

Customer Specification File

Customer:

Project : ETSI TS 101 952-1-1 Splitter for ADSL Application

Request from :

Magcom PN: ACO600P48ZY

Revision	Realized By	Modification Description	Date	Last Pages
A01	KelvinHuang	New Release	Jan-29-2007	11

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1 Preliminary:

This is a Customer design project for _____-. This Document is for Specification Review

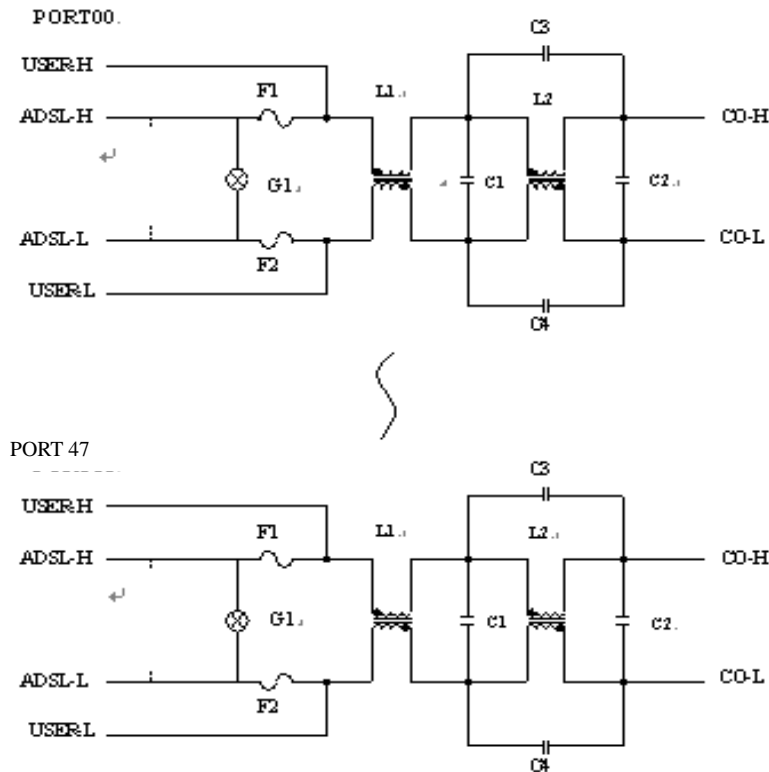
2 Customer reference documents:**3 Standard reference documents:**

- ANSI T1.413
- ETSI TS 101 952-1-1 (ADSL)

