"GSM"
(Global System for Mobile)

COMMUNICATION

SYSTEM

USING

HITECH - PIC - 'C'

What is GSM?

- Voice service and data delivery using digital modulation
- Can connect to any Microcontroller, Microprocessor or a Computer
- Easy 3 wire - 7 wire Communication Method
- Data Transmitted in ASCII Format
- Global Standard Protocol.

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GSM Services:

Tele Services: Mobile Phone and Emergency calls etc…

Data Services: SMS(Short Message Service), Fax, Voice mail, Electronic mail

Supplementary Service: Local Calls, call Forwarding, Call Hold, Call waiting, Conference etc..

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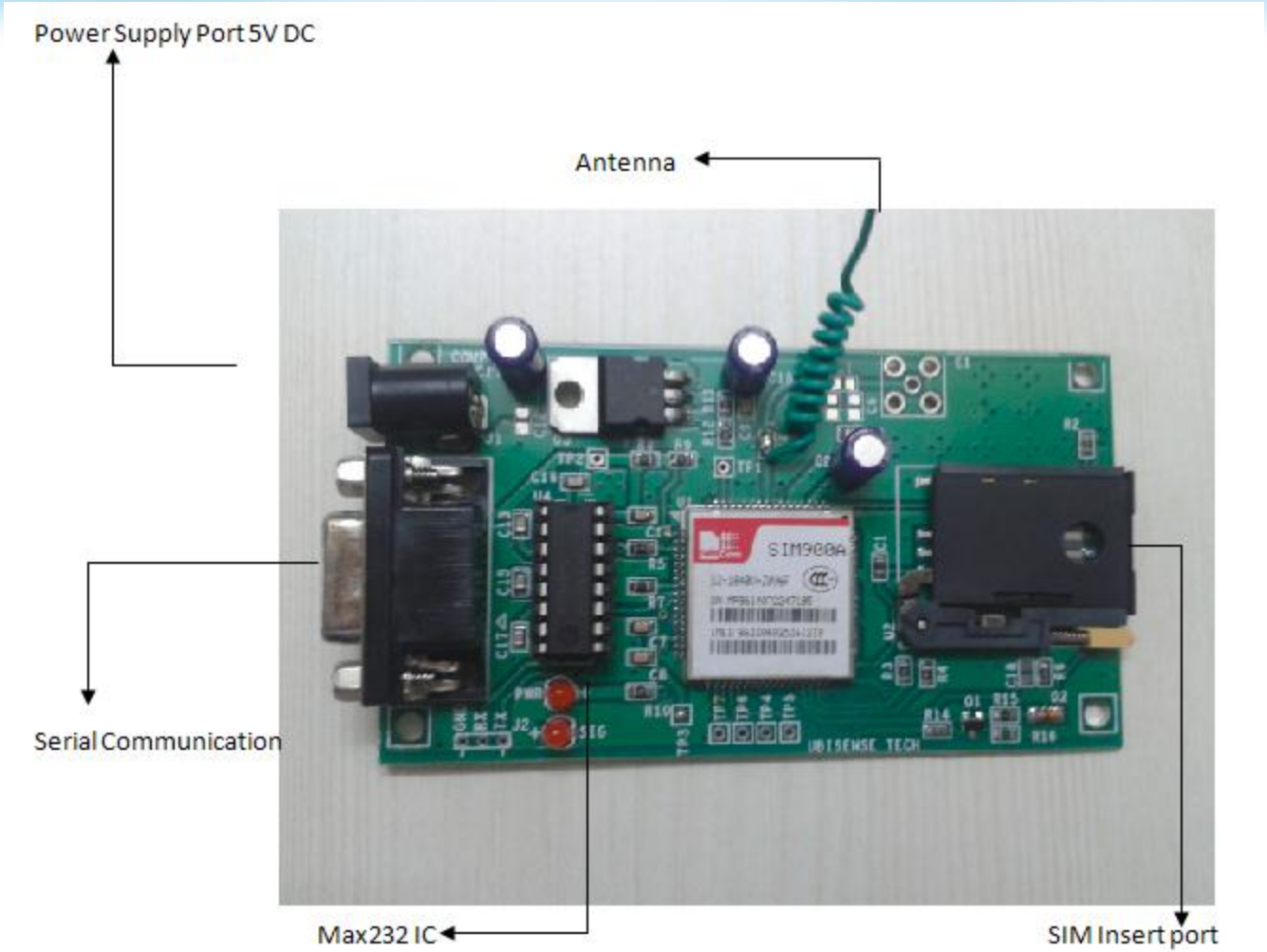
GSM Hardware:



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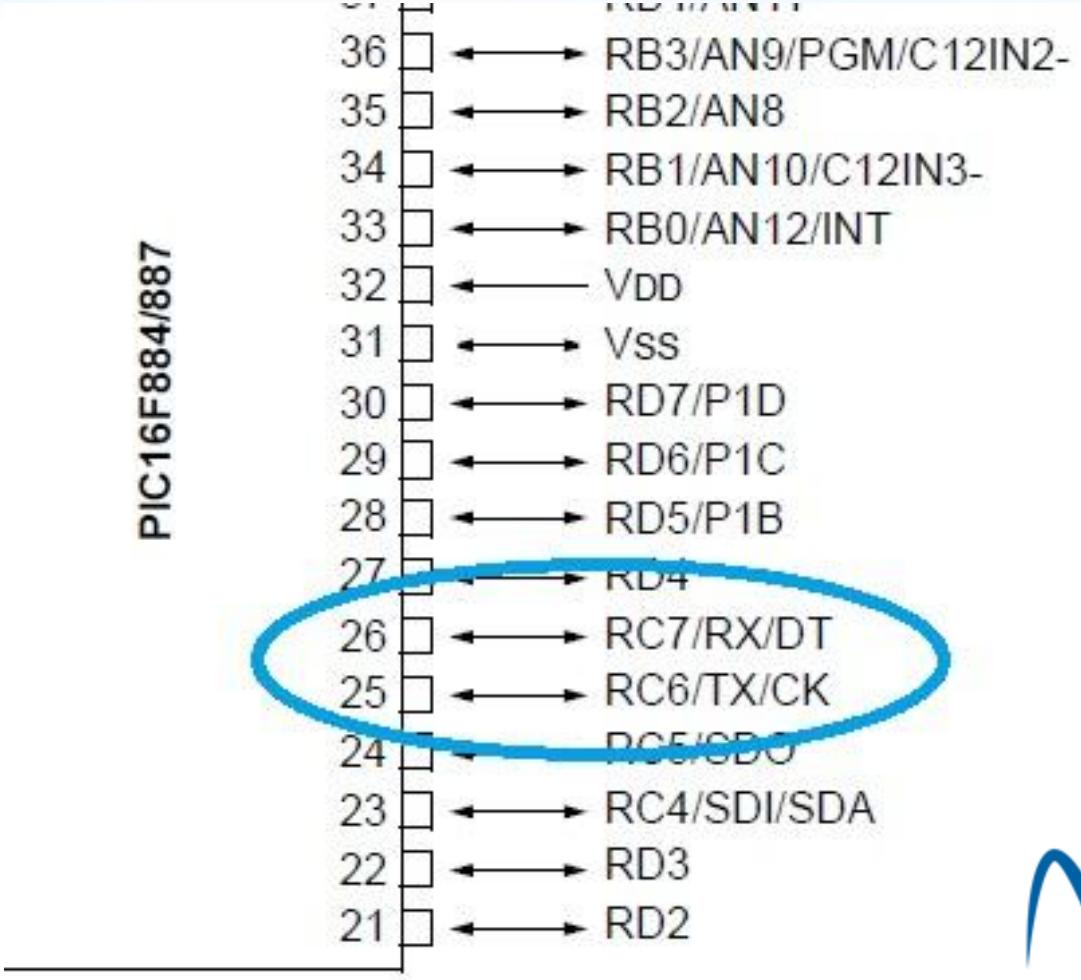
Converted Result:



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RS232 Port Settings

GFG - HyperTerminal

File Edit View Call Transfer Help

```
OK
AT+CGMM
SIMCOM_SIM900A

OK
AT+CGSN
863306025361210
```

```
OK
AT+CIMI
404940010739034

OK
ATD<+918124663674>→
ERROR
ATD<+918124663674>;♦→
ERROR
ATD<+918124663674>;
ERROR
ATD<+918124663674>
ERROR
ATD<+918124663674>;
ERROR
ATD<+918124663674>[<@>][;]
ERROR
ATD<+918124663674><@>;
ERROR
ATD*#06#
863306025361210
```

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HYPER TERMINAL:

- Hyper Terminal is a Computer software
- Used for Dial up network connection.
- It can connect to computer ports like: Rs232, USB Ports etc.
- Text Data or Voice Data can be transmitted or received through Hyper Terminal.
- Can be used for testing RS232 data Transmission and Reception.

