FCC ID: E5XCD32XJU001

EMC

TEST REPORT

REPORT NO. : F87052509
MODEL NO. : BCD 40XJ, BCD 36XJ, BCD 32XJ
DATE OF TEST : May 28, 1998

PREPARED FOR: BEHAVIOR TECH COMPUTER CORP.

ADDRESS : 12F, 18, SEC. 1, CHANG AN E. RD.,
TAIPEI, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION

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12F, NO.1, SEC.4, NAN-KING EAST RD.,
TAIPEI, TAIWAN, R.O.C.

1. CERTIFICATION

Issue Date: June 3, 1998

Product	:	CD-ROM DRIVE
Trade Name	:	BTC
Model No.	:	BCD 40XJ, BCD 36XJ, BCD 32XJ
Applicant	:	BEHAVIOR TECH COMPUTER CORP.
Standard	:	FCC Part 15, Subpart B, Class B ANSI C63.4-1992 CISPR 22: 1993 +A1+A2

We hereby certify that one sample of the designation has been tested in our facility on May 28, 1998. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class B limits of conducted and radiated emission of applicable standards

TESTED BY: Johnny. Liu , DATE: 6/3/98
(Johnny Liu)

CHECKED BY: Ariel Hsieh , DATE: 6/3/98
(Ariel Hsieh)

APPROVED BY: Mike Su , DATE: 6/3/98
(Mike Su)

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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	CD-ROM DRIVE
Model No.	:	BCD 40XJ, BCD 36XJ, BCD 32XJ
Power Supply	:	DC 5V/12V (from PC)
Data Cable	:	Nonshielded (IDE cable) (0.8 m)

Note: The EUT has three model names, which are identical to each other in all aspects except for their model names and speed as follows:

- MODEL: BCD 40XJ – speed: 40 X
- MODEL: BCD 36XJ – speed: 36 X
- MODEL: BCD 32XJ – speed: 32 X

From the above models, model BCD 40XJ is selected as the representative for the test.

The EUT is a 40X CD-ROM DRIVE, which is designed to be used within an IBM PC or compatible computer by using the IDE connection.

User could install one sound card in PC to process audio signals from EUT then output audio to speaker via SPK port located on sound card or only connect headphone to headphone jack on front panel of EUT to listen to an audio directly playing from the CD-ROM DRIVE.

The EUT was tested under the following two conditions:

(1) The EUT played music CD and audio signals were present via headphone port, no sound blaster card was installed.
(2) The EUT played video demo CD and PC showed continuous pictures on monitor and present stereo audio via sound blaster card.

The maximum emission levels of the above two conditions are recorded together in this report.

For more detailed features, please refer to User's Manual.

2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

No	Product	Brand	Model No.	FCC ID	I/O Cable
1	PERSONAL COMPUTER	HP	VECTRA VL 5/133	B94VECTRA500T	Nonshielded Power (1.8m)
2	MONITOR	ADI	937G	BR8937G	Shielded Signal (1.5m) Nonshielded Power (1.8m)
3	KEYBOARD	FORWARD	FDA-104GA	F4ZDA-104G	Shielded Signal (1.4m)
4	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (1.2m) Nonshielded Power (1.8m)
5	MODEM	ACEEX	1414	IFAXDM1414	Shielded Signal (1.2m) Nonshielded Power (1.8m)
6	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded Signal (1.5m)
7	EARPHONE	CAMMA	LH115	N/A	Nonshielded Signal (1.2m)
8	SPEAKER	J-S	J-003	N/A	Nonshielded Signal (1.4m)
9	SOUND CARD	CREATIVE	CT2970	IBACT-SONATE	N/A

2.3 TEST METHODOLOGY AND CONFIGURATION

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site. Please refer to the photos of test configuration in Item 5.

