

PERFORMANCE DATA

General AMPS system information

In the table below, AMPS is the default setting of the user-defined AMPS system and is specified as a subset of E-AMPS.

System type	Base Tx frequency channel 1	Mobile Tx frequency channel 1	Minimum channel number	Maximum channel number	Channel spacing	Duplex offset (Rx - Tx)
	MHz	MHz			kHz	MHz
E-AMPS	870.030	825.030	1	1023	30	45
N-AMPS	870.030	825.030	1 WIDE	1023 WIDE	30	45
	870.020	825.020	1 BELOW	1023 BELOW	30	45
	870.030	825.030	1 NARROW	1023 NARROW	30	45
	870.040	825.040	1 ABOVE	1023 ABOVE	30	45
AMPS	870.030	825.030	1	666	30	45

Allocation of channels

N-AMPS BELOW channels are offset from the NARROW channels by -10 kHz, N-AMPS ABOVE channels are offset from the NARROW channels by +10 kHz.

1 to 333: System A.
 334 to 666: System B.
 667 to 716: System A'.
 717 to 799: System B'.
 800 to 990: Reserved.
 991 to 1023: System A''.

Dedicated control channels

313 to 333: System A.
 334 to 354: System B.

Voice deviation FM

Except narrowband: 12.0 kHz maximum.
 N-AMPS narrowband: 5.0 kHz maximum.

Data deviation

Except narrowband: 8.0 kHz $\pm 10\%$.
 N-AMPS narrowband: 700 Hz $\pm 10\%$.

Data type

FSK Manchester encoded, BCH parity.

Data rate

Except narrowband: 10 kbit/s ± 1 bit/s.
 N-AMPS narrowband: 100 ± 0.1 bit/s.

SAT frequencies

5.970, 6.000 and 6.030 kHz.

SAT deviation

2.0 kHz $\pm 10\%$.

Signalling tone frequency

10.0 kHz ± 1 Hz.

Signalling tone deviation

8.0 kHz $\pm 10\%$.

Signalling tone duration

50 ms, 400 ms or 1.8 s $\pm 10\%$.

GENERAL INFORMATION

DSAT sequences 2556CBH, 255B2BH, 256A9BH, 25AD4DH, 26AB2BH, 26B2ADH and 2969ABH.

DST sequences DAA934H, DAA4D4H, DA9564H, DA52B2H, D954D4H, D94D52H and D69654H.

DSAT and DST deviation (N-AMPS narrowband.) 700 Hz \pm 10%.

DSAT and DST type NRZ (DSAT, DST and sync word).

DSAT and DST rate 200 bit/s \pm 0.2 bit/s.

Other tones DTMF sent in conversation from mobile by pressing key pad.

Noise measurement filtration CCITT psophometric.

Mobile transmit power

Power level	Power		
	Class I	Class II	Class III
0	2.82 W	1.12 W	447 mW
1	1.12 W	1.12 W	447 mW
2	447 mW	447 mW	447 mW
3	178 mW	178 mW	178 mW
4	70.8 mW	70.8 mW	70.8 mW
5	28.2 mW	28.2 mW	28.2 mW
6	11.2 mW	11.2 mW	11.2 mW
7	4.47 mW	4.47 mW	4.47 mW
SCM	xx00	xx01	xx10

GENERAL INFORMATION

User controls

2955

Four mode keys as below.

Selects normal 2955 operation.

CRTS

Selects cellular radio test system mode.

DISC

Selects disc menu.

PSOPH

Selects psophometric filter.
Selects local when in remote.

DC power meter

Voltage range

1 to 25 V.

Voltage accuracy

±5% ±100 mV.

Current range

0 to 10 A.

Current accuracy

±5% ±200 mA.

Power accuracy

±10% ±20 mW, 100 mW to 200 W.

AF input to AF output

As 2955 except AC coupling only and x20 amplifier for <100 mV.

External modulation input

0.5 V pk-pk for 5 kHz deviation ±10% at 1 kHz.

AF measurement de-emphasis

Frequency response

6 dB/octave, 300 Hz to 3.4 kHz.

Psophometric (CCITT) filter

CCITT filter selectable for psophometric audio measurements.

Frequency response

Conforms to CCITT Recommendation P53.