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GSM ASCII Table:

Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
0	00	Null	32	20	Space	64	40	@	96	60	`
1	01	Start of heading	33	21	!	65	41	A	97	61	a
2	02	Start of text	34	22	"	66	42	B	98	62	b
3	03	End of text	35	23	#	67	43	C	99	63	c
4	04	End of transmit	36	24	$	68	44	D	100	64	d
5	05	Enquiry	37	25	%	69	45	E	101	65	e
6	06	Acknowledge	38	26	&	70	46	F	102	66	f
7	07	Audible bell	39	27	'	71	47	G	103	67	g
8	08	Backspace	40	28	(	72	48	H	104	68	h
9	09	Horizontal tab	41	29	)	73	49	I	105	69	i
10	0A	Line feed	42	2A	*	74	4A	J	106	6A	j
11	0B	Vertical tab	43	2B	+	75	4B	K	107	6B	k
12	0C	Form feed	44	2C	,	76	4C	L	108	6C	l
13	0D	Carriage return	45	2D	-	77	4D	M	109	6D	m
14	0E	Shift out	46	2E	.	78	4E	N	110	6E	n
15	0F	Shift in	47	2F	/	79	4F	O	111	6F	o
16	10	Data link escape	48	30	0	80	50	P	112	70	p
17	11	Device control 1	49	31	1	81	51	Q	113	71	q
18	12	Device control 2	50	32	2	82	52	R	114	72	r
19	13	Device control 3	51	33	3	83	53	S	115	73	s
20	14	Device control 4	52	34	4	84	54	T	116	74	t
21	15	Neg. acknowledge	53	35	5	85	55	U	117	75	u
22	16	Synchronous idle	54	36	6	86	56	V	118	76	v
23	17	End trans. block	55	37	7	87	57	W	119	77	w
24	18	Cancel	56	38	8	88	58	X	120	78	x
25	19	End of medium	57	39	9	89	59	Y	121	79	y
26	1A	Substitution	58	3A	:	90	5A	Z	122	7A	z
27	1B	Escape	59	3B	;	91	5B	[	123	7B	{
28	1C	File separator	60	3C	<	92	5C	\	124	7C	|
29	1D	Group separator	61	3D	=	93	5D	]	125	7D	}
30	1E	Record separator	62	3E	>	94	5E	^	126	7E	~
31	1F	Unit separator	63	3F	?	95	5F	_	127	7F	□

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GSM Used ASCII Values:

Carriage Return: 0x0D

Line Feed: 0x0A

Vertical Tab: 0x0B

Back Space: 0x08

Escape: 0x1B

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GSM Command:

1. AT Command : Check GSM is Ready to Use

2. AT+CREG: Network Registration for SIM

3. ATE0: characters that are sent to the modem are echoed back to the

4. AT+CMGF: controls the presentation format of short messages, from the modem.

5. AT+CMGS: sends a short message from the modem to the network

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Sample code to start with:

Initilize

```
TRISD=0x00;
TRISE=0x00;
TRISC=0x80;


SPBRG=25;
TXEN=1;
TXIF=0;
BRGH=1;
SYNC=0;
SPEN=1;
CREN=1;
TRMT=1;
RCIE=1;
```

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Sample code to start with:

Transmit Function

```
void ser_tx(unsigned char t)
{
        TXREG = t;
        while(TXIF==0);
        TXIF = 0;
}
```

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Sample code to start with:

Receive Function

```
while(1)
        {
        TXREG='A';
                                while(RCIF==0);
                                x=RCREG;
                                lcd_data(x);
                                RCIF=0;
        }
```

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QUERIES??

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