3. TEST INSTRUMENTS

3.1 TEST INSTRUMENTS (EMISSION)

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
HP Spectrum Analyzer	8594E	3520A01861	Feb. 12, 1999
HP Preamplifier	8447D	2944A08118	June 29, 1998
ROHDE & SCHWARZ TEST RECEIVER	ESVS 10	840241/010	Sept. 9, 1998
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 28, 1998
CHASE BILOG Antenna	CBL6111A	1079	July 19, 1998
ADT Turn Table	U200	9701	N/A
EMCO Tower	1051	1825	N/A
Open Field Test Site	Site 3	ADT-R03	July 18, 1998

Note: 1. The measurement uncertainty is less than +/- 3dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESHS30	828109/007	Aug. 4, 1998
ROHDE & SCHWARZ Artificial Mains Network	ESH2-Z5	892107/003	July 22, 1998
EMCO L.I.S.N.	3825/2	9504-2359	Aug. 1, 1998
Shielded Room	Site 3	ADT-C03	N/A

Note: 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m) dBuV/m	Class B (at 10m) dBuV/m
30 - 230	40	30
230 - 1000	47	37

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
Above 1000	300	49.5	500	54.0

Note: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

LIMIT OF CONDUCTED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range	:	0.15 - 30 MHz (Conducted Emission)
		30 - 1000 MHz (Radiated Emission)
Input Voltage	:	120 Vac, 60 Hz
Temperature	:	26 ℃
Humidity	:	65 %
Atmospheric Pressure	:	996 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -13.6 dB at 0.150 MHz Minimum passing margin of radiated emission: -6.4 dB at 47.01 MHz

4.1.1 EUT OPERATION CONDITION

1. Turn on the power of all equipments.
2. PC plays a demo disk via the EUT and sends out audio via sound card installed. The monitor screen shows video of this demo disk.

OR

1. Turn on the power of all equipments.
2. PC reads a test program and runs it to enable all functions.
3. PC sends "H" messages to monitor and monitor displays "H" patterns on screen.
4. PC sends "H" messages to modem.
5. PC sends "H" messages to printer, and the printer prints them on paper.
6. PC plays a music disk via the EUT and sends out audio signals to earphone via the EUT.
7. Repeat steps 3-7.

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TEST DATA OF CONDUCTED EMISSION

EUT: **CD-ROM DRIVE** MODEL: **BCD 40XJ**

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: Johnny Liu

Freq.	L Level		N Level		Limit		Margin [dB (μV)]			
[MHz]	[dB (μV)]		[dB (μV)]		[Db (μV)]		L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.150	52.40	-	45.30	-	66.00	56.00	-13.6	-	-20.7	-
0.228	48.80	-	43.20	-	62.52	52.52	-13.7	-	-19.3	-
1.134	21.80	-	25.40	-	56.00	46.00	-34.2	-	-30.6	-
1.767	23.20	-	26.00	-	56.00	46.00	-32.8	-	-30.0	-
9.497	20.80	-	20.00	-	60.00	50.00	-39.2	-	-40.0	-
28.637	31.10	-	34.70	-	60.00	50.00	-28.9	-	-25.3	-