Tolerances

50 to 300 Hz	±2 dB.
300 to 800 Hz	±1 dB.
800 Hz reference	0 dB.
800 Hz to 3 kHz	±1 dB.
3 to 3.5 kHz	±2 dB.
3.5 to 5 kHz	±3 dB.

GENERAL INFORMATION

Psophometric (C-message) filter

C-message filter, selectable for psophometric audio measurements.

Frequency response

Relative to 1 kHz reference.

60 Hz	55.7 ±2 dB.
100 Hz	42.5 ±2 dB.
200 Hz	25.0 ±2 dB.
300 Hz	16.5 ±1 dB.
400 Hz	11.4 ±1 dB.
500 Hz	7.5 ±1 dB.
600 Hz	4.7 ±1 dB.
700 Hz	2.7 ±1 dB.
800 Hz	1.5 ±1 dB.
900 Hz	0.6 ±1 dB.
1 kHz	0.0 dB reference.
1.2 kHz	0.2 ±1 dB.
1.3 kHz	0.5 ±1 dB.
1.5 kHz	1.0 ±1 dB.
1.8 kHz	1.3 ±1 dB.
2 kHz	1.3 ±1 dB.
2.5 kHz	1.4 ±1 dB.
2.8 kHz	1.9 ±1 dB.
3 kHz	2.5 ±1 dB.
3.3 kHz	5.2 ±2 dB.
3.5 kHz	7.6 ±2 dB.
4 kHz	14.5 ±3 dB.
4.5 kHz	21.5 ±3 dB.
5 kHz	28.5 ±3 dB.

Thereafter, attenuation to increase at 12 dB/octave until it reaches 60 dB.

SAT generation

Frequency range	3 to 8 kHz in 5 Hz steps, normally 4 or 6 kHz.
Frequency accuracy	Crystal derived, better than ±1 Hz (at SAT frequencies).
Output level accuracy	±10%, 300 Hz to 2.5 kHz at system frequencies, i.e. 3.955 to 4.045 kHz and 5.970 to 6.030 kHz.
Distortion	<3%. <2% at 4 kHz ±45 Hz. <2% at 6 kHz ±30 Hz.

SAT measurement

Accuracy	±10% at nominal system SAT frequencies and levels.
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ST measurement

Measurement accuracy	±10% at 5 to 10 kHz.
Tone duration	±10 ms at 40 ms to 5 s.

GENERAL INFORMATION

FSK data	Manchester encoded NRZ.
Generated data deviation	±10% at 1 to 10 kHz.
Bit rate	±1 bit/s at 8 or 10 kHz.
Measurement deviation	±10% at 1 to 10 kHz.
DTMF tone generation	
Frequency accuracy	±1 Hz at DTMF frequencies.
Deviation	±10% for 1 to 5 kHz high tone. Low tone equal to high tone ±2 dB.
Distortion	<3% (individual tones).
Digital SAT and ST generation	Sub-audible FSK data, Manchester encoded and bandwidth limited.
Data rate	200 bit/s.
Data rate accuracy	±0.01 bit/s.
Deviation range	0 to 1 kHz.
Deviation accuracy	±10% at 700 Hz.
Digital SAT and ST measurement	
Deviation accuracy	±10% at nominal system level (700 Hz).
Printers	
Printer interfaces	RS-232, GPIB and Centronics.
Print menu facilities	Print on PASS, FAIL, ALWAYS.
Control interfaces	
GPIB	IEEE488 subset SH1, AH1, T5, TEO, L4, LEO, SR1, RL1, PPO, DC1, DT1, CO, E1.
RS-232	All standard rates 75 to 9600 baud. Length/parity 8 even, odd, none; 7 even, odd, none. Stop bits 1,2.
Parallel	Parallel printer (Centronics type). 8-way bi-directional port. 48 mA sink. 4 TTL outputs (unprotected). 4 TTL inputs (unprotected). +5 V DC supply at 100 mA accessory power (unprotected). 3 analogue inputs routed to AF INPUT of 2955, maximum 10 V peak, impedance >1 MΩ (accessible through GPIB).

GENERAL INFORMATION

System parameter settings

System type	As selected. Default E-AMPS.
System identity	5 digits (decimal). Default 00002.
Control channel	0 to 1023. Default 334.
First voice channel	0 to 1023. Default 1.
Last voice channel	0 to 1023. Default 666.
Handoff increment	1 to 1023. Default 333.
SAT frequency	5.970, 6.000 or 6.030 kHz. Default 5.970 kHz.
Digital colour code (DCC)	0, 1, 2 or 3. Default 0.
DSAT colour code (DSCC)	(N-AMPS only.) 0 to 6. Default 0.

Mobile parameter settings

Mobile number (MIN)	Format xxx-xxx-xxxx. Default 000-000-0000.
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Display format settings

Display format	SUMMARY or FULL. Default FULL.
Pause	ALWAYS, MANUAL ONLY or ON FAILURE. Default MANUAL ONLY.
Number format	HEXADECIMAL, DECIMAL, OCTAL, STANDARD 1 or STANDARD 2. Default STANDARD 1.

Test sequence settings

Test sequence	BRIEF TESTING, COMPREHENSIVE TESTING, CALL PROCESSING ONLY, CALL AND RF TESTING or NO SEQUENCE DEFINED (user-defined sequence until the title is reset). Default BRIEF TESTING.
DTMF	ENABLED or DISABLED. Default DISABLED.
Hook flash	ENABLED or DISABLED. Default DISABLED.

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Printer settings

Printer port	UNASSIGNED, GPIB, RS-232 or PARALLEL. Default UNASSIGNED.
Print	OFF, ALL, ON FAILURE or ON PASS. Default OFF.
Terminate	<CR> and <LF>, <LF> or <CR>. Default <LF> and <CR>.

Interface settings

Baud rate	75, 150, 300, 600, 1200, 2400, 4800 or 9600. Default 1200.
Length/parity	7/EVEN, 7/ODD, 7/NONE, 8/EVEN, 8/ODD or 8/NONE. Default 8/NONE.
Stop bits	1 or 2. Default 1.
GPIB address	01 to 30. Default 06.

Test sequences

CALL PROCESSING ONLY

REGISTRATION, Test routine no. 20.
CALL MS TO CELL, Test routine no. 22.
 Repeated if failed first time.
 The following three are omitted if failed second time.
DTMF TONES, Test routine no. 30 (if enabled).
HOOK FLASH, Test routine no. 31 (if enabled).
CLEAR FROM MS, Test routine no. 27.
CALL CELL TO MS, Test routine no. 21.
 Repeated if failed first time.
AUTO HANDOFF, Test routine no. 24 (with N-AMPS channel rotation when
 applicable).
CLEAR FROM CELL, Test routine no. 26.
Print summary.

GENERAL INFORMATION

Disc interface

Format	Compatible with 3.5 or 5.25 inch, 40 or 80 track, single-sided or double-sided, single density disc drive with industry standard S.400 (Shugart) controller drive interface. Track to track step time selectable from 6 or 12 ms.
Connector	34-way IDC male socket.

Power requirements, AC

Rated supply voltage	115 V or 230 V nominal AC.
Supply voltage range	95 to 130 V or 190 to 264 V AC.
Supply frequency range	50 to 400 Hz $\pm 10\%$.
Consumption	30 VA.

Power requirements, DC

Supply voltage	± 11 to 32 V.
Consumption	30 W maximum.

Dimensions and Weight

Height	231 mm (9.1 in)
Width	345 mm (13.6 in)
Depth	490 mm (19.3 in)
Weight	20.0 kg (44 lb)

Safety

Complies with IEC 348 safety requirements.

Environmental

Limit range of operation	0 to 55°C.
Rated range of use	0 to 50°C.

Conditions of storage and transport

Temperature	-40 to +70°C.
Humidity	Up to 90% RH.
Altitude	Up to 2500 m (pressurized freight at 27 kPa differential (3.9 lbf/ in ²)).

Radio frequency interference

Conforms to the requirements of EEC Directive 76/889 as to limits of RF interference.

GENERAL INFORMATION

ACCESSORIES

Supplied

Operating Manual
Programming Manual
Fixing kit
Stowage cover assembly

Part no.

46881-980X
46881-981M
46883-879M
41690-495E

Optional

Service Manual, 2957A Adapter
Service Manual, 2955A and 2955R
Service Manual, 2955B
Primary pack
DC supply cable kit
Cable assembly, N to TNC
Cable assembly, parallel control port to Centronics
Cable assembly, serial port to standard RS-232
Custom Test Software Package

46881-982C
46881-954A
46882-114B
37136-582V
46883-907V
43130-596E
43130-592K
43130-593A
44991-064D