4 Features (Blank)

5 Design Requirement

5.1 Schematic



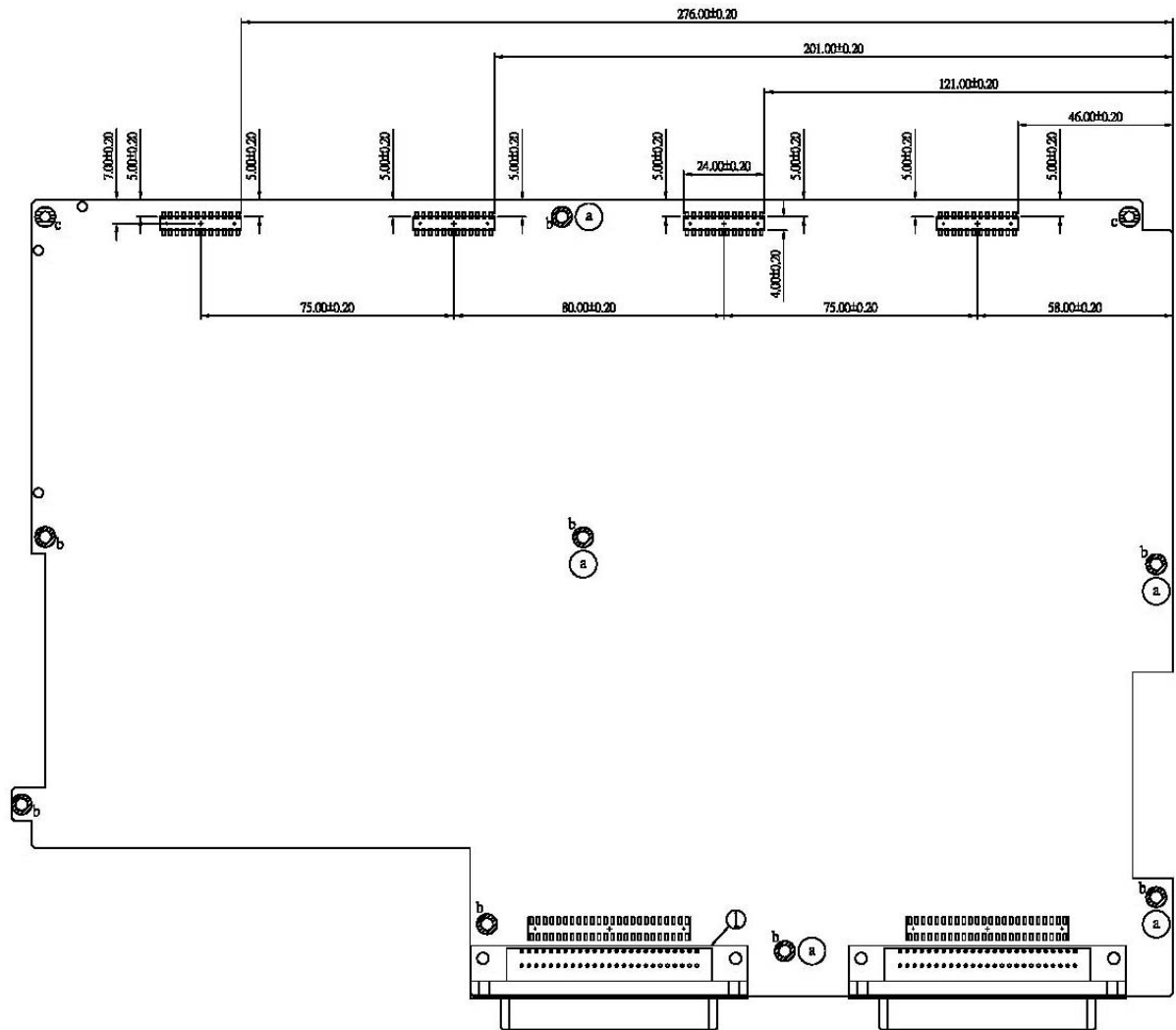
5.2 Electrical Performance

5.2.1 General conditions

General conditions		
	Conditions	Values
Splitter bandwidth		DC-4kHz
Voice band		DC-4kHz
Ringing frequency		15.3Hz ~ 68Hz
ADSL frequency band		30kHz~2.2MHz
POTS band impedance-Z _L	0Hz ~ 3.4kHz	600 Ω
Modem Impedance	30kHz~2.2MHz	100 Ω
Z _{ADSL}	0Hz ~ 4kHz	27nF + (100Ω//470uH)
ADSL band impedance	30kHz~2.2MHz	100Ω
Modem impedance	30kHz~2.2MHz	ZHPc
Max. operating voltage to ground		250VDC
DC Loop current		<100mA

5.2.2 Electrical Requirement

Electrical Requirement		
DC requirements		
	Conditions	Values
TIP and RING to Earth	100VDC	> 20 MΩ
TIP to RING	100VDC	> 5 MΩ
TIP to RING	POTS port shorted	<25Ω
Voice band loss requirements		
Insertion loss	@1004Hz	<0.5 dB
distortion	0.2-4 kHz	+1.0 to -1.0 dB
Return loss	200 Hz – 500Hz	>14dB
	500 Hz – 2000Hz	>18dB
	2000 Hz – 3400Hz	>14dB
Delay distortion	0.6-3.2 kHz	<200 μs
	0.2-4.0 kHz	<250 μs
ADSL band requirements	30kHz~300KHz	>65dB
Stop band attenuation	30kHz~2.2MHz	>65dB
Input impedance	30kHz~2.2MHz	<0.25dB
Near-end cross talk NEXT	30kHz~2.2MHz	>45dB
Longitudinal conversion loss LCL	200~1000Hz	>58 dB
	3KHz	>53 dB