Remarks:
1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value

ADT CO. SITE 3

28. May 98 08:55

CISPR 22 CLASS B

EUT: BCD 40XJ
Test Spec: LISN : L

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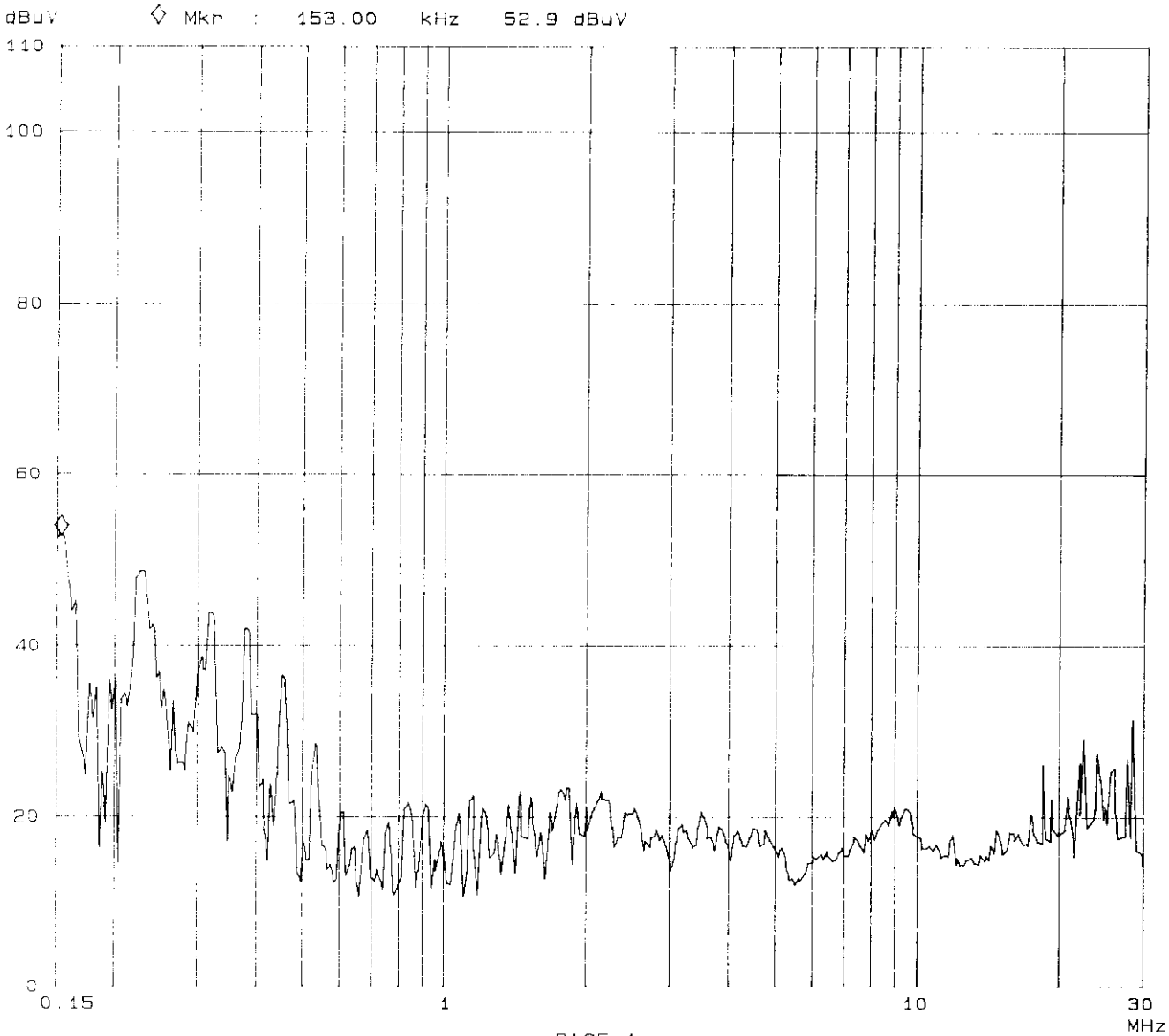
Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	450k	3k	10k	PK	1ms	10dBLN	OFF	60dB
450k	5M	3k	10k	PK	1ms	10dBLN	OFF	60dB
5M	30M	3k	10k	PK	1ms	10dBLN	OFF	60dB



