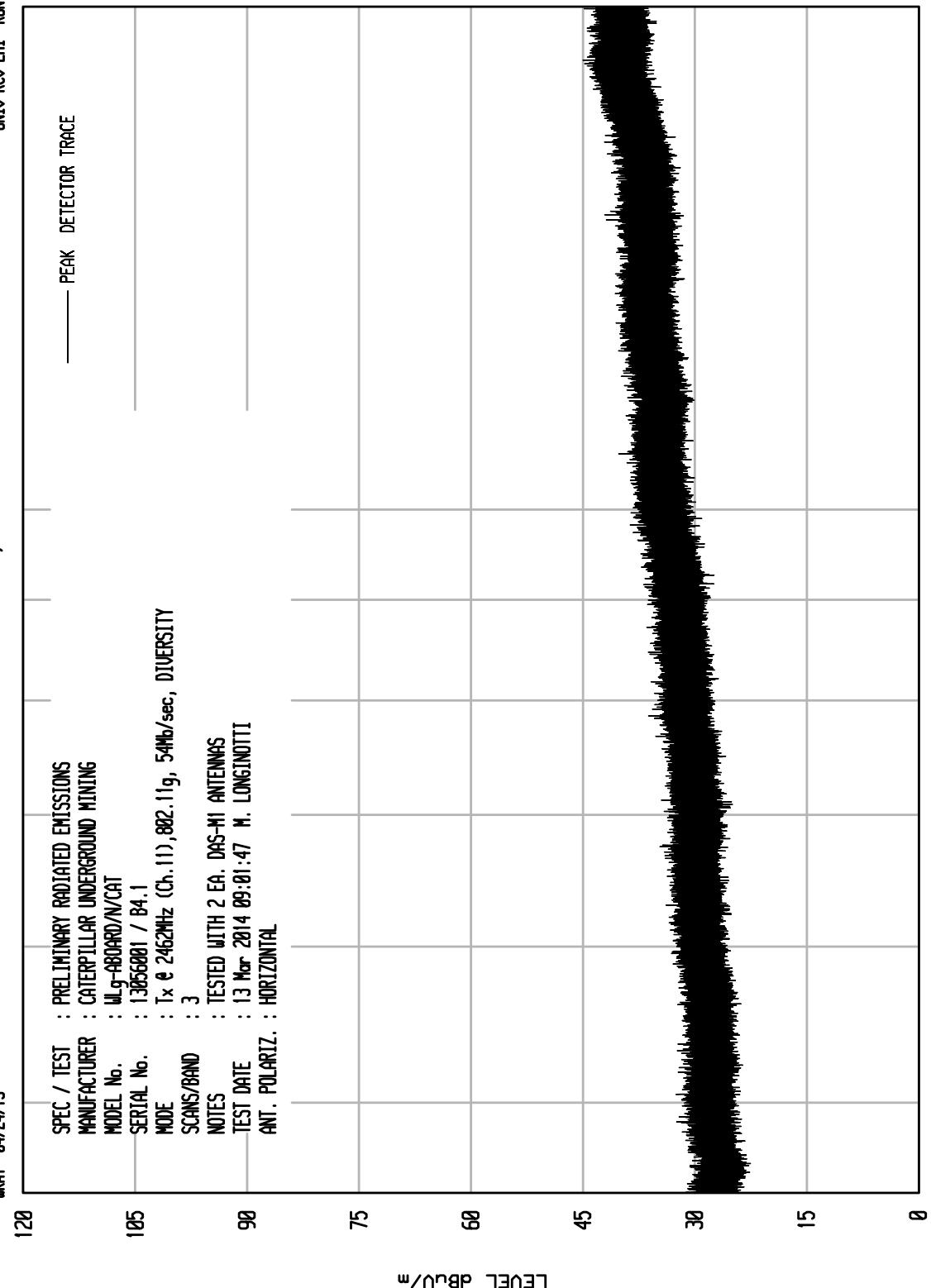
MKA1 04/24/13



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UNIV RCU EMI RUN 3

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	:	CATERPILLAR UNDERGROUND MINING	
MODEL No.	:	W4-ABORD/NCAT	
SERIAL No.	:	13056001 / B4.1	
MODE	:	Tx @ 2462MHz (Ch. 11), 802.11g, 54Mbps/sec, DIVERSITY	
SCANS/BAND	:	3	
NOTES	:	TESTED WITH 2 EA. DAS-MI ANTENNAS	
TEST DATE	:	13 Mar 2014 09:01:47	M. LONGINOTTI
ANT. POLARIZ.	:	HORIZONTAL	



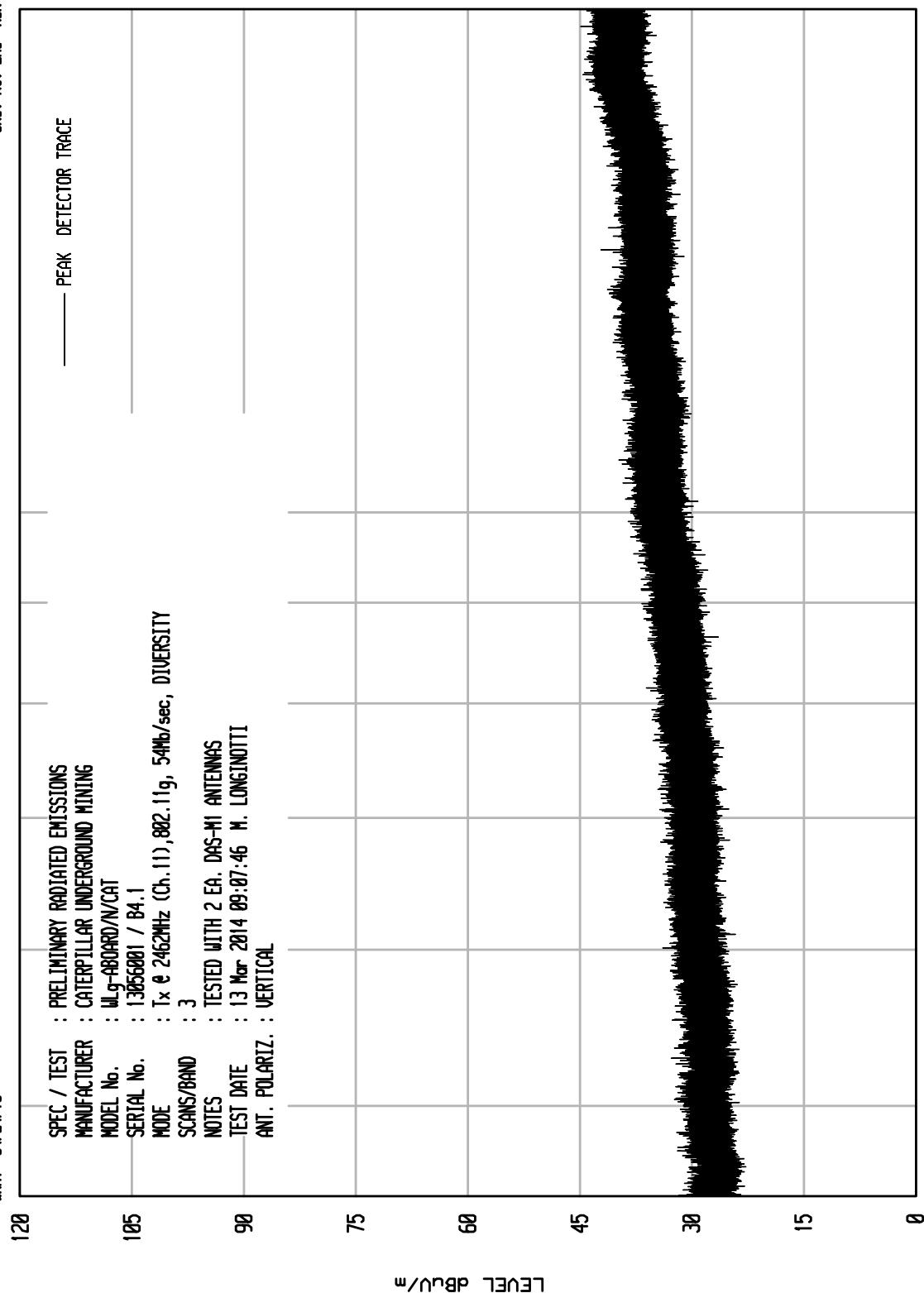
START = 4500

STOP = 18000

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UNIV RCU EMI RUN 4

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
		MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
105		MODEL No.	: W4-ABORD/NCAT
SERIAL No.			: 13056001 / B4.1
MODE			: Tx @ 2462MHz (Ch. 11), 802.11g, 54Mbps/sec, DIVERSITY
SCANS/BAND			: 3
NOTES			: TESTED WITH 2 EA. DAS-MI ANTENNAS
TEST DATE			: 13 Mar 2014 09:07:46 M. LONGINOTTI
ANT. POLARIZ.			: VERTICAL



START = 4500

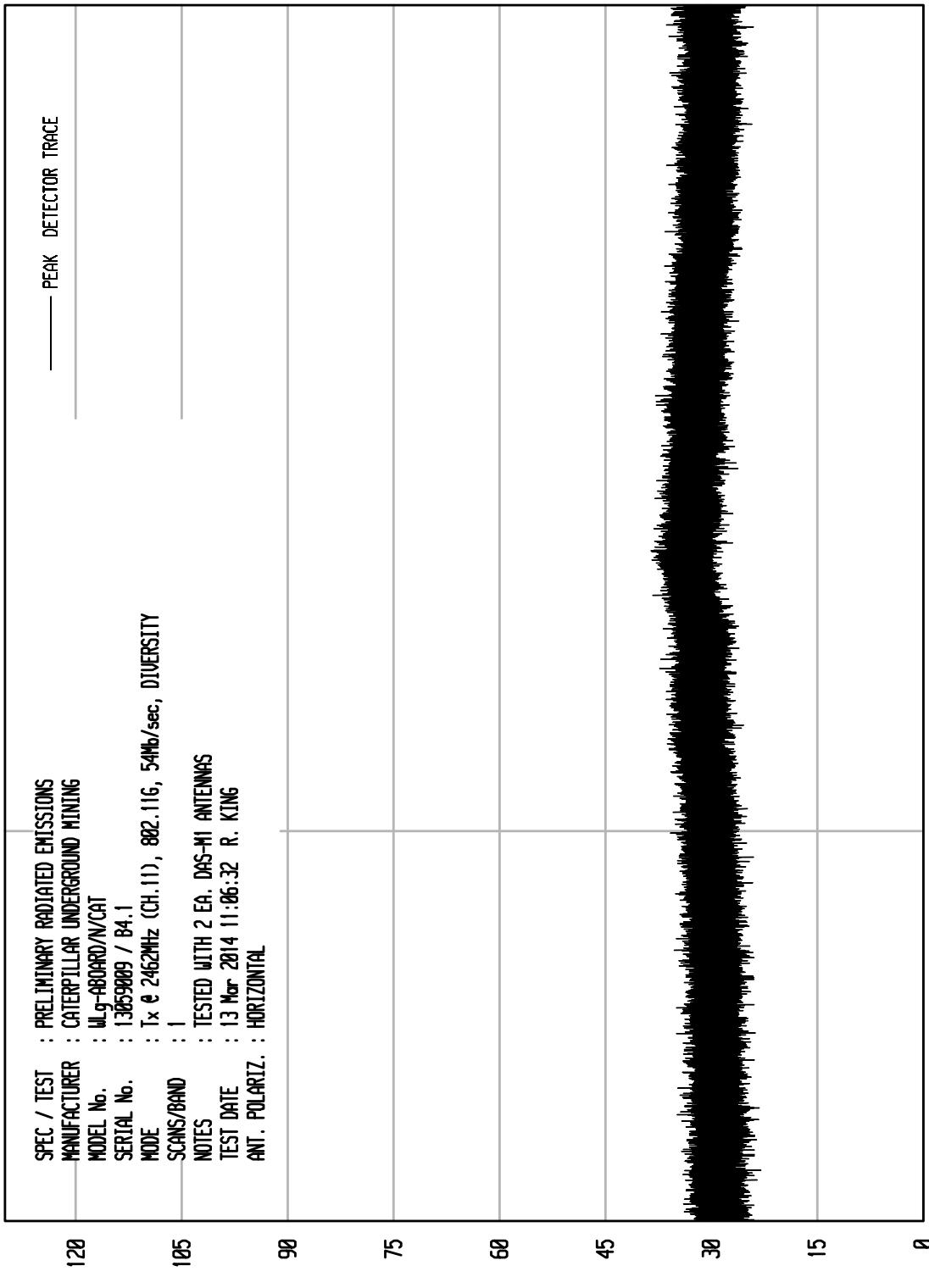
STOP = 18000

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MKA1 04/24/13

UNIV RCU EMI RUN 6

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS	PEAK DETECTOR TRACE
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING	
	MODEL No.	: M9-ABORD/N/CAT	
	SERIAL No.	: 13059009 / B4.1	
105	MODE	: Tx @ 2462MHz (CH.11), 802.11g, 54Mbps, DIVERSITY	
	SCANS/BAND	: 1	
	NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS	
	TEST DATE	: 13 Mar 2014 11:06:32 R. KING	
90	ANT. POLARIZ.	: HORIZONTAL	



START = 180000

FREQUENCY MHz

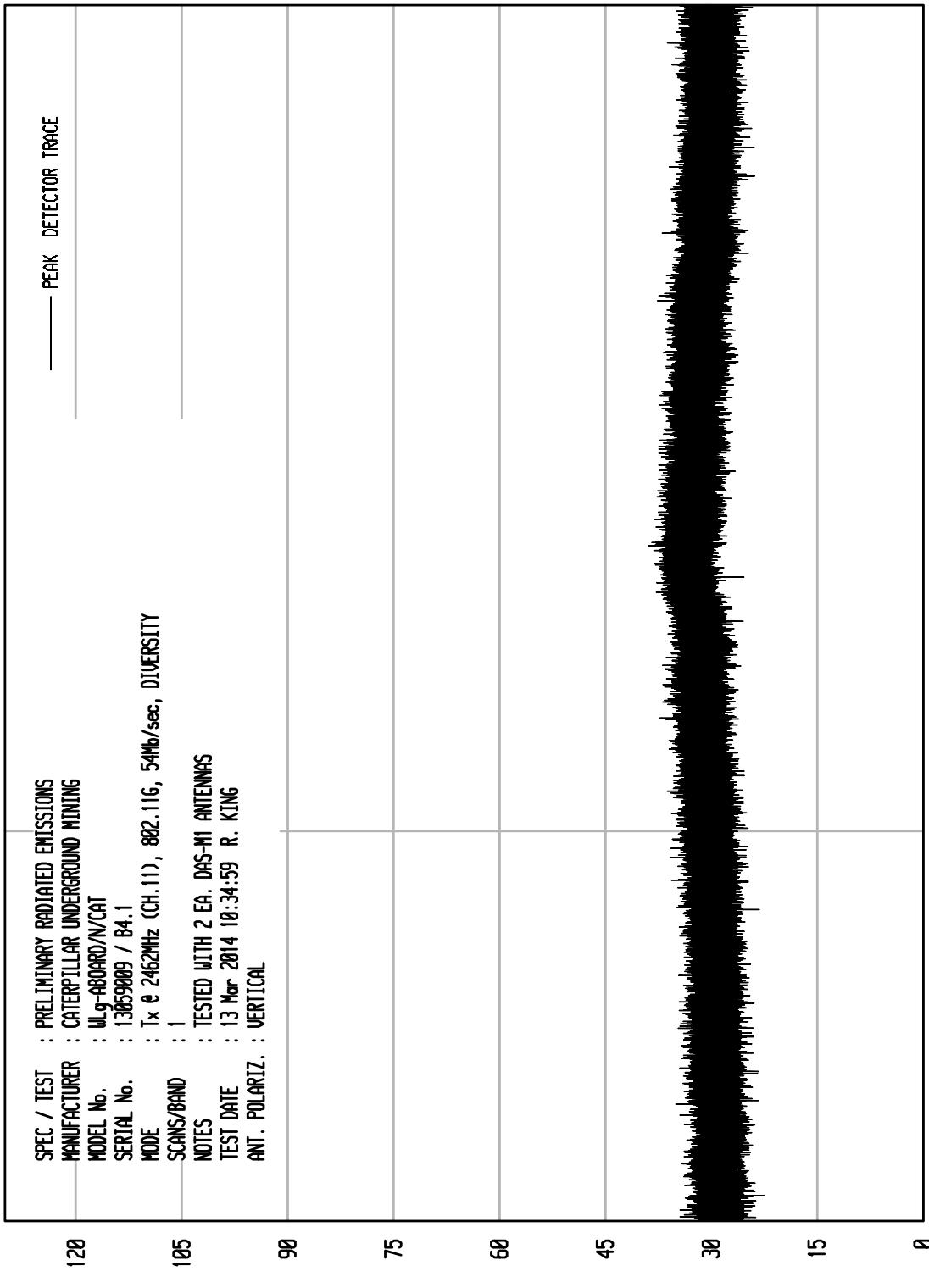
STOP = 250000

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MKA1 04/24/13

UNIV RCU EMI RUN 5

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS	PEAK DETECTOR TRACE
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING	
	MODEL No.	: M9-ABORD/N/CAT	
	SERIAL No.	: 130559009 / B4.1	
105	MODE	: Tx @ 2462MHz (CH.11), 802.11g, 54Mbps/sec, DIVERSITY	
	SCANS/BAND	: 1	
	NOTES	: TESTED WITH 2 EA. DAS-MI ANTENNAS	
	TEST DATE	: 13 Mar 2014 10:34:59 R. KING	
90	ANT. POLARIZ.	: VERTICAL	