5.3 Mechanical**Pcb Thickness = 1.6mm****Width = 236 mm****Length = 338 mm**

5.4 Pin Assignments

USER 01-24 COM1**USER 25-48 COM2**

Pin Nr.	Signal	Pin Nr.	Signal	Pin Nr.	Signal	Pin Nr.	Signal
1	NC	26	NC	1	NC	26	NC
2	USER24H	27	USER24L	2	USER48H	27	USER48L
3	USER23H	28	USER23L	3	USER47H	28	USER47L
4	USER22H	29	USER22L	4	USER46H	29	USER46L
5	USER21H	30	USER21L	5	USER45H	30	USER45L
6	USER20H	31	USER20L	6	USER44H	31	USER44L
7	USER19H	32	USER19L	7	USER43H	32	USER43L
8	USER18H	33	USER18L	8	USER42H	33	USER42L
9	USER17H	34	USER17L	9	USER41	34	USER41L
10	USER16H	35	USER16L	10	USER40H	35	USER40L
11	USER15H	36	USER15L	11	USER39H	36	USER39L
12	USER14H	37	USER14L	12	USER38H	37	USER38L
13	USER13H	38	USER13L	13	USER37H	38	USER37L
14	USER12H	39	USER12L	14	USER36H	39	USER36L
15	USER11H	40	USER11L	15	USER35H	40	USER35L
16	USER10H	41	USER10L	16	USER34H	41	USER34L
17	USER9H	42	USER9L	17	USER33H	42	USER33L
18	USER8H	43	USER8L	18	USER32H	43	USER32L
19	USER7H	44	USER7L	19	USER31H	44	USER31L
20	USER6H	45	USER6L	20	USER30H	45	USER30L
21	USER5H	46	USER5L	21	USER29H	46	USER29L
22	USER4H	47	USER4L	22	USER28H	47	USER28L
23	USER3H	48	USER3L	23	USER27H	48	USER27L
24	USER2H	49	USER2L	24	USER26H	49	USER26L
25	USER1H	50	USER1L	25	USER25H	50	USER25L

CO 01-24 COM3

CO 25-48 COM4

Pin Nr.	Signal	Pin Nr.	Signal	Pin Nr.	Signal	Pin Nr.	Signal
1	CO24H	25	CO24L	1	CO48H	25	CO48L
2	CO23H	26	CO23L	2	CO47H	26	CO47L
3	CO22H	27	CO22L	3	CO46H	27	CO46L
4	CO21H	28	CO21L	4	CO45H	28	CO45L
5	CO20H	29	CO20L	5	CO44H	29	CO44L
6	CO19H	30	CO19L	6	CO43H	30	CO43L
7	CO18H	31	CO18L	7	CO42H	31	CO42L
8	CO17H	32	CO17L	8	CO41H	32	CO41L
9	CO16H	33	CO16L	9	CO40H	33	CO40L
10	CO15H	34	CO15L	10	CO39H	34	CO39L
11	CO14H	35	CO14L	11	CO38H	35	CO38L
12	CO13H	36	CO13L	12	CO37H	36	CO37L
13	CO12H	37	CO12L	13	CO36H	37	CO36L
14	CO11H	38	CO11L	14	CO35H	38	CO35L
15	CO10H	39	CO10L	15	CO34H	39	CO34L
16	CO9H	40	CO9L	16	CO33H	40	CO33L
17	CO8H	41	CO8L	17	CO32H	41	CO32L
18	CO7H	42	CO7L	18	CO31H	42	CO31L
19	CO6H	43	CO6L	19	CO30H	43	CO30L
20	CO5H	44	CO5L	20	CO29H	44	CO29L
21	CO4H	45	CO4L	21	CO28H	45	CO28L
22	CO3H	46	CO3L	22	CO27H	46	CO27L
23	CO2H	47	CO2L	23	CO26H	47	CO26L
24	CO1H	48	CO1L	24	CO25H	48	CO25L