ADT CO. SITE 3
CISPR 22 CLASS B

28. May 98 09: 40

EUT: BCD 40XJ
Test Spec: LISN : N

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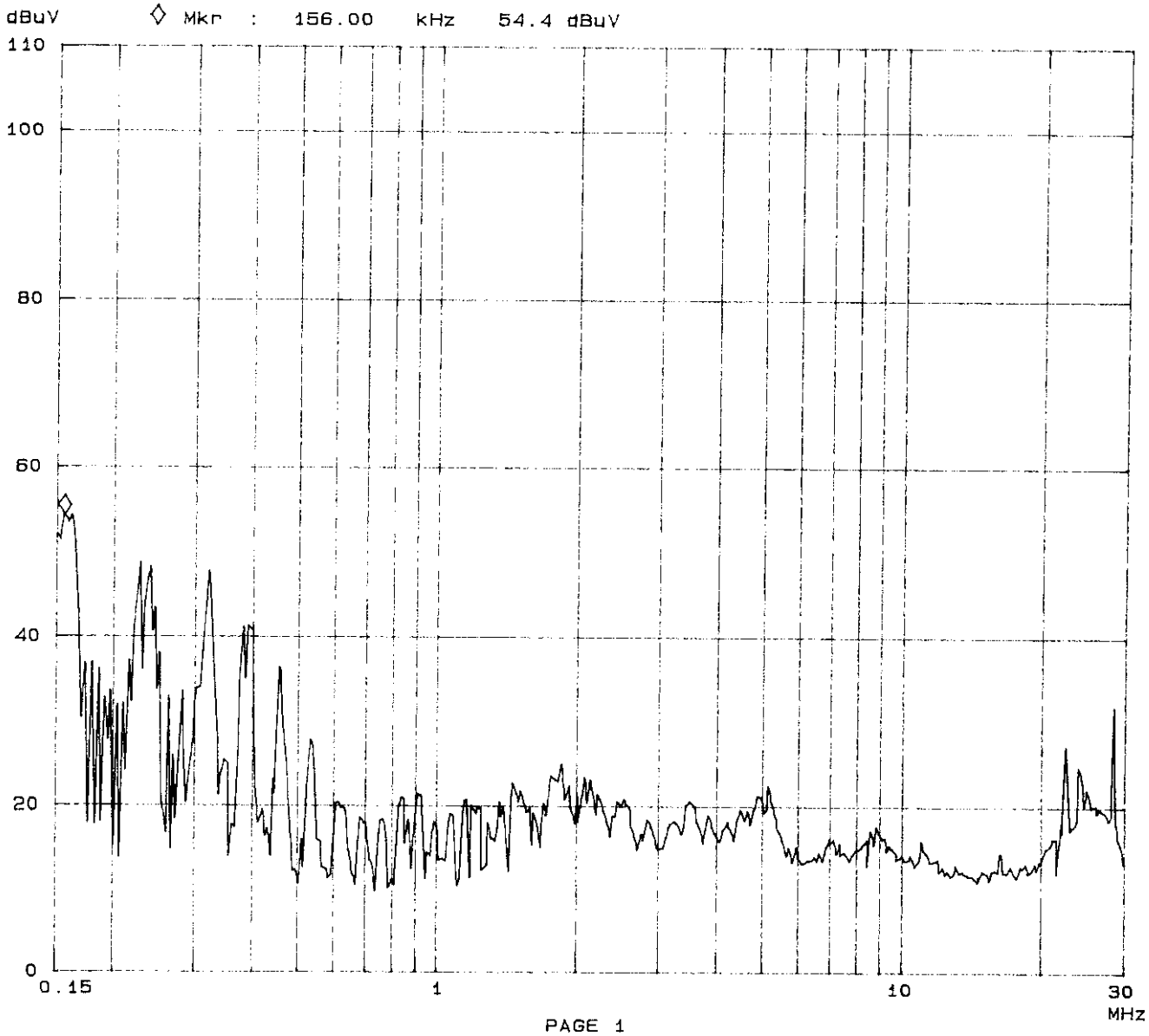
Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	450k	3k	10k	PK	1ms	10dBLN	OFF	60dB
450k	5M	3k	10k	PK	1ms	10dBLN	OFF	60dB
5M	30M	3k	10k	PK	1ms	10dBLN	OFF	60dB



4.1.2 TEST DATA OF RADIATED EMISSION

EUT: **CD-ROM DRIVE** MODEL: **BCD 40XJ**

ANTENNA: CHASE BILOG CBL6111A POLARITY: Horizontal

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

TEST PERSONNEL: Johnny Liu

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
85.92	9.5	5.9	15.4	30.0	-14.6
135.52	13.7	5.1	18.8	30.0	-11.2
143.20	13.5	5.6	19.1	30.0	-10.9
157.51	12.9	7.8	20.7	30.0	-9.3
171.82	12.2	6.7	18.9	30.0	-11.1
202.84	13.4	3.0	16.4	30.0	-13.6
265.28	15.5	10.6	26.1	37.0	-10.9

REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) +Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

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TEST DATA OF RADIATED EMISSION

EUT: **CD-ROM DRIVE** MODEL: **BCD 40XJ**

ANTENNA: CHASE BILOG CBL6111A POLARITY: Vertical

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

TEST PERSONNEL: Johnny Liu

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
47.01	11.6	12.0	23.6	30.0	-6.4
85.41	9.9	4.6	14.5	30.0	-15.5
123.92	15.3	5.7	21.0	30.0	-9.0
134.39	14.2	8.7	22.9	30.0	-7.1
143.13	13.5	7.2	20.7	30.0	-9.3
167.55	12.4	6.9	19.3	30.0	-10.7
193.73	12.7	6.9	19.6	30.0	-10.4
204.19	13.3	9.6	22.9	30.0	-7.1
214.72	13.4	5.4	18.8	30.0	-11.2
221.64	13.5	8.1	21.6	30.0	-8.4
233.87	13.6	7.3	20.9	37.0	-16.1
683.02	24.8	4.3	29.1	37.0	-7.9

REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) +Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value