START = 180000

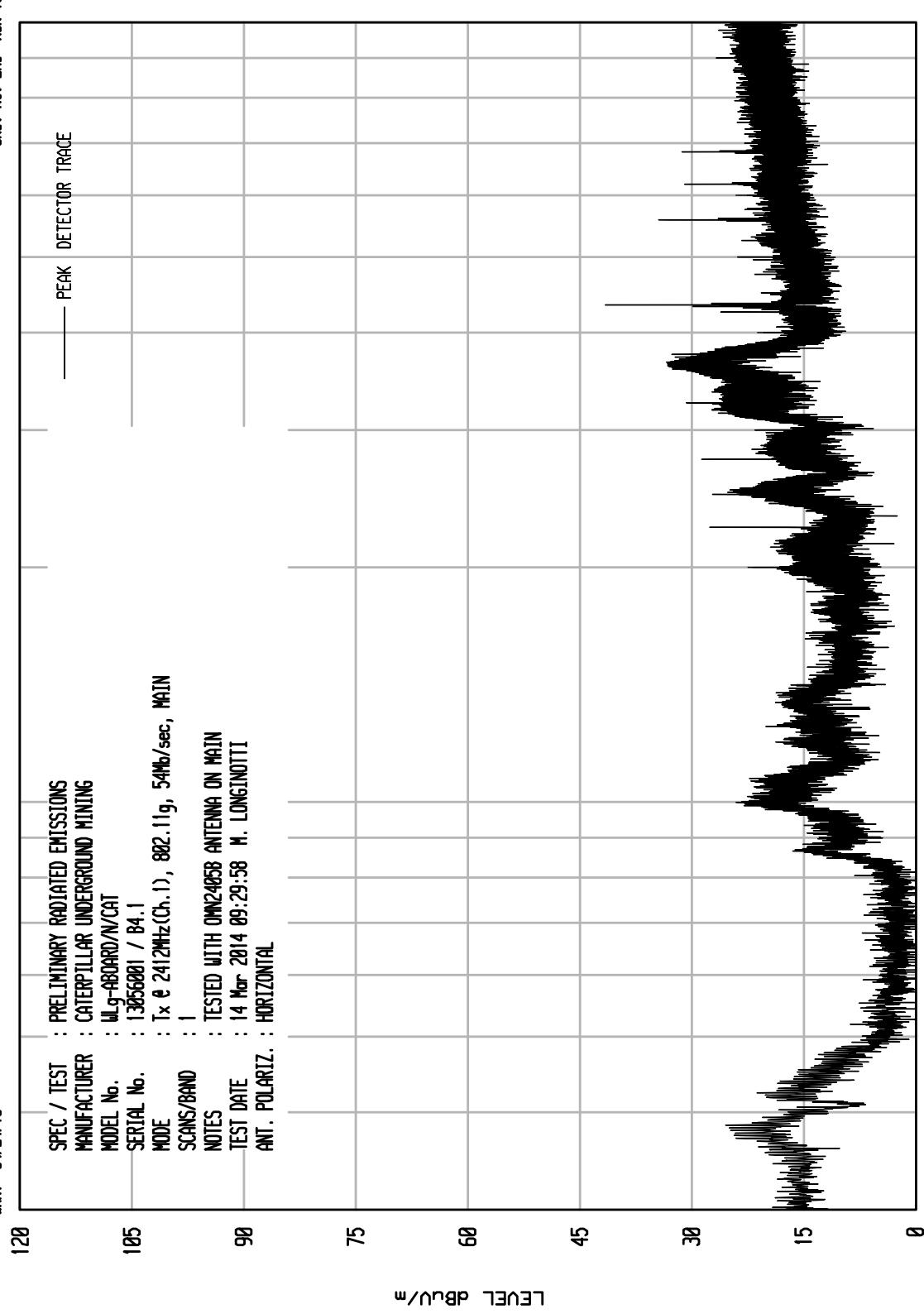
FREQUENCY MHz

STOP = 250000

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 MKA1 04/24/13
 UNIV RCV EMI RUN 10

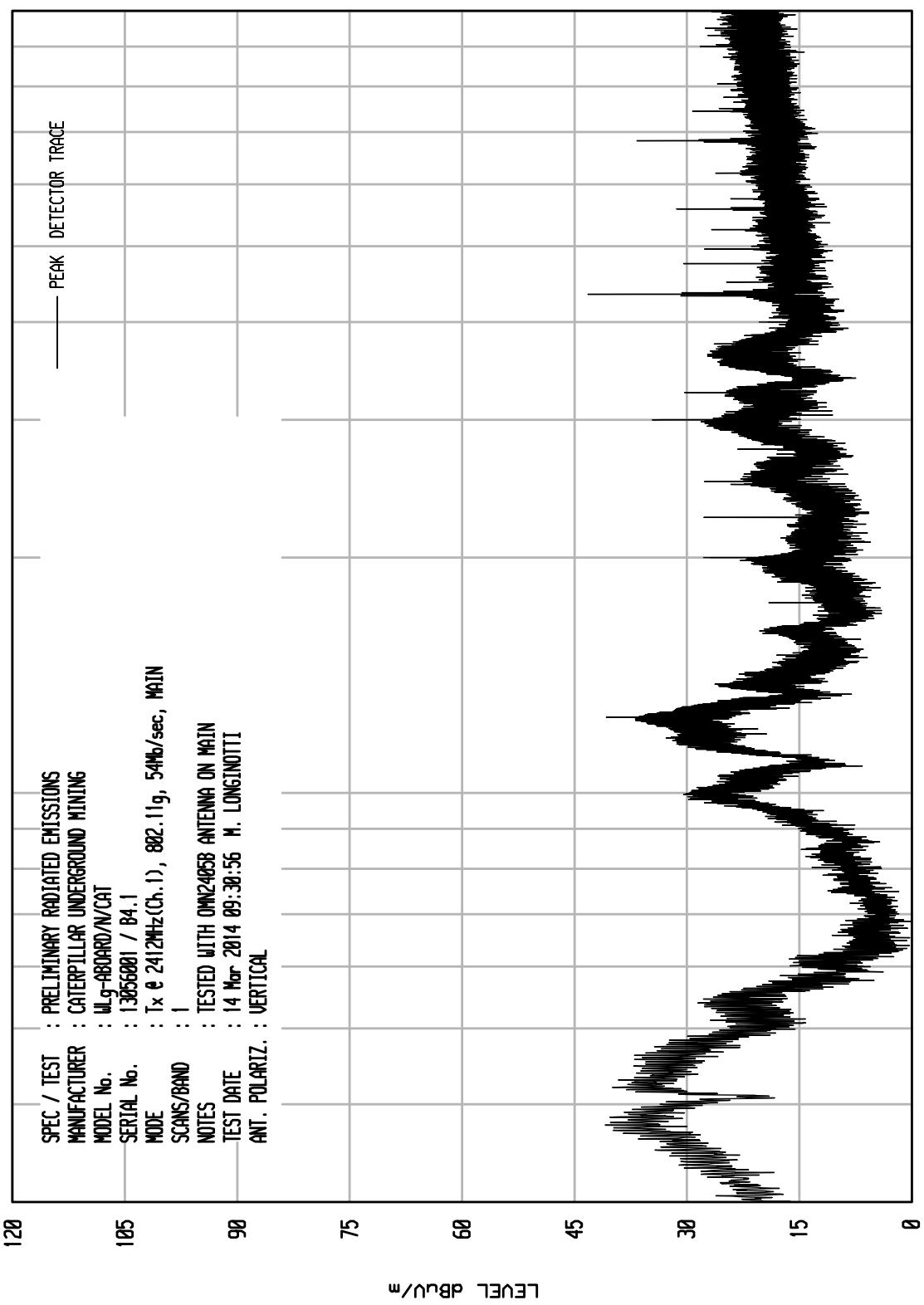
SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/CAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2412MHz(Ch. 1), 802.11g, 54Mbps, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 14 Mar 2014 09:29:58
ANT. POLARIZ.	: HORIZONTAL



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 MKA1 04/24/13
 UNIV RCU EMI RUN 11

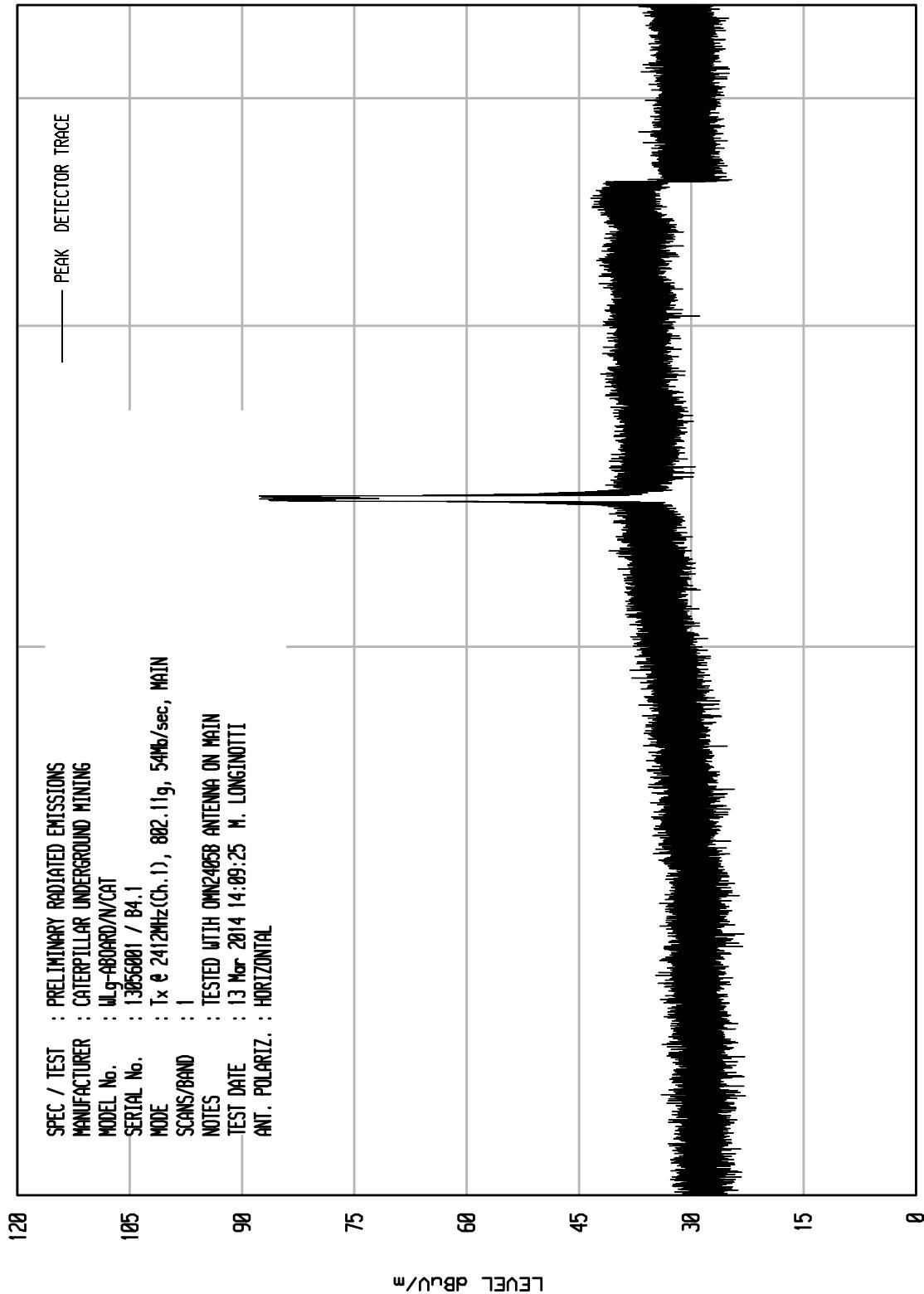
SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/N/CAT
SERIAL No.	: 13056001 / B4_1
MODE	: Tx @ 2412MHz(Ch. 1), 802.11g, 54Mbps, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 14 Mar 2014 09:30:56 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL



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UNIV RCU EMI RUN 11

MKA1 04/24/13

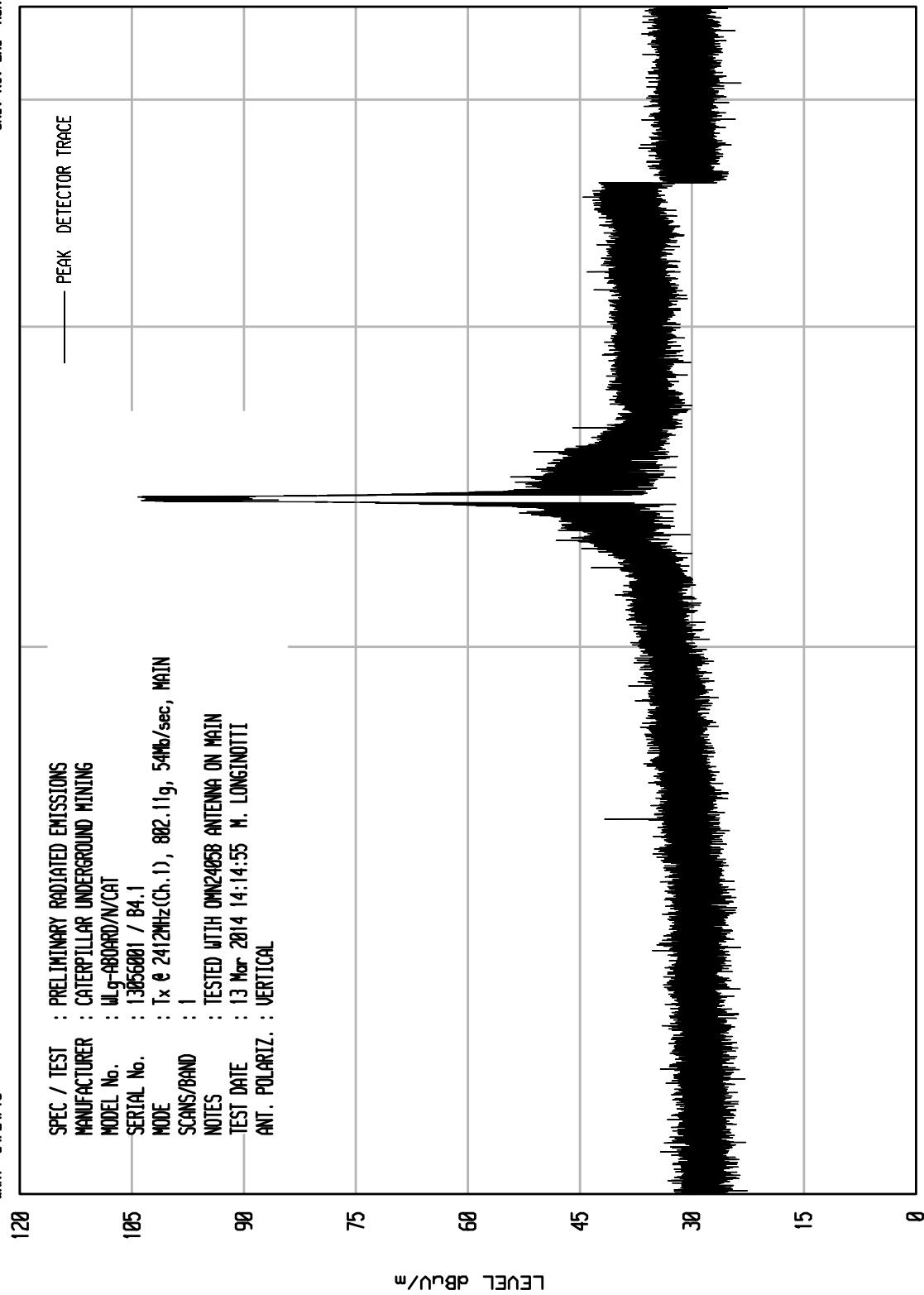


ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

MKA1 04/24/13

UNIV RCU EMI RUN 12

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2412MHz (Ch. 1), 882.11g, 54Mb/sec, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 13 Mar 2014 14:14:55 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

UNIV RCU EMI RUN 14

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2412MHz (Ch. 1), 882.11g, 54MHz/sec, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 13 Mar 2014 14:20:45
ANT. POLARIZ.	: HORIZONTAL

105

90

75

60

45

30

15

0

LEVEL dBuU/m

120

105

90

75

60

45

30

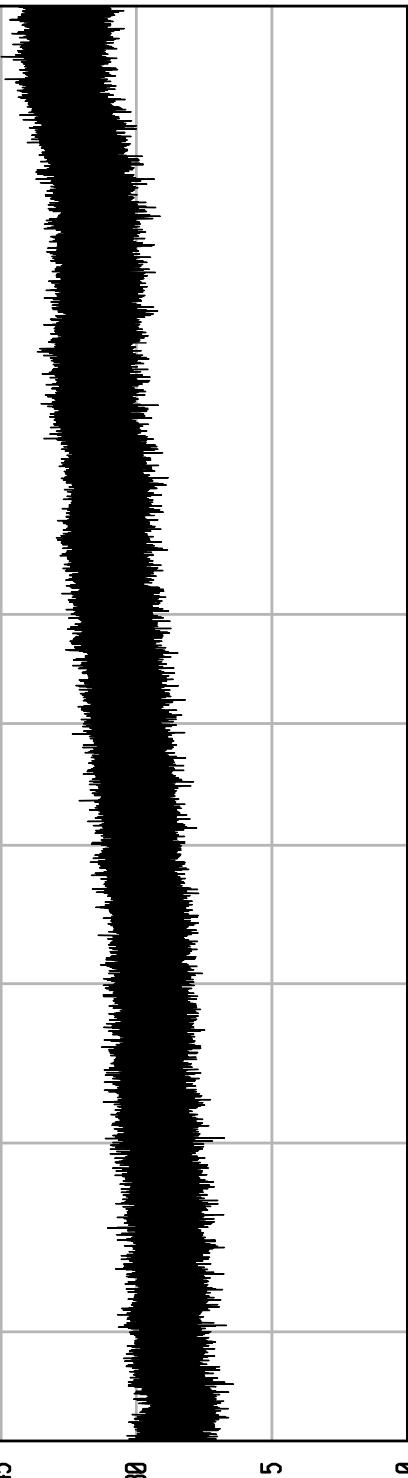
15

0

START = 4500

 FREQUENCY MHz
 10000

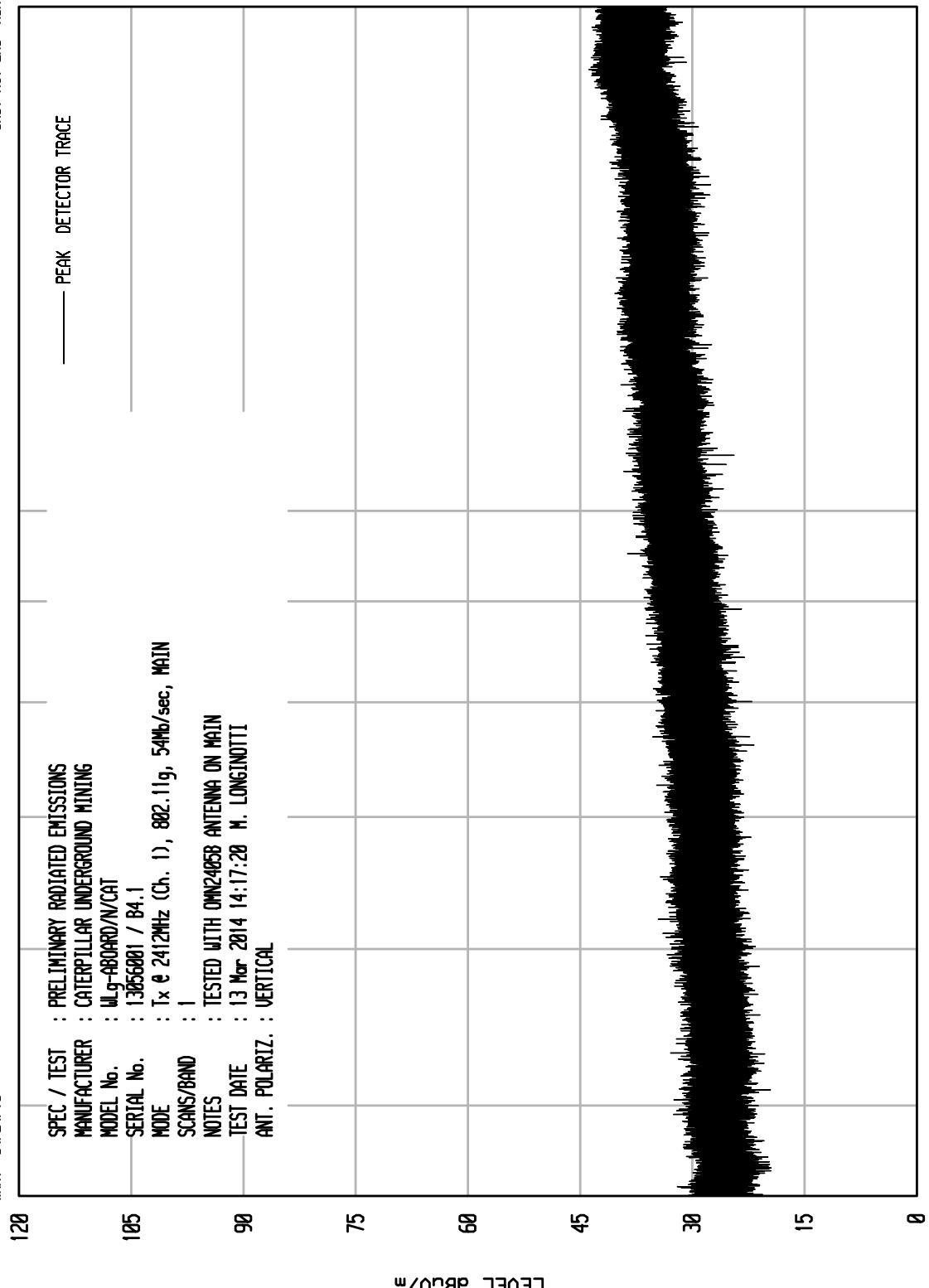
STOP = 18000



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

UNIV RCU EMI RUN 13

MKA1 04/24/13

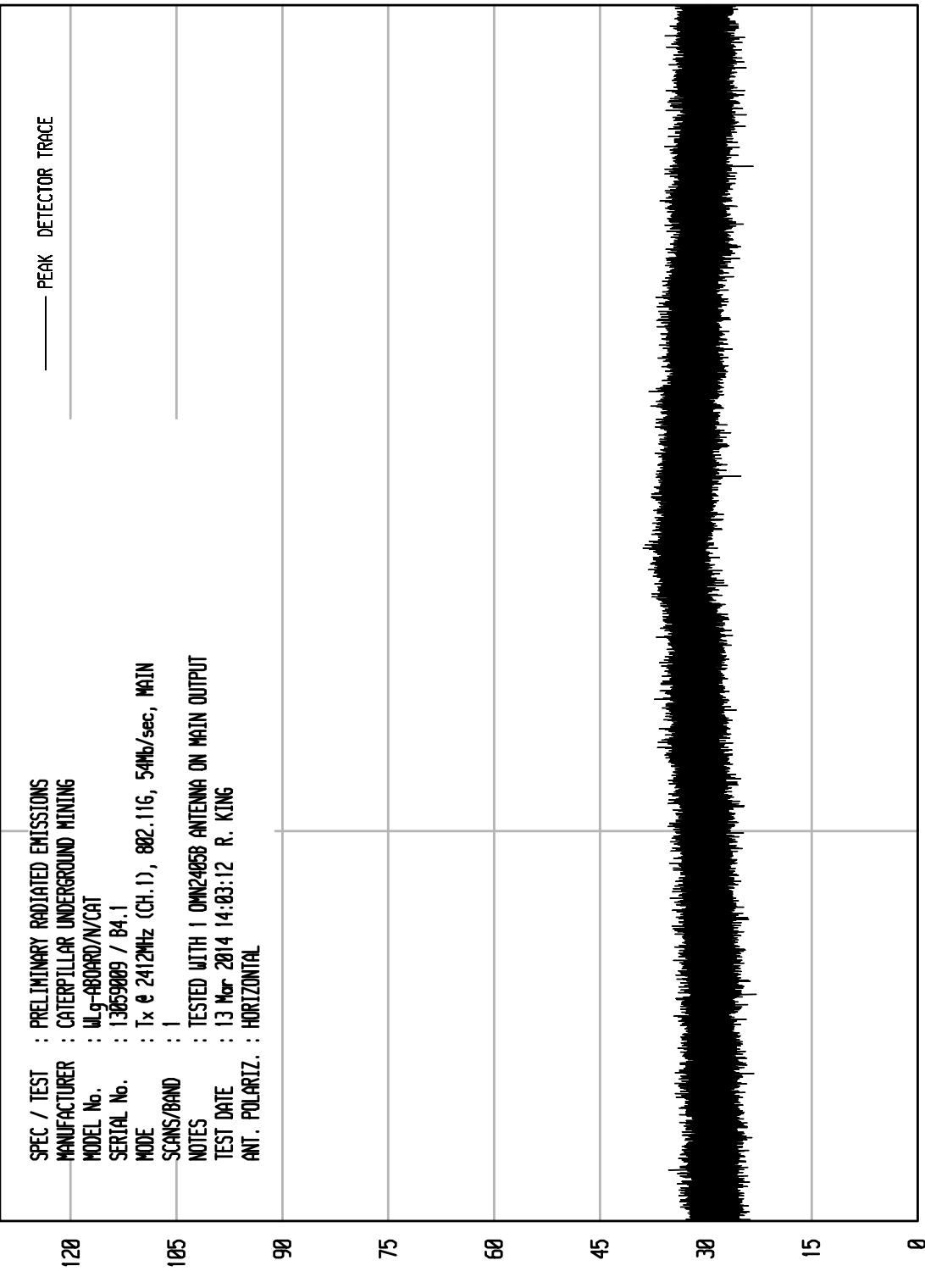


ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

MKA1 04/24/13

UNIV RCU EMI RUN 18

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
	MODE	: Tx @ 2412MHz (CH.1), 802.11G, 54Mb/sec, MAIN
105	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMN2408SB ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 14:03:12 R. KING
	ANT. POLARIZ.	: HORIZONTAL



START = 180000

FREQUENCY MHz

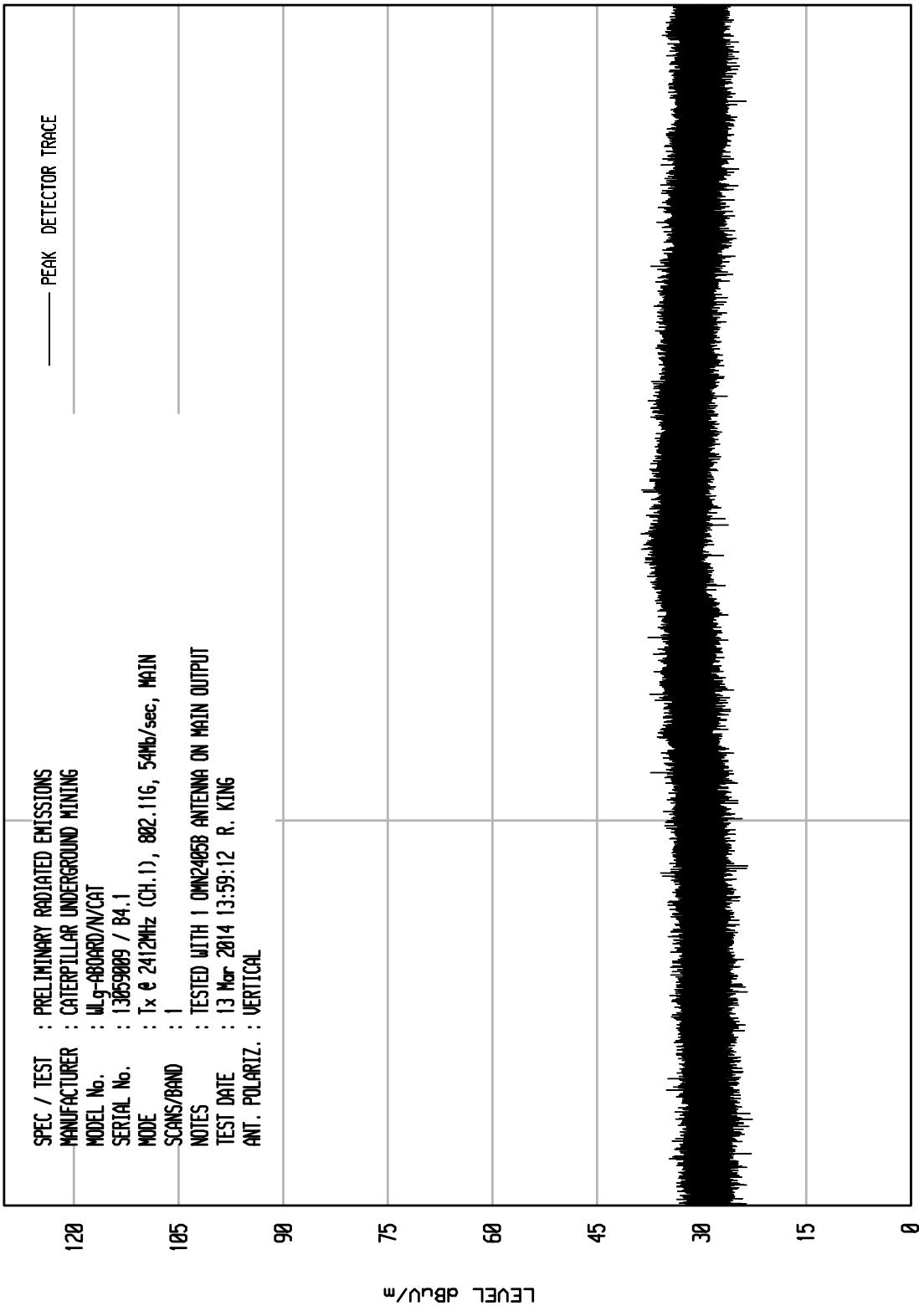
STOP = 250000

ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

MKA1 04/24/13

UNIV RCU EMI RUN 17

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: M9-ABORD/NCAT
	SERIAL No.	: 13059009 / B4.1
105	MODE	: Tx @ 2412MHz (CH.1), 802.11G, 54Mb/sec, MAIN
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMN2408SB ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 13:59:12 R. KING
	ANT. POLARIZ.	: VERTICAL



START = 180000

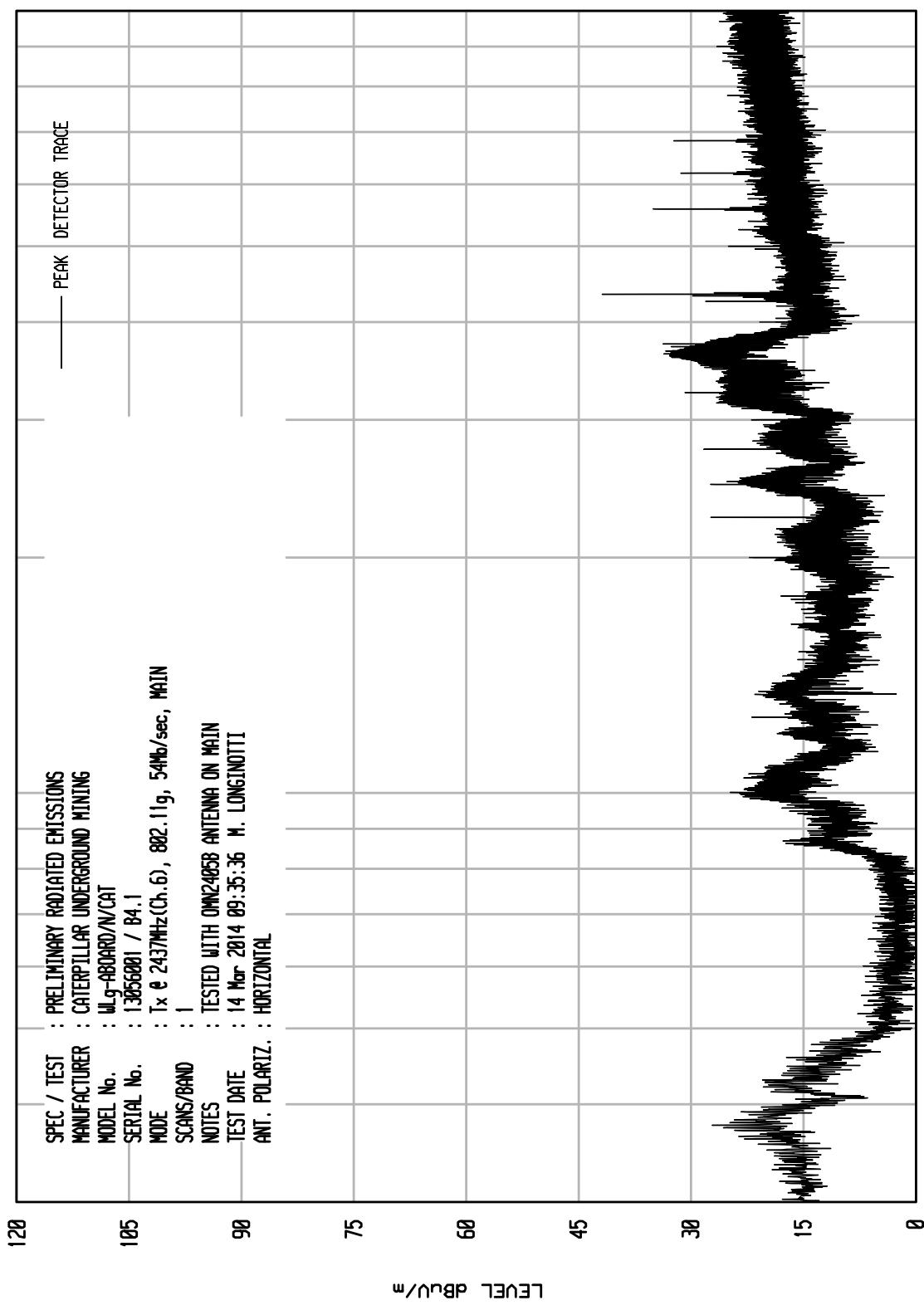
FREQUENCY MHz

STOP = 250000

ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

MKA1 04/24/13 UNIV RCU EMI RUN 13

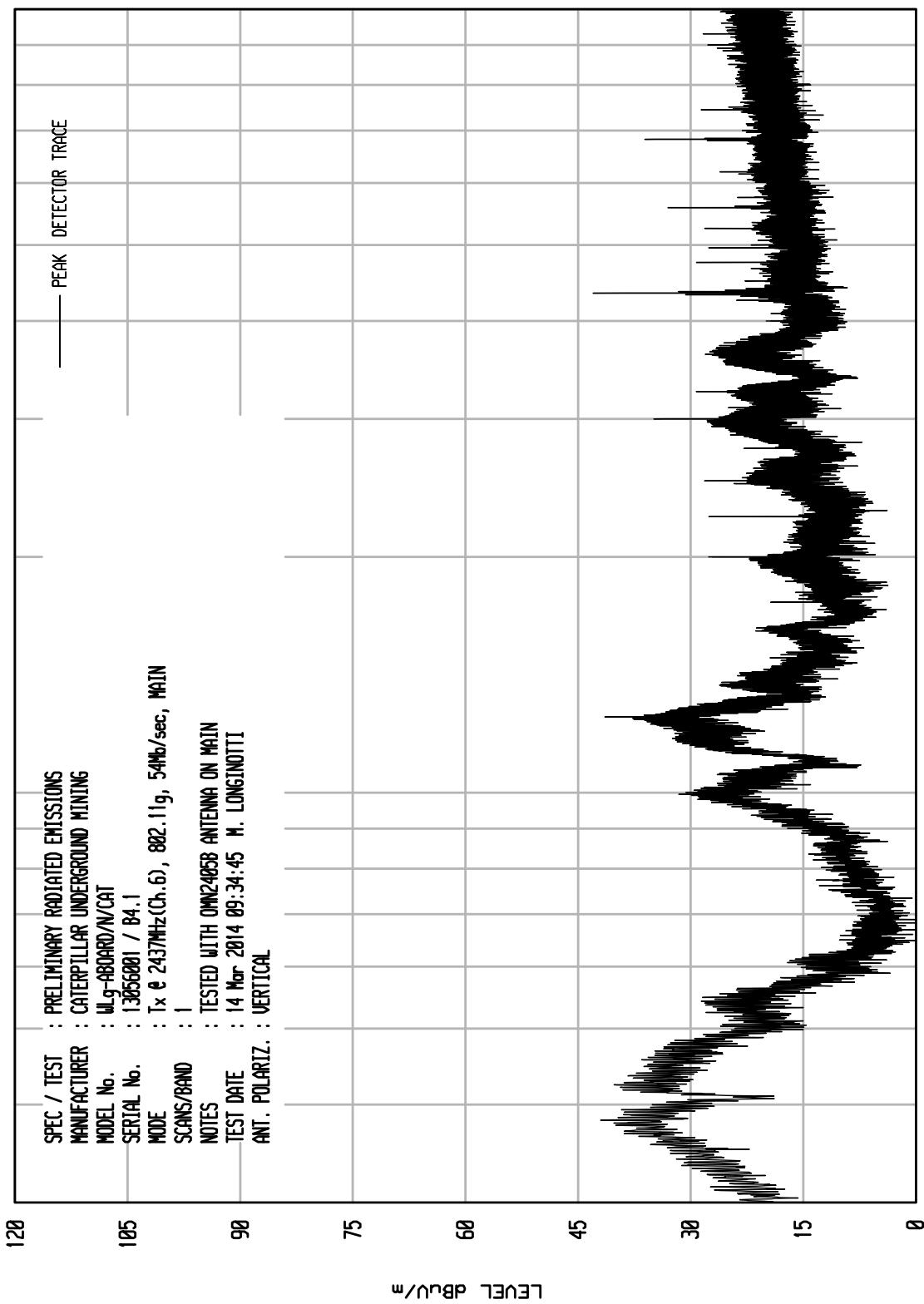
SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/N/CAT
SERIAL No.	: 130256001 / B4_1
MODE	: Tx @ 2437MHz(Ch. 6), 802.11g, 54Mb/sec, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 14 Mar 2014 09:35:36 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL


 START = 30 STOP = 1000
 FREQUENCY MHz

ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

 MKA1 04/24/13
 UNIV RCU EMI RUN 12

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: M9-ABORD/N/CAT
SERIAL No.	: 130256001 / B4.1
MODE	: Tx @ 2437MHz(Ch. 6), 802.11g, 54Mbps, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 14 Mar 2014 09:34:45 H. LONGINOTTI
ANT. POLARIZ.	: VERTICAL



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

MKA1 04/24/13

UNIV RCU EMI RUN 14

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 243MHz(Ch. 6), 882.11g, 54Mb/sec, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 13 Mar 2014 14:57:19 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

105

90

75

60

45

30

15

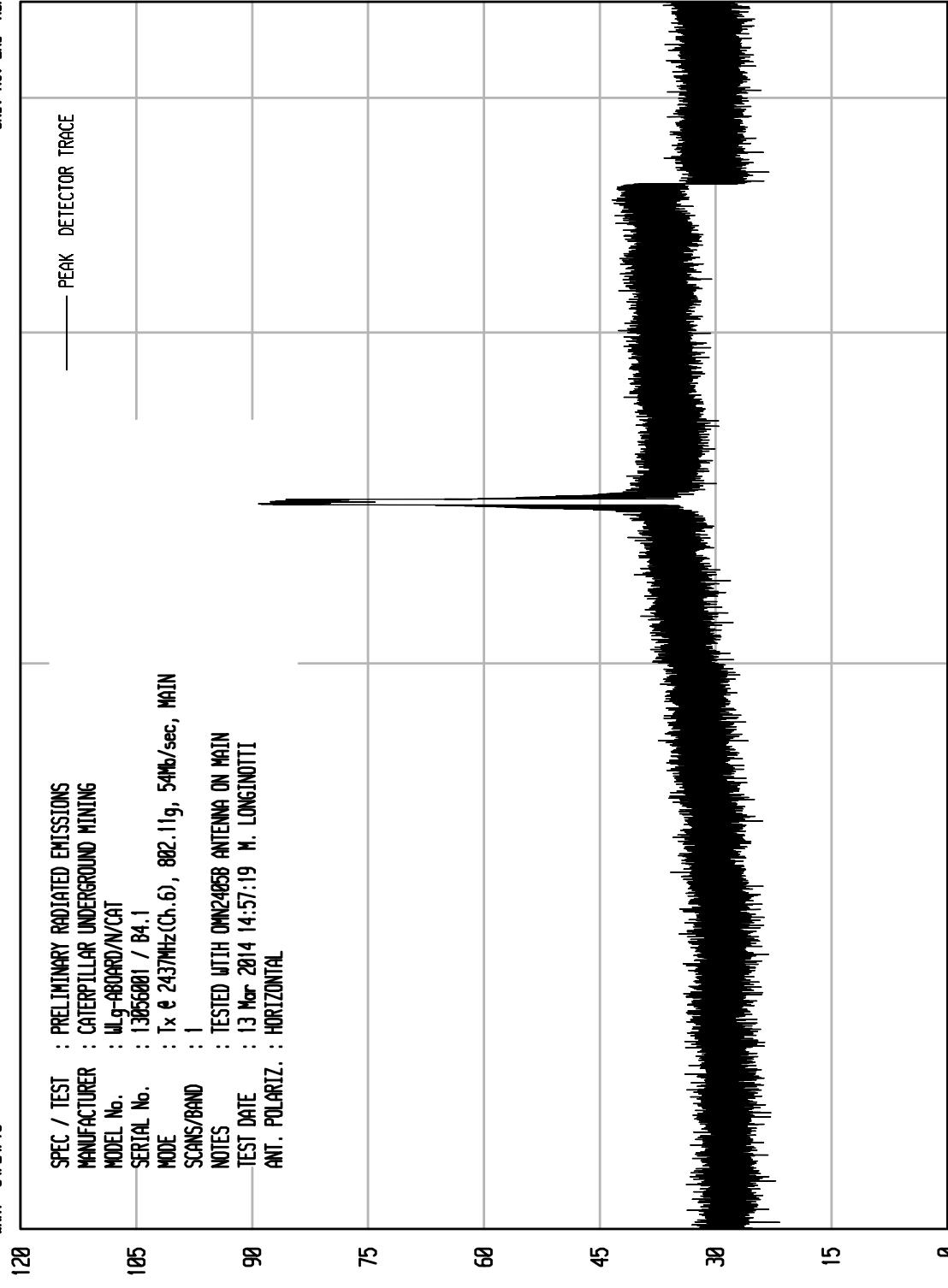
0

LEVEL dBu/m

START = 1000

FREQUENCY MHz

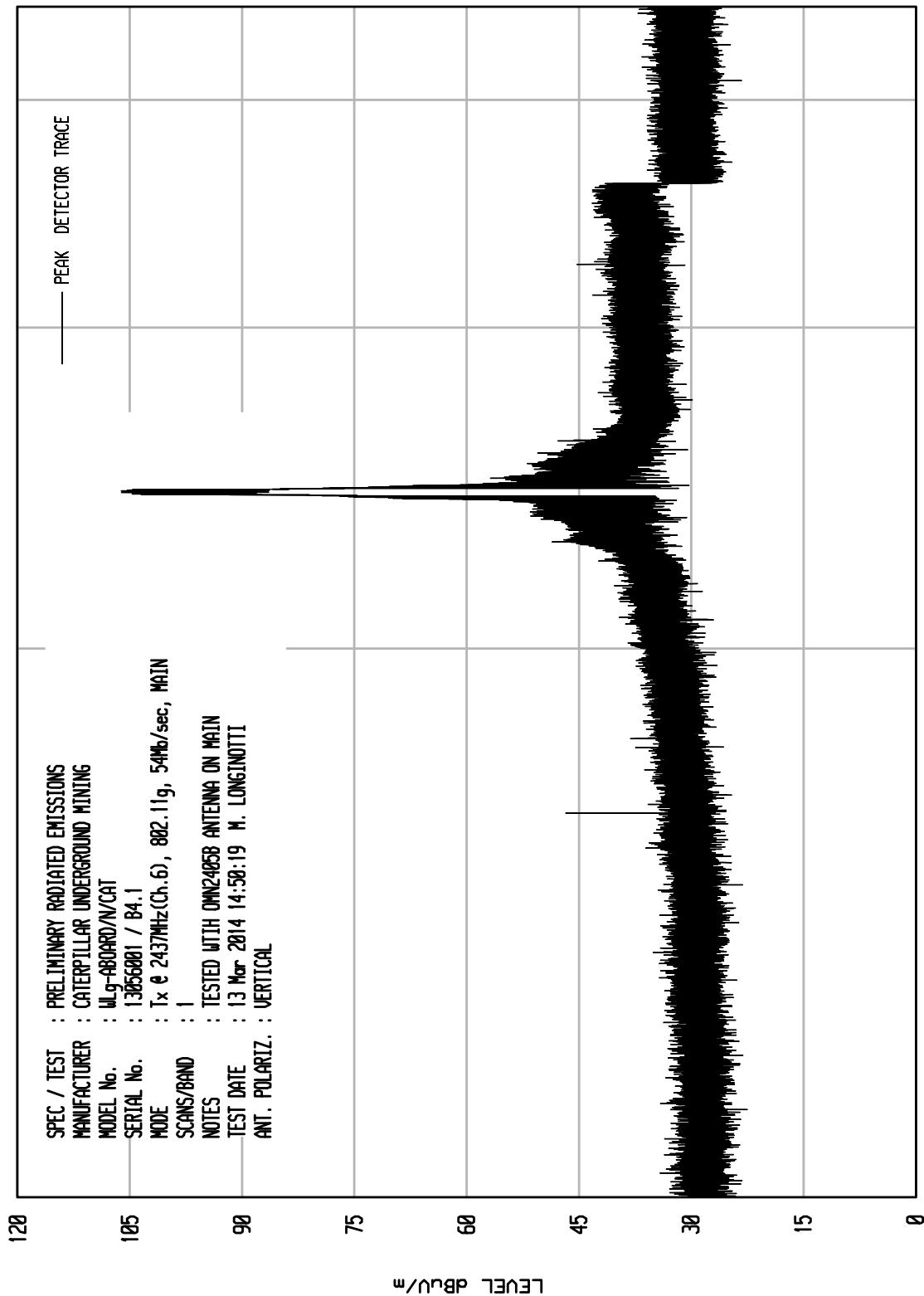
STOP = 4500



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 13

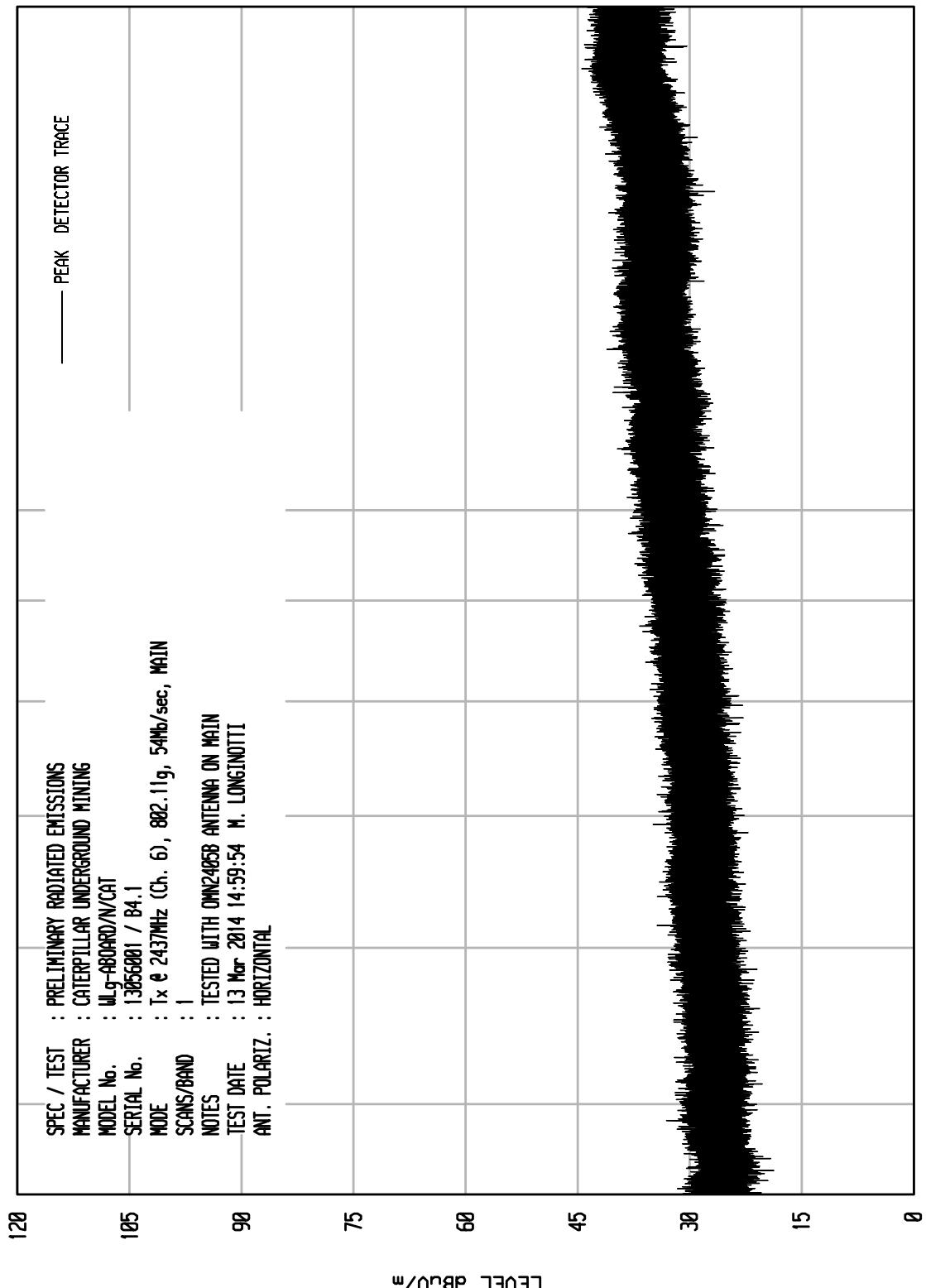
MKA1 04/24/13



ELITE ELECTRONIC ENGINEERING Inc.
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UNIV RCU EMI RUN 15

MKA1 04/24/13

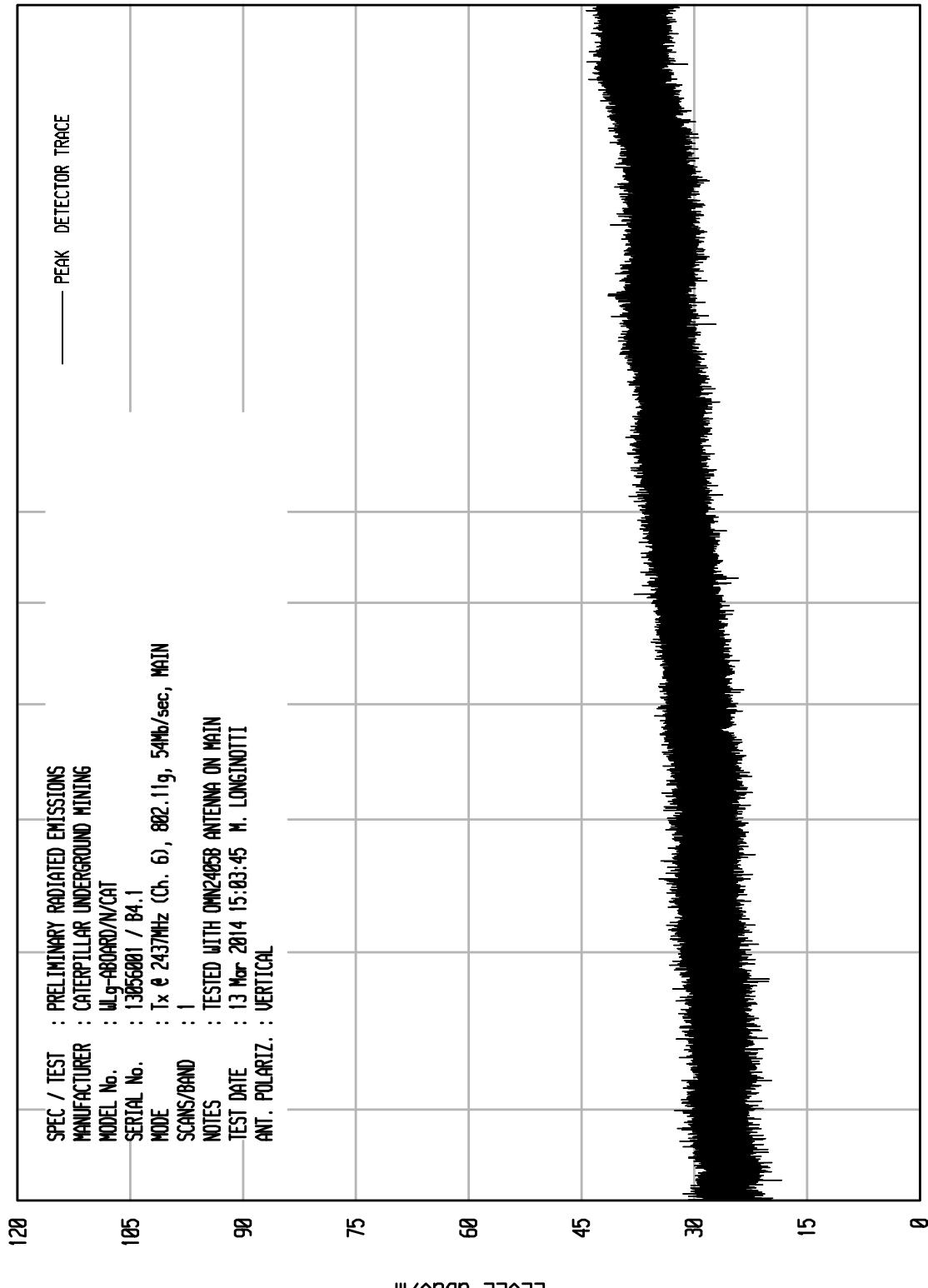


ELITE ELECTRONIC ENGINEERING Inc.

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UNIV RCU EMI RUN 16

MKA1 04/24/13

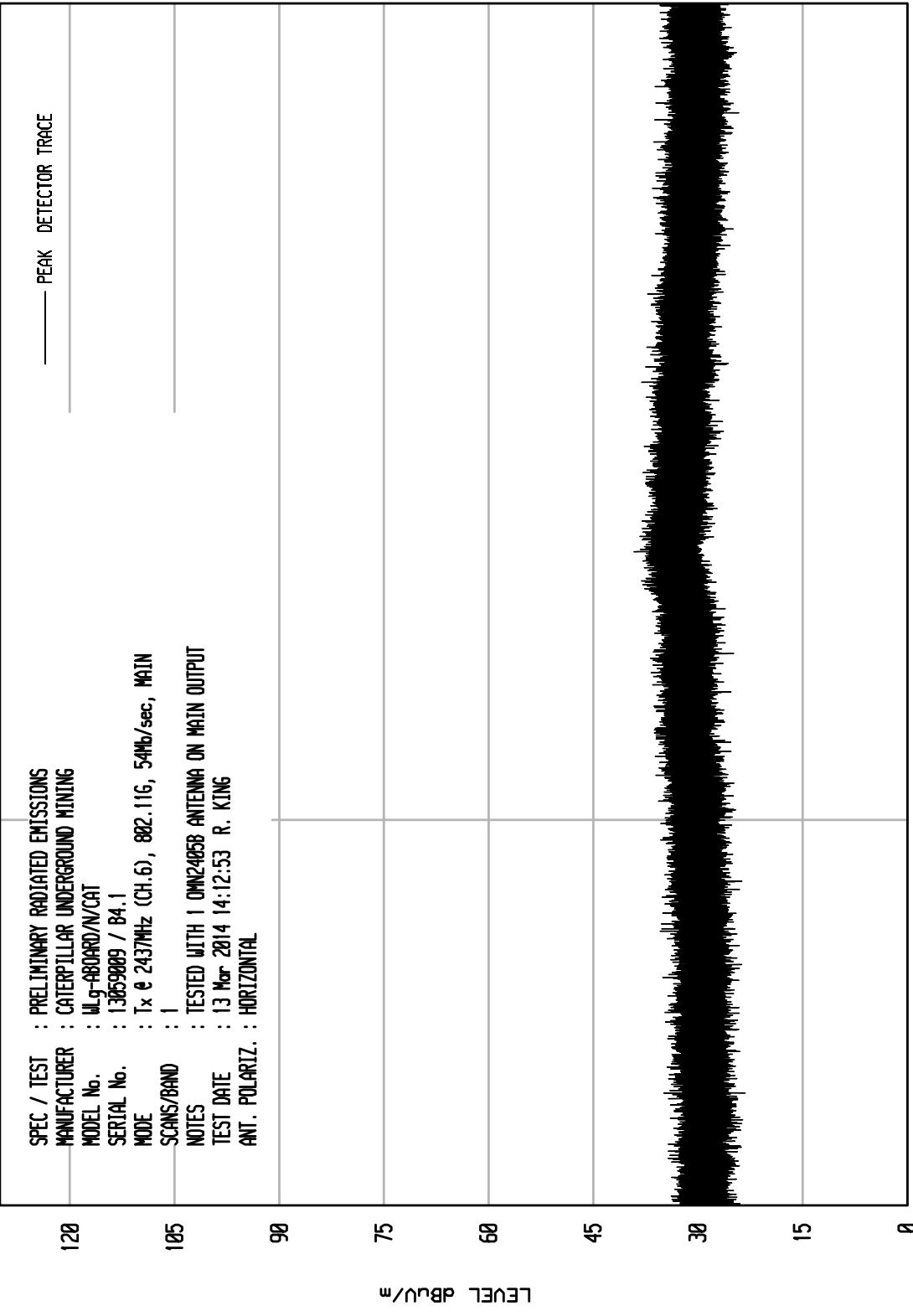


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60155

WKA1 04/24/13

UNIV RCU EMI RUN 19

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
	MODE	: Tx @ 243MHz (CH.6), 802.11G, 54Mb/sec, MAIN
105	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMN2408SB ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 14:12:53 R. KING
	ANT. POLARIZ.	: HORIZONTAL



START = 18000

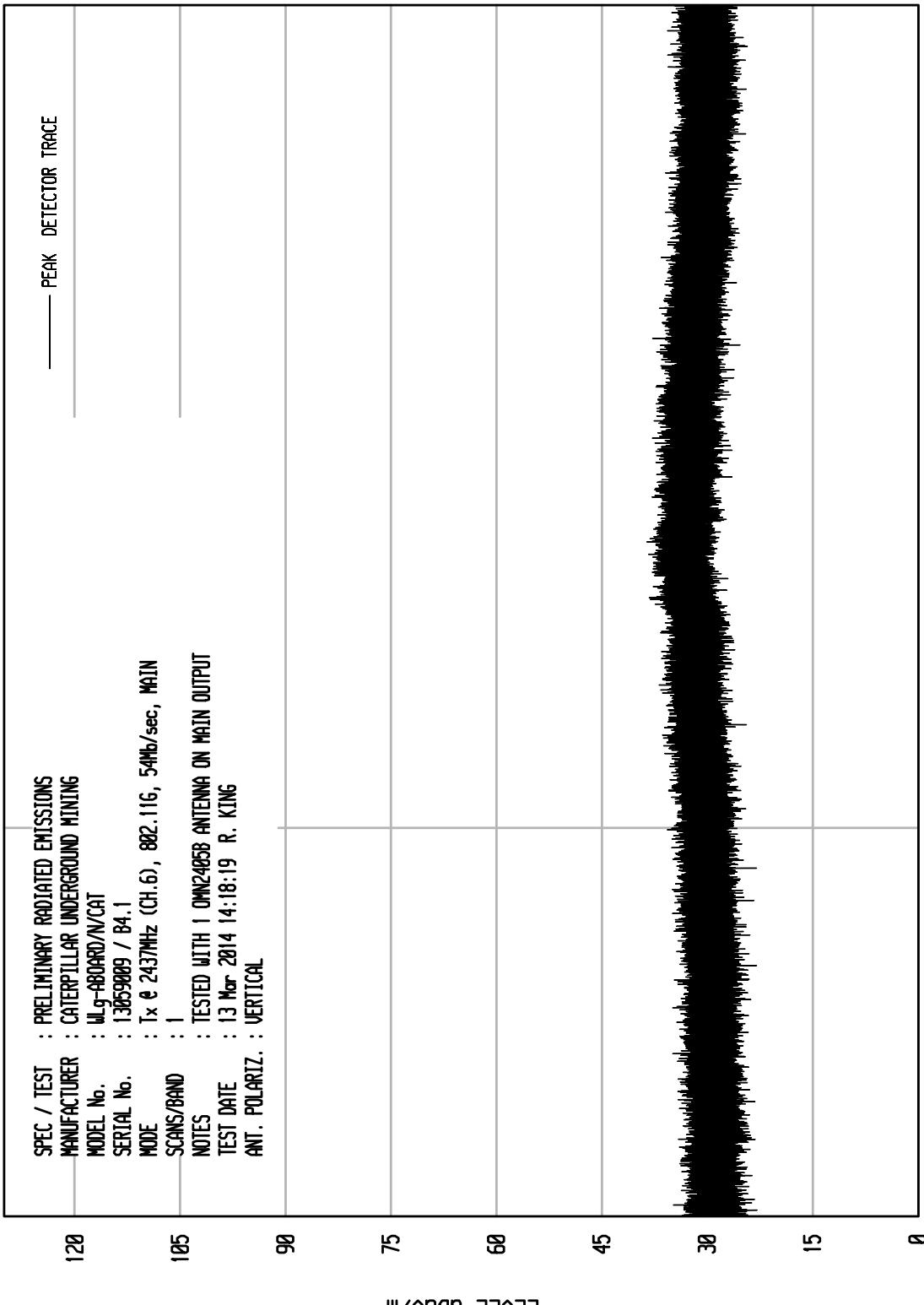
FREQUENCY MHz

STOP = 25000

ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

MKA1 04/24/13

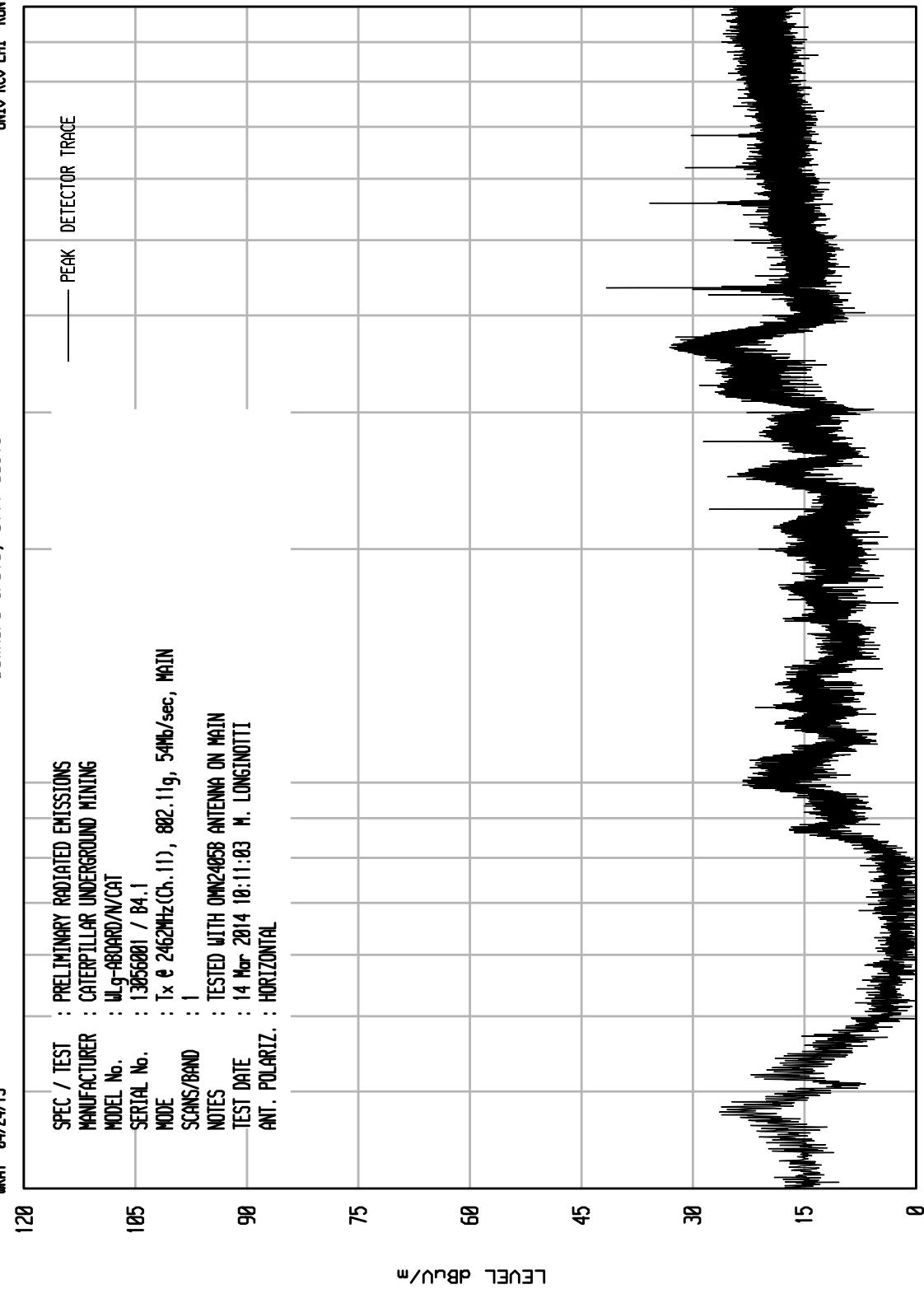
UNIV RCU EMI RUN 2B



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 14

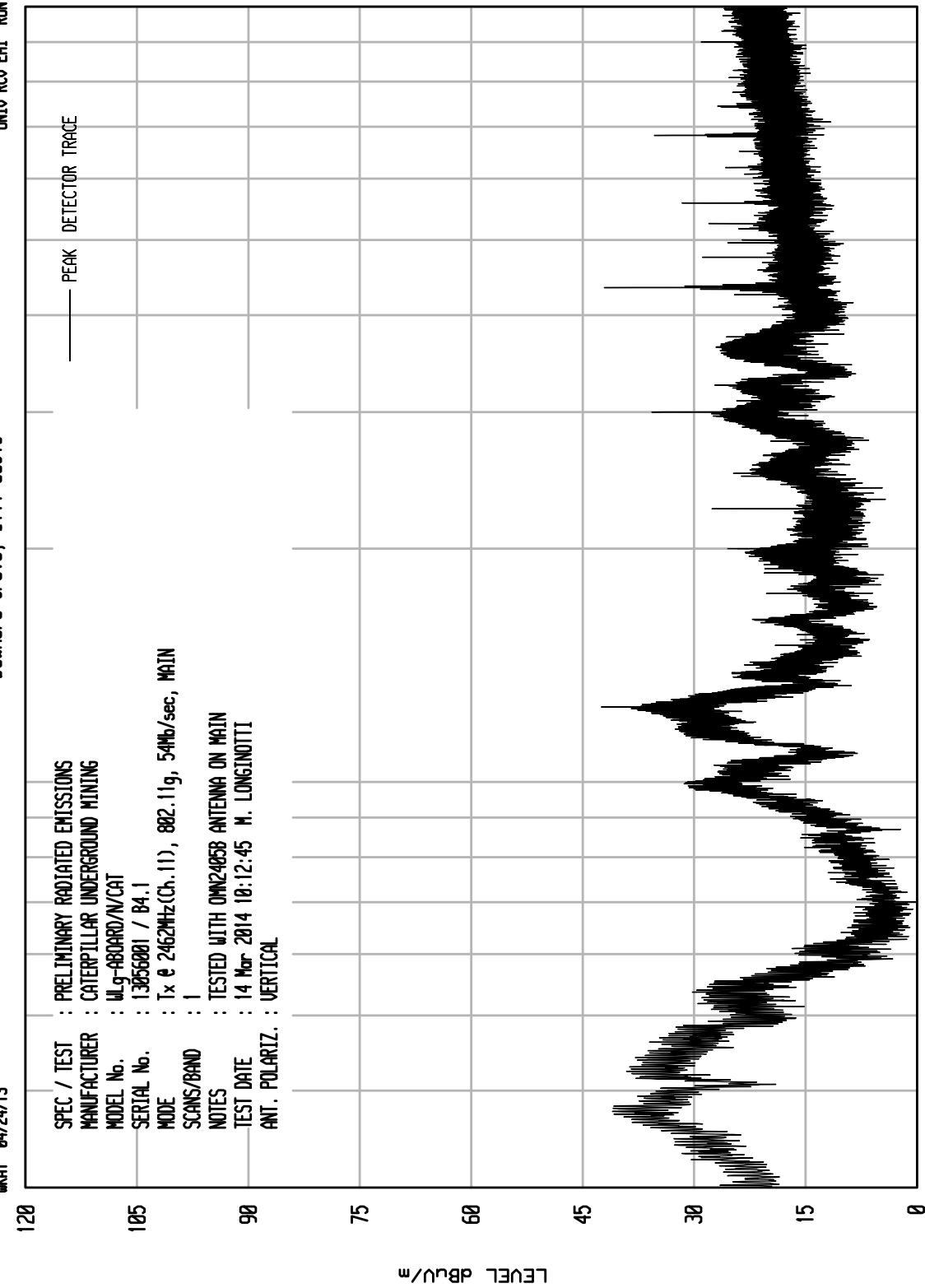
WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	CATERPILLAR UNDERGROUND MINING		
MODEL No.	W9-ABORD/CAT		
SERIAL No.	13056001 / B4.1		
MODE	Tx @ 2462MHz (Ch. 11), 802.11g, 54MHz/sec, MAIN		
SCANS/BAND	1		
NOTES	TESTED WITH OMN2405B ANTENNA ON MAIN		
TEST DATE	14 Mar 2014 10:11:03 M. LONGNOTTI		
ANT. POLARIZ.	HORIZONTAL		



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

UNIV RCU EMI RUN 15

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	:	CATERPILLAR UNDERGROUND MINING	
MODEL No.	: W9-ABORD/NCAT		
SERIAL No.	: 13056001 / B4.1		
MODE	: Tx @ 2462MHz (Ch. 11), 802.11g, 54MHz/sec, MAIN		
SCANS/BAND	: 1		
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN		
TEST DATE	: 14 Mar 2014 10:12:45		M. LONGNOTTI
ANT. POLARIZ.	: VERTICAL		



STOP = 1000

FREQUENCY MHz

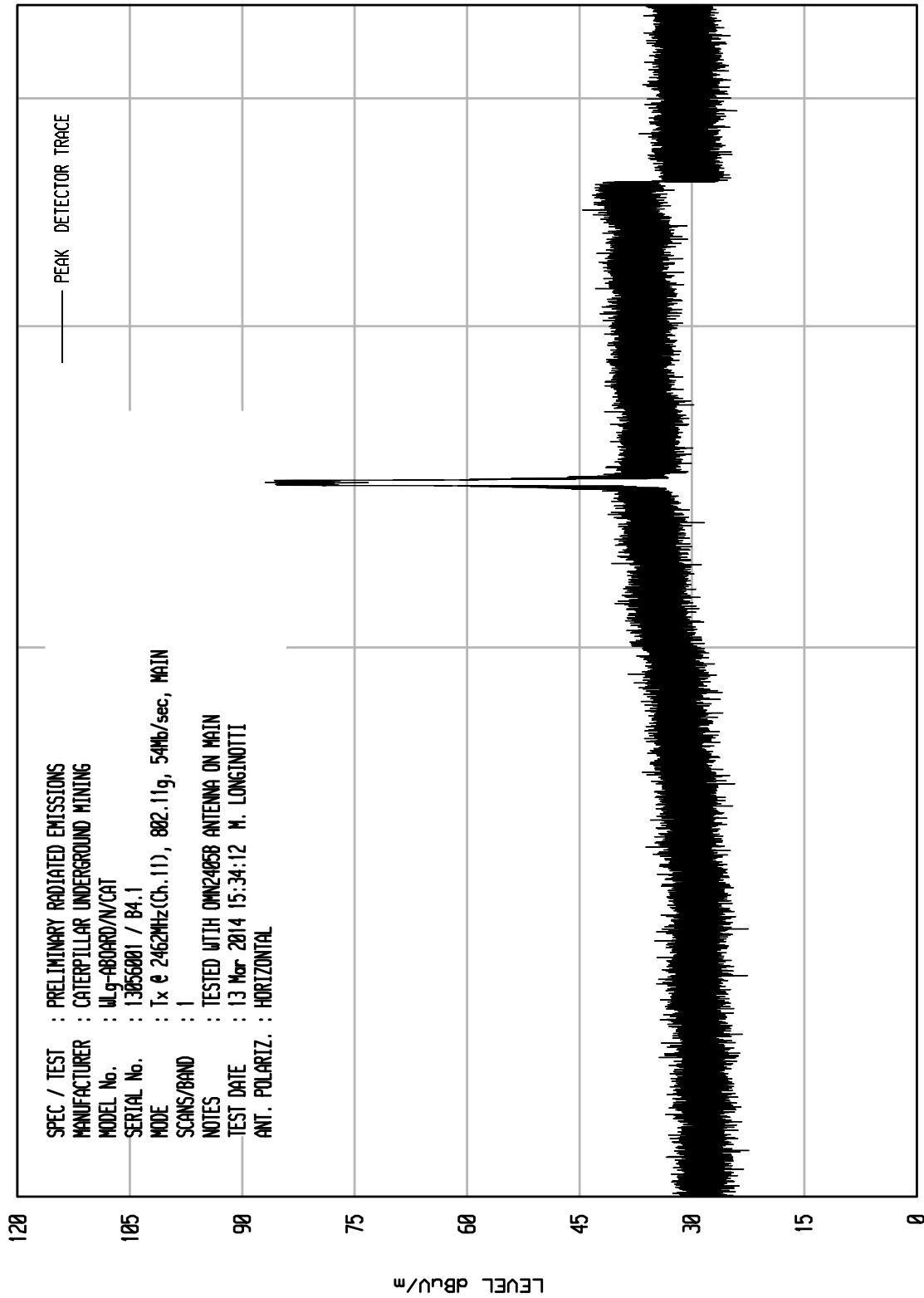
100

START = 30

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UNIV RCU EMI RUN 15

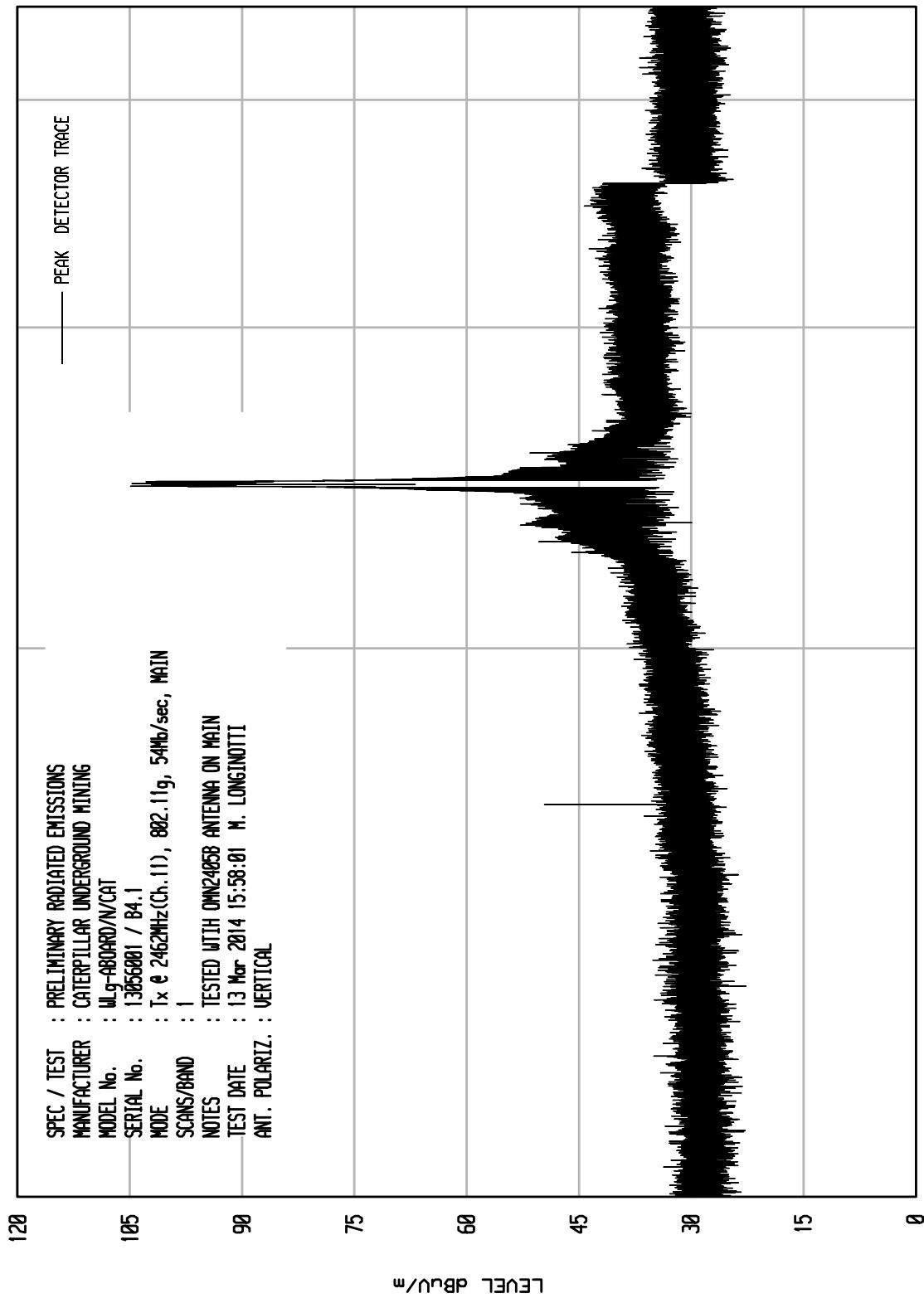
MKA1 04/24/13



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 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 16

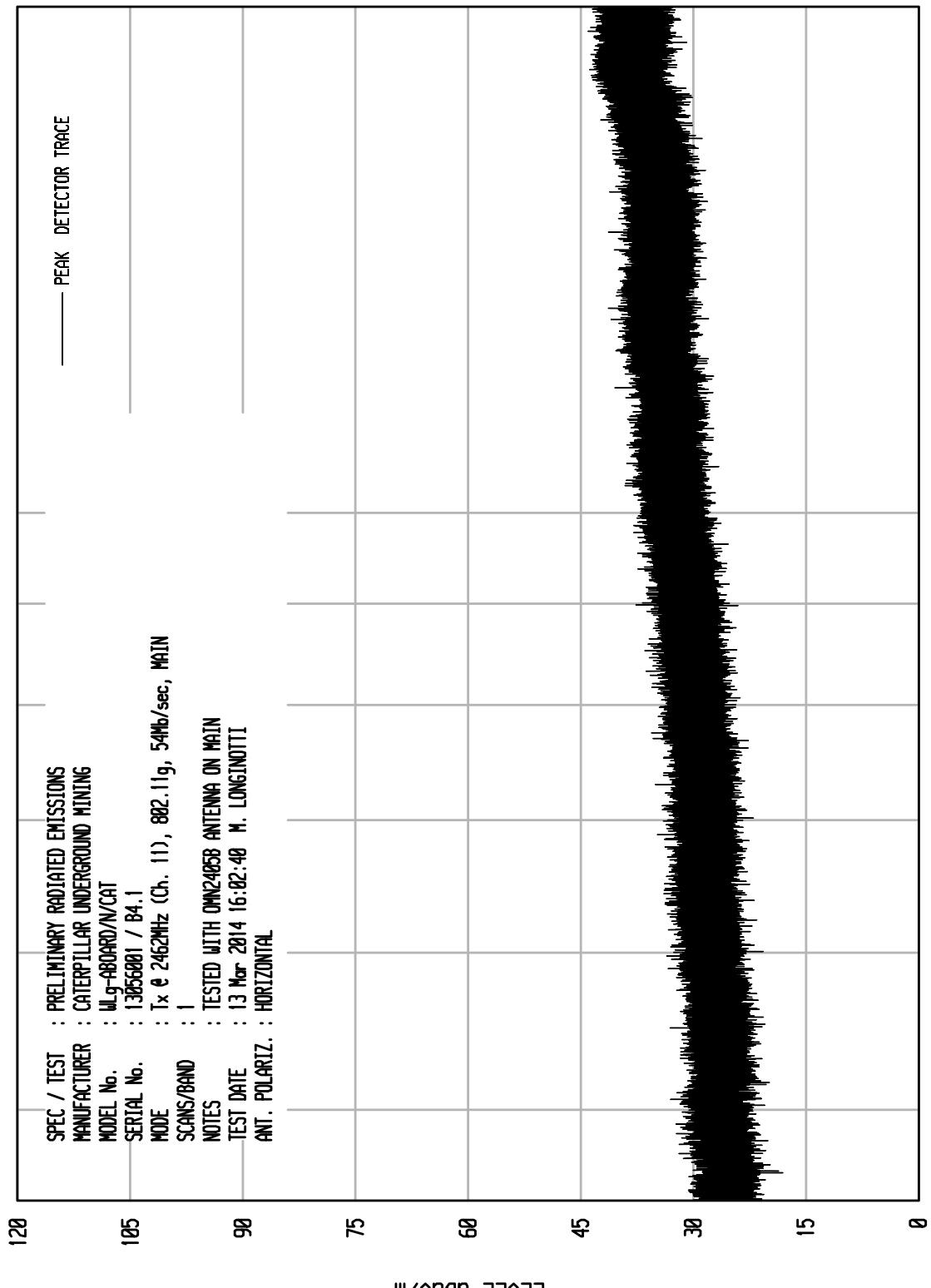
MKA1 04/24/13



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 Downers Grove, Ill. 60155

UNIV RCU EMI RUN 18

MKA1 04/24/13



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

UNIV RCU EMI RUN 17

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
MODEL No.	: W9-ABORD/NCAT
SERIAL No.	: 13056001 / B4.1
MODE	: Tx @ 2462MHz (Ch. 11), 882.11g, 544b/sec, MAIN
SCANS/BAND	: 1
NOTES	: TESTED WITH OMN2405B ANTENNA ON MAIN
TEST DATE	: 13 Mar 2014 16:00:02 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

105

90

75

60

45

30

15

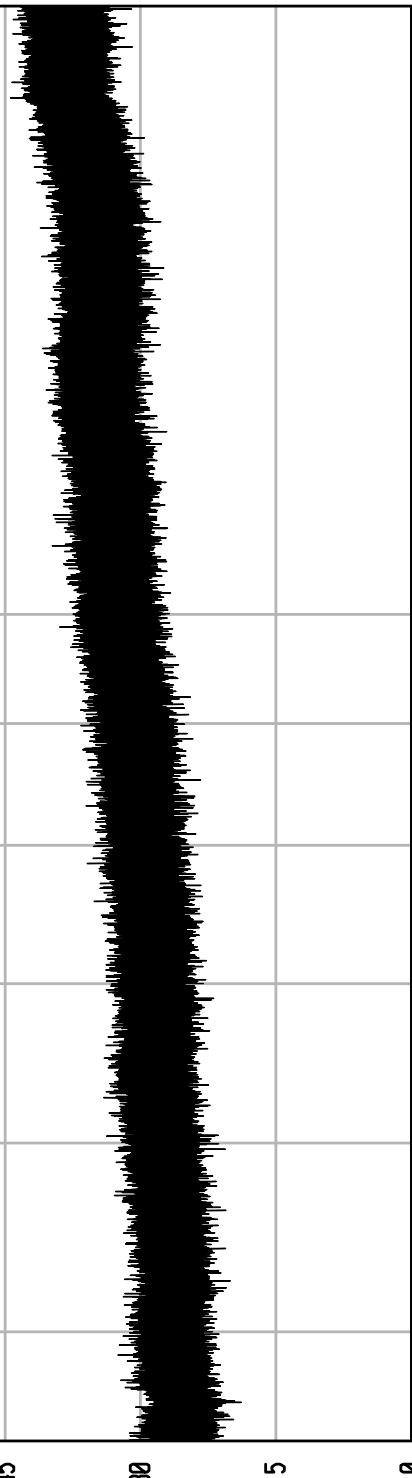
0

LEVEL dBuU/m

START = 4500

 FREQUENCY MHz
 10000

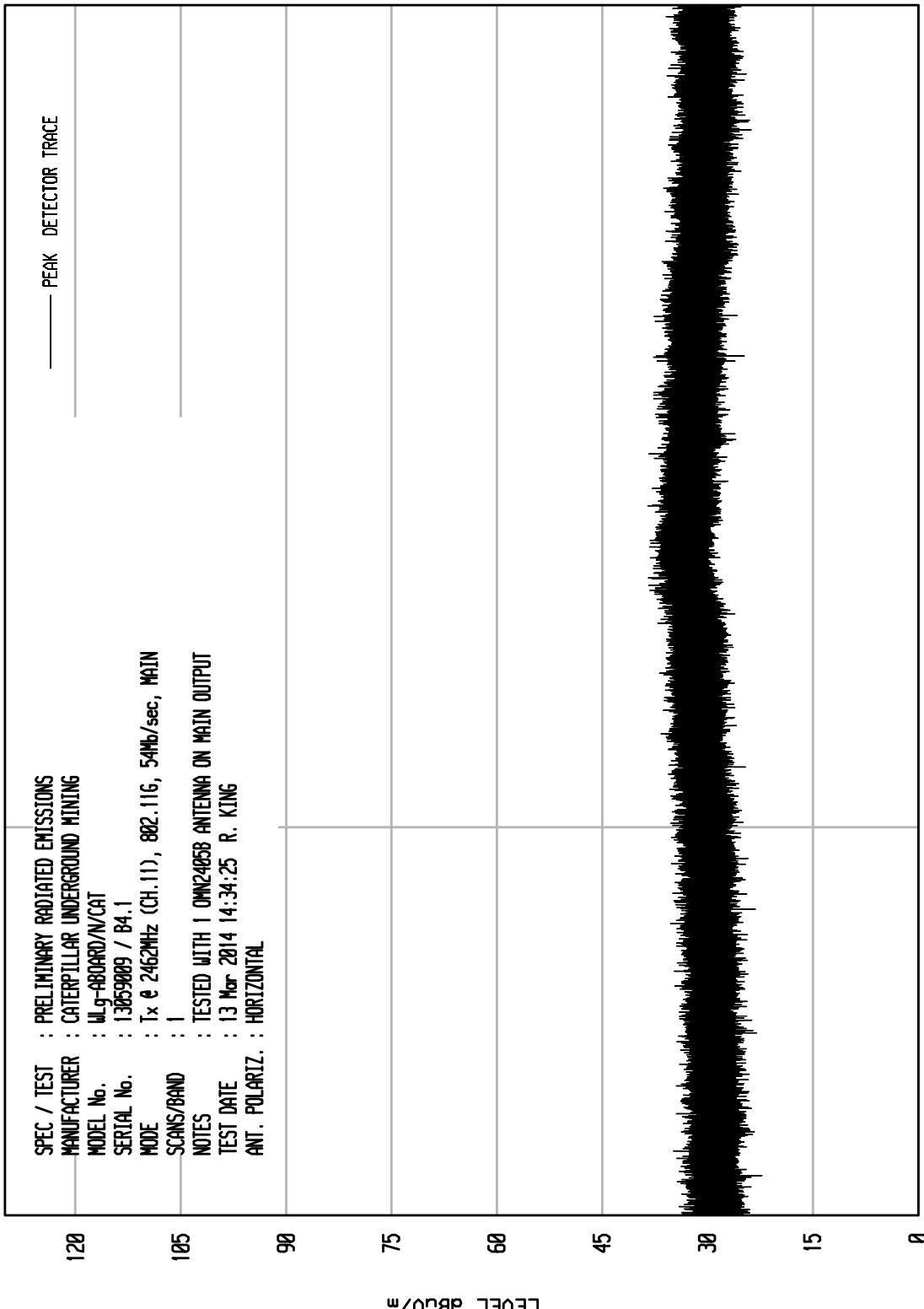
STOP = 18000



ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

MKA1 04/24/13

UNIV RCU EMI RUN 22

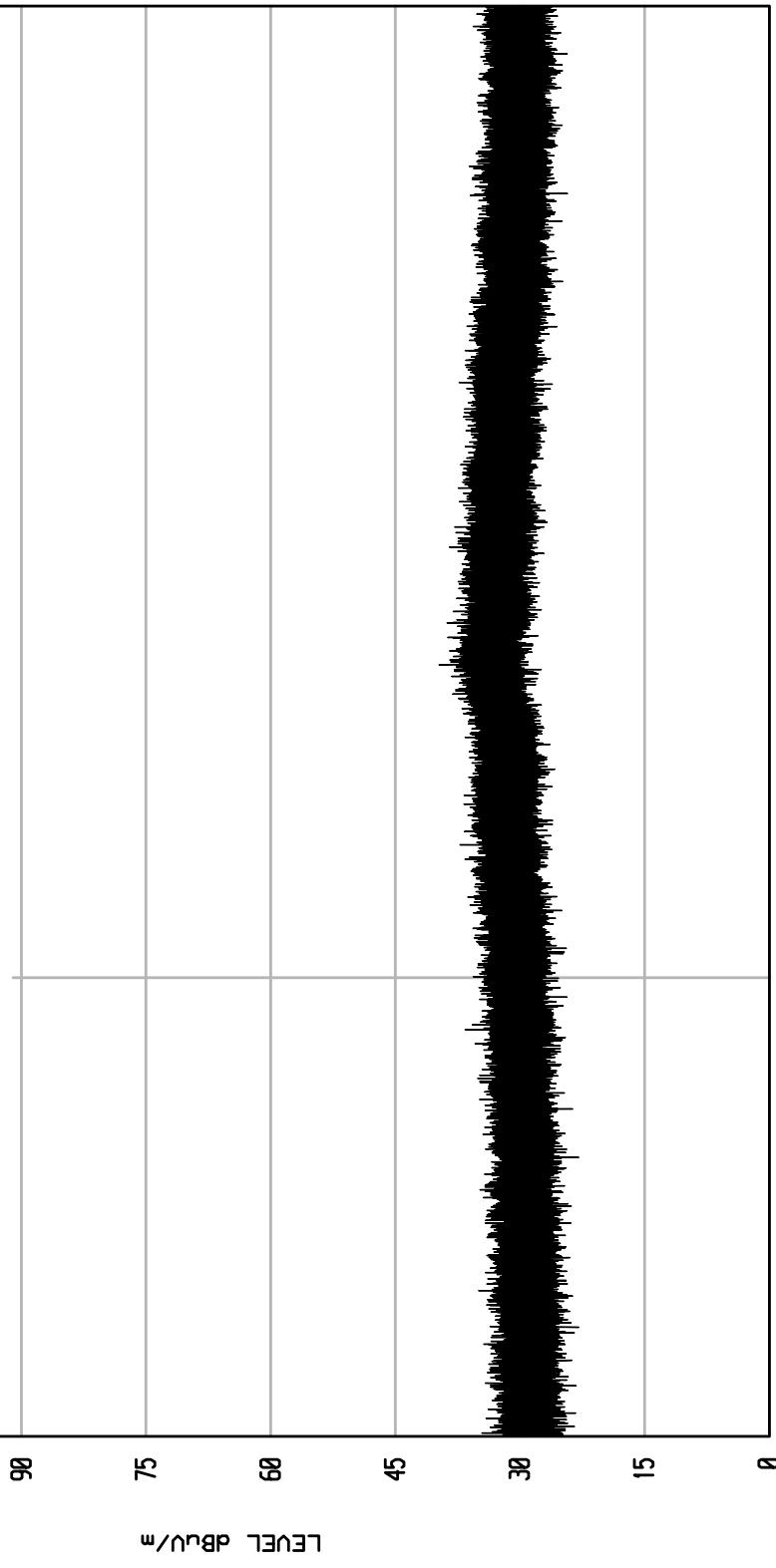


ELITE ELECTRONIC ENGINEERING Inc.
 Downers Grove, Ill. 60155

MKA1 04/24/13

UNIV RCU EMI RUN 21

120	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: CATERPILLAR UNDERGROUND MINING
	MODEL No.	: W9-ABORD/N/CAT
	SERIAL No.	: 13059009 / B4.1
105	MODE	: Tx @ 2462MHz (CH.11), 802.11g, 54Mbps, MAIN
	SCANS/BAND	: 1
	NOTES	: TESTED WITH 1 OMN2408B ANTENNA ON MAIN OUTPUT
	TEST DATE	: 13 Mar 2014 14:30:26 R. KING
	ANT. POLARIZ.	: VERTICAL



START = 180000

FREQUENCY MHz

STOP = 250000



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands (below 1GHz)
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2412MHz (Ch. 1), 802.11b, 11Mb/sec, Diversity
Notes : Tested with RFI Model No. DAS-M1 on Main Antenna Port and Auxiliary Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Quasi-peak Readings in a 120kHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	QP Total dBuV/m at 3m	QP Total uV/m at 3 m	QP Limit uV/m at 3 m	Margin (dB)
37.90	H	10.5		0.3	14.0	0.0	24.9	17.5	100.0	-15.1
37.90	V	25.4		0.3	14.0	0.0	39.8	97.2	100.0	-0.2
121.70	H	24.3		0.6	12.1	0.0	37.0	70.6	150.0	-6.5
121.70	V	22.6		0.6	12.1	0.0	35.3	58.0	150.0	-8.2
125.00	H	25.0		0.6	12.0	0.0	37.6	75.7	150.0	-5.9
125.00	V	26.8		0.6	12.0	0.0	39.4	93.2	150.0	-4.1
250.00	H	12.6		0.8	12.2	0.0	25.6	19.1	200.0	-20.4
250.00	V	18.1		0.8	12.2	0.0	31.1	36.0	200.0	-14.9

Quasi-Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (db) + Pre Amp Gain (dB)

Quasi-Peak Total uV/m = $10^{((\text{Quasi-Peak Total (dBuV/m)})/20)}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2412MHz (Ch. 1), 802.11b, 11Mb/sec, Diversity
Notes : Tested with RFI Model No. DAS-M1 on Main Antenna Port and Auxiliary Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4824.00	H	48.6	Ambient	3.7	34.4	-40.1	46.5	212.0	5000.0	-27.5
4824.00	V	48.1	Ambient	3.7	34.4	-40.1	46.0	200.2	5000.0	-28.0
12060.00	H	48.6	Ambient	6.1	39.0	-39.6	54.0	502.5	5000.0	-20.0
12060.00	V	48.2	Ambient	6.1	39.0	-39.6	53.6	479.9	5000.0	-20.4
14472.00	H	48.7	Ambient	6.6	39.5	-39.9	54.9	558.5	5000.0	-19.0
14472.00	V	48.4	Ambient	6.6	39.5	-39.9	54.6	539.5	5000.0	-19.3
19296.00	H	29.2	Ambient	2.2	40.4	-27.9	43.9	156.1	5000.0	-30.1
19296.00	V	28.7	Ambient	2.2	40.4	-27.9	43.3	146.8	5000.0	-30.6

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m = $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2412MHz (Ch. 1), 802.11b, 11Mb/sec, Diversity
Notes : Tested with RFI Model No. DAS-M1 on Main Antenna Port and Auxiliary Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4824.00	H	48.6	Ambient	3.7	34.4	-40.1	-29.2	17.4	7.4	500.0	-36.6
4824.00	V	48.1	Ambient	3.7	34.4	-40.1	-29.2	16.9	7.0	500.0	-37.1
12060.00	H	48.6	Ambient	6.1	39.0	-39.6	-29.2	24.9	17.5	500.0	-29.1
12060.00	V	48.2	Ambient	6.1	39.0	-39.6	-29.2	24.5	16.7	500.0	-29.5
14472.00	H	48.7	Ambient	6.6	39.5	-39.9	-29.2	25.8	19.5	500.0	-28.2
14472.00	V	48.4	Ambient	6.6	39.5	-39.9	-29.2	25.5	18.8	500.0	-28.5
19296.00	H	29.2	Ambient	2.2	40.4	-27.9	-29.2	14.7	5.4	500.0	-39.3
19296.00	V	28.7	Ambient	2.2	40.4	-27.9	-29.2	14.2	5.1	500.0	-39.8

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m = $10^{(\text{Average Total (dBuV/m)})/20}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2437MHz (Ch. 6), 802.11b, 11Mb/sec, Diversity
Notes : Tested with RFI Model No. DAS-M1 on Main Antenna Port and Auxiliary Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4874.00	H	47.9	Ambient	3.7	34.4	-40.2	45.9	196.5	5000.0	-28.1
4874.00	V	47.8	Ambient	3.7	34.4	-40.2	45.8	194.2	5000.0	-28.2
7311.00	H	48.2	Ambient	4.7	35.4	-39.8	48.5	265.9	5000.0	-25.5
7311.00	V	47.8	Ambient	4.7	35.4	-39.8	48.1	254.0	5000.0	-25.9
12185.00	H	48.4	Ambient	6.1	39.0	-39.5	53.9	497.7	5000.0	-20.0
12185.00	V	48.3	Ambient	6.1	39.0	-39.5	53.8	492.0	5000.0	-20.1
19496.00	H	28.5	Ambient	2.2	40.4	-27.8	43.2	145.1	5000.0	-30.7
19496.00	V	28.3	Ambient	2.2	40.4	-27.8	43.1	142.9	5000.0	-30.9

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m = $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2437MHz (Ch. 6), 802.11b, 11Mb/sec, Diversity
Notes : Tested with RFI Model No. DAS-M1 on Main Antenna Port and Auxiliary Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4874.00	H	47.9	Ambient	3.7	34.4	-40.2	-29.2	16.7	6.9	500.0	-37.3
4874.00	V	47.8	Ambient	3.7	34.4	-40.2	-29.2	16.6	6.8	500.0	-37.4
7311.00	H	48.20	Ambient	4.7	35.4	-39.8	-29.2	19.3	9.3	500.0	-34.6
7311.00	V	47.8	Ambient	4.7	35.4	-39.8	-29.2	18.9	8.9	500.0	-35.0
12185.00	H	48.4	Ambient	6.1	39.0	-39.5	-29.2	24.8	17.4	500.0	-29.2
12185.00	V	48.3	Ambient	6.1	39.0	-39.5	-29.2	24.7	17.2	500.0	-29.3
19496.00	H	28.5	Ambient	2.2	40.4	-27.8	-29.2	14.1	5.1	500.0	-39.9
19496.00	V	28.3	Ambient	2.2	40.4	-27.8	-29.2	13.9	5.0	500.0	-40.1

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m = $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2462MHz (Ch. 11), 802.11b, 11Mb/sec, Diversity
Notes : Tested with RFI Model No. DAS-M1 on Main Antenna Port and Auxiliary Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4924.00	H	48.4	Ambient	3.7	34.5	-40.2	46.4	208.9	5000.0	-27.6
4924.00	V	47.8	Ambient	3.7	34.5	-40.2	45.8	195.0	5000.0	-28.2
7386.00	H	47.8	Ambient	4.7	35.4	-39.8	48.2	255.9	5000.0	-25.8
7386.00	V	48.4	Ambient	4.7	35.4	-39.8	48.8	274.2	5000.0	-25.2
12310.00	H	48.6	Ambient	6.1	38.9	-39.4	54.2	513.8	5000.0	-19.8
12310.00	V	48.6	Ambient	6.1	38.9	-39.4	54.2	513.8	5000.0	-19.8
19696.00	H	28.0	Ambient	2.2	40.4	-27.8	42.7	137.0	5000.0	-31.2
19696.00	V	28.3	Ambient	2.2	40.4	-27.8	43.1	143.3	5000.0	-30.9
22158.00	H	30.0	Ambient	2.2	40.6	-28.5	44.3	164.9	5000.0	-29.6
22158.00	V	29.8	Ambient	2.2	40.6	-28.5	44.1	160.1	5000.0	-29.9

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m = $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2462MHz (Ch. 11), 802.11b, 11Mb/sec, Diversity
Notes : Tested with RFI Model No. DAS-M1 on Main Antenna Port and Auxiliary Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4924.00	H	48.4	Ambient	3.7	34.5	-40.2	-29.2	17.2	7.3	500.0	-36.7
4924.00	V	47.8	Ambient	3.7	34.5	-40.2	-29.2	16.6	6.8	500.0	-37.3
7386.00	H	47.80	Ambient	4.7	35.4	-39.8	-29.2	19.0	8.9	500.0	-35.0
7386.00	V	48.4	Ambient	4.7	35.4	-39.8	-29.2	19.6	9.6	500.0	-34.4
12310.00	H	48.6	Ambient	6.1	38.9	-39.4	-29.2	25.1	17.9	500.0	-28.9
12310.00	V	48.6	Ambient	6.1	38.9	-39.4	-29.2	25.1	17.9	500.0	-28.9
19696.00	H	28.0	Ambient	2.2	40.4	-27.8	-29.2	13.6	4.8	500.0	-40.4
19696.00	V	28.3	Ambient	2.2	40.4	-27.8	-29.2	14.0	5.0	500.0	-40.0
22158.00	H	30.0	Ambient	2.2	40.6	-28.5	-29.2	15.2	5.8	500.0	-38.8
22158.00	V	29.8	Ambient	2.2	40.6	-28.5	-29.2	15.0	5.6	500.0	-39.0

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m = $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands (below 1GHz)
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2412MHz (Ch. 1), 802.11b, 11Mb/sec, Main
Notes : Tested with PacSat OMN2405B on Main Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Quasi-peak Readings in a 120kHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	QP Total dBuV/m at 3m	QP Total uV/m at 3 m	QP Limit uV/m at 3 m	Margin (dB)
37.92	H	10.5		0.3	14.0	0.0	24.8	17.5	100.0	-15.2
37.92	V	25.3		0.3	14.0	0.0	39.6	96.0	100.0	-0.4
119.90	H	18.5		0.6	12.2	0.0	31.3	36.6	150.0	-12.3
119.90	V	11.3		0.6	12.2	0.0	24.1	16.0	150.0	-19.5
125.00	H	15.5		0.6	12.0	0.0	28.1	25.4	150.0	-15.4
125.00	V	30.7		0.6	12.0	0.0	43.3	145.9	150.0	-0.2
250.00	H	19.2		0.8	12.2	0.0	32.2	40.8	200.0	-13.8
250.00	V	20.0		0.8	12.2	0.0	33.0	44.8	200.0	-13.0

Quasi-Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Quasi-Peak Total uV/m = $10^{((\text{Quasi-Peak Total (dBuV/m)})/20)}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2412MHz (Ch. 1), 802.11b, 11Mb/sec, Main
Notes : Tested with PacSat OMN2405B on Main Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4824.00	H	46.7	Ambient	3.7	34.4	-40.1	44.6	170.4	5000.0	-29.4
4824.00	V	48.3	Ambient	3.7	34.4	-40.1	46.2	204.8	5000.0	-27.8
12060.00	H	48.5	Ambient	6.1	39.0	-39.6	53.9	496.8	5000.0	-20.1
12060.00	V	47.9	Ambient	6.1	39.0	-39.6	53.3	463.6	5000.0	-20.7
14472.00	H	47.9	Ambient	6.6	39.5	-39.9	54.1	509.3	5000.0	-19.8
14472.00	V	48.0	Ambient	6.6	39.5	-39.9	54.2	515.2	5000.0	-19.7
19296.00	H	29.4	Ambient	2.2	40.4	-27.9	44.0	158.6	5000.0	-30.0
19296.00	V	30.2	Ambient	2.2	40.4	-27.9	44.9	175.7	5000.0	-29.1

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m = $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2412MHz (Ch. 1), 802.11b, 11Mb/sec, Main
Notes : Tested with PacSat OMN2405B on Main Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4824.00	H	46.7	Ambient	3.7	34.4	-40.1	-29.2	15.5	5.9	500.0	-38.5
4824.00	V	48.3	Ambient	3.7	34.4	-40.1	-29.2	17.1	7.1	500.0	-36.9
12060.00	H	48.5	Ambient	6.1	39.0	-39.6	-29.2	24.8	17.3	500.0	-29.2
12060.00	V	47.9	Ambient	6.1	39.0	-39.6	-29.2	24.2	16.2	500.0	-29.8
14472.00	H	47.9	Ambient	6.6	39.5	-39.9	-29.2	25.0	17.8	500.0	-29.0
14472.00	V	48.0	Ambient	6.6	39.5	-39.9	-29.2	25.1	18.0	500.0	-28.9
19296.00	H	29.4	Ambient	2.2	40.4	-27.9	-29.2	14.9	5.5	500.0	-39.1
19296.00	V	30.2	Ambient	2.2	40.4	-27.9	-29.2	15.7	6.1	500.0	-38.2

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m = $10^{(\text{Average Total (dBuV/m)})/20}$



Manufacturer : Caterpillar Underground Mining
Model No. : WLg-ABOARD/N/CAT
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 10, 2014 through April 1, 2014
Mode : Tx @ 2437MHz (Ch. 6), 802.11b, 11Mb/sec, Main
Notes : Tested with PacSat OMN2405B on Main Antenna Port
Notes : Test Distance is 3 meters
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4874.00	H	47.6	Ambient	3.7	34.4	-40.2	45.6	189.8	5000.0	-28.4
4874.00	V	47.7	Ambient	3.7	34.4	-40.2	45.7	192.0	5000.0	-28.3
7311.00	H	47.8	Ambient	4.7	35.4	-39.8	48.1	254.0	5000.0	-25.9
7311.00	V	47.7	Ambient	4.7	35.4	-39.8	48.0	251.1	5000.0	-26.0
12185.00	H	48.9	Ambient	6.1	39.0	-39.5	54.4	527.2	5000.0	-19.5
12185.00	V	48.3	Ambient	6.1	39.0	-39.5	53.8	492.0	5000.0	-20.1
19496.00	H	30.2	Ambient	2.2	40.4	-27.8	44.9	176.7	5000.0	-29.0
19496.00	V	29.6	Ambient	2.2	40.4	-27.8	44.4	165.3	5000.0	-29.6

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m = $10^{((\text{Peak Total (dBuV/m)})/20)}$