ADSL 01-12 COM5

ADSL 13-24 COM6

Pin Nr.	Signal	Pin Nr.	Signal	Pin Nr.	Signal	Pin Nr.	Signal
1	ADSL12H	13	ADSL12H	1	ADSL24H	13	ADSL24L
2	ADSL11H	14	ADSL11H	2	ADSL23H	14	ADSL23L
3	ADSL10H	15	ADSL10H	3	ADSL22H	15	ADSL22L
4	ADSL9H	16	ADSL9H	4	ADSL21H	16	ADSL21L
5	ADSL8H	17	ADSL8H	5	ADSL20H	17	ADSL20L
6	ADSL7H	18	ADSL7H	6	ADSL19H	18	ADSL19L
7	ADSL6H	19	ADSL6H	7	ADSL18H	19	ADSL18L
8	ADSL5H	20	ADSL5H	8	ADSL17H	20	ADSL17L
9	ADSL4H	21	ADSL4H	9	ADSL16H	21	ADSL16L
10	ADSL3H	22	ADSL3H	10	ADSL15H	22	ADSL15L
11	ADSL2H	23	ADSL2H	11	ADSL14H	23	ADSL14L
12	ADSL1H	24	ADSL1H	12	ADSL13H	24	ADSL13L

ADSL 25-36 COM7

ADSL 37-48 COM8

Pin Nr.	Signal	Pin Nr.	Signal	Pin Nr.	Signal	Pin Nr.	Signal
1	ADSL36H	13	ADSL36L	1	ADSL48H	13	ADSL48L
2	ADSL35H	14	ADSL35L	2	ADSL47H	14	ADSL47L
3	ADSL34H	15	ADSL34L	3	ADSL46H	15	ADSL46L
4	ADSL33H	16	ADSL33L	4	ADSL45H	16	ADSL45L
5	ADSL32H	17	ADSL32L	5	ADSL44H	17	ADSL44L
6	ADSL31H	18	ADSL31L	6	ADSL43H	18	ADSL43L
7	ADSL30H	19	ADSL30L	7	ADSL42H	19	ADSL42L
8	ADSL29H	20	ADSL29L	8	ADSL41H	20	ADSL41L
9	ADSL28H	21	ADSL28L	9	ADSL40H	21	ADSL40L
10	ADSL27H	22	ADSL27L	10	ADSL39H	22	ADSL39L
11	ADSL26H	23	ADSL26L	11	ADSL38H	23	ADSL38L
12	ADSL25H	24	ADSL25L	12	ADSL37H	24	ADSL37L

6 Environmental conditions:**6.1 Resistibility to over voltages and over currents:**

Comply with the resistibility requirements per ITU-T Recommendation K.20 electrical safety requirements

6.2 Climatic conditions:**6.2a. Operating temperature:**

-20 °C to +60°C

6.2b. Storage and transportation:

Low ambient temperature - 40°C

High ambient temperature +80°C

6.2c. Operation humidity:

0 to 95% (non-condensing)

7 Reliability conditions:**7.1 Thermal shock:**

Temperature from -20 °C to +85 °C for 5 cycles

7.2. Temperature humidity exposure:

+50 °C / 95 RH, 96hrs

7.3. Vibration test:

Random vibration / Overall: 1.15 g rms

Freq. (Hz): 1 → 4 → 100 → 200

PSD (g₂/ Hz): 0.0001 → 0.01 → 0.01 → 0.001

Test Axis / Time: Top / 30 mins Bottom / 10 mins

X axis / 10 mins Y axis / 10 mins

8 Note: