

Exhibit E: Intermec Operational Description

FCC ID: HN2MG18

5.0 Radio Specifications:

- 5.1 Frequency Band: 900 MHz (GSM), 1800 MHz (DCS), 1900 MHz (PCS)
- 5.2 Voltage: 3.0V to 6.0V measured at the I/O connector during the transmit slot (576µs out of 4.6ms)
- 5.3 Current Rating: 150µA off current
 - 7.2 mA @ DRX 2 standby mode
 - 3.5 mA @ DRX 9 standby mode
 - 300mA average in call at power level 5
 - 1.2 A peak @217Hz @ power level 5
- 5.4 Output Power: GSM Mode - power levels #19 to 5, 5 dBm to 33 dBm (per ETSI)
DCS Mode - power levels #15 to 0, 0 dBm to 30 dBm (per ETSI)
PCS Mode - power levels #15 to 0, 0 dBm to 30 dBm (per FCC)
- 5.5 SIM Card Reader Options: Internal (chip SIM CR 3/5 SIM)
External (local interface 3/5 SIM)
External (remote/DSC interface 5V only)
- 5.6 Interface Options: 9 line RS232 Sserial asynchronous 3V logic level
 - Vih = 2.0 to 5.5 Volts
 - Vil = 0.8V max.
 - Voh = 2.5V min. @ 100µA
 - Vol = 0.2V max. @ 100µAWizard application S/W, used to activate PDP context
- 5.7 Host Protocol: CSD mode - AT commands including GSM 07.07 and GSM 07.05
GPRS mode - AT commands per standard for GSM 07.60 and 07.07 ver 7.5.0
- 5.8 Data: Over the air transparent/non-transparent up to 1,140 bps max.
- 5.9 PC FAX: Class 1 using Winfax
- 5.10 SMS: Send and receive (PDU and block mode per GSM 07.05)
- 5.11 Voice Call: Supported I/O with external H/SET
- 5.12 Audio: Analog - full duplex I/O on interface connector
Digital - Motorola proprietary DSC Bus
Echo cancelling activated by AT for hands free audio

6.0 Environmental Ratings:

- 6.1 Operating Temperature Range: -30°C to +60°C
- 6.2 Storage Temperature Range: -40°C to +85°C
- 6.3 Physical Shock Withstand: 20 g's (11 msec. duration, 20 impacts/plane)
- 6.4 Vibration Withstand: 1.5 g's (5 to 500 Hz @ 0.1 octave/min. in each plane)

7.0 Mechanical Specifications:

7.1 Housing Material: PC/ABS plastic housing

7.2 Interface Connector: 36 position ZIF receptacle, 0.5mm pitch
28 pin dual row receptacle, 1.27mm pitch

7.3 RF Output Connector: 50Ω MMCX jack

7.4 Weight: 22 grams

8.0 Agency Approvals: FCC part 15 (Class B)

9.0 Interface Connector Pinouts:

9.1 36 Position FFC Receptacle -

Pin No.	Function	Pin No.	Function
1	TX Enable	19	SIM CR I/O Data
2	Not used	20	SIM CR Clock
3	Not used	21	TS (Turn on/standby)
4	RS232 - TXD	22	DSC - Enable
5	RS232 - RXD	23	DSC - Downlink
6	RS232 - DTR	24	DSC - Uplink
7	RS232 - DCD	25	Analog Audio GND
8	RS232 - RTS	26	GND
9	RS232 - CTS	27	GND
10	RS232 - DSR	28	GND
11	RS232 - RI	29	GND
12	Man Test	30	V _{CC} (3.0 to 6 VDC)
13	Analog Audio In	31	V _{CC} (3.0 to 6 VDC)
14	Analog Audio Out & Pwr on/off	32	V _{CC} (3.0 to 6 VDC)
15	Wake up/GPRS coverage indicator	33	V _{CC} (3.0 to 6 VDC)
16	Input I/O (custom) & SIM CR DET	34	Not used
17	SIM CR V _{CC} (3/5 VDC)	35	Not used
18	SIM CR Reset (RST)	36	Not used

9.2 28 Pin Header (-101 only)-

Pin No.	Function	Pin No.	Function
1	V _{CC} (3.0 to 6 VDC)	15	No Connection
2	V _{CC} (3.0 to 6 VDC)	16	TX Enable
3	SIM CR I/O Data	17	Analog Audio GND
4	SIM CR Reset (RST)	18	Analog Audio Out & Pwr on/off
5	SIM CR V _{CC} (3/5 VDC)	19	Analog Audio In
6	SIM CR DET	20	DSC - Enable
7	RS232 - DTR	21	RS232 - DSR
8	TS (Turn on/standby)	22	DSC - Downlink
9	Man Test	23	DSC - Uplink
10	Wake up/GPRS cvrg ind	24	SIM CR Clock
11	GND	25	RS232 - TXD
12	GND	26	RS232 - RXD
13	RS232 - RI	27	RS232 - CTS
14	RS232 - DCD	28	RS232 - RTS

10.0 Outline Drawing (mm): Model g18 DV DIN Horizontal, -001